# FROG CALL

**NEWSLETTER No. 66**
**July 2003**

**THE FROG AND TADPOLE STUDY GROUP OF NSW INC**
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**Jervis Bay Tree Frog**
*(Litoria jervisiensis)*
Smiths Lake Feb 03
Photo by David Nelson

Next meeting 6.30 PM for a 7.30 PM start
FRIDAY 1 st August 2003
AUSTRALIAN MUSEUM,
**WILLIAM ST ENTRANCE**

## MEETING FORMAT for 1st August 2003

| | |
|---|---|
| 6.30 pm | A small number of frogs, mostly juvenile Green Tree Frogs, are ready to collect from the Frog Rescue Service. Please bring your FATS membership card and Licence. |
| 7.30 pm | Annual General Meeting |
| 8.00 pm | Arthur White: The Wallum Froglet |
| | ABC Creature Feature video on our Frog Rescue Service |
| | Lothar Voigt and Arthur White: Frog Finding Techniques |
| 9.30 pm | 5 Favourite Slides (Please bring along any froggy slides that you would like to show, or talk for up to 5 minutes) |
| 9.45 pm | Auction and drawing of door prize |
| 10 pm | Tea and Coffee |

## CONTENTS



## THE LAST MEETING

Our main speaker was **Stan Orchard**, who gave us his farewell speech – nothing less than a **Proposal for the Sustainability of Frog Conservation in Australia**. First the cartoon video (Red-eyed Green Tree Frogs and Banjo Frogs singing their heads off in a junk yard). Then a summary of the huge WWF/ Rio Tinto Frogs! Program, of the projects it sponsored and of events leading up to the two conferences of Australian frog groups.

Australia-wide, frog groups now clock up over 10,000 members, with an outreach – through media and personal contacts – of hundreds of thousands of people.

A new Action Plan is being designed, with at its core a table listing all the known Australian frog species (214 described) against dozens of biological variables, to be constantly updated and on the Internet. This model will be applied to each of 15 bio-regions in Australia. Projects, be they pure or applied science, educational, species recovery or community-based, will be feeding into it.

Some of the projects funded with Rio Tinto assistance have been RMIT's remote sensing of frog populations, NT surveys for new species, Cane Toad workshops, Sarah Broomhall's "Frogs in an Effluent Society", projects to create wetlands in school grounds (starting in four states), the Cairns frog diseases conference, a field guide to frogs of Tasmania and Marion Anstis' Whitley-medal-winning tadpole book and her poster.

To help pull the various frog science, education, frog group and public initiatives together, Stan has been advocating "Frogs Australia", a national frog conservation organisation, hopefully to be launched in Canberra in November this year.

Our great hope is that now others will ably take up Stan's initiative. (Since the meeting, Stan has returned to Canada.)

**Marion Anstis** showed some video clips: A Great Barred Frog taddy grazing on a rock, with its underslung mouth, streamline body and deep tail muscles. And cute tree frog tadpoles with their eyes wide apart.

**Arthur White** gave us a riddle: Why are some of the most poisonous frogs so drab and inconspicuous, when others have bright warning colours? He wouldn't tell, so the debate goes on ...

As always, we appreciated those members who brought in their five slides or talked briefly about their experiences.

L.V.

## FAREWELL STAN ORCHARD

Here is the last of many emails from Stan in his role as National Co-ordinator of the WWF/Rio Tinto Frogs! Program. (This email triggered a barrage of wish-you-all-the-best and hope-we-can-stay-in-touch replies.)

"Dear Friends of Frogs,

"For your information - my four-year Australian work visa is about to expire and I will be returning to Canada on June 21st. Co-ordinating this national program has been a great and pleasurable opportunity to become intimately acquainted with the multifarious herpetological community of Australia - and other assorted fauna. Naturally, I will continue to have a keen interest in the conservation biology of Australian frogs.

"Please keep in touch, and thank you all very much for your help and support over the past four years.

"Au revoir, Stan"

**Red-eyed Green Tree Frogs** *(Litoria chloris)*, Smiths Lake Feb 03
Photo by David Nelson

## A NOTE FROM THE EDITOR

The native bee on the back of the last *FrogCall* was not photographed by David Nelson but by Rick Stevens. Apologies to all. Monica Wangmann has been ill but is getting better now. So I have been putting this issue together. Sorry about the small print. There are a few more items that I couldn't fit in. Apologies if your contribution was among those being held over.

But we still need lots more articles for next time. Please keep sending them. L.V.

## DATES FOR YOUR CALENDAR

| | |
|---|---|
| In August | Frog licence returns are due |
| 1. August | AGM and FATS meeting |
| 12-14. August | Science Week, primary schools*** |
| 17. August | Science Week, Open Day*** |
| 30.-31. August | Ku-Ring-Gai Wildflower Festival*** |
| 7. September | National Threatened Species Day |
| 26.-28. Sept. | Smiths Lake field trip |
| 3. October | FATS mtg, raffle f. Cairns Frog Hosp. |
| 10. October | HHS frog keeping talk, Richmond |
| 18. October | Chullora Wetlands field trip |
| 31. October | FATS Trivia Night |
| 1. November | Frogmobile launch |
| 1.-9. November | Frogweek |
| 29. November | Riverstone field trip |

*** = **Frog Volunteers needed**. Science Week is in the Australian Museum; the Ku-Ring-Gai Wildflower Gardens are off Mona Vale Road. Please ring Lothar on 9371 9129 or 0419 249 728.

L.V.

## A NOTE FROM OUR PRESIDENT

### Next Meeting

The next meeting will commence with our **Annual General Meeting**. This normally takes about 30 minutes and all of the executive positions will be filled at the meeting.

The main speaker at the next meeting will be our President Arthur White. Arthur will present the results of several years work on the poorly known Wallum Froglet. This threatened species only occurs in coastal areas and is often not identified in areas where it is present. The talk will cover the habitats and requirements of these frogs and discuss their future conservation.

Also, a video from the ABC's Creature Feature program will be screened. This segment is devoted to the Frog Rescue Service run by FATS.

In addition, Lothar and Arthur will do a short practical demonstration of field techniques when surveying for frogs.

The meeting starts at 7.30 pm. If you want a good seat, get there earlier. Entrance is through the William Street entrance. Tell the security guard that you are going to the Frog Meeting and he will show you through to the Threatrette.

If you are picking up frogs from the Frog Rescue Service, these are available from 6.30 pm. onwards. Frogs are only available to FATS members and remember to bring your frog keepers licence with you. No frogs without showing the licence and FATS membership card.

### October Meeting: Fund Raiser for Cairns Frog Hospital

The October FATS meeting will be used as a venue to raise funds for the Cairns-based Frog Hospital. A brief video clip showing some of the activities of the hospital will be screened at the start of the meeting.

To raise money for the hospital, you are all asked to bring an item that can be auctioned off at the meeting. These can be frog paraphernalia, pond plants, books etc etc. Also, don't forget to bring some money so that you can bid for some of the items that will be up for auction. All proceeds will go the Frog Hospital. Cairns appears to be one of the first impact areas for many new and exotic diseases that are hitting Australian frogs and so it important that the Hospital is able to continue to screen and test new treatments for these diseases. We all benefit from their work.

### Smiths Lake Field Trip

FATS will be conducting an overnight field trip at Smiths Lake in the Myall Lake National Park, about 100 km north of Newcastle. Accomodation will be in the dormitories of the University of New South Wales' field station at Smiths Lake. The field trip will run from Friday to Sunday 26th to 28th of September 2003.

Accommodation costs are $12 per adult per night, kids (under 12) half price. There is a strict limit of 30 people for the Smiths Lake trip – first in gets a spot. You will need to bring own food, sheets and blankets. A list of items to bring and a map will be sent to you when you contact the Trip leaders (Arthur and Karen). Frogging at night and lazing about, swimming, bird watching, bushwalking, snoozing or playing cricket during the days. If you are interested or want to know more contact Arthur or Karen White on 02-9599-1161 for details.

### Trivia Night

To celebrate the arrival of Frog Week this year, FATS is going to host another Trivia Night at the Australian Museum. Arthur has been banned from writing the questions and various categories, such as current events, sports, Australian history, natural history will be covered, along with a smattering of frog-related questions.

The night will be Friday the 31st of October and will be held in the 4th Floor auditorium in the Australian Museum. Its starts at 6 pm. Supper will be provided but you are advised to bring your own food and drink to consume during the evening. It is also a good idea to organise a group (of up to 10) and book a table. In this way you (and your clever friends) can be together on the same table. The cost is $5 per person.

There will be games and other activities throughout the night, some of which will require gold coins (so empty the piggy bank and fill your pockets with gold coins so that you can be in everything).

Fill in the insert in *FrogCall* as soon as you have organised your table. If you don't have any friends, we will find a table for you to join. It will be a fun night.

**Mystery frog**

Here are five clues to help you identify the mystery frog. If you think that you known the identity, come along to the FATS meeting and fill in an entry form. It costs $1 for each entry that you make. There is an interesting prize to the winner (if there are more than one correct answer, the winner will be drawn from a box containing all of the correct respondents).

Clue 1: I am not a large frog.

Clue 2: Some of my relatives are toxic (to snakes)

Clue 3: I have a boldly marked black and white belly.

Clue 4: I eat tiny ants and other small invertebrates that live in leaf litter.

Clue 5: I have a distinctive T-shaped mark on my head.

Who am I?

**Frogs of Western New South Wales Poster**

At long last, the poster showing the Frogs of Western New South Wales has been printed. This has been a joint production, instigated by the NSW National Parks and Wildlife Service (thank you Melanie), and involving FATS, Worldwide Fund for Nature and the National Parks and Wildlife Foundation.

This double-sided poster features 37 species of frogs in full colour, has detailed notes about each and is stunning to look at. The posters can be bought at the meeting for $5 (discount price). We only have a limited supply.

Arthur White

## POBBLEBONKS, SPADEFOOTS, BANJOS and BELLS

(The email below is from Rebecca Lines-Kelly of NSW Agriculture and was kindly forwarded to FATS by Danny Wotherspoon.)

Seen a Giant Pobblebonk lately? Or how about a Common Spadefoot? If you have no idea what these are, a new poster just released by the National Parks and Wildlife Service Western Threatened Species Unit will put you in the picture.

The *Frogs of Western NSW* poster has been mailed out to hundreds of schools and community groups to help identify which frogs are in the local environment.

Threatened Species Officer Melanie Bannerman said she hoped the poster would be a valuable educational resource.

"Frogs are a really important part of the food chain and this project was a way of promoting the diversity of frog species found in Western NSW.

"It's a huge poster which includes quality colour photographs of 35 native frogs, along with a written description, notes on their ecology, size, tadpole description, call and status.

"We've also included a cane toad, for comparison. Cane toads are an introduced pest species that aren't found in Western NSW, but they can resemble some of our native species, so it's really important not to get them confused.

"Five of the frogs are endangered in NSW, others vary in status from common, to rare or declining in numbers.

"The five endangered species are the Booroolong Frog, the Southern Bell Frog, the Painted Burrowing Frog, the Green and Golden Bell Frog and the Yellow-spotted Bell Frog.

"If people identify these species from the poster, NPWS would certainly like to hear about it," Ms Bannerman said.

The *Frogs of Western NSW* poster was jointly sponsored by NPWS, The Frog and Tadpole Study Group, World Wildlife Fund for Nature and the Foundation for National Parks and Wildlife.

Whirring Tree Frog (*Litoria revelata*), oviposition, Smiths Lake Feb 03
Photo by David Nelson

## AND A NOTE FROM OUR MEMBERSHIP SECRETARY

Dear FATS members,

It's been around four years since I first took on the role of Membership Secretary from Anthony Nicholson. In this time I have had the pleasure of meeting and interacting with many wonderful people, both on the Executive Committee and as ordinary members. It is with regret that I have to relinquish my role due to a permanent work related move in September/October of this year. Fortunately I will still be involved with FATS in answering emails and assisting with the website.

For those FATS members in the Newcastle region, I hope that within a year I'll be able to organise a local field trip, picnic, or possibly a meeting. If you think you'd like to get together then send me an email to stephen.weir@csiro.au and I'll contact you closer to the date. For those without email I will be putting something in FrogCall as well.

Before I go I just thought I'd give a bit of an insight into the FATS membership and the part played by the Membership Secretary in getting your FrogCall to you, along with some bits of trivia.

Since records were first kept on a computer, back in 1997, FATS has had over 1050 memberships. For this current mailout (August 2003), FATS has a total of 382 memberships, of which 15 are Complimentary Memberships to other likeminded societies and groups. The total number of members is difficult to calculate since at present we have 92 Family Memberships, but assuming a minimum of 2 people per Family Membership gives FATS a membership conservatively in excess of 470. I feel safe in estimating around 500, since there are four in my own Family Membership. Not bad for an organisation that started as a splinter group within the AHS.

Managing the database of approximately 1050 memberships, and keeping track of the almost 400 names and associated personal details of the current members is primarily what the Membership Secretary does. The database is continually updated with new members and changes of address for current members, and also with membership renewals for many months of the year. This information is sorted prior to each mailout, about two weeks before the meeting, to select the 380 or so financial members who will receive FrogCall. Their names and addresses are then printed onto labels ready to be stuck on to envelopes. More complex manipulation of the database is required when Herpetofauna and/or Renewal Reminders are to be sent out as well. Once the envelopes have been labelled the receipts and Membership Cards are added prior to them being delivered to the Editor. So please have some patience with the new Membership Secretary as he or she learns the ropes.

FATS has many longstanding members, with 89 memberships having been members for five years or more, 48 for four years, 33 for three, 41 for two, 66 for between one to two, and 90 new memberships this past year. Over 200 memberships receive Herpetofauna, a proportion that has risen slowly from the approximately 30% when I first started to over 50% now.

For some trivia, the most popular first name for current FATS members is David, with ten. A close second is John with nine, then third with a protest is Chris with seven (includes a Christopher and Christian). Equal fourth with five is Andrew, Mark and Peter. The top female name is Barbara with four, which ties with Greg, Michael and Robert. Equal second with three for the female names include Lisa, Samantha, Sue, Sarah and Wendy. Whilst there does seem to be more memberships under male names, the difference is not great (roughly 60:40), so it is probably that boys have less diversity in their names than girls do.

We have nine FATS memberships in Queensland, two in Victoria, and two in South Australia. The most popular postcodes for FATS members to live at are 2031 and 2121, with seven in each. In equal third are 2148 and 2153 with six, equal fifth with five are 2250 and 2747, and honourable mentions with four apiece are 2077, 2088, 2233 and 2257.

I've enjoyed the time I've spent as Membership Secretary, and I'd like to thank everyone from FATS who I've had contact with for always being polite, courteous and understanding, even when things have gone wrong. I trust everyone will extend the same to the new Membership Secretary. Finally, I'd especially like to thank the Executive Committee whose untiring work keeps this group going, for to meet a better group of people may take many lifetimes, if ever.

Steve Weir

## COMMENCEMENT OF 2003/2004 FIELD TRIPS PROGRAMME

The FATS Committee are pleased to announce the commencement, in September, of its Spring / Summer Field Trips Programme.

We would like to remind members that frogs are very shy & reticent creatures & quickly 'go to ground' when there is disturbance in the area. For this reason, we would ask all members, when requested, to remain **BEHIND** the leader. This is particularly important when initially approaching ponds, dams & other water-bodies. Some leaders may also request this when walking along tracks and fire-trails; the leader is

attempting to pick-up eye-shine and /or listen for calls. All our leaders will provide ample opportunity for members to explore a site and will, in fact, assist in developing search & identification skills. – Please allow them the opportunity of finding the more difficult frogs under the most ideal conditions possible. Remain **BEHIND** the leader until instructed otherwise. It would be greatly appreciated if parents could assist with the supervision of young children in this respect. Please remember, our leaders give their time voluntarily, please assist them in this regard. It is a courtesy not only to them, but also to fellow members.

We hope that you will enjoy our programme of events this coming season & look forward to seeing you out in the bush !

**Field Trips**

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

**September 26 – 28. Smiths Lake Camp-Out**

UNSW Field Studies Centre, Smiths Lake
**Leaders : Arthur & Karen White**

Despite all his years of professional fieldwork experience, even Arthur was astonished by last year's trip to Smiths Lake. A breathtaking tally of 24 frog species, breeding aggregations of several thousand individuals, not to mention pythons, snakes & numerous mammals. Awash after heavy rains, few sites are as awe-inspiring as the swirling creeks & tall, rain-soaked forests of Smiths Lake. Let's hope for a repeat of last season's conditions ! Cabin / dormitory style accommodation & camping sites available. All kitchen facilities / utensils / crockery supplied. Bookings essential. Nightly fee of $12 applies. Phone Arthur & Karen White directly on 9599-1161 for further details & bookings. Note: Limit of thirty people.

**October 18. 5-30p.m. Chullora Wetlands**

Meet in Dasea St, near the cnr.of Rookwood Rd, Chullora (outside R.S.P.C.A. Shelter).
**Leader : Terrill Nordstrom.**

For many years, Terrill, wearing his other cap of community & environmental activist, has had a close association with the rehabilitation of this wetlands area. Public access is generally restricted at this site. Tonight, Terrill will show us the large number of frogs that have since returned to this once degraded site. Along with a guided tour, he will discuss the peculiar history of this former railway-yard wasteland & its subsequent transformation into a wetlands oasis. We will meet slightly earlier than usual so that, with the benefit of some daylight, we may better appreciate the magnitude of this project.

**November 29 8-00p.m. Riverstone**

Meet at Knudsen Reserve, Garfield Rd, Riverstone ( almost opposite Carnarvon Rd )
**Leader : Liz Kelso**

The Cumberland Plain is an often harsh landscape. To cope, its froglife had to adapt in remarkable ways. Sadly, so much of this woodland has succumbed to urbanisation that it is now listed as an endangered ecological community. Liz, who has studied the frogs of this area for many years, will show us some of the hidden jewels that can still be found in forest remnants. Tonight, we will both marvel at these survivors & ponder the fragility of this sometimes uncompromising region.

In the event of uncertain frogging conditions ( e.g. prolonged / severe drought, hazardous and/or torrential rain, bushfires etc. ), please phone 9681-5308. Remember ! - Rain is generally ideal for frogging ! Children must be accompanied by an adult. Bring enclosed shoes that can get wet ( gumboots where specified ), torch, warm clothing and raincoat. Please be judicious with the use of insect repellant. - Frogs are very sensitive to chemicals !Your leader is there to help you achieve maximum enjoyment from your frogging experience. - Please observe all directions that he / she may give. Children are welcome, however please remember that young children especially can become very excited and boisterous at their first frogging experience. - Please help ensure that the leader is able to conduct the trip to everyone's satisfaction. Unfortunately, due to current insurance requirements, all field trips are strictly for members only. Newcomers are however, welcome to take out membership before the commencement of the field-trip. This situation has been imposed upon us and we regret any inconvenience.

The FATS Committee

## SMITHS LAKE FIELD TRIP, 24.2. 2003

David Nelson compiled the list of the record 24 frog species found on that trip:

| | |
|---|---|
| Litoria fallax | Litoria freycineti |
| Litoria nasuta | Litoria gracilenta |
| Litoria chloris | Litoria lesueuri |
| Litoria tyleri | Litoria peronii |
| Litoria dentata | Litoria revelata |
| Litoria jervisiensis | Litoria caerulea |
| Litoria phyllochroa | Uperoleia laevigata |

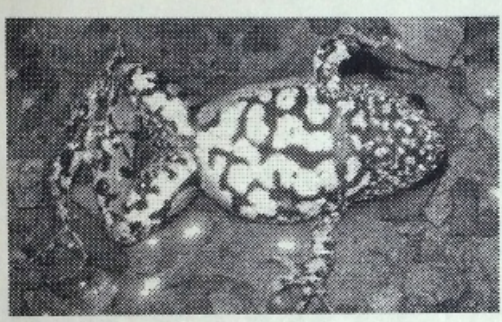
| | |
|---|---|
| Limnodynastes dumerilii | Uperoleia fusca |
| Limnodynastes peronii | Adelotus brevis |
| Limnodynastes tasmaniensis | Mixophyes fasciolatus |
| Pseudophryne coriacea | Crinia tinnula |
| Crinia signifera | Paracrinia haswelli |

David also took some stunning photos of them. He has put 20 of them (11 species) in glorious colour on http://members.optushome.com.au/awnelson/davidavid/smith0203/ . A few of them are reproduced in this issue.

## TWO MORE WEBSITES TO LOOK AT

Cairns Frog Hospital and Frog Decline Reversal Project (and their links) www.fdrproject.org.au

ADI site (Residents Action Group now fighting back, offering attractive wildflower cards) www.savetheadisite.bmt.com.au/card_key.html



Tusked Frog (*Adelotus brevis*), belly. Smiths Lake Feb 03
Photo by David Nelson

## EMAIL ADDRESSES

As most members with an email address will be aware, FATS has started an email group to enable us to use email to contact members with issues concerning FATS, frogs and tadpoles. The email group is a resource that will allow only the FATS Committee to reach a great proportion of the membership quickly and conveniently. It is used to send requests for frog explainers for FATS attended events, requests for general help, and reminders of meetings and other events. It is used primarily when the newsletter will not come out until after the event, or when telephoning a large number of members would take too long. The traffic is only averaging one to two messages per month.

Unfortunately the email addresses supplied to FATS are not always maintained, and currently some 35 are not receiving the messages sent out. If you have changed your email address please let us know. Better still, if you have an email address we don't know about and would like to be part of the list, then contact me and I can subscribe you. The list is free and only requires an email address from you. The list and consequently your email address is not accessible to anyone other than those people authorised as part of the FATS Committee.

So if you'd like to join, either contact me at stephen.weir@csiro.au, the FATS group email at fatsgroupnsw@hotmail.com, or subscribe directly yourself to fatsgroupnsw-subscribe@yahoogroups.com. Any enquiries about the list can be sent to either me at the above address or fatsgroupnsw-owner@yahoogroups.com.

Don't forget that email is a convenient way to advise FATS of a change of address. If we already have your email address it's also a great way for us to find you if you have moved with telling us, so that you can receive all the FrogCalls you're entitled to.

Hope to read you soon,

Steve

## GOLDEN PAW AWARD 2003

The Foundation for National Parks & Wildlife Golden Paw Award is on again.

The Golden Paw Award is a National Threatened Species Day event to help raise awareness for threatened Australian animals and to encourage people to get involved in their conservation.

The Golden Paw Award is open to all children between 4-12 years attending a NSW primary school. By drawing an Australian threatened animal they can show others why it is special and needs our help.

Entries close National Threatened Species Day 7 September 2003. Get drawing and save our species!

For details & entry form see:
http://www.fnpw.com.au/GoldenPaw.htm
See last year's winning entries, links to great websites on threatened species, how we help save threatened species.

Contact us if you would like Golden Paw Award flyers or information:
mailto:goldenpaw@fnpw.com.au

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'Fostering the protection of Australia's native plants, animals and cultural heritage through fundraising for environmental education and conservation projects"

Dainty Green Tree Frog (*Litoria gracilenta*)
Smiths Lake Feb 03 Photo by David Nelson

## NSW STATE FORESTS FROG DAY

On Monday the 21st of July 2003, NSW State Forests hosted a one day forum on frog biology. The conference was intended mainly for students but a few older froggers managed to get a chance to speak as well. The venue was at State Forests headquarters in the Cumberland State Forest, off Castle Hill Road in Sydney's north-west. About 80 people attended including half a dozen FATS members. Frank Lemckert (also a FATS member) hosted the forum and organised the barbeque lunch.

### Giant Burrowing Frogs in NSW Southern Forests

First cab off the rank was Trent Penman. Trent was working on Giant Burrowing Frogs in the south-east forests of NSW. It proved difficult to find more than one or two of these frogs at a time and Trent had his best results from driving kilometres of dirt roads through the state forests at night and finding frogs on or near the roads. Eventually he was able to find a stable population that he was able to radiotrack.

Trent also used a bio-climatic program to predict other locations where Giant Burrowing Frogs should occur. In particular, there are no records of the species between Batemans Bay and Narooma; the Bioclim program predicted that the species should be there and that there should not be a disjunction in the distribution of the species. We wait to see if the program was correct.

Trent radio-tracked 25 Giant Burrowing Frogs and found that they were not active every night but were frequently active on wet nights and nights when low pressure air systems were moving through. The frogs move mainly within a feeding area and may have more than one feeding area. In the breeding seasons, the males and female frogs may move long distances to breeding sites but may only stay at the site for one or two nights before returning to their normal shelter burrows.

Trent also observed 4 Burrowing Frogs being eaten by snakes and one taken by a kookaburra.

### Life History Strategies of the Red-crowned Toadlet

Karen Thumm presented information about the reproductive manipulations that Red-crowned Toadlets make in order to survive in difficult habitats. The toadlets occur within the Sydney Basin bioregion and usually are in small water courses (first order streams) at the top of ridges or plateaux in Hawkesbury Sandstone. Although Sydney has a high rainfall it is erratic and unpredictable. These areas high on the sandstone do not retain water for long and free water is of short duration. Red-crowned Toadlets breed by laying eggs under damp leaf litter. Later on, the eggs will hatch and the young tadpoles will be released into small puddles nearby. Hopefully, the puddle will last long enough for the tadpoles to metamorphose and the young frogs to survive.

Karen found that many egg masses dry up and die and often tadpoles die in these puddles and do not make it to adulthood. As the breeding habitat was so unreliable, Karen predicted that Red-crowned Toadlets must have some tricks up their sleeves to help them improve the survival prospects during breeding.

In general, Karen argued that the frogs hedge their bets with reproduction. They cannot afford to put all of their reproductive effort into one batch of eggs because the chances are high that the eggs will die. Instead of laying all of their eggs in one go, a smaller number of eggs is laid and laying occurs a few times each year. Furthermore, hatching time can vary from 15 to 110 days and the state of development of the hatchling can vary from Stage 23 (no legs, poorly formed gut) to stage 36 (arms, legs, tail reducing). By spreading the time of hatching over a many weeks, the chances of finding conditions whereby some tadpoles survive is increased.

Karen surprised the audience by reporting that the toadlet population that she had been monitoring for the last 11 years had had only three successful breeding episodes in that time.

### Growth in Barred River Frogs

Harko Werkman presented large amounts of data on the sizes on Stuttering Frogs *Mixophyes balbus* and the Giant Barred Frogs *Mixophyes iteratus*. Both of these frogs are stream-dwelling species, are endangered or threatened and occur in logged areas of state forests. Harko had three main sites: in Orara State Forest (near Coffs Harbour), Wyong State Forest (north of Sydney) and Gloucestor Tops National Park (North of Newcastle).

BY walking set transects along streams in these areas and catching, tagging and measuring frogs, Harko was able to put frogs into size classes and determine growth

rates and size as maturation. He found that male Stuttering Frogs, which may reach 60 mm in snout-vent length, took about 2 years to get to 90% of that size (size at sexual maturity); females took almost 3 years to reach maturity. Giant Barred Frogs males, which can get up to 80mm long, took 4 years to reach 90% of the maximum size, while females, which can be up to 110mm long, took over 5 years. He found that there were size differences at the different sites (e.g. the Wyong Stuttering Frogs were smaller and lighter than those from the other two sites).

Harko them showed that survival rates in these frog populations were about 50% per year (i.e 50% of the adult frogs died each year); thus by Year 2 only 25% were left, 12.5% by year 3, 6.25% by year 4 and so on. This high loss of adults must be matched by the production of young frogs or else the populations will crash. Yet, tadpole growth is slow in both species. The oldest male Stuttering Frogs that was recaptured was 9 years old.

**Habitat Fragmentation in Sandstone Habitats around Sydney**

Andrew Stauber surveyed Red-crowned Toadlets and Giant Burrowing Frogs in the national parks and reserves to the north of Sydney. In particular, he was interested to see what effects roads had on these frogs. He anticipated that roads could have a lot of negative effects, such as habitat loss (to road and road clearings), habitat modifications (road elevations creating new roadside habitats); creating barriers to dispersal, fragmenting habitat (perhaps putting breeding habitat on one side of the road and foraging habitat on the other side); allowing exotic species to move in along road corridor (animals as well as weeds) and death through road kills. He also suggested that some positive benefits could arise from roads, such as the creation of breeding habitats beside roads (due to road runoff) and basking areas on road surface (particularly for reptiles).

Andrew worked along the fire trails in the Ku-ring-gai National Park and nearby reserves. He found the Red-crowned Toadlets were able to exploit soaks created alongside tracks (although these were sometimes destroyed by passing vehicles) and that Giant Burrowing Frogs were able to use deeper pools at the end of table drains. His work is ongoing to determine whether these habitats actually contribute towards an increase in population size or structure.

Andrew also found the Giant Burrowing Frogs were able to vary the time of metamorphosis of the tadpoles if ponds started to dry up. In controlled experiments he found that normally they took 41 days to hatch whereas if the water levels were quickly lowered, hatching took 38 days on average. The faster-hatched tadpoles were smaller in length that the normal hatchling frogs.

**Impacts of Logging on the Common Eastern Froglet inTasmania**

Bonnie Lauck examined the response of the small Common Eastern Froglets *Crinia signifera,* to logging in Tasmania. She set up a series of new ponds in logged and unlogged areas; the new ponds were at 20, 50, 120 and 500 metres from the original pond in the forest. The ponds were checked regularly and eggs were collected and counted in each pond after laying. She found that the froglets colonised all of the ponds regardless of distance from the original pond. She found that colonisation was rapid as the intervening terrain did not prevent or interfere with froglet migrations.

She found that ponds were colonised faster in unlogged forest than in logged forest areas. She also found that there were usually many more egg clutches laid in the ponds in the unlogged forest. In addition, she found that male froglets were larger in unlogged sites.

Logging did not exclude froglets from colonising new sites but did reduce the number of opportunities for these frogs to undertake the journeys of colonisation.

**Reptiles and Frogs in Plantation in Northern NSW**

Beth Mott presented parts of a large study on the fauna in plantation forests in the Wauchope area of northern NSW. She was interested to know if the structure of plantations had any effects on the fauna; for example, plantation trees were usually planted in rows, were all the same age, there was little timber or leaf litter on the ground and the canopy was usually open.

She found that there were climatic differences in plantations compared to old growth forests. Older forests had closed canopies that kept the under canopy temperatures down by as much as 10° in the middle of a hot day. In addition, the radiant energy reaching the ground was greatly reduced and the humidity was higher. In general, plantations had to be at least 15 years old before the canopy began to close.

She found that some reptiles were able to exploit young plantations (especially *Lampropholis amicula*, a small skink). Others were not able to leave old growth forests (e.g Murrays Skink *Eulamprus murrayi*), while still others were able to colonise thinned forests or more established plantations.

She also carried out controlled environment experiments to tests species' ability to select different environments on the basis of air temperature, radiant energy, shading and complexity of ground cover. Not surprisingly, those species that preferred old growth forests chose shady sites, little radiant energy, lower air temperatures and complex ground cover. The most important factor for all species was the complexity of ground cover; few species were prepared to choose open sites, even if the temperature and energy levels were ideal.

## Sphagnum Frogs in the Wauchope Area

Justin Williams carried out his studies on the Sphagnum Frog *Kyrranus sphagnicolus* in the Mt Boss, Bellangary and Kippara State Forests in the Wauchope District. Sphagnum Frogs are cryptic frogs that occur in the mountain country and are difficult to find as they are often under boulders or in cracks in rocks.

He found that Sphagnum Frogs occurred in a number of sites over 400 metres elevation and were in wet forest or rainforest areas. A bio-climatic program was used to predict the distribution of the frog in the area, based on his location sites and it was found that the current sites corresponded to all predicted habitats. Some habitats were lost through clearing for agriculture years ago.

All of the current sites for Sphagnum Frogs were in unlogged areas and were in areas that had been excluded from logging by conservation prescriptions. This was a species that could be adequately protected by the current forest agreements.

## Wallum Froglets in the Sydney Area

Arthur White presented data on the poorly studied Wallum Froglets *Crinia tinnula*. He pointed out that the reason that they were so poorly studied was that they were small, cryptic and very difficult to tell from the common sister species, *Crinia signifera*. The lack of knowledge has been reflected by the constantly changing distributional range of the spaces, which, in 1995, was found at Kurnell in Sydney.

The Kurnell Peninsula was surveyed intensively and 17 breeding sites were found that were used only by Wallum Froglets, 7 that were used by both *C. tinnula* and *C. signifera* and nine that were used by *C. signifera* alone. These habitats were analysed and characterised so that a more precise means could be found to discriminate between habitats that could be used by one or both species. Water quality measurements were also taken at each pond.

Locations of calling Wallum Froglets were taken over a number of days, nights (wet and dry) and over successive wet nights. Wallum Froglets were found to call over a long period, both during day and night. As the call was distinctive, the frogs were not caught, other than in pit traps set around 4 ponds. By plotting the locations of calling frogs, its was found that Wallum Froglets ranged up to 110 metres from ponds and foraged in areas of dense heath and even woodland. When rains came, the frogs converged on breeding sites and remained there for several days before dispersing out into the non-breeding habitat areas.

Wallum Froglet breeding ponds were shallow, fluctuate or were ephemeral, had highly acidic water at times (pH 4) and were weakly saline (0.7 ppt). In addition, the ponds had some open water, contained a mixture of single and dual stemmed sedges and the base of the pond had a thick organic layer. When the ponds dried up, this layer became friable and developed deep cracks. In drought, the Wallum Froglets sheltered at the base of this layer. The high acid levels in the water appear to result from the humic acid release from the organic layer.

Because of their greater specificity of habitat, Wallum Froglets were susceptible to habitat disturbance and any changes to hydrology were likely to result in the loss of the site in preference to *Crinia signifera*.

## Use of Tadpoles in Frog Surveys

Marion Anstis explained the features of tadpoles that could be used in identifying tadpoles found in the field. In particular, she stressed:

Body Shape (round, oval, elliptical or elongate)
Eyes and nostril placement
Fin size and length
Vent and spiracle location
Mouthparts
Behaviour

One feature that was unreliable was body colour. Marian gave examples of the various tadpoles forms, and the rest of the day was spent looking at tadpoles under the microscope and identifying the features that were used in identification.

Although some tadpoles were difficult to identify, many could be recognised quickly. As tadpole were often easier to find that adult frogs and were present for a long time in the field, their use in field surveys was warranted.

Arthur White

Red-eyed Green Tree Frog (*Litoria chloris*) Smiths Lake Feb 03
Photo by David Nelson

## FROG KEEPERS' LICENCES

Extract from Jeff Hardy's email to Monica:

"... returns for reptiles are due in April of each year or for frogs in August. The time commitment and cost of sending out postal reminders prior to the due date is too great to be a simple annual initiative. It is easier and cheaper to send reminders to those who don't comply with licence conditions.

"In mid-2004 the NSW NPWS animal keeper licensing databases will be migrated to a new Government Licensing System (GLS) that caters for on-line licensing. Those people who have internet access will be able to apply for licences over the internet. They will be able to process their own initial licence applications and renewals unless there has been a bar placed on individual licences because of a failure to submit returns, prosecutions, investigations etc. Applications for interstate import and export licences will be available immediately. The GLS will provide for fee discounts for those that do their own licence processing. AND there will be emaol reminders for events such as expiry of licences and time to submit returns etc. ...

"Jeff Hardy
Co-ordinator Wildlife Licensing
Biodiversity Management Unit
National Parks and Wildlife Service"

Great Barred Frog (*Mixophyes fasciolatus*) Smiths Lake Feb 03
Photo by David Nelson

## FROG BOTTLE FOUND

An empty bottle of 'Growling Grass Frog Beer' fell into Martyn Robinson's hands, who donated it to the FATS Group. It is a new Victorian beer with a *Litoria raniformis* on the label (reputedly the only one in the world with a frog logo) which states on the side 'The Growling Grass Frog was listed as a threatened species in Feb 2001. Every frog beer you buy generates a donation to help protect this great frog.' And it may keep drivers off the roads. We should have a scheme like this here, too. Whoever gets the bottle at the auction might even get the scheme going!

L.V.

## CANE TOAD CONTROL RESEARCH

Below is an email response from Alex Hyatt to Deborah Pergolotti:

Dear Deborah,

The questions you have asked in your email of 26th May are reasonable issues to raise and are questions we have discussed on many occasions ourselves. We want to air these issues at a workshop we are planning where these can be discussed and other views can be incorporated.

I will try to provide more detail on a few issues you have raised.

Our team at AAHL was involved in the earlier project in Venezuela through identification and characterisation of samples. Within this project Australian ecologists researched the ecology of the animals and microbiologists searched for potential pathogens. A report on this work is available (contact Environment Australia)

Our current work can be broken into three steps:

1) Remove a virus gene to attenuate the virus. Attenuation is the removal of a virus gene so that replication of the virus is less efficient. The virus can still replicate itself, but if we remove the correct gene, then replication of the attenuated virus does not cause disease in the animal.

2) Select a cane toad specific gene necessary for metamorphosis. If we can deliver a cane toad gene to the tadpole and generate an immune response to the product of that gene, then the natural expression of the gene may be altered. What we hope to do is deliver a gene whose product is required in the metamorphosis process, so that its expression is altered and we disrupt tadpole metamorphosis. We have some contenders for this process and are working through them.

3) Insert cane toad metamorphosis gene/s into the attenuated virus. The selected cane toad gene/s is/are incorporated into the attenuated virus. The virus then acts as a self-replicating, non-disease causing vector that carries the cane toad specific metamorphosis gene. It delivers this gene to cane toad tadpoles and they mount a response to it. This response is harmless until metamorphosis, when the gene is expressed. The expressed gene is then altered by the tadpole's response to the virally delivered version of the gene. Past research as shown that a small percentage of adults have antibodies against ranaviruses, however this research is directed to the tadpole.

A release of any virus will require comprehensive testing to ensure target species will not be affected. To this end, we have recently been advised that we have received a small amount of funding to hold a workshop late this year or early next year to consult widely on the most effective way to comprehensively test non-target species. We will keep people posted on this development.

Please note that Tony Robinson did not issue a media release on renewed funding. The journalist who wrote the short article in the NT News contacted Tony with questions about cane toads in general and misrepresented the information he was given. The Daly River project is one being run by Dr Sean Doody of the University of Canberra. Populations of goannas and freshwater crocodiles are being monitored prior to cane toad invasion. The populations will continue to be monitored during and after invasion to assess cane toad impacts. Tony mentioned this project to the reporter as CSIRO is planning to provide some support. Using the Daly River as a release site was never mentioned.

Alex Hyatt
(on behalf of the current CSIRO group researching possible biological Control Strategies for the Control of Cane Toads)

Whirring Tree Frog (*Litoria revelata*) Smiths Lake Feb 03
Photo by David Nelson

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We hold six informative, informal, topical and practical meetings each year at the Australian Museum, Sydney (William Street entrance). Meetings are held on the first Friday of every **EVEN month** (February, April, June, August, October and December) at 6.30 pm for a 7:30pm start. **NO MEETINGS ARE HELD ON GOOD FRIDAY so check each newsletter for alternate dates.** Visitors are welcome. We are actively involved in monitoring frog populations and in other frog studies, and we produce the newsletter *FrogCall* and *FrogFacts information* sheets. All expressions of opinion and information are published on the basis that they are not to be regarded as an official opinion Of the Frog and Tadpole Study Group Committee unless expressly so stated.

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