

FR G CALL

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Your NPWS frog licence MUST be brought to meeting, if adopting a frog.
Frog-O-Graphic calendars 4 sale \$15, great Christmas raffles, bring your \$\$



White-lipped Tree Frog *Litoria infrafrenata* Photo Miguel Diaz

Join us at our FATS meeting. Arrive 6.30pm for a 7pm start **Friday 4th December 2009** Park at the first security gate on the right hand side of Jamieson St., about 350m off Holker St. Follow the signs to Building 22 Homebush Bay, Sydney Olympic Park. Accessible by bus or train. Call us for details. Coming by car? : AVOID TRAVELLING VIA AUSTRALIA AVE & BENNELONG RD



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MEETING FORMAT for Friday 4th December 2009

- 6.30 pm Lost frogs needing homes. Please bring your FATS membership card, donation and remember... **YOUR current amphibian licence must be sighted.**
- 7.00 pm Welcome, and announcements.
Our main speaker is Marion Anstis
"Frogging adventures in Northern Australia."
Arthur White will talk about "Riversleigh's Fossil Frogs".
- 9.00 pm Frog-o-graphic competition entries shown, people's choice voted on and winners announced. 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.
- 9.30 pm We will end the night with a large auction, several great prizes, time to chat and an extra nice Christmas supper. Calendars, frogs, books, T shirts, live stick insects and crickets will be on sale at the meeting.

OUR NEXT FATS MEETING FRIDAY 4TH DEC

TRAFFIC ALERT

We understand that the V8s will be racing next week, so the SOP Town Centre will be locked down. There will be concerts in the evening and roads still closed. Access to the Armory and our meeting place will be fine, but people should avoid the centre of SOPA if they can, especially Bennelong Road and Australia Ave due to possible heavy traffic. FATS visitors should approach Jamieson Street via Parramatta Rd and Hill Rd, or Silverwater Rd and then into Holker as normal. It's a bit unknown but people should be aware.

LOST FROGS NEEDING HOMES

We have many both large and small frogs needing good homes. Green Tree frogs, White Lips, Perons, Gracilentas and Fallaxes. **IF YOU WISH TO ADOPT A FROG YOU MUST BRING YOUR CURRENT AMPHIBIAN AND REPTILE LICENCE FOR US TO SIGHT.** If you would like a frog as a pet, a donation is required to help cover our rescue and quarantine costs.



Peek-a-Boo photo Kiora Leong

FROG-O-GRAPHIC COMPETITION AND CALENDARS

The big activity on Friday night 4 December will be the showing of the Frog-o-graphic entries and the choosing of the People's Choice winner. We have prepared 2010 calendars featuring the 12 winning entries from this year's competition. We only have a limited number of calendars so if you want one get in early (\$15 each).

BRING YOUR MONEY WITH YOU !

SPINY LEAF STICK INSECTS – FOR SALE

We have stick insects Macleay's Spectre / Spiny Leaf *Extatosoma tiaratum* for sale.

See <http://www.publish.csiro.au/samples/Complete%20FG%20to%20Stick%20and%20Leaf%20Insects.pdf> for further information. Like our rescued frogs, they can NEVER be released into your garden or the wild.

There will also be a large raffle with several big prizes and finally the Christmas supper. It should be a good night.

Limnodynastes fletcheri - Barking Marsh Frog



Photo George Madani Nyngan

FROG WEEK AT BOBBIN HEAD

& SUMMER HILL PRIMARY SCHOOL

Perfect weather brought out record crowds to the frog week celebrations at Bobbin Head on 1st November. The team from "coast alive" had a great display of the frog and tadpole posters near the old kiosk. Mats in the shade were covered with kids eager to listen to stories about frogs, look at the tadpoles and to see the puppet show.

Five interesting frogs found around Sydney were the subject of the talk but when the topic moved to keeping our waterways free of chemicals, One young student gave us all a lesson in co2 and the acidification of the oceans.

Afterwards the enthusiasts went on to visit the Bobbin Head aquarium. **Wendy Grimm**

Frog week ended with FATS running a "frog stall" in a mobile class room at Summer Hill Primary School's fete on Saturday 7th November. FATS have been represented there for the last few years. About 1,000 current and former pupils, staff and parents were eager to visit "The Frog Lady", with some enthusiastic primary school children adopting the frog display for much of the day. **Monica Wangmann**



Photo George Madani *Litoria phyllochroa*

LAST FATS MEETING 2nd OCTOBER 2009

Phillip Grimm, our main speaker, was introduced by FATS Chairperson, Punia Jeffery. Phillip spoke about the auditory surveys at Sydney Olympic Park (SOP), showing area maps, ponds and local Perons, Striped Marsh and Green and Golden Bell Frogs.



Photo from Virginia Ede

FATS participates in an annual auditory frog survey at SOP. The male frogs call on their own or is induced to call in response to a recorded frog call. There are many frog ponds that have been created but the best known ones are at the brickpit, which has a walkway around it. FATS do surveys in the more outlying parts of the site. Please let Arthur White know if you are interested in participating in November and December surveys this year. More experienced members will assist newcomers. You don't need to be a frog expert to join us. There is plenty of instruction and information available. The evening activities are very enjoyable. Why don't you join us? It's great fun.

Phillip spoke about our September FATS trip to Falls Retreat rainforest sanctuary. He showed slides of the trip. The facility is between Port Macquarie and Taree and surrounded by State Forests, National Parks and has very pure creeks flowing into it from the mountains above. Mary White, who has written many books on Gondwana land, is the host. The 14 intrepid FATS members stayed at their luxurious townhouses on site and conducted animal surveys at Falls Retreat and a neighbouring property. Using appropriate traps, they were very pleased to find a rare bat, as well as bush rodents, native rats, many frogs and tadpoles such as Mixophyes, *Litoria Tyleri*. and many plants.

Robert Wall our field trip coordinator spoke about our field trips, cheap camp-outs and free night spotlighting events. See pages 11 and 12. Call Robert if you would like to participate or wish to ask any questions.

Rescued Green Tree, Gracilenta, White Lip and Fallax frogs found permanent homes at the last meeting. **MW**



Eastern Dwarf Tree Frog at SOP

BIRDS AUSTRALIA

Visitors to the meeting were invited to a private tour of the Birds Australia building, across the road from building 22. Park Ranger, Judy Harrington shared her enormous expertise with us, describing the adventures of the local Sea-Eagles bringing sticks, arranging the nest, laying eggs, raising chicks and feeding fish to their young. The adults were very gentle with their newly hatched chicks, born on 1st August. We were fortunate to see never before documented footage of a nesting pair and a juvenile who was preparing to leave the nest. Like many raptors and birds of prey, the stronger chick survives. The Sea-Eagles face many challenges including pollution and the need to find their own separate territories. The site being monitored and filmed has been a nest for decades. There are many interesting birds recorded at SOP. Volunteers carry out work, observations and education activities on behalf of Birds Australia. **MW**

On Saturday 21 November a free series of short talks on the biodiversity of Sydney Olympic Park were held. Visitors learnt about monitoring programs. The community are ensuring that biodiversity continues to thrive in this unique urban environmental setting.

Juvenile White-bellied Sea-Eagle photo Jon Irvine



Presenters were:

- * Nesting behaviour of the White-bellied Sea-Eagle Judy Harrington, Sydney Olympic Park Authority.
- * Reptile diversity of Sydney Olympic Park Matthew McCloskey, Australian Herpetological Society,
- * White-fronted Chats: monitoring a declining population Katie Oxenham, Sydney Olympic Park Authority,
- * Frogs of Sydney Olympic Park Arthur White, Frog and Tadpole Study Group (FATS),
- * Roost site use by a maternity colony of White-striped Freetail Bats Marg Turton, Ecologist and
- * Community involvement in the Spring Bird Survey, Cumberland Bird Observers Club

A light afternoon tea was provided.

Look out for future talks such as those to be held on World Wetland day Saturday 6 February 2010.

COLONISING THE GREEN AND GOLDEN BELL FROG (*LITORIA AUREA*) AT THE SYDNEY OLYMPIC PARK, HOMEBUSH

Extracts from BA research paper



In his book, *Ecological Imperialism: The Biological Expansion of Europe, 900-1900*, (1986) Alfred Crosby strongly argued that European migrants did not arrive in the 'New World' alone, but were accompanied by 'grunting, crawling, chirping, snarling, buzzing, self-replication and world altering avalanches' (www.lib.latrobe.edu.au, 1997). It is this passive and distracted role of the human endeavour in altering the ecosystems that I am concerned with, which has amongst other things endangered the survival of our Australian 'croaker,' the Green and Golden Bell Frog (GGBF) (*Litoria aurea*), the subject of my 'Sustainable Development Project.'

The Australian indigenous GGBF was almost extinct when Homebush was selected to host the 2000 Olympic Games. Therefore, the survival of the GGBF, and one of the largest developments ever undertaken in Australia was a gauge of success of the environmental protection and rehabilitation at work. Fortunately, the almost extinct GGBF is now flourishing at the Sydney Olympic Park. The last census information available to me is based on Peterson/Lincoln index using the combination of 1, 2, 3, and taking into account the lower and upper limits, the Brickpit had '423 and 1159 frogs', and the Wetlands '355 and 1278' respectively [Australian Museum Business Services (AMBS), May 2002, p.22, and p.31]. I would suggest that the estimate would reasonably be within 95% confidence interval for each mode of counting, and is appropriate but not absolute. More recent population estimates are not yet available, but the occurrence of the GGBF at Homebush Bay is well documented and the population is regarded as one of the largest extant in NSW (AMBS, May 2002, pp 1-7).

The Olympic site at Homebush Bay, consisting of approximately 700 hectares, provides a useful case study

because it demonstrates an ambitious clean up project and a solid commitment to applying ecologically sustainable development principles, not only the development and the management of a large parcel of land, but also the preservation of flora and fauna. I hypothesise that education and scientific interpretation about such aspects as habitat, breeding and monitoring processes are important elements for the sustainability of the GGBF, as well as creating potential to provide the community with an environmental consciousness and facilitate long-term sustainable behavioural changes.

Background: Before European settlement, which Crosby refers to in his beautiful book, the Homebush Bay area consisted of extensive tidal wetlands and open woodlands, which have since been dramatically altered by the draining of the wetlands from as long ago as '1800s, and reclamation of land carried out from 1948 to the early 1960. Large parts of the area were used for the dumping of municipal and industrial waste' [Environment Protection Authority (EPA), Fact Sheet, 1997]. The establishment of the Olympic Coordination Authority (OCA), in 1995, charged with the task of providing Olympic facilities at Homebush Bay grasped the opportunity to develop the area beyond the Games, to a new sustainable urban development for Sydney as well as preserving and providing a variety of ecologically significant habitats and unique flora and fauna. This impacted on the community greatly, with an environmental consciousness and facilitated long-term sustainable behavioural changes. The sustainable developments included commitments to energy and water conservation; waste minimisation; air, water and soil quality and protection of significant natural and cultural environments. The commitments also included the endangered GGBF, which is now one of the largest known remaining populations in Australia. In addition, 'over 20 species of migratory birds, protected under international agreements between the governments of Australia, Japan and China visit the Parklands each year over the spring and summer months' [Sydney Olympic Park Authority (SOPA) Report, 2001/2002,p.19].

Since the 2000 Olympics the GGBF has become the public face of Sydney, and at the Sydney International Airport a very large replica of the GGBF greets the visitor. Dr.Allen Greer, an Australian Museum herpetologist, who was commissioned to investigate the species, first discovered the GGBF at Homebush in 1993. Dr. Greer found that not only the GGBF were surviving but also the population was one of the largest known in New South Wales. (SOPA, 'Frog Conservation Works 1993-2001,' 2003,p.1). The GGBF population was restricted to the former State Brickwork's quarry, generally known as the 'Brickpit.' The Brickpit contained several freshwater ponds that the GGBF used for breeding. Piles of rocks and rubble sheltered them during summer and provided refuge during winter. The GGBF also colonised the Northern Water Feature Wetlands, located at the northern end of the Olympic Boulevard, diagonally across the Brickpit. The sites were considered to be 'ephemeral habitat,' incapable of supporting a viable

population of the species, and should be used for sporting venues. The plans, however, to construct the Olympic Tennis Centre and an Amphitheatre thereon were changed, with the Tennis Centre relocated and the amphitheatre shelved (SOPA, 'Frog Conservation Works 1993-2001,' 2003, p.1).

The SOPA was committed to the protection, amongst other flora and fauna, of the beautiful GGBF and developed an Ecologically Sustainable Development (ESD) management plan. This plan was prepared by the herpetologists from the AMBS in conjunction with the OCA, and was endorsed by the National Parks and Wildlife Service.

During the construction period of the infrastructure of the Olympics a number of new frog habitats were created on 'remediated lands' across the Homebush site. Suitable ponds and foraging sites were established in Haslam's Creek South, Kronos Hill, and Newington, and movement corridors, vehicle overpasses, frog underpasses, and 'frog fences' were constructed to prevent the GGBF from entering roadways and construction sites (OCA News Bulletin, *The Frog and Tadpoles Study Group Inc.*, '2001). The AMBS was engaged to devise a monitoring program, to regularly assess the status of the population and the success of the replacement habitats.

Mindful of the quality of the water required for the successful breeding and survival of the GGBF, the OCA obtained approval to use part of the Brickpit as water storage reservoir for the Water Reclamation and Management Scheme (WRAMS). A major component of the undertaking was to construct replacement habitats on the upper levels of the Brickpit to compensate for the lower levels. The water quality and the construction works undertaken by the WRAMS ensured the continued sustainability of the GGBF in the Brickpit as well as in the wetlands. The WRAMS is one of the key environment initiatives of the SOPA, providing reclaimed water for use in toilet flushing and irrigation, greatly reducing the use of portable water. (SOPA, *WRAMS*, pp, 1-3, 2003). The large wetland areas, the Northern Water Feature and the Eastern Water Quality Control Pond were also reconstructed, both of which are components of the site for stormwater collection system, designed to collect and filter stormwater runoff from the hardstand areas of the Sydney Olympic Park prior to its discharge into Haslams Creek.

The water is also used for irrigation. Both of these wetlands have incorporated frog habitat components, and have become successful breeding areas.

Threats to Survival: While most problems associated with the survival of the GGBF could be through storm water; fungal pathogen (chytrid); water quality; herbicides; pesticides; predation by foxes, cats, and the exotic *Gambusia holbrooki*, my observations point to the fact that at Homebush these deleterious factors have been substantially overcome for the time being. A variety of causes for the decline have been put forward, including habitat destruction, various pathogens, predation of eggs

and tadpoles by exotic fish and animals, global climate change, and increased UV radiation. 'However no theory has been conclusively tested.' (SOPA, *Litorea aurea*, p.3, 2003).

Some scientists, however, have pointed to *Gambusia holbrooki*, which was introduced into Australia to control mosquitoes. Like most introduced species it is hardy and adaptable that it now lives in most Australian waters. The argument generally is that, because the tadpoles have not evolved with *Gambusia holbrooki*, they do not have the defence mechanisms against the vicious attacks, except to hide in reeds or at the bottom of the ponds. This strategy obviously does not work and most of the time the tadpoles are eaten before they can become frogs. (White: 2000, www.endangeredfrogs.com)

The most recent theory about the threat has to do with disease. Apparently frogs are susceptible to many diseases, viruses and parasites, and fungus. The fungus theory has some credibility, because, in 1998, a group of Geelong scientists found that chytrid was killing frogs, when it came into contact with the frog's skin. The fungus probably lives in the water or in the soil. At present, the chytrid has been identified in 31 Australian frogs, including the GGBF. The GGBF survival, however, in some polluted waters and industrial sites has led to the speculation that salt and copper may help to fend off the fungus. (Christy, 2000, quoted in www.endangeredfrogs.com). The chytrid theory would suggest that the survival of the GGBF in the past was guaranteed in the Brickpit, because of impurities in the water. It is early days to monitor any threats at the newly constructed pristine GGBF ponds at the Brickpit and the Northern Water Feature Wetlands, but a cautious attitude should prevail as far as the chytrid theory is concerned.

Results: The Sydney Olympics not only gave us the best games ever, but also ensured 'the protection of the integrity of natural ecosystems including native bushland, forest and waterways as well as endangered species'(Greenpeace, n.d: - www.greenpeace.or.au/archives/Olympics.press-kit/biodiversity.html).

Although elsewhere in Australia the survival of the GGBF is precarious, positive actions taken by the OCA, SOPA, AMBS, and the local community environmental consciousness have guaranteed a new lease of life to our patriotic Green and Golden 'battler'. Elizabeth Magarey et al, in their report have stated that especially in the newer ponds there have been '3:1 ratio of females to males captured' (Magarey, E et al,

Future: The conservation of the GGBF, in the newly created ponds at the Brickpit as well as the rest of the wetlands has brought many benefits to the community, in heightening awareness of the conservation needs of the endangered GGBF. Through the auspices of SOPA and AMBS there has been a continued interest in the survival of the GGBF, long after the Olympic Games. Knowledge about the biology, survival and the diffusion of the scientific information about this endangered species has brought about awareness of

environmental issues and sustainable practices to other projects by industry and government instrumentalities.

The on-going patriotic stance taken during the Olympics, the huge replica of a GGBF at the Sydney International Airport, education in schools, material on the Internet, books and other resources will ensure the continued interest in the sustainability aspects of the GGBF, not only at the Sydney Olympic Park, but also in other precarious colonies on the eastern seaboard of Australia. The ESD can only be achieved through cooperation between developers, industry, scientists and government agencies, and above all bringing about the community environmental consciousness to ensure behavioural changes. The conservation of the GGBF at the Sydney Olympic Park is one such example of ESD, where its future is guaranteed for generations to come.

Discussion: Once the GGBF was the most commonly encountered species on the south-eastern seaboard of Australia, where one could collect them by bucketful. Sadly like many other endangered species in Australia the GGBF has declined in distribution and abundance over the years. The depletion of its population could be attributed to the destruction of freshwater habitats, changes to water drainage systems, flood prevention works, pollution, *Gambusia holbrooki*, pesticides, herbicides and other industrial and household hazardous wastes. As stated above, the survival of GGBF, however, in some polluted waters and industrial sites has led to speculation that salt and copper may help to fend off the chytrid fungus. (Christy, 2000). I have argued in "Threats" above, that the chytrid theory would suggest that the survival of the GGBF was guaranteed in the Brickpit at Homebush and other polluted waters at the Sydney Olympic Park, but nowhere else. It is early days to monitor any threats at the newly constructed 'pristine' GGBF ponds at the Brickpit, and the Northern Water Feature Wetlands for the fungus. We can only hope that SOPA is able to curb any ill-effects of the fungus before it takes over the whole area.

To increase the GGBF population some scientists have suggested captive breeding.

While it has to be conceded that it is one way of preserving endangered species, it is not the real answer, because captive breeding does not follow natural selection. In theory, animals resulting from captive breeding may not be the strongest or the best of the species. For this reason some areas are well suited for breeding through natural selection process, because of the large extent of water and excellent conditions. In addition, the migration of the juveniles and dispersal of metamorphs would ensure excellent future cross-breeding in the natural selection mode Brown R.K et al (2002) have bred GGBF through

aquaculture, where tadpoles were fed high protein diet to satiation, and frequent water changes, which resulted in very rapid growth of tadpoles to 'quality' metamorphs. They suggest that this protocol could be applied to raising tadpoles for reestablishment programs. Although their paper, '*High density effects on the growth, development and survival of *Litoria aurea* tadpoles, Aquaculture*' makes interesting reading, I remain unconvinced that aquaculture would produce better frogs, as against the natural selection process.

Frogs have been recorded to move between ponds of different types and stages, up to distances of a kilometre or more. The success of the GGBF viability at Sydney Olympic Park depends on the ability 'to readily colonise new sites, as well as the provision of a network of varied habitats that enable the site to act as one whole' (Magarey et al, *Design and Monitoring...*, AMBS, n.d).

Conclusion: In his book, *Ecological Imperialism*, (1986) Alfred Crosby's main thrust of the argument is that biology played a crucial role in expanding the European culture. Weeds and animals were great allies of the Europeans and the germs and the diseases, which accompanied them to the 'New World,' dominated not only the indigenous people but the ecology as well. Homebush was no exception to this theory.

Two hundred years ago Homebush Bay formed part of an estuary surrounded by vast mudflats fringed with mangroves, salt marshes, and beautiful woodlands of Eucalyptus and Casuarinas where amongst other inhabitants the GGBF lived happily with its 'athletic' abilities, in harmony with the Australian Aborigines. Sadly, up till the 2000 Olympics Games, European civilisation had turned this beautiful piece of land into the most toxic site in Australia, with its polluted ground water and contaminated soils as a legacy of half a century of industrial waste dumping. Nonetheless, for the endangered GGBF hope sprang eternal. Not only the Olympics gave us the best games ever, but also ensured 'the protection of the integrity of natural ecosystems including native bushland, forest and waterways as well as endangered species, that also guaranteed the survival of our indigenous GGBF. In memory of the other indigenous inhabitant, the Australian Aborigine, the SOPA planted 'bush tucker' trees in the Park and used a few indigenous names for parkland precincts. Hopes of both indigenous communities of the old Homebush woodlands, however, still hang in the air. **Environmental Law Consultant, Jack Singh (Editor : This extract is from a BA research paper, written some years ago. Nearly all of the analysis, tables, data, research work, references to the selected quadrant, photos and references have been deleted or abridged due to space considerations in FrogCall – many apologies to Mr Singh and his sources of reference.)**

Abridged list of References: Australian Regional Association of Zoological Parks and Aquaria, Brown R.K, Pomeroy M., Hamer A. J. Christy, Crosby, A.W, CSIRO, Darcovich, K, Environment Protection Authority, Greenpeace, Knox, Ladiges, Evans and Saint, Magarey M., Muir G., Murdoch University WA, Olympic Coordination Authority, Olympic Coordination Authority, Pakenham Secondary College/ Mordialloc-Chelsea Secondary College, Sydney Olympic Park Authority, University of Newcastle Penman, T and White, A.

PEBBLE TOAD'S ROCK AND ROLL LIFE



Throwing yourself down a mountain is the only way to go. It was an unusual thing to see at the top of a mountain. They just curl up and flop.

When confronted by a predator, some animals fight, others run while a few hide, hoping not to be noticed. The pebble toad of Venezuela does something altogether different: it curls up like a ball and throws itself down the side of a mountain. By doing so, the tiny creature bounces down the rocks just like a rubber ball. This extraordinary tumbling behaviour has been filmed in slow motion by a BBC crew for the natural history programme Life.

The pebble toad (*Oreophrynella niger*) is tiny, measuring just a few centimetres long. It lives on the top of a type of mountain known as a tepui, which occur across the Guiana Highlands in South America. These table-topped mountains rise out of the rainforest, isolating the animals and plants that live upon them. As a result, many of the creatures have evolved differently.

For example, the pebble toad is unable to jump very far, an inch being the furthest it can hop. While there are no snakes living on the tepui, this lack of athletic prowess makes the toads vulnerable to marauding tarantulas, an ambush predator.

The ball position So the toads have evolved a unique escape mechanism. A threatened toad folds its arms and legs under its body, tucks in its head and tenses its muscles, assuming a "ball position". Because the amphibian is mostly likely resting on an incline, it then rolls downhill like a dislodged pebble.



Camouflage is another defence.

The toads travel far enough to escape the attentions of the tarantulas and often tumble into a crack or crevice where they are out of sight or difficult to reach. The toad's black and grey colour also helps it blend in with its sandstone habitat. The toad is so small and light that the forces of impact are too tiny to cause it any harm. However, as well as being less than impressive jumpers, the toads do not swim well. So while most that land in puddles survive, there are reports of toads drowning after tumbling into deeper pools of water.

The team located the toads with the help of biologist Dr Bruce Means, an Adjunct Professor at Florida State University, US and head of a non-profit conservation organisation called the Coastal Plains Institute and Land Conservancy, based in Florida. Dr Means ventured up the tepui, located in southeast Venezuela, to find the toads.

Life assistant producer Mr Scott and cameraman Mr Rod Clarke then followed a few days later to film the action, using slow motion cameras capable of recording up to 2000 frames per second. "The first time I saw one of the toads on a rock one morning, we saw each other, and I made some sudden movement, and it flicked itself back and flopped down into a channel at the bottom of the rock," says Mr Scott. "We'd been told they do this thing and then it did it to me. It was an unusual thing to see at the top of a mountain. They just curl up and flop."

The tumbling pebble toad can be seen on the BBC series Life, which is broadcast at 2100BST on BBC One on Monday 19 October. And hopefully repeated. **By Matt Walker Editor, Earth News Life assistant producer Adam Scott Forwarded to FATS by Andrew Nelson and Arthur White**
http://news.bbc.co.uk:80/earth/hi/earth_news/newsid_8307000/8307333.stm

BROUGHTON ISLAND DECLARED FERAL-FREE

An eradication program has wiped out more than 1000 wild rabbits on the nature reserve, ending a tenure spanning almost a century. In the final stage of the National Parks and Wildlife Service program yesterday, hunting dogs were let loose on the 114-hectare nature reserve off Port Stephens. (Editor: A GGBF habitat)

Springer spaniels Katie and Joker failed to flush out any remaining feral animals signaling the \$60,000 program's success. About 5000 rats were also wiped out in what was part of a long-term Department of Environment, Climate Change and Water island sanctuaries program to eradicate vertebrate pests from NSW offshore islands to restore seabird habitat. It involved two years' planning, a calicivirus release in April, and two aerial-baiting programs on Broughton Island, neighbouring Little Broughton Island and storm petrel nature reserves in August.

Broughton Island ranger Susanne Callaghan said the landscape was already starting to recover and regenerate. Rangers hope the rat-free environment will lead to the white-faced storm petrel's return. It stopped nesting on the island because rats preyed on eggs and young. To avoid reintroducing ferals to the island, rangers have warned visitors to ensure their gear and boats are pest-free. The National Parks and Wildlife Service will monitor the island. **BY MELISSA LYONS 13 Nov 2009 The Herald**

SECRETS OF FROG KILLER LAID BARE



Signs of infection

“This is lethal across a broad range of hosts, so it's really important to look at what's happening in other amphibians” Jamie Voyles, James Cook University

Scientists have unravelled the mechanism by which the fungal disease chytridiomycosis kills its victims. The fungus is steadily spreading through populations of frogs and other amphibians worldwide, and has sent some species extinct in just a few years. Researchers now report in the journal *Science* that the fungus kills by changing the animals' electrolyte balance, resulting in cardiac arrest. The finding is described as a "key step" in understanding the epidemic.

Karen Lips, one of the world authorities on the spread of chytridiomycosis, said the research was "compelling". "They've done an incredible amount of work, been very thorough, and I don't think anybody will have problems with this. "We suspected something like this all along, but it's great to know this is in fact what is happening," the University of Maryland professor told BBC News.

Skin deep Amphibian skin plays several roles in the animals' life. Most species can breathe through it, and it is also used as a membrane through which electrolytes such as sodium and potassium are exchanged with the outside world.

The mainly Australian research group took skin samples from healthy and diseased green tree frogs, and found that these compounds passed through the skin much less readily when chytrid was present. Samples of blood and urine from infected frogs showed much lower sodium and potassium concentrations than in healthy animals - potassium was down by half.

In other animals including humans, this kind of disturbance is known to be capable of causing cardiac arrest.

The scientists also took electrocardiogram recordings of the frogs' hearts in the hours before death; and found changes to the rhythm culminating in arrest. Drugs that restore electrolyte balance brought the animals a few hours or days of better health, some showing enough vigour to climb out of their bowls of water; but all died in the end.

Grail quest Lead scientist Jamie Voyles, from James Cook University in Townsville, said the next step was to look for the same phenomenon in other species. "This is lethal across a broad range of hosts, whether terrestrial or aquatic, so it's really important to look at what's happening in other susceptible amphibians," she said.

Another step will be to examine how the chytrid fungus (*Batrachochytrium dendrobatidis* - Bd) impairs electrolyte transfer. "What this work doesn't tell us is the mechanism by which chytrid causes this problem with sodium," said Matthew Fisher from Imperial College London. "It could be that Bd is excreting a toxin, or it could be causing cell damage. This causative action is actually the 'holy grail' - so that's another obvious next step."

The finding is unlikely to plot an immediate route to ways of preventing or treating or curing the disease in the wild. Curing infected amphibians in captivity is straightforward using antifungal chemicals; but currently there is no way to tackle it outside.

Various research teams are exploring the potential of bacteria that occur naturally on the skin of some amphibians, and may play a protective role. Understanding the genetics of how Bd disrupts electrolyte balance might lead to more precise identification of protective bacteria, suggested Professor Lips, and so eventually play a role in curbing the epidemic.

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Environment correspondent, BBC News website
forwarded to FATS by Andrew Nelson
<http://news.bbc.co.uk:80/2/hi/science/nature/8319467.stm>

Tadpole Ed Bambach aged 7

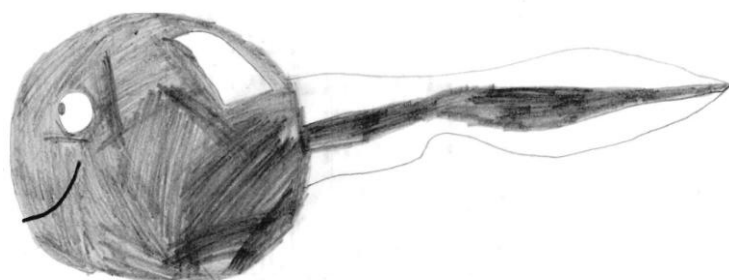


Photo George Madani Cyclorana calling at Nyngan

Litoria caerulea Green Tree Frog



Photo by George Madani, Nyngan

WHAT'S AT THE BOTTOM OF YOUR GARDEN?

I have been a member of FATS for about 13 years. When I joined it, I was living in Blacktown in Sydney's West. I used to enjoy our meetings at the Museum. How I found out about FATS was by contacting National Parks to seek advice as to how I may breed Green Tree Frogs,

Litoria Caerulea as they used to be (35 years earlier) plentiful there. FATS was recommended. After attendance at several meetings and reading Frogcall and other relevant publications, I established what I believed to be a frog friendly environment which attracted numerous species of frog, including Green Tree Frog, to my garden, however, breeding was confined to Striped Marsh Frog, *Limnodynastes Peronii* and Bleating Tree Frog *Litoria Dentata*.

On moving to Scone almost four years ago, we again attempted to establish a frog friendly environment which quickly attracted numerous Green Tree Frogs and other small ground frogs which I have not been able to identify. I inspected my two ponds almost daily for signs of activity, but alas none came, despite the fact that the frogs slept in the vicinity of the larger of the two and frequented the other during darkness. Imagine my pleasant surprise last Friday, when I noticed some movement on the surface of the larger of my ponds. On closer inspection, I saw what appeared to be thousands of Green Tree Frog tadpoles, busily making themselves at home. They have grown over the past week at an incredible rate, (perhaps 5 consecutive days of temperatures up to 45% had something to do with it). With some sense of pride I think I can fairly say "Mission Accomplished" (with due apologies to George Bush). **Kind Regards Don Reid**

FROGWATCH HELPLINE 0419 249 728

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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 and indemnifies FATS. We are currently checking with insurance firms to see whether a realistic group policy can be organised to cover FATS volunteers and people who attend field trips. **FATS MEETINGS** commence at about 7pm, end about 10pm and are usually held on the **first Friday of every EVEN month February, April, June, August, October and December**. Building 22, RANAD, turn into Jamieson St from Holker St and park at the first security gate on the right hand side, Sydney Olympic Park, Homebush Bay. Accessible by car or bus. Call us the day before for a lift from the train station. 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 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 sources must be fully acknowledged.



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Society of Frogs & Reptiles Inc (SOFAR)



8th Annual Frog & Reptile Expo

Newcastle Jockey Club
Darling St, Broadmeadow

Sunday 14th March 2010

9.00am - 4.00pm

Huge Reptile & Frog Auction

live frog & reptiles display

licensed frogs & reptiles for sale

children's entertainment

food & drinks available

General Admission

Children 13 years - Adults \$5.00 each

Children 5 to 12 years \$2.00 each

Children up to 4 years Free

Site fees available upon request from Expo Coordinator on
0416 421 455 or sofar@hunterlink.net.au

For more information please log on to the SOFAR website:
www.sofar.hl.com.au

Licence required to keep frogs and reptiles in NSW

TOXIC SNAKES, SPIDERS - YES - BUT TOXIC SOIL?

Soil diseases are most responsible for frog and toad deaths up here in Cairns for the past few years.

The Curator of the Cairns Frog Hospital Deborah Pergolotti recently had a close encounter which brought her new understanding of how some of her froggy patients must feel. This unpleasant meeting wasn't with one of Australia's deadly snakes or highly venomous spiders but with the muddy soil in the hospital facility's backyard!

People don't generally think of their yards as a threatening place but soil diseases are some of the nastiest beasties out there and the possible increase of these pathogens in the soil is of growing concern to the frog conservation group. Its Curator, Deborah Pergolotti, has just been released from hospital after having surgery for an aggressive infection with invasive Streptococcus and Pseudomonas - two soil diseases which dissolve tissues and are notoriously difficult to treat (and painful !)

Ms. Pergolotti is now calling on Queensland Health and the Commonwealth government to add Pseudomonas, Streptococcus Groups A & B, and Staphylococcus aureus and it's MRSA strain to the Notifiable Diseases list for

both human and veterinary cases urgently. Still sporting an uncomfortable limp, she stressed that, "Because these diseases are not notifiable, there is insufficient monitoring of their incidence, where these infections are being picked up, how they were acquired, and even how much they are costing the public health system". Monitoring could highlight where better public education needs to be directed and where containment procedures need to be strengthened, but it also would provide confirmation if zoonotic transmission should ever occur [this is where animal disease is transmitted to a human].

Ms. Pergolotti is equally emphatic about the risks posed to children especially by these soil diseases. "My infection was difficult enough for an adult to manage and meant I couldn't walk for a month, was in hospital for a week, had two surgeries plus more than two months of multiple antibiotics at maximum doses and may still suffer long term damage to a foot. I doubt a child could be dosed up on the level of pain killers I was on so what kind of suffering would they have to go through?"

These diseases also pose a threat to wildlife and that is where any possibility of zoonotic transmission needs to be watched. "We have lab results going back years to show that Pseudomonas has been found on frogs regularly and, since cyclone Larry, Streptococcus has also been present along with a mildly formidable list of other unpleasant human diseases." Streptococcus Group B in particular has recently received media attention because of its involvement in fish deaths which suggests to us that there could be a lot more of it in the wet season runoff than expected.

The group stresses that everyone - especially children - NEVER handle any frog or toad without gloves or a plastic bag over their hand. Deborah warns, "I want to make it VERY CLEAR THAT FROGS ARE NOT A THREAT AND ONLY SOME OF THEM could have something nasty on their skin, but only someone experienced with these conditions could tell which ones. We are saying to be safe and always use gloves." The new Soil Health section is in our site: www.fdrproject.org.au

NPWS TO HALT TOADS MOVING SOUTH



The discovery of a dreaded cane toad at Nambucca Heads has authorities even more determined to halt their march southward. The adult cane toad was found in the town last week and reported to the National Parks and Wildlife Service. "Their known range is normally Yamba/Brooms Head north into Queensland, so it is unusual to find them outside their generally accepted range," NPWS spokesman Lawrence Orel said yesterday.

"So if a toad is found further south, we are encouraging people to contact their nearest NPWS office. They should also get in touch with us if they are not sure if it's a cane toad or a native frog. "We want people to keep an eye out as the weather begins to warm, when they may be more active." Mr Orel said it was possible the toad found at Nambucca Heads was a hitch-hiker from areas further north where cane toads were endemic.

"They are inadvertently transported around the State from Queensland or northern NSW in freight such as nursery materials or timber," he said. "They normally can't survive colder conditions further south."

- Cane toads have no natural enemies and their toxin can kill most native animals that normally eat frogs. They therefore pose a risk to both native fauna and pets such as cats and dogs.
- Cane toads can use a wide variety of habitats and thrive in urban and disturbed areas.
- They have a voracious appetite and can eat many different foods.
- They also breed quickly, allowing them to rapidly colonise and dominate an area. These abilities give cane toads a competitive advantage over native species.
- Native frogs control insects that may otherwise become pests and are in turn food for many native animals. Populations of many native frogs have declined severely in recent times and some species are threatened with extinction. The spread of the cane toad may increase these threats.
- Adult cane toads are usually very large - around nine to 15cm (or 3.5 to 5 inches) long.
- Smaller toads can easily be confused with native frogs. To make sure you don't kill a native frog by mistake, you are urged to take all toads under 4cm long to a frog expert for identification.
- If handling them, use rubber gloves.

<http://www.coffscoastadvocate.com.au/story/2009/10/05/npws-hops-to-halt-toads-moving-south/> Craig Mctear | 5th October 2009 AAP

6-DAY COACH-CAMPING TOUR

Frogs and Reptiles of the Northern NSW Rainforests

12 – 17 February 2010

The Frog and Tadpole Study Group, in conjunction with **Outback Track Tours**, will host a six-day herpetological tour of the **Dorrigo and Washpool** rainforests of northern NSW. We will explore the unique wildlife and dark luxuriance of these spectacular **World Heritage Listed** rainforests. Our itinerary remains flexible to ensure that, each day, we are able to take advantage of optimum local conditions. Returning towards Sydney, we will spend a day taking in the grandeur of Barrington Tops, camping overnight. We will survey the local area for frogs and reptiles.

We will enjoy camping to the sights and sounds of pristine mountain streams set amongst towering forests. This is a wonderful opportunity to see some of our most inspiring frogs and reptiles in their natural habitat. Most members would rarely experience this fauna in the wild.

The tour will be led by Dr. Arthur White. Arthur carries out much professional fieldwork and his research is widely published in scientific journals. He lectures extensively on many scientific matters, and of course, speaks regularly on various frog matters at meetings. This tour is open to all interested herpetologists i.e. FATS membership is not a requirement.

The tour will commence and finish at Eddy Avenue at Central Station. The fare of \$800 includes travel by air-conditioned 4WD coach, camp and park entry fees, driver, professional cook and meals. Some assistance with setting-up of tents, after-meal wash-up and general duties will be appreciated. Bookings can only be confirmed with the payment of \$250 deposit to Outback Track Tours.

This tour will eventually be advertised to the general public, members are advised to book early to ensure a place on the tour. For further enquiries and detailed itinerary, phone Robert Wall of the FATS Group on 9681 5308 or Mark and Sarah Wardrop of Outback Track Tours on 9913 1484 or STD on 1300 884 463.

Please Note : This is a commercial tour and business arrangement with Outback Track Tours. All planned activities at **Dorrigo and Washpool** are restricted to **TOUR PARTICIPANTS ONLY**. Club members **will not** be permitted to 'link-up' with the tour group at **Dorrigo, Washpool or Barrington** in order to attend herpetological activities. Your courtesy will be appreciated.

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.

Sunday 6th December. Australian Reptile Park, Somersby. Interclub Christmas Party.

The once-a-year get-together of the herpetological societies. John Weigel is Santa and a big croc gets a Christmas treat. Us mere mortals may get a behind the scenes tour. Not to be missed! Free entry to FATS members. Bookings are **not** required for this event. Please bring your current FATS membership card and check start and finish times – usually around 10 a.m. to 3 p.m.

12th December. 8-30 p.m. Scheyville National Park. Leader : Grant Webster.

Meet at the corner of Dormitory Hill Rd and Scheyville Rd, Scheyville.

The once-vast Cumberland Plain woodlands are now listed as an Endangered Ecological Community. Originally occupying much of the Greater Western Sydney region, these woodlands are now restricted to a small number of highly fragmented (and often highly disturbed) habitats. Inevitably, the frogs that are dependent on these woodlands have experienced a similar reduction in their distribution and abundance. Tonight we will look at the frogs of the Cumberland Plain, and we will discuss how and why they differ from the frogs of the Sydney sandstone (Hint: See Frogfacts Sheet #7 for a discussion of some of these differences). Grant carries out extensive fieldwork across the entire NSW region and has accumulated vast experience of NSW frogs. Tonight he returns to more familiar turf and will show us around some of the habitat that is critical for the survival of the frogs of western Sydney.

30th January. 8-30p.m. Darkes Forest. Leader : Aaron Payne.

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

The early French explorers and naturalists contributed much to the understanding of Australian natural history. Amongst other things, they discovered and described many species of frog. Today, many frogs retain a scientific epithet (i.e. name) honouring these French naturalists. Many frogs bear common names such as Peron's Frog, Lesueur's Frog and Bibron's Toadlet to name a few. Tonight we will look at some of our frogs in an historical context and we will examine some of those species first discovered by, or named in honour of, the French. We will also discuss the importance and enlightened scientific role of early French exploration in Australia. Aaron is perhaps better known to members for his consistently stunning photographic work. Few realise that he is one of our more intrepid fieldworkers, his latest and most recent expedition including frog work in the Northern Territory.

12th - 17th February. 6-Day Coach/Camping Tour: The Dorrigo & Washpool Rainforests Leader: Arthur White.

This is our very first coach/camping tour! There are only a couple of seats left. Over millennia, Australian rainforests have repeatedly expanded and contracted largely according to global climate conditions. At all times, these ancient rainforests have retained a rich and unique legacy of wildlife. More than ever, these rainforests act as vital refugia for many of our most threatened species. During this week we will not only look at some of the astonishing frogs and reptiles of these magnificent rainforests, but we will also spend our days exploring the luxuriance and grandeur of this region. Mountain ranges, waterfalls, spectacular scenery and lots of wildlife ! From his extensive work with the palaeofauna ('palaeo' - old, ancient or prehistoric) of the Riversleigh fossil site to his work with present-day frogs, Arthur is a consummate encyclopaedia of rainforest fauna. As with all FATS events, this will be a relaxed, casual and fun week. All camping gear and food is supplied. Ring for information regarding fares and bookings. Rob ph. 9681 5308.

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.