

NEWSLETTER No. 95 The Year of the Frog June 2008 THE FROG AND TADPOLE STUDY GROUP OF NSW INC Email fatsgroupnsw@hotmail.com PO Box 296 Rockdale NSW 2216 Website www.fats.org.au ABN 34 282 154 794



To keep it any longer, we'd need to give it a good upgrade and replace the now fading beautiful large photos by Marion Anstis, Alistair MacDougall and Martyn Robinson.

MEETING FORMAT for 6th June 2008

6.30 pm	Lost frogs needing homes. Please bring your FATS membership
	card, donation & amphibian licence to home a froggy friend.
	White Lips, Gracilentas, Perons, Fallaxes and Green Tree frogs
	are looking for your love and attention.

- 7.00 pm Welcome and announcements.
- 7.30 pm The main speaker is Mark Semeniuk (formerly of Sydney University, now with AMBS).
 "Froggie did a wooing go -Cane Toads and their breeding habits".
- 9.30 pm Field trip reports and five favourite slides. Tell us about your recent frogging trips or experiences. If you have slides or other images, bring them along as well. Evenings end with our regular guessing competition, light refreshments and pleasant conversation.

Join us at our next meeting Arrive at 6.30pm for a 7.00 pm start **Friday 6th June 2008**

Follow signs to Building 22 end of Jamieson St. (off Holker Street), Homebush Bay, Sydney Olympic Park

Public transport is available by bus or train. Call us the day before if you would like to be collected from the train station.



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BYE-BYE FROGMOBILE!

Our Frogmobile has come to the end of its natural life. After six years in the sunshine and in the rain, after well over 100 exhibitions and after having shown its frogs and frog habitats to untold numbers of people, it is now time to let go.



To keep it any longer, we'd need to give it a good upgrade and replace the now fading beautiful large photos by Marion Anstis, Alistair MacDougall and Martyn Robinson's artwork, we'd need to find affordable undercover parking, and we'd need to find people who can dedicate much of their free time to it. (My own spare time for the FM has also run out; other projects await me with now greater urgency.)

But we're going out with a splash: Leichhardt Council filed five school classes through the FM, then Warringah ten classes over two days, then Darling Harbour, then Bondi Beach – all in one week!

Have a look at the new FM photos on our website www.fats.org.au. Here are a few additional ones:



The FM never failed to attract large crowd, here at the 2008 Frog and Reptile Show at Castle Hill Showground.



And it never failed to captivate young and old.



All made possible by our scores of devoted Frog Explainers. Here Matt, just like the frogs themselves, is keeping an eye on everything that moves.



Our last FM show will be at Centennial Park by the Duck Pond where it all started. If you want to say farewell to it, be there on Sunday, 13 July, between 11 am and 4pm. L.V.



Our mission is to describe the many and varied patterns in the distributions, abundances and diversity of terrestrial vertebrates, and to understand the processes that create and shape them. This quest is driven by our fascination with the richness of vertebrate life and the systems that sustain it, and by the imperative to conserve and manage what we can in a world that is impacted increasingly by human activity. We focus our major efforts in the Australasian region because the conservation challenges here are so urgent.



We recognise and emphasise the fundamental importance of teaching and learning in ecology. We seek solutions by applying excellence in ecological research and training, by collaborating with research partners within and outside the university, and by engaging the broader community.



We require enthusiastic volunteers to help us check pitfall traps for small mammals and reptiles, survey vegetation plots, collect seed and invertebrate samples, and help with the establishment of new research projects. The work is physically demanding, but very rewarding, giving volunteers experience in a wide range of survey techniques and research skills. Volunteers required for September $(3^{rd} - 25^{th} \text{ Sep})$ and October $(8^{th} - 28^{th} \text{ Oct})$ desert trips. See the desert during a boom! Contact Aaron Greenville aarong@bio.usyd.edu.au

CRAVENS PEAK - BIODIVERSITY OF THE SIMPSON DESERT

Saturday 17 December 2005 Summary

The Australian Bush Heritage Fund has just bought a property the size of metropolitan Sydney to protect some of the most remarkable plant and animal diversity of any desert in the world. Cravens Peak near Boulia is their second reserve in South West Queensland and together they protect almost half a million hectares.

These private conservation reserves are the culmination of 16 years of research lead by Chris Dickman, from the University of Sydney. Environment specialist Alexandra de Blas crawls through the desert dunes to find out what lies beneath. Program Transcript can be found at http://www.abc.net.au/rn/science/ss/stories/s1531895.htm

Chris Dickman is an ecologist at the University of Sydney and he was with Alexandra de Blas, you will remember her from the program Earthbeat on ABC Radio National. She's now with the Australian Bush Heritage Fund. Guests on this program: Professor of Terrestrial Ecology School of Biological Sciences University of Sydney cdickman@bio.usyd.edu.au

Further information:

The Australian Bush Heritage Fund

http://www.bushheritage.org

Ethabuka

http://www1.bushheritage.asn.au/default.aspx?MenuID=436

Cravens Peak

http://www1.bushheritage.asn.au/newsletters/2005summer/cravens_fr.html

The Lake Eyre Basin

http://www.deh.gov.au/water/basins/lake-eyre/

National Reserve System

The purchase of Cravens Peak was made possible by a \$1.8 million grant from the Australian Government under the Natural Heritage Trust's National Reserve System program. http://www.deh.gov.au/parks/nrs/

FATS ANNUAL GENERAL MEETING 2008

The Frog and Tadpole Study group NSW inc (FATS) AGM will be held at 7pm 1stAugust 2008, building 22 Jamieson Street, Homebush Bay (Sydney Olympic Park). If you would like to ask questions about joining the FATS committee, please give any of the current committee members a call. See page 12. The committee meet six times a year at one of our homes, from 2pm to 5pm, usually on a Sunday afternoon and occasionally a week night. Committee meeting times may change in the future to suit new members. Please consider applying. New members are very welcome. No previous experience required. MW

NEW PROBLEM: "REDLYNCH" VIRUS



This problem is getting around fast and we ask anyone relocating tadpoles to PLEASE STOP.

If you are a breeder of frogs and have experienced any batches of tadpoles which have the symptoms described on this page, DO *NOT* SELL OFF OR GIVE AWAY ANY OF THAT BATCH. We can assist you

with decontamination information as well as contacts to have some of the diseased batch examined for confirmation that they are affected with this virus.

"Redlynch" virus is definitely getting around! Aside from the Cairns' suburbs of Redlynch, Centenary Park, Ellis Beach, and north of Ellis, we are getting new reports of dead and deformed tadpoles from Clifton Beach, Smithfield, Upper Mooroobool and Whitfield. We are also receiving problematic tadpoles from Mena Creek and Mt. Carbine which are two remote areas nowhere near Cairns. We are also receiving reports from several states in the USA which is where we believe this problem came from before it arrived here.

Other reports we have received indicate that the problem is also present in the Atherton area and the Gold Coast and Sunshine Coasts of SE Queensland. We received a report of



this virus in the wild in Mackay in October 2007. Sadly, we have also had confirmation that this disease is in the pet trade in Victoria and South Australia and we know of at least two breeder's premises

which are contaminated and at least one VIC and two SA pet shops that have sold juveniles with "Redlynch" virus. In late 2007, reports started coming in from NSW as well with clearly infected offspring coming from a breeder's premises.

CSIRO is

currently working on the process of formal identification and characteristics of this virus and results are expected in early 2008. But there are some specific predictable symptoms and



behaviours we have been able to record so far.

Please look at your backyard water bodies for any of the indications below and contact us asap if you see anything fitting the descriptions below:

- it appears to be aquatic so once it has been transported to a body of water, all tadpoles in it are infected
- it might also have vertical transmission which means an infected adult automatically passes the virus to its offspring through the process of reproduction (which would explain why the virus has turned up in very temporary, isolated bodies of water such as a puddle in the lawn when heavy rain has fallen)



- it doesn't seem to have any effect on fish so it is unlikely to be a ranavirus/iridovirus (one of the labs that has tested this says that it is a herpes virus)
- it doesn't start to cause physical changes or sudden death until the mid to later stages of tadpole development so the young ones appear perfectly normal
- it causes the majority of the clutch (roughly 90%) to die before metamorphosis; dead tadpoles nearing the stage of metamorphosis can be found floating at the edge of the water or dead on the bank just after metamorphosis

What few juveniles that do survive past metamorphosis are deformed and/or suffering growth problems - some common indications in frogs are:

- all four limbs are disfunctional, ranging from weak to completely uncoordinated (with tree frogs, some tadpoles are unable to climb out of the water at all and drown);
- juveniles can have one deformed eye and we've seen two right arms;



- juveniles can have one missing eye;
- the front of the body looks normal while the back half of the body is stunted:
- the frog only grows to a third of normal size or appears to not be growing at all;
- scoliosis is common;
- rear legs are warped and feet twisting backwards is common; when legs are tucked in (normal position), the ankles stick out slightly to the back and the knee joints are bent upward, the feet might stick out perpendicular to the calf instead of lining up under it;
- the body can get very bloated with fluid, especially in the older juveniles and sub-adults
- the colour of some tree frogs is wrong (Graceful remains yellow instead of green, Common Green tree frogs are blue or two-tone);
- sudden death continues to plague juveniles in first six months; almost all raised in

captivity die with a average of one per clutch reaching breeding age (and only because it is protected in captivity - deformed individuals would not last long in the wild)

In the tadpoles, the signs to look for are:

- some tadpoles in a batch shift colour from normal to very pale or very dark; some species turn grey
- some tails are stunted in length and rounded instead of pointed
- tails get S or L bends in them or are corkscrewed
- behaviour gets sluggish and they stop eating



In a water body, the signs to look for are: (this applies to flowing creeks as well as enclosed water bodies)

- the largest of the tadpoles are dead in the water
- heaps of tadpoles are present one week (but nowhere near the stage of metamorphosis) and it seems they have all or mostly all vanished as little as a week later
- lots of frogs are calling frequently at the water body but there are no tadpoles to be found in the water other marine life is there so it is not a toxicity issue
- the only tadpoles you can find after doing regular



searches are the smallest ones

Cane toads are especially susceptible to this problem and mortality rates at the tadpole stage are nearly 100%. If any cane toads are found with even the slightest deformity to their legs, eyes, or backs, please collect them for us.



Please do some checks on the water bodies which may be on your properties and, if any of the indications listed above are present, please contact Deborah Pergaloti on fdrproject@westnet.com.au asap. We will want to collect a batch of tadpoles from your water to raise in captivity so we can monitor and record the symptoms. (If the problem with your tadpoles turns out not to be disease, we can advise you on setup changes you can do to improve tadpole survival.)

http://www.fdrproject.org.au/pages/disease/virusredlynch.htm

Last updated: December 5th, 2007 copy write protected





WHAT'S AT THE BOTTOM OF YOUR GARDEN?

This beautiful Bolas spider was photographed by Wendy Grimm. Punia Jeffery and Wendy found the identity of this Sydney spider on the Australian Museum web page. Egg case (above) and the spider in its dome case (below).

http://www.amonline.net.au/factSheets/bolas_spider.htm











Harry's Practice, filmed April 08 – frogs as pets. L.V. FATS FROGS ON TV



ABC Play School, filmed April 08 - frog life cycle. L.V.



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HEAP BIG FROGS

Do you have a small garden? A small pond? You can still produce some monsters. Have a look at these; and if yours are bigger, let us know!



Carrie Jeffers of Parramatta snapped this whacking big monster Peron's Tree Frog. The bricks are 93 mm high; the frog is not all that much smaller.

Remember not to measure the frog's legs as well, just the SVL (the snout-vent-length) in a straight line.



A huge Striped Marsh Frog found by Phil Felix of Lake Macquarie.



Photograph by George Grall http://www.nationalgeographic.com/ngm/0105/feature6/zoom1.html

The biggest SMF I could find around my pond - 66 mm.



But I have 90 mm SMF metamorphs!



And small ones, raised in a different environment.

Any idea what makes some grow better than others? If you have made any observations, don't keep them to yourself. L.V.

Suspended in a watery world, a red-eyed tree frog embryo develops into a tadpole



LAST FATS MEETING 4th APRIL 2008

George Madani and Henry Cook accompanied by a band of like minded amphibian researchers including Rachel Melrose came to FATS rescue, yet again, and gave an impromptu presentation.... with slides and a video thrown in ... and with only 30 minutes notice! (Our expected speaker was unavoidably unable to attend at the last minute.)

George, Henry and a group of researchers have been working in the Simpson Desert. See page 2. Their unique photos, video and commentary about radio tracking, pit traps, collecting, photographing and field studies, were an insight into the camaraderie associated with field work. Herpetology is anything but a dry and boring career. We thank George, Henry and Rachel for their presentation. Slides included Crimson Chats, Sandy Inland Mice, Dunnarts, *Neobatrachus centralis, Notaden nichollsi*, whistling spiders, massive centipedes, scorpions, bluetongues, skinks, goannas, termite eating geckos, breaded dragons and snakes. Most frogs in the Simpson Desert (like the one seen digging in the video) are burrowers.

Arthur White thanked all the speakers, including Grant Webster, Chloe, Martyn Robinson, Lothar Voigt, Marion Anstis, William Wangmann and myself, who were FATS presenters at the Easter Show. Sorry folks, I do not have the full list of presenters at the time of going to press. I'm sure I have missed someone. The Royal Easter Show frog talks at the Plant and Garden Pavilion, surrounded by bush-care, environmental groups (and this year, spectacular columns of silken flag garden artworks, of frogs, that appeared to leap out at you, by Jane Davenport), have become very popular.

Andrew Nelson presented a video on the FATS Smiths Lake field trip. The film documented our frog group's activities at the field station and recorded some of the many amphibians, reptiles and snakes seen over the weekend, such as the endangered Stephens Banded Snake, the venomous Golden Crown Snake and orange-groined toadlets.

Arthur White spoke about the distribution of Barred River Frogs genus *Mixophyes* in the Greater Sydney Region. Scientists have never clearly understood their history in this region. There have been dramatic changes in their distribution particularly since the late 1960s.

There are three species around Sydney, but previously they were regarded as one. The confusion with the early taxonomy confused the understanding of the historical distribution of the species. Since 1999 systematic surveys have been carried out across the Sydney Basin investigating historic sites and searching for new habitats to try to unravel the correct distribution limits for these species.

The Stuttering Frog *Mixophyes balbus* was distributed across the Sydney Basin and as far South as North-East Victoria. It is now mostly confided to the Watagan Mountains, North of the Hawkesbury River. One population survives South of Sydney at Macquarie Pass and a second near Moruya appears to have perished. This species has disappeared from 400 k of habitat areas South of the Hawkesbury River. The Giant Barred Frog *Mixophyes iteratus* occurred as far South as the Blue Mountains. It is no longer present there and is confined to six small isolated populations in the Watagan Mountains.

The Great Barred Frog *Mixophyes fasciolatus* was known historically to occur as far South as the Illawarra. Recent surveys located this species further South again in the Shoalhaven area and near Sussex Inlet. This species was common in the lower Blue Mountains and still persists in a few areas near Kurrajong.

All three species have suffered significant losses at the South end of their distribution ranges. The Giant Barred Frog is facing local extinction.

FATS members are very fortunate to hear talks by Arthur, who is at the forefront of research in his field.

There was general debate about possible impacts the perceived over-use by soft drink companies, of the Ourimbah aquifer water, was having on creek levels in the area. Was the lack of water in creeks, placing additional stresses on frog populations? There have been observations of less ground water in the region and whether it was connected to the decrease in water levels in the aquifer.

Anthony Stimson spoke about the Reptile and Amphibian Conference and Expo, all the displays etc. Visit http://www.wildexpo.com.au



Matthew McCaffery presented frog, dragon and other wildlife photos from Hill End, Mudgee and Sydney Wildlife World. The meeting ended with light refreshments and chats before it was time to go home again. **MW**



THREAT FROM TINY PET FISH



The platys ... reckless owners.

A tiny tropical fish is about to become a household name alongside the cane toad, the Indian myna bird and the rabbit as native ecosystems battle yet another foreign invader. A small feral population of the exotic aquarium fish called platys has been found near Newcastle, sparking fears that they may be beyond eradication.

The platys is aggressive, eats frog and fish spawn, and breeds rapidly. It could overwhelm native species in areas where it survives.

Despite years of education, scientists said reckless owners probably flushed the fish down the toilet or released it in water systems, known as "*Finding Nemo* syndrome".

The Department of Primary Industries found six of the fish in a drain connected to Newcastle's main water supply, Grahamstown Dam. The department's acting manager of aquatic biosecurity, Bill Bardsley, said that if the fish had spread to the dam it might be too late to control its numbers.

"This does highlight the need for ongoing public education, which we already do a considerable amount of," he said. "If you have a fish and you want to get rid of it, the right thing to do is to dispose of it humanely or give it to a fish shop or pass it on to a friend because you never know the damage they could do if released."

The platys is known as a live-bearer because it keeps its eggs until they are hatched, giving them a huge advantage over natives with which they compete for food. Seventy millimetres long, the platys reproduces quickly and is highly resilient in foreign environments. A professor at the Sydney Institute of Marine Science, Iain Suthers, said the platys shared characteristics with a relative, the mosquito fish, which was introduced into Australian waters in the 1920s to control mosquito populations.

The mosquitoes survived, and mosquito fish populations are out of control throughout Australia.

"They are very aggressive little fish," Professor Suthers said. "They are the Indian myna of the fish world. They are not scared of just about anything, they can tolerate live carp and, because they are live-bearers, their populations can very quickly dominate native fish."

Mr Bardsley said he did not know how much damage the platys could cause. It preferred warmer waters and might not thrive along the NSW coast.

The Government has a phone number for reporting foreign aquatic species, 4916 3877.

Sent to Frogcall by Steve Weir, written by Jonathan Dart 28/4/08 http://www.smh.com.au/news/environment/finding-nemesisthreat-from-pet-fish/2008/04/27/1209234655180.html

TREE FROG FOUND ALIVE IN PACKET OF SPINACH

A green tree frog narrowly avoided becoming lunch to an unsuspecting shopper after finding its way into a packet of spinach. The woman was unpacking her groceries when she spotted the Eastern Dwarf Tree Frog and quickly freed it from its plastic prison. Now appropriately named Popeye, the frog was rushed to Currumbin Wildlife Sanctuary's community hospital and was found to be in perfect health.

Veterinarian nurse Mimi Dona said the frog was very close to becoming part of a meal when he was found. Despite being healthy, she said his immediate future was unclear. "We would love to release him however due to the possible threat of disease and that we are unsure of his origin, he will stay with us until his future is decided," Ms Dona said. **brisbanetimes.com.au forewarded to Frogcall by Steven Weir written by Shannon Molloy 15 April 2008**

Litoria fallax photo Ben Harrington



SET TOADS LOOSE TO SAVE NATIVE SPECIES,

expert says



There are fears that this new idea could be helping the cane toad along its destructive path (photo Reuters: David Gray)

A ustralian scientists have tried just about everything to stop the spread of the hated cane toad which is blamed for the large scale depletion of a number of native birds and animals in the north of Australia. When it comes to toad theory, there are two broad schools of thought. There are those like Darwin's Toadbusters, who spend their nights hunting cane toads down to stop them spreading. Now there is the 'set them loose and let them go' theory of scientists like University of Sydney Professor Rick Shine.

He has come up with surely the most controversial proposal yet - to release toads into areas of Australia that are still cane toad free. It sounds crazy, but Professor Shine believes if it is done correctly, setting the toads loose may actually help to save Australia's native species. "The toad front is moving at 40 to 50 kilometres per year, nothing that anybody has done has slowed it in the slightest," he said. "It's absolutely clear that the toads will be in those areas within a few months, and that the mortality will be massive. So at the very worst, we would slightly move a little bit of that mortality forward."

In fact the idea is not as silly as it sounds.

Professor Shine says toads leading the invasion across northern Australia are by nature the biggest and most poisonous toads that annihilate native species like snakes, goannas and quolls. So releasing much smaller toads ahead of them might make the animals sick, but could also save them from extinction.

"The basic idea is that we could drop some small cane toads, just in advance of the invasion front," Professor Shine said. "We'd use all males - and sterile males, so that they certainly wouldn't start breeding themselves - and it would give the local quolls and goannas and so on a chance to learn that cane toads are bad news.

"So when these great big toads arrive on the invasion front, we've got these predators likely to survive the experience."

'An absolute folly'

But there are fears that this new idea could be helping the cane toad along its destructive path.

Frogs back from the dead The Australian 26/5/2008 10 writer Greg Roberts

"If it doesn't work, if the presence of small toads doesn't decrease the impact of the main toad invasion, the worst we would have done is induce a bit of mortality a couple of months before it would already have happened," Professor Shine said.

This theory horrifies the man who spent years organising the toad bust to remove cane toads from Darwin and parts of the Top End. So popular is Graeme Sawyer's method of cane toad control, he was recently elected Darwin's new Lord Mayor. "I would not be supporting any plan of introduced cane toads into any area that they haven't got to already," he said. "There's still enough evidence, I think, to suggest that we can really slow down and minimise the damage cane toads are causing if we put our minds to it.

"Introducing them to country where they haven't got to, I think would be an absolute folly."

Just in case his proposal does fail, Professor Shine has another theory - that a parasitic lung worm found in cane toads could be harnessed to control their numbers. Scientists have known for decades that the worm can kill the toads, but wrongly believed that it also kills native frogs.

Now, a recent discovery may have led to a breakthrough.

"It turns out that the worm is actually a South American species that's come across with the toads and it doesn't attack Australian frogs," Professor Shine said. "They've got lots of worms, but they're all Australian species, so it looks like we really have a toad killer.'

Adapted from a story first aired on ABC Radio's AM program on 6 May 2008. Sent to Frogcall by Steve Weir http://www.abc.net.au/news/stories/2008/05/06/2236523.htm

QUEENSLAND frogs, feared to be on the path to extinction, have defied the experts by making a comeback.

Frogs from rainforest mountain streams in north and southeast Queensland are returning to areas where they have not been recorded for many years.

"There is a ray of light at last for these animals," said Queensland Parks and Wildlife Service herpetologist Harry Hines.

In a phenomonon that started in the late 1970s, six Queensland frog species became extinct when the chytrid virus invaded their pristine habitat in the rainforest streams.

The fungus infects frog skins, destroying the animals' breathing and nervous systems. Experts believe infection is triggered by a factor such as pollution from agricultural chemicals, increased exposure to ultraviolet radiation, or temperature rises from climate change.

The Queensland extinctions, which included the unique platypus frog, coincided with a worldwide crash in amphibian populations, feared by some observers as the harbinger of impending environmental disaster linked to climate change.

Mr Hines has noted recent

increases in numbers of the tiny Kroombit tinker frog in the forests of the Kroombit Tops, near Gladstone in central Queensland.

Three species of closely allied tinker frogs were among the extinction victims of the chytrid virus.

The Kroombit frogs have reappeared at one monitoring site from which they had vanished, and as many as 40 of the amphibians were found at each of several other sites.

Mr Hines said that at several places in the state's southeast and north, species such as the cascade tree frog have returned to areas from which they had long disappeared. "While some species have taken a fair whack, we have gotten to a point where things are reasonably stable," he said.

Mr Hines said it was possible frogs were building up immunity to the fungus, or that the disease was becoming less deadly. Alternatively, factors that triggered fungal infection might no longer be present.

He cautioned that populations of some species, while stabilising, were low compared to what they were 20 or 30 years ago. The Kroombit tinker frog was still at risk from the destruction of its rainforest habitat by feral pigs and bushfires.

FIRST LUNGLESS FROG FOUND

The first recorded species of frog that breathes without lungs has been found in a clear, cold-water stream on the island of Borneo in Indonesia. The frog, named *Barbourula kalimantanensis*, gets all its oxygen through its skin.



"Nobody knew about the lunglessness before we accidentally discovered it doing routine dissections," study lead author David Bickford, a biologist at the National University of Singapore, said in an email. His colleague Djoko Iskandar at the Bandung Institute of Technology in Indonesia first described the frog in 1978 from one specimen. About 15 years later, fishermen found another individual. "Each specimen was deemed so valuable that scientists did not want to sacrifice the animals for dissection," Bickford said.

But the biologist immediately partially dissected several frogs when he found the species on a recent expedition to Borneo. The team describes the peculiar frog in the 6 May issue of the journal *Current Biology*.

(Read about other new species found in Borneo.)

Evolutionary Oddity

Previously the only four-limbed creatures known to lack lungs were salamanders. A species of earthwormlike, limbless amphibian called a caecilian is also lungless. Tetrapods, or fourlimbed creatures, that develop without lungs are rare evolutionary events, Bickford and colleagues write. The trait in amphibians is likely an adaptation to life between water and land and their ability to respire through the skin. The researchers suggest lunglessness in *B. kalimantanensis* may be an adaptation to the higher oxygen content in fast-flowing, cold water. "Cold water can hold more dissolved oxygen than warm water," Bickford explained. The frog also has a low metabolic rate, which means it needs less oxygen. What's more, the species is severely flat compared to other frogs, which increases the surface area of the skin. "Along with the fact that having lungs makes you more likely to be swept away in a fast-flowing stream—because you would float this [is] a very strong context for the evolution of loss of lungs," Bickford said.

Unsurprising Find

David Wake is a biologist and expert in amphibian evolution at the University of California, Berkeley. He said the finding of a lungless frog is unsurprising since tailed frogs are already known for their greatly reduced lungs. Wake added that for most amphibians, the majority of gas exchange happens through the skin. A low but significant amount of respiration occurs via simple, sac-like lungs.

Most species, he noted, have mating calls that require lungs. So biologists are unsure why a few species have entirely gotten rid of the organs, Wake said. "This species is so rare that we know next to nothing concerning its biology," he wrote in an email. "But it is aquatic and lives in cold streams and doubtless has low basal metabolic rate." Thus loss of lungs as an adaptation to the cold, fast-flowing water "seems like a rational hypothesis to me," he said.

Rare Frog

Further studies of the frog to test the hypothesis, however, may be hampered by the species' rarity and endangered habitat, according to Bickford and colleagues. For instance, the frog's cold-stream habitat is being destroyed by illegal gold mining, Bickford said. The mining activity makes the water cloudy with sediment and contaminates it with mercury. In addition, much of the surrounding habitat is under threat from legal and illegal logging, which increases runoff into the streams.

"Most of the frog's presumably original range is now completely uninhabitable," Bickford said. Further threats, he added, may come from changes in temperature and precipitation patterns due to climate change. "This frog has a grim future and it is entirely our fault," Bickford said. "It is our responsibility to try and remedy the situation." **Forwared to Frogcall by Arthur White** John Roach for National Geographic News 7 April 08

INSURANCE DISCLAIMER FATS has public liability insurance for its various public functions. 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. <u>FATS MEETINGS</u> commence at about 7.00pm and end about 10.00pm, on the <u>first Friday of every EVEN month</u> (February, April, June, August, October and December), at Building 22, RANAD, off Jamieson St, Sydney Olympic Park, Homebush Bay (accessible by car, train or bus). We hold 6 informative, informal, topical and practical meetings each year. Visitors are welcome. We are actively involved in monitoring frog populations, other field studies, produce the newsletter FROGCALL & 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.

FIELD TRIPS.

Autumn/Winter Recess. No fieldtrips scheduled. The Spring/Summer Fieldtrips programme recommences in September.

FIELD-TRIPS & THE FATS CODE OF CONDUCT.

Members would now be aware of the new departmental protocols governing fieldtrips. All official FATS fieldtrips comply with these legal requirements. Any member embarking on fieldtrips of a private nature need to understand that all native fauna is protected by law. This includes native fauna located on private property. There is now an increased risk of prosecution for anyone failing to observe hygiene protocols, interfering unnecessarily with frogs, or causing undue disturbance (i.e. by trampling) of habitat. In many cases, access to populations of some species is also restricted. Penalties for infringements can be severe. FATS always like to encourage members to go out & look for frogs. If however, you have ANY doubts about a proposed private visit, please seek advice beforehand. Speak to a committee member or contact the Area Manager of National Parks or, where relevant, Forests NSW. There is a legal onus on the individual to ensure that their fieldtrip complies with all departmental requirements and that approval for the fieldtrip has been secured. Remember, pleading ignorance WILL NOT provide immunity from prosecution, nor will such breaches of the regulations help our froglife. The FATS Code of Conduct has now been redrafted to mirror these legislative changes. To repeat, the responsibility for fieldtrip approvals & the general compliance with departmental requirements will now rest entirely with the individual member. For those participating in small group outings, it is advisable that each member of the group carry out their own checks to ensure that approval has been obtained & that all conditions are complied with.

FATS endorse these new regulations that serve to protect our precious frogs. The Code of Conduct will reinforce this position. FATS will not offer any assistance or character testimonials to members in trouble with authorities. Irrespective of departmental action, the FATS Group **WILL NOT TOLERATE** breaches of these regulations by any member. Any such breaches will result in disciplinary action being taken. Prosecution by government agencies will not preclude FATS from issuing its own, additional disciplinary measures.

Furthermore, FATS will not tolerate any incident of unethical behaviour. This includes any behaviour that jeopardises the well-being of frogs, wild or captive. It also includes **ANY** behaviour that brings FATS into disrepute, or behaviour that unfairly aggrieves any fellow member or members (including damage to their reputation and/or their standing within the scientific community). Please note that we do not need to receive a complaint from a member to instigate a disciplinary review. FATS will commence a review if it sees fit. The FATS Committee will take whatever action is necessary to deal with cases of misconduct, and we will be adopting a 'zero-tolerance' approach. **Serious or repeat offences will result in expulsion.**

The FATS Code of Conduct imposes a higher standard of behaviour than is demanded by law. For this, we make no apologies. We know our members take pride in belonging to a group that is highly regarded within the zoological community. We need, however, to remain on top of our game. There is no room for complacency.

Rob Wall, on behalf of the FATS Committee.

FROGWATCH HELPLINE

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