

FROG CALL

THE FROG AND TADPOLE STUDY GROUP NSW Inc.

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NEWSLETTER No. 121 October 2012



Rhacophorus norhayatii (C) George Madani

Arrive 6.30 pm for a 7pm start.

Friday 5th October

FATS meet at the Education Centre,
Bicentennial Pk, Sydney Olympic Park

Easy walk from Concord West railway station and straight down Victoria Ave.

If walking, take a strong torch (Apr - Oct).

By car: Enter from Australia Ave at the

Bicentennial Park main entrance,

turn off to the right and drive

through the park. It's a one way road.

Or enter from Bennelong Road / Parkway.

It's a short stretch of two way road.

Park in p10f car park, the last car park

before the exit gate. See map p11.

MEETING FORMAT Friday 5th October 2012

6.30 pm There are only a few lost frogs needing forever homes. Contact us before the meeting to confirm if any frogs are coming to the meeting. More frogs will be ready in December. Please bring your FATS membership card and cash \$30 - \$50 donation. NSW NPWS amphibian licence must be sighted on the night. Rescued frogs can never be released.

7.00pm Welcome and announcements.
Frog-o-graphic competition to be announced in December.

7.45 pm Matt Greenlees from Sydney Uni is talking about:
"Radio-tracking Toads"

9.00 pm Show us your frog images, tell us about your frogging trips or experiences, guessing competition, continue with frog adoptions, supper & a chance to relax and chat with frog experts.

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FATS MEETING FRIDAY 3RD AUGUST, 2012

FATS held our AGM and election of the committee, with all positions filled.



George Madani (above) regaled the meeting with his adventures in Borneo with David Nelson

(see FrogCall 119 June 2012).



Large and venomous snakes (image of Adult Wagler's Pit-Viper) were seen along with a vast assortment of frog species. Actually getting to view the frogs was quite strenuous including his escapade, with David Nelson, in finding *Rhacophorus norhayatii*. In George's words "The most exciting thing however is that *R. norhayatii* is only described from peninsular Malaysia and southern Thailand and here it was in Borneo!! A first!!" See front page.

Arthur White gave a very illustrative talk about the decline of the Green and Golden Bell Frog from Western Sydney. The G&G used to be in large numbers on the floodplains of the Hawkesbury-Nepean River. With flood mitigation and housing and other development the G&G has suffered massive declines. There are still a few pockets of G&G near creeks around the Blacktown area. Arthur will be working with the councils and FATS volunteers in this area to try to stabilize the existing populations and help them with over-wintering by using scattered large sheets of plastic as refuges. Supper was provided and enjoyed by all. **Phillip Grimm**

SYDNEY FROG POSTER – APOLOGY

The incorrect version of the poster was included in the last Frogcall No. 120 edition. Apologies for any problems it has caused. Hopefully FATS will be able to post the correct version on our website soon. **MW**



Photos by Ben Brown

Heleioporus australiacus Giant Burrowing Frogs





FATS SUCCESS AT THE KU-RING-GAI FESTIVAL OF WILDFLOWERS



The dipnetting (left) was enthusiastically enjoyed by the younger members of the community. Several large tadpoles, dragon fly larvae and water insects, were caught, observed and then released (photo, below left).

Further out on the pond a red-bellied black snake basked in the sunshine until noticed and then smoothly departed.



A large contingent of the FATS committee: Kathy (centre left photo, LHS), Sheila (centre left, RHS), Andre, Punia (below LHS), Robert (above), Arthur (top right), Karen (below centre) and Phillip (our photographer) enjoyed the day. Ku-ring-gai Council, thanked FATS volunteers for all their efforts and time, advising that we had contributed considerably to the success of the day.

FATS had a great day at the Festival of Wildflowers in St Ives. A fine sunny day brought out the crowds, especially young families and the FATS Stall and display frogs were as popular as ever. Arthur White's talk on "Frogs and Gardens" (top right) provided lots of interest for plant lovers as one measure of a good garden is how successful it is in attracting birds, frogs and reptiles.



Phillip Grimm - story and photography

CLIMATE CHANGE MAY BOOST FROG DISEASE CHYTRIDIOMYCOSIS (extract)



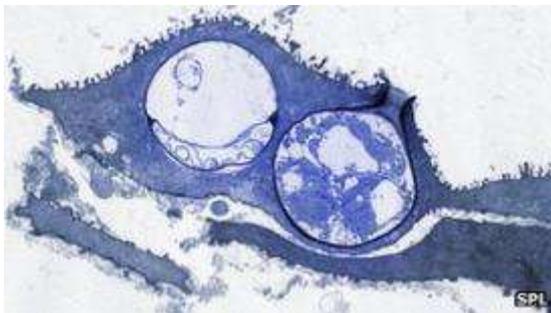
The Cuban tree frog is one of many species affected by the fungal disease chytridiomycosis

More changeable temperatures, a consequence of global warming, may be helping to abet the threat that a lethal fungal disease poses to frogs.

Scientists found that when temperatures vary unpredictably, frogs succumb faster to chytridiomycosis, which is killing amphibians around the world. The animals' immune systems appear to lose potency during unpredictable temperature shifts. The research is published in **Nature Climate Change journal**.

Chytridiomycosis, caused by the parasitic fungus *Batrachochytrium dendrobatidis* (Bd), was identified only in 1998. It affects frogs and their amphibian relatives - salamanders, and the worm-like caecilians - and has caused a number of species extinctions.

Variable success Over the years, various teams of scientists have conducted a whole raft of experiments to find, for example, whether Bd is more active in warm or cold temperatures.



Bd spores spread from the skin of amphibians

The new research looked at what happens in a more real-life situation - when chytrid fungus is actually on a vulnerable frog. And the key variable the scientists looked at was variability of temperature, rather than temperature itself. Cuban tree frogs (*Osteopilus septentrionalis*) infected with Bd were kept under various conditions. In some, the

temperature was kept constant at either the bottom or top of their natural range (15C and 25C (59F and 77F)).

In others, the temperature was switched predictably between the two values, mimicking the natural day-night cycle; and in a third set, the temperature was switched between 15C and 25C unpredictably. On its own, the fungus fared better in cooler conditions, and when the temperature changes were regular. But when it was already on the frogs, the pattern was reversed; the fungus grew faster under unpredictable temperature change.

What are amphibians?



- First true amphibians evolved about 250 million years ago
- Three orders: frogs (inc. toads), salamanders (inc. newts) and the limbless caecilians
- Adapted to many aquatic and terrestrial habitats
- Present on every continent except Antarctica
- Many metamorphose from larvae to adults

• **BBC Nature: Amphibians videos, news and facts**

The explanation is that being a simpler organism, it is able to adapt faster than the frogs' immune system. Previous research has found alterations in frogs' white (immune) cells due to temperature changes. But Dr Raffel suggested it was hard as of now to project what this meant for amphibians and the chytrid threat. Herpetologist Benjamin Tapley from the Zoological Society of London (ZSL), who was not involved with the study, also suggested it was too soon to draw strong conclusions.

Consuming problem In a separate piece of research, scientists have produced more evidence that Bd is being spread by trade - in this case, by the movement of the American bullfrog (*Lithobates catesbeianus*) for food. The bullfrog carries Bd, but appears naturally immune. In a **paper in the journal Molecular Ecology**, the researchers documented that a Brazilian strain of Bd had been transported to Japan, discovered various strains on frogs being sold in Asian food shops in the US, and found novel strains created by sexual reproduction. Three years ago, **Australian researchers calculated** that more than a billion frogs were raised each year for human consumption. **By Richard Black Environment correspondent, BBC News Follow Richard on Twitter forwarded to Frogcall by Andrew Nelson** <http://www.bbc.co.uk/news/science-environment-19199197>

GLOBAL WARMING COULD HELP PESKY FISH PEST (extract)

The mosquitofish are better able to escape from their predators in warmer waters, the study found (Elektra Sinclair)



Global warming could advantage one pesky marine species while disadvantaging its predator, a new study suggests. The study, of the eastern mosquitofish (*Gambusia holbrooki*) and its predator, the Australian bass (*Macquaria novemaculeata*), is published today in the *Proceedings of the Royal Society B*. Seebacher and colleagues wanted to investigate how increasing water temperatures could affect the relationship between mosquitofish and its predator.

Lab experiment Seebacher and colleagues first acclimatised both mosquitofish and bass in laboratory tanks at 15°C and 25°C for several weeks, representing their winter and summer averages. They then exposed each to 5°C increments in temperature starting at 10°C and ending at 30°C and tested how this affected their ability to swim, given their different long-term thermal background.

The researchers also exposed the different fish to each other and measured how well the bass could catch mosquitofish and how well the mosquitofish could escape from the bass. As well as being a fish humans like to eat, bass are currently being used by scientists to hold mosquitofish in check. But the researchers say their findings suggest as it gets warmer bass will be less able to feed themselves, because they will be less able to catch their prey and mosquitofish in return will escape predation. The researchers now hope to look at the relationship between mosquitofish and their tadpole prey, and a three-way relationship between bass, mosquitofish and tadpoles. **Forwarded to Frogcall by Steve Weir**
<http://www.abc.net.au/science/articles/2012/08/01/3557368.htm> 1 August 2012 Anna Salleh ABC

TADPOLE PHEROMONE TARGETS FELLOW TOADS (extract)

Competition in ponds can be fierce. Cane toad tadpoles are known to hunt out and eat eggs from their own species, but may also have a more insidious way to dispose of any young upstarts. "If we can identify the specific chemical and check very carefully that it doesn't have any effects on the native frogs, we could deploy it into ponds," says Dr Richard Shine, professor of biology at the University of Sydney and co-author of the paper published today in *Royal Society Biology Letters*.

Scientists suspected older tadpoles might slow the development of younger competitors by producing pheromones, chemicals that change the behaviour or physiology of other members of the species. To test this hypothesis, the researchers placed cane toad eggs in containers split in half by flyscreen mesh. Ten of the containers contained older cane toad tadpoles on the opposite side of the mesh, and another ten were kept without tadpoles for comparison.

There was no physical contact between eggs and tadpoles, but waterborne cues could pass through the mesh. After 72 hours, the eggs hatched into tadpoles which were moved to other containers. By the time they turned into toads, tadpole-exposed individuals had a survival rate 40 per cent lower than the others.

Species-specific cues It is thought this chemical could be used against the toads, complementing existing measures like community cane toad musters. However, in the fight against this introduced species there is a need to ensure native frogs don't become collateral damage.

According to Shine, cane toad tadpoles communicate in a chemical language, using alarm pheromones that tell others to flee from danger, and attractant pheromones that say 'come over for a free meal.' He says native frog species do not respond to these chemicals, so there's a good chance the development-disrupting pheromone would also be species-specific, though further testing is needed. Competition from within: researchers hope a naturally occurring cane toad pheromone can be used to control their number.

31 Aug. 11

<http://www.abc.net.au/science/articles/2011/08/31/306427.htm> Sarah Kellett ABC Sent to Frogcall by Steve Weir.



Photo by Ben Brown *Litoria phyllochroa*

HERPDIGEST

RESEARCHERS FIND OUR INNER REPTILE HEARTS

The genetic building blocks behind the human heart's subtle control system have finally been identified. An elaborate system of leads spreads across our hearts. These leads -- the heart's electrical system -- control our pulse and coordinate contraction of the heart chambers. While the structure of the human heart has been known for a long time, the evolutionary origin of our conduction system has nevertheless remained a mystery. Researchers have finally succeeded in showing that the spongy tissue in reptile hearts is the forerunner of the complex hearts of both birds and mammals. The new knowledge provides a deeper understanding of the complex conductive tissue of the human heart, which is of key importance in many heart conditions.

Forerunner of conductive tissue "The heart of a bird or a mammal -- for example a human -- pumps frequently and rapidly. This is only possible because it has electrically conductive tissue that controls the heart. Until now, however, we haven't been able to find conductive tissue in our common reptilian ancestors, which means we haven't been able to understand how this enormously important system emerged," says Bjarke Jensen, Department of Bioscience, Aarhus University. Along with Danish colleagues and colleagues from the University of Amsterdam, he can now reveal that the genetic building blocks for highly developed conductive tissue are actually hidden behind the thin wall in the spongy hearts of reptiles. The new

results have just been published in the journal PLoS ONE.

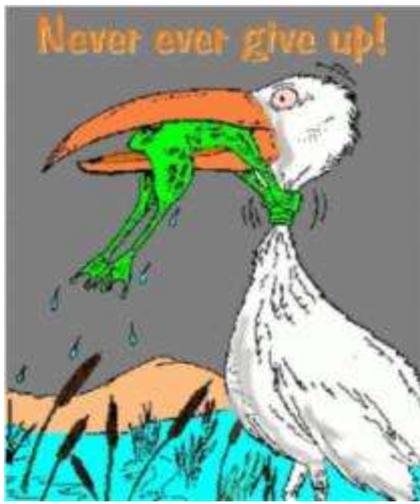
Different anatomy conceals similarity "We studied the hearts of cold-blooded animals like lizards, frogs and zebrafish, and we investigated the gene that determines which parts of the heart are responsible for conducting the activating current. By comparing adult hearts from reptiles with embryonic hearts from birds and mammals, we discovered a common molecular structure that's hidden by the anatomical differences," explains Dr Jensen. Since the early 1900s, scientists have been wondering how birds and mammals could have developed almost identical conduction systems independently of each other when their common ancestor was a cold-blooded reptile with a sponge-like inner heart that has virtually no conduction bundles.

Human fetal hearts The studies show that it is simply the spongy inner tissue in the fetal heart that gets stretched out to become a fine network of conductive tissue in adult birds and mammals. And this knowledge can be put to use in the future. "Our knowledge about the reptilian heart and the evolutionary background to our conductive tissue can provide us with a better understanding of how the heart works in the early months of fetal life in humans, when many women miscarry, and where heart disorders are thought to be the leading cause of spontaneous abortion," says Professor Tobias Wang.

Fact box: Why did we not keep reptilian hearts?

Reptiles are cold-blooded animals and therefore have the same temperature as their surroundings. Their spongy hearts are efficient enough to maintain their low metabolism. Birds and mammals -- including humans -- have independently of each other developed a high body temperature (warm-bloodedness) and spend enormous amounts of energy maintaining it. Their pulse has to increase to pump all the blood needed for high metabolism. This means they require efficient conductive tissue in the heart. **Science Daily 14 Sep. 2012 HerpDigest is a non-profit corporation, based in New York State. It is a publication, independent of any government public or private agenda, and reflects only the editor and opinion of what is news in the herp world. It is now in its 11th straight year of publication.**

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NEW AMPHIBIAN SPECIES ON THE INCREASE

A curious paradox has befallen the world's amphibians, and UC Berkeley scientists are tracking it day by day. New species of frogs and toads, newts and salamanders, and wormlike critters called caecilians are being discovered all the time as biologists take to the field in the world's last unexplored places. At the same time, naturalists say, more and more species of amphibians are dying off in what appears to be an oncoming mass extinction - particularly for frogs.

"In all the doom and gloom about the species that are threatened and the populations that are declining, we're finding new ones at an even faster rate," said David Wake, a UC Berkeley biologist who has long combed the continents discovering new amphibians - particularly salamanders - and was among the first to warn that many species are going extinct.

Wake and his colleagues have created an online catalog of the lives and fates of all amphibians, called AmphibiaWeb. The site reported with fanfare this week that 7,000 amphibian species have been recorded in the world, up from about 5,000 a dozen years ago.

In the past two weeks alone, biologists reported the discovery of 18 new species, said Wake, director of AmphibiaWeb.org. One of them is a little green glass frog, *Centrolene sabini*, discovered in Peru by a young naturalist from San Francisco State, Alessandro Catenazzi.

"It was a rainy night in January," Catenazzi wrote in an e-mail from his exploration site 10,000 feet high in the cloud forest of the Andes, "and I was just walking along a road looking for frogs when I heard *C. sabini*'s intriguing call. This calling male was perched over a precipice above the stream, but luckily I was able to reach the branch and record the call."

Frogs dominate the Berkeley-based project, with 6,179 frog species reported. Newts and salamanders trail, with 631 species reported, and the caecilians come last, with only 190 species known to biologists.

The caecilians are obscure critters indeed: legless and nearly blind, they travel like worms and snakes, use their bony heads to burrow underground, and reproduce in varied bizarre ways. Three of the species are considered at risk of vanishing.

The International Union for the Conservation of Nature in Switzerland, which tracks the status of all the world's plants and animals, reported on its Red List this year that 41 percent of the world's amphibians are threatened with extinction.

Fifteen years ago, the organization reported that only 18 species of amphibians were "critically endangered." This year the count is 507 species.

"It's deeply ironical and paradoxical that so many amphibians are going extinct right in front of our eyes, while at the same time, more and more biologists are taking the last chance to explore in the last wild places and discovering more and more new species of amphibians," Wake said.

The disappearance of many frogs has been documented in the Sierra, due primarily to an epidemic of the toxic chytrid fungus that is spreading across every continent in the world. Other threats to amphibians include development on habitat lands, pollution, pesticides and the introduction of species that overwhelm existing populations, the AmphibiaWeb scientists say.

HERPDIGEST Volume # 12 Issue # 39 29/8/2012 by David Perlman, July 31, 2012, SFGate



Photo by Miguel Diaz White-lipped Tree Frog
Litoria infrafrenata

BIODIVERSITY OF SYDNEY OLYMPIC PARK

Visitors learned how monitoring programs and the community are ensuring that biodiversity continues to thrive in this unique urban environmental setting. A series of short talks on the biodiversity of Sydney Olympic Park was held on 16 September 2012 at Building 22, Newington Armory, Jamison Rd.

Life In The Park Program: The secret lives of birds at Sydney Olympic Park - Dr Tina Hsu, Sydney Olympic Park Authority. Green and Golden Bell frogs in Sydney Olympic Park - Deb Bower, University of Newcastle. Investigating hollow competition at Sydney Olympic Park - Jen O'Meara, Sydney Olympic Park Authority. Are frogs good indicators of habitat quality? - Professor Mike Mahony, University Of Newcastle. Migratory shorebirds of the Parramatta River - Chelsea Hankin, Avifauna Research Services. Living in the estuary - crabs and fish at Sydney Olympic Park - Dr Swapan Paul, Sydney Olympic Park Displays on reptiles, frogs and birds were present and the Birds Australia Discovery Centre was open where live footage, via EagleCAM, of our nesting Sea-Eagles is available. **Jennifer O'Meara Parklands Ecologist Sydney Olympic Park**
<http://www.sydneyolympicpark.com.au/>

INTERNET & FACEBOOK SITES

<http://rivertrails.com.au/rivertrails/river-trail/langleys-river-cruises/>

<http://rivertrails.com.au/rivertrails/nature-trail/macquarie-marsh-nature-reserves/>

<http://www.abc.net.au/rural/telegraph/content/2012/s3565032.htm> hear audio Sent to Frogcall by Andrew Nelson **Politicians go toad busting** By Tyne McConnon Friday, 10 August 2012 It's not every day you'll find Federal MP's cane toad hunting in the Kimberley but that's what they were up to on a recent visit to northern WA. It's all part of a plan to tackle the spread of the destructive cane toads. Kimberley reporter Tyne McConnon was there to see just how serious these politicians were about the problem. Barry Hasse, Liberal Party Representative for Durack, WA; Greg Hunt, Shadow Minister for the Environment.

FrogLog 103- Regional Focus Sub-Saharan Africa

http://issuu.com/amphibiansdotorg/docs/froglog_103?goback=.gde_4014628_member_139384915

AUSTRALIAN REPTILE PARK

John Weigel and the Australian Reptile Park, Somersby traditionally hosts a Herpetological Societies' Christmas Party. Please check with the ARP or next Frogcall for details. The interclub Christmas party is usually on the first Sunday in December, 10 am to 3 pm. Please call them to confirm. Free entry to FATS members. Take your current FATS membership card.. **MW**



Smiths Lake Sept. 2011 – Photo by Margaret Morgan

HANDY HINTS FOR PHOTOGRAPHING FROGS

You need to photograph the frog untouched as much as you can, better never touch it unless you are wearing vinyl gloves, not latex or hand thoroughly disinfected with ethanol based non perfumed non oily disinfecting substance as it reduces zoonosis transference. The best position to get a photo of the frog as dorsolateral, for identification. The information that helps with identification is - locality, when and did you hear it call.

Limnodynastes peronii Striped Marsh - Photo Ben Brown



WHAT'S AT THE BOTTOM OF YOUR GARDEN & FATS ON FACEBOOK (with 332 members)



Litoria peronii Toowoomba Queensland, Photo by Frances



It's on! **SAVE THE FROGS** will hold its first ever eco-tour, **January 2013, in beautiful Belize.** There are 20 spots available, the trip is \$2,475 per person includes meals and lodging. Please join trip me there for an amazing 10 days of tropical wilderness exploration! More info www.savethefrogs.com/belize Please direct questions to starkey@savethefrogs.com Michael Starkey. An itinerary will be available online in a few days. <https://www.facebook.com/savethefrogs>



Fiona at Nowra – *Litoria aurea* Green and Golden Bell Frog



Morton National Park near Ulladulla
Litoria littlejohni Photographed by Ewan.



In Sept 2011, Save The Frogs Kerry Kriger found lots of *Hyperolius concolor* metamorph at Lake Bosomtwe, Ghana's only natural lake (formed by a meteorite impact). <https://www.facebook.com/savethefrogs>



365 NEW SPECIES DISCOVERED IN PERUVIAN PARK

They've been known to exist elsewhere, but not in Bahuaja Sonene National Park



Andre Baertschi **Giant leaf frogs are among the 50 reptiles and amphibian species found in Bahuaja Sonene National Park in southeastern Peru.** Hundreds of species never before seen in a Peruvian national park have been found during an inventory of the Amazonian forests there, according to a conservation group. The Wildlife Conservation Society (WCS) announced today the discovery of 365 species previously undocumented in Bahuaja Sonene National Park in southeastern Peru. More than a dozen researchers inventoried the park's plant life, insects, birds, mammals and reptiles. The species found are known to exist elsewhere, but have never been seen inside Bahuaja Sonene.

The discovery included 30 undocumented bird species, including the black-and-white hawk eagle, Wilson's phalarope and ash-colored cuckoo. The survey also found two undocumented mammals — Niceforo's big-eared bat and the Tricolored Bat — as well as 233 undocumented species of butterflies and moths. This expedition was the first time that research of this scale has been carried out in Bahuaja Sonene National Park since it was created in 1996, according to the WCS.

Bahuaja Sonene National Park contains more than 600 bird species, including seven different types of macaw, more than 180 mammal species, more than 50 reptiles and amphibian species, 180 fish varieties and 1,300 types of butterfly. Since the 1990s, the WCS has been working in Tambopata and Bahuaja Sonene Parks in Peru, and Madidi, Pilon Lajas and Apolobamba Parks in neighboring Bolivia. The Greater Madidi Landscape of Bolivia and Peru spans more than 15,000 square miles of the tropical Andes and is considered to be the most biodiverse region on Earth. The past decade saw a boom in new species discovered in the Amazon. On average, a new species was discovered every three days from 1999 to 2009, according to the conservation group WWF. **By OurAmazingPlanet staff Follow OurAmazingPlanet for the latest in Earth science and exploration news on Twitter @OAPlanet and on Facebook. Bolivian Thoughts in an Emerging World <http://www.wcs.org/news-and-features-main/365-new-species-discovered-in-peruvian-park.aspx>**

RELATIONS BETWEEN CONSPECIFIC DENSITY AND EFFECTS OF ULTRAVIOLET- B RADIATION ON TADPOLE SIZE IN THE STRIPED MARSH FROG

TOBY MITCHELL, LESLEY A. ALTON, CRAIG R. WHITE, CRAIG E. FRANKLIN School of Biological Sciences, The University of Queensland, Brisbane QLD 4072, Australia, email c.franklin@uq.edu.au Conservation Biology - Article first published online: 26 JUL 2012

Abstract: Global increases in ultraviolet-B radiation (UVBR) associated with stratospheric ozone depletion are potentially contributing to the decline of numerous amphibian species around the world. Exposure to UVBR alone reduces survival and induces a range of sublethal effects in embryonic and larval amphibians. When additional environmental stressors are present, UVBR can have compounding negative effects. Thus, examination of the effects of UVBR in the absence of other stressors may substantially underestimate its potential to affect amphibians in natural habitats. We examined the independent and interactive effects of increased UVBR and high conspecific density would have embryonic and larval striped marsh frogs (*Limnodynastes peronii*). We exposed individuals to a factorial combination of low and high UVBR levels and low, medium, and high densities of striped marsh frog tadpoles. The response variables were time to hatching, hatching success, posthatch survival, burst-swimming performance of tadpoles (maximum instantaneous swim speed following an escape response), and size and morphology of tadpoles. Consistent with results of previous studies, we found that exposure to UVBR alone increased the time to hatching of embryos and reduced the burst-swimming performance and size of tadpoles. Similarly, increasing conspecific density increased the time to hatching of embryos and reduced the size of tadpoles, but had no effect on burst-swimming performance. The negative effect of UVBR on tadpole size was not apparent at high densities of tadpoles. This result suggests that tadpoles living at higher densities may invest relatively less energy in growth and thus have more energy to repair UVBR-induced damage. Lower densities of conspecifics increased the negative effects of UVBR on developing amphibians. Thus, low-density populations, which may include declining populations, may be particularly susceptible to the detrimental effects of increased UVBR and thus may be driven toward extinction faster than might be expected on the basis of results from single-factor studies. **From Herpdigest Volume # 12 Issue # 34**



INSURANCE DISCLAIMER FATS has public liability insurance for its various public functions. This insurance does not cover FATS members; it covers the public and indemnifies FATS. We are currently checking with insurance firms to see whether a realistic group policy can be organised to cover FATS volunteers and people who attend field trips. **FATS MEETINGS** commence at 7 pm, (arrive 6.30pm) and end about 10pm at the Education Centre Bicentennial Park, Sydney Olympic Park, Homebush Bay. They are usually held on the **first Friday of every EVEN month** February, April, June, August, October and December (but not Good Friday). Call, check our web site or email us for further directions. Easy walk from Concord West railway station and straight down Victoria Ave. Take a strong torch in winter. By car: Enter from Australia Ave at the Bicentennial Park entrance and drive through the park (one way road) turn off to the right if entering from the main entrance or enter from Bennelong Rd/Parkway. It's a short stretch of 2 way road and park in p10f car park (the last car park before the exit gate). We hold 6 informative, informal, topical and practical free meetings each year. Visitors are welcome. We are actively involved in monitoring frog populations, other field studies; produce the newsletter FROGCALL and FROGFACTS information sheets. All expressions of opinion and information are published on the basis that they are not to be regarded as an official opinion of the Frog and Tadpole Study Group Committee, unless expressly so stated. **Material from FROGCALL MAY NOT BE REPRODUCED** without the prior consent of the writer, photographer, editor or president of FATS. Permission from FATS and/or author/s must be obtained prior to any commercial use of material. The author/s and sources must be always fully acknowledged.



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FIELD TRIPS.

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

6 October 7-00 p.m.

Darkes Forest.

Leader: Ken Griffiths.

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

The advances in affordable digital technology have seen photography become an important tool for wildlife researchers. Photography is now used extensively to identify wildlife, verify field records and to embellish scientific presentations. Many of the most impressive FATS talks are now given by members who are armed only with a sense of adventure and a cheap camera! Tonight we will look for the impressive collection of frogs and reptiles that are found at Darkes Forest. We will also spend some time photographing them and we will briefly discuss some of the challenges of wildlife photography and how to overcome them. Ken will be on hand to answer questions and to give pointers. Ken, author of 'Frogs and Reptiles of the Sydney Region' and 'Nature Photography' is a well-known herpetologist and wildlife photographer. He also has extensive experience with the wildlife of the Darkes Forest area.

2 – 4 November

Smiths Lake Camp-Out.

Leaders: Arthur and Karen White.

There is much media controversy surrounding the plight of old growth forests. As young forests grow, they pass through several growth stages. Old growth is the final or 'climax' stage of forest development. These forests are distinguished by a wide range of tree sizes and ages (importantly including many dead trees and trees with deep hollows), irregular gaps in the canopy, an 'untidy' forest floor and streams and creeks littered with forest debris (to describe all these things, scientists use the term and say these forests are 'structurally complex' or speak of 'stand structural complexity'). Because old growth forests are not uniform, they provide a myriad of habitats and staggered, year-round resources for wildlife. Commercial or regrowth forests cannot replicate old growth attributes. This week-end, exploring the range of forest types around Smiths Lake, Arthur and Karen will explain why some frogs, and other fauna, are old-growth specialists and why they are particularly vulnerable when these forests are put at risk. Arthur and Karen are professional environmental consultants and have an appreciation of the subtleties of the Australian bush that few can match. Cabin/dormitory accommodation and camping sites available. All kitchen facilities, utensils and crockery supplied. A non-refundable fee of \$14 p.p. per night applies. Phone Arthur and Karen White directly on 9599-1161 for bookings and further details. Limit of thirty people applies.

1 December 8-15 p.m.

The Watagans.

Leaders: Brad and Matt McCaffery.

Take the F3 north. Travel approximately 83km and take the Morisset/Cooranbong exit. Turn right and drive 2km to the cnr. of Mandalong Rd and Freemans Dr. Many readers of Frogcall often wonder why we use those seemingly complicated, Latin-based, double-barrelled, scientific names when discussing frogs. It is because we adopt the binomial system. Common names are often confusing and are easily duplicated. They are often colloquial, fraught with historical inaccuracies, and vary from local region to local region. The binomial system provides us with a clear and unambiguous alternative. It also conforms to an internationally accepted code, so we may travel the world and be assured that there is consistency in the naming of frogs. The binomial system also helps describe the relationship between frog species. Brad and Matt have a very simple, unique layman's approach to the binomial system. Tonight, using the spectacular frogs of the Watagan's forests as an example, they will help us unravel some of the mysteries of the binomial system and they will show us how simple it really is. Brad and Matt have accumulated much field experience in a very short time and already enjoy an excellent reputation in herpetological circles.

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