

FROG CALL



THE FROG AND TADPOLE STUDY GROUP NSW Inc.

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NEWSLETTER No. 173 JUNE 2021

Eastern Stony Creek Frogs *Litoria wilcoxii* amplexing photo by Mark Sanders



CSIRO is publishing **Photographic Field Guide to Australian Frogs**
<https://www.publish.csiro.au/book/7951/> by Mark Sanders. See P4

You are invited to our FATS meeting. It's free. Everyone is welcome.

Arrive from 6.30 pm for a 7pm start.

Friday 4th June 2021

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

Easy walk from Concord West Railway Station and straight down Victoria Ave.

Take a torch in winter.

By car: Enter from Australia Ave at the Bicentennial Park main entrance, turn off to the right and drive through the park. It's a one way road. Turn right into P10f car park.

Or enter from Bennelong Rd/Parkway. It's a short stretch of two way road. Turn left.

Park in P10f car park, the last car park before the Bennelong Rd. exit gate.

FATS MEETING 7PM FRIDAY 4th JUNE 2021

There are no COVID19 meeting restrictions this month.

- 6.30 pm** Lost frogs seeking forever homes: Please bring your membership card and cash \$50 donation. Sorry, we don't have EFTPOS. Your NSW NPWS amphibian licence must be sighted on the night. Adopted frogs can never be released. Contact us before the night and FATS will confirm if any frogs are ready to rehome.
- 7.00 pm** Welcome and announcements
- 7.30 pm** The main speaker is Roy Farmer from UNSW. Talking about "Fossil frogs- an Australian perspective".
 Arthur White will be presenting "How to find extinct frogs" and "Saving Heleioporus in Victoria"
- 9.30 pm** Show us your frog images. Tell us about your frogging trips or experiences. Guessing competition, frog adoptions continue, supper, relax and chat with frog friends and experts.

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2021 FATS FROG-O-GRAPHIC COMPETITION

The FATS members' 2021 Frog-O-Graphic competition opens on the 1st May and closes on the 31st August 2021.

Categories:

Best Frog Image,
Best Pet Frog Image,
Most Interesting Image and
People's Choice.

Category winners are decided by a panel of judges.

People's Choice is voted for by everyone present at the October FATS meeting. Alternate arrangements will be made if we can't meet in October.

All entries are by email to photos@fats.org.au

Please state:

your name,

confirm that you are a financial FATS member,

identify the frog species preferably by scientific name (in the file name) and location, if known,

whether the image is a pet frog and

your contact phone number

Max 6 entries per person.

Max attachment size 6 MB.

Fabulous prizes awarded. Entries must be original and your own work. They don't have to be recent images. The entries may appear in FrogCall, FATS Facebook, our web site and other FATS publications.

Arthur White

Samantha Wallace from Newcastle Uni. was our speaker in April, talking about the "Strange World of Littlejohn's and Watsons' Tree frogs".

FATS AGM NOTICE FRIDAY 7 AUGUST 2021

The FATS AGM will be held on Friday 7/8/2021, commencing 7pm. FATS meets at the Education Centre, Bicentennial Park, Sydney Olympic Park. If you would like to ask any questions about joining the FATS committee, please give us a call. Contact our President Arthur White at least two weeks before the meeting for further information and to submit items.

We appreciate fresh ideas and new members on our committee. No experience required. The committee meets 6 times a year. No task commitments or time expected of committee members, other than what you are able to spare.

See contacts details on page 11. **Arthur White**



Handmade wool felt design Mad Hatter Beret worn by our clever Kimberley McReynolds See ETSY Madhatterberet madhatterberets@gmail.com



CELEBRATING WOMEN IN SCIENCE



VET CELIA GACHES TO THE RESCUE

Have you heard of "Banana Box Frogs"?

Several species of frogs inhabit the banana orchards of Queensland, and sometimes they accidentally end up in shipments, travelling all over Australia. Unfortunately, this leaves them stranded. For the safety of other frogs, they can't go home (they may have picked up diseases). For this reason and their own safety, they can't be released where they're found!! Without the intervention of rescues, zoos, and research groups, these poor little hitchhikers would be doomed.

Such was the story of this "Banana Box" Frog (a "Dainty/Graceful Tree Frog", *Litoria gracilentia*), who arrived in a shipment of bananas here locally. It was brought to our hospital, and after a hands-free physical exam, we began the process to find it a safe place to be.

We were directed to The Frog and Tadpole Study Group of NSW by Nick Skevington (thanks Nick) and WIRES Inga Tiere.



DELIGHTFUL PAINTING BY VICTORIA, FROM FATS ON FACEBOOK

We love our frogs, who live on our property and are enjoying learning more about them through this Group. My daughter, Victoria, has been inspired to paint a frog picture. Having always been animal lovers (pets and wild creatures). We were delighted to find frogs at our place, upon moving to the mid north coast of NSW. We love to hear the frog song at night when it is raining. A kind neighbour recommended us to your group and we have enjoyed learning so much more about these fascinating creatures, through your conservation Facebook group. Mum, Michelle and Victoria, King Creek NSW



Photo by Samantha Wallace, male *Litoria littlejohni*
Dharawal National Park



After some coordination, we are pleased to report our hoppy friend has entered into rescue care. Assuming it continues to be healthy through its quarantine period, it will be rehomed to an appropriately licensed and experienced frog guardian, to live the rest of its days in spoiled comfort!!

We encourage our community to be actively aware of the conservation needs of our unique Australian Flora and Fauna. FATS is one of many organizations providing specialized conservation care and education. We are grateful to the spaces they have created for these wayward hoppers, as well as the knowledge we gain with their diligence and passion. Dr Celia Gaches, Bargo NSW

www.premiervetcare.com.au

Facebook PremierVetCareBargo

We're a small local practice servicing our communities companion animals, as well as serving as the community wildlife veterinary service. We work with WIRES or any other wildlife group that needs assistance, as well as serving as a contact point for members of the public.

FERAL SPECIES MOVE INTO UNBURNT REFUGES AFTER FIRES

In the years leading up to the recent huge bushfires, park rangers in East Gippsland hadn't been able to locate a small, ground-dwelling frog known as a martins toadlet, which is critically-endangered. After a long drought there were no pools on the grounds, no frogs calling and no sign of the martins toadlet, leaving a significant question mark over its future.



Martin's Toadlet *Uperoleia martini* is a critically-endangered species of frog that lives in eastern Victoria. photo: Peter Robertson (Wildlife Profiles Pty. Ltd.)



But recently, Parks Victoria ranger Jeremy Tscharke went out surveying in wild, wet weather, and heard the toadlet's characteristic long, creaking 'aaaaaar' call: "The frogs were going off that night". It had likely bunkered down in the humus layer while the fires passed over, and when the La Nina weather pattern brought damp weather they re-emerged and looked for habitat.

But the toadlet is not the only creature in East Gippsland searching for safe harbour after the fires. Parks Victoria has also noticed feral animals - like pigs and deer - are moving across the burnt landscape looking for places to live and feed, and coming into "refuge" areas that didn't burn. This brings them into competition with native species, which often need

particular environments and can't cover the range that feral animals do.

The unassuming Ewing Morass wetland, east of Bairnsdale, is a haven for rare and endangered frogs, and its residents include the martins toadlet, green and golden bell frog, the leaf green tree frog, and the blue mountain tree frog. It has become an important refuge for species displaced by the 2019-20 fires. But in recent weeks, feral pigs moved into the reserve and were damaging the water and surrounds by chewing up roots that keep vegetation and wetlands intact, and causing turbid water.

Feral pigs also eat small mammals, reptiles and frogs, and breed at a ferocious rate. They are able to produce young from three months of age, and may have 12 piglets in a litter.

Luckily, because rangers were regularly visiting the area, and spotted the pig spoor, they were able to act quickly, says Mr Tscharke, who is the ranger for the lakes and eastern alps. "Timely, regular visits are critical so you don't assume everything is okay," he said. The Ewing Morass Wildlife Reserve is now being included in the pig baiting and trapping works as part of the Victorian government's \$50 million bushfire biodiversity response program.

During the past six months Mr Tscharke has been investigating the effect on amphibians of East Gippsland, particularly the ones that are only found in the fire footprint.

As expected, he found much lower numbers of individuals present at each site than before the fires, but says there are enough to repopulate the areas. "Where I might have heard a chorus of frogs before, I'm only hearing dozens, or individual frogs," he says. "But there were no sites where I didn't hear what I was expecting." "Most of the species, if not all of them, have survived quite well. It's a positive result."

The Ewing Morass wetlands now also have a very healthy population of the endangered growling grass frog, which had not been seen in this location before. Frogs are surveyed by listening for their call, searching with a torch and even playing calls electronically to see if any animals respond and call back.

Miki Perkins is a senior journalist and Environment Reporter at The Age. 25/4/2021 Article from Feral Herald Invasive Species Council. contact@invasives.org.au <https://www.smh.com.au/environment/conservation/feral-species-move-on-unburnt-refuges-after-fires-20210425-p57m4w.html>



Citizen scientists are teaming up with University of Newcastle researchers leading Australia’s effort to prevent the extinction of precious amphibians.

When Vic Giniuzas receives the call, he finds it hard to contain his excitement. From his home in Springwood, he sets off into pristine and often isolated parts of the Blue Mountains with valuable technology in his backpack. Sometimes, his mission requires him to camp out overnight – not that he’s complaining. “I enjoy exploring,” he says. “It’s a bit like prospecting. You might find something valuable, something unique.”

Vic is a proud ‘citizen scientist’. For a couple of years he had been doing his own research into the Giant Burrowing Frog, which is threatened. Since August, 2020, he has been able to put his knowledge to good use as a volunteer assisting University of Newcastle researchers.

Video: From the Blue Mountains to Bellingen, discover how the University of Newcastle is protecting our frogs.

In 2019, renowned amphibian expert [Professor Michael Mahony](#) and his team received \$300,000 from the NSW Government’s Saving Our Species grant to investigate the threats to five threatened frog species in protected habitats such as Vic’s beloved Blue Mountains National Park as well as the Barrington Range and New England Range.

As part of the three-year project, citizen scientists – local residents and community groups such as Bushcare Blue Mountains – are helping to monitor auditory data loggers known as AudioMoths, which are placed near known frog populations to record their calls. Volunteers such as Vic take the AudioMoths to designated sites and retrieve data every six weeks or so which is then shared with University of Newcastle researchers.

For Vic, being involved in the project gives him a sense of purpose: “I’ve always been a nature nerd and it gives my interest and passion legitimacy. You feel like you’re part of something bigger.”

Michael Mahony is a driving force behind the University’s engagement with citizen scientists. A committed teacher who began his science career supervising high school students while completing his PhD, Michael’s mentorship was recognised in 2016 by former University of Newcastle student Dr Simon Clulow, who named a newly discovered frog after him. Mahony’s Toadlet (*Uperoleia mahonyi*) is found in select coastal sand swamps in the Myall Lakes, Port Stephens and Central Coast.

Michael’s passion for teaching combined with a commitment to conservation drives his focus outside the lab on the role of citizen scientists. He has worked alongside hundreds of people throughout his research career who may not have attended university, but want to do their bit to protect frogs.

“With tools and training, citizen scientists are empowered to become our eyes and ears, and also that of the wider community,” he says. “They can make a valuable contribution and I think since the bushfires more people want to be involved. We defend what we care about.”



Michael Mahony speaks ‘frog’. “Waak, waak, waak ... brrr, brrr, brrr,” he mimics. “And the amazing thing is, they answer back. It’s how we locate them.”

Sadly, an increasing number of frog populations are falling silent. When the Black Summer bushfires were finally extinguished in March 2020, the statistics reinforced the grim images that dominated news reports. Of the more than 18 million hectares razed nationally, 5 million were in New South Wales.

But it was the loss of animals that made headlines around the world.

Michael was one of 10 scientists who contributed to the report commissioned by the World Wildlife Fund for Nature, [Australia’s 2019-2020 Bushfires: The Wildlife Toll](#). It estimated that 3 billion animals were killed or displaced by the fires and 51 million of those were frogs. The figures are regarded as conservative.

“The fires distressed us all,” says Michael. “They may have changed some habitats forever. We’re still coming to terms with what was lost and we will go through it again.”

“Frogs are a symbol of the health of our environment and they capture our imagination. You can remember as kids heading into the bush searching for them. They’re accessible in a way that other animals aren’t. You can collect tadpoles, listen to frogs at night in your backyard.”

Long before the fires, frogs were vulnerable. The waves of extinction gained momentum in the 1980s, both here and overseas. Globally, nearly 200 frog species have been lost in the past 30 years to disease, and a further 200 face imminent threat. Australia has 240 frog species, 40 of which are in the Hunter region, and all of the diverse population aren’t found anywhere else in the world. We have already lost 10 species and researchers estimate another 30 to 40 are at risk.

From 1980 to 1986, six species of frog became extinct in rainforest in Queensland’s wet tropics. That they were disappearing in pristine areas was significant. Theories included drought, damage to the ozone layer, and loss of

habitat. It took until 1998 for it to be accepted that the chytrid fungus was largely responsible for wiping out more than a third of the world's frog species. Chytrid is a highly infectious fungal disease that attacks the keratin in a frog's skin, disrupts the flow and levels of electrolytes, and eventually causes a heart attack.

Chytrid fungus is probably transferred by direct contact between frogs and tadpoles, or through exposure to infected water. The disease may not kill frogs immediately, and they can swim or hop to other areas before they die, spreading fungal spores to new ponds and streams. This means it is very important not to move frogs from one area to another. Wet or muddy boots and tyres, fishing, camping, and gardening equipment may also be contributing to the spread of the disease.

Michael describes frogs as “the clearest sign of impending disaster”, like canaries in a mine because their shell-less eggs and permeable skin is so sensitive to changes in the environment. His message is that we need to buy time:

“In spite of our influence and impact, humans haven't made one new species. We can't make DNA, but we can use innovation and technology to find solutions. We shouldn't let millions of years of evolution disappear in the click of a finger. We need an insurance policy. We can store the genome in frozen gene banks. Everyone can make a contribution to their preservation.”



The University of Newcastle's [Conservation Science Research Group](#) is creating a new conservation paradigm – one focused on innovative biological interventions that mitigate threats which can't be stopped in time to prevent extinction. Traditional conservation programs known as translocations typically fail because threats remain present or establish themselves in translocation sites. They also don't stop at boundaries of national parks, reserves or other conservation areas.

The University of Newcastle team is driving three key research areas to protect frog species:

Cryopreservation Michael and fellow researchers have developed a world-first 'in the field' semen collection and cryopreservation technique. “IVF for frogs,” says Michael, who is regarded as a pioneer in amphibian DNA cryopreservation.

This work has also resulted in a cutting-edge collaborative project on de-extinction called The Lazarus Project. In a world-first, the Newcastle team helped revive and reactivate the genome of the extinct Australian Gastric-Brooding Frog using sophisticated cloning technology.

The frog, which bred its young in its stomach and gave birth through its mouth, became extinct in 1986. Newcastle researchers partnered with the University of NSW to recover cell nuclei from tissues that were collected in the 1970s and kept for 40 years in a deep freezer.

In repeated experiments over five years at the University of Newcastle's Amphibian Laboratory, researchers took fresh donor eggs from the distantly related Great Barred Frog, inactivated the egg nuclei, and replaced them with dead nuclei from the extinct frog. Some of the eggs spontaneously began to divide and grow to early embryo stage. This innovative cloning technology was one of *Time* magazine's [25 Best Inventions](#) of the year in 2013.

Genome bank In partnership with the Taronga Conservation Society, the University of Newcastle team is working to collect and store frog DNA in 'banks' to preserve frog species and also enable reintroduction of historical DNA to prevent inbreeding.

Captive breeding program University of Newcastle researchers have gained new insights about the impacts of the chytrid fungus on the endangered Australian Green and Golden Bell Frogs by studying disease incidence in natural populations at Kooragang Island and Sydney Olympic Park. They found that peak infection occurred in winter, which led to major mortality events each year. The loss of breeding-age females had the greatest impact on the population, as fewer females were able produce the large numbers of spawn that would have sustained the local population.

Working with industry partners, the team started a captive breeding program. From 2012 to 2016, they released 40,000 tadpoles and juvenile frogs into newly constructed habitats at Kooragang Island.

After more than two successful breeding seasons, Kooragang Island is now home to a new generation of Green and Golden Bell frogs, which had not been seen in large and sustainable numbers for nearly two decades.

by Rosemarie Milsom

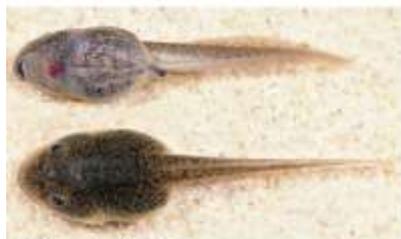
The citizen science program is supported by the NSW Government through a partnership between the Saving our Species program and the Environmental Trust.

https://www.newcastle.edu.au/hippocampus/story/2021/saving-the-frogs?utm_campaign=enl-uon-brand-reputation-2022-cm-comm&utm_source=facebook&utm_medium=social-newsfeed&utm_term=prospecting-story-custom-interest&utm_content=frogs-image-researcher-1080x1080&fbclid=IwAR2RO_puYDqtDwv4SYWECztI7qaugDURw6-MQuV_mTct-n6uIplBWbtQVk

CANE TOAD DISTRIBUTION IN NSW



Green Tree Frog



Eastern Banjo Frog



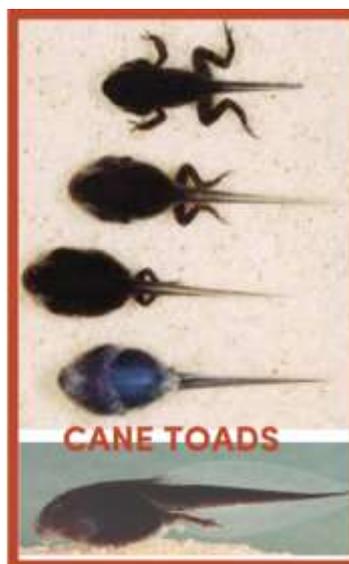
Eastern Dwarf Tree Frog



Green and Golden Bell Frog



Striped Marsh Frog



CANE TOADS

https://www.dpi.nsw.gov.au/_data/assets/pdf_file/0007/1268431/management-of-non-indigenous-animal-incursion-procedure.pdf

All photos by Marion Anstis, author of Tadpoles and Frogs of Australia

This map shows three areas of NSW along with guidance on the management and reporting of cane toads in each area. The Cane Toad Biosecurity Zone consists of the Buffer areas and Cane toad free area. To help with determining which of the three areas a specific address is located in, the map has an address search function.

Managing cane toads detected in the Biosecurity Zone

If you think you have seen a cane toad:

Catch it:

- Don't harm it - it might actually be a native frog
- Wear protective clothing such as disposable gloves, glasses, long sleeves and eye protection before touching it
- Watch out for poison. When stressed, cane toads can ooze and sometimes squirt poison from glands behind the head
- If you can do so safely, keep it in a well-ventilated container with a little water in a cool location while we determine the species

Report it:

- Take a photo (if you can)
- Record your location
- Report the detection

Guide to reporting cane toads in NSW

Area	Area colour	What to do if you spot a cane toad in this area
Established cane toad population area	Green	Be alert to cane toads and prevent their spread into the Cane Toad Biosecurity Zone
Buffer area (Cane toad Biosecurity Zone)	Amber	Suspected cane toads should be photographed, carefully contained and reported. If the suspected cane toad is part of a new infestation detected outside a National Park it should be reported to Border Ranges-Richmond Valley Landcare Network or Clarence Landcare . If the suspected cane toad is part of a new infestation detected inside a National Park it should be reported to National Parks and Wildlife Service - North Coast Branch via Environment Line on 131 555 or info@environment.nsw.gov.au . No person can keep, move or release a cane toad in the Cane Toad Biosecurity Zone unless permitted for pest control, research or exhibition.
Cane toad free area (Cane toad Biosecurity Zone)	Red	Suspected cane toads should be photographed, carefully contained and reported using the NSW DPI Report an unusual animal form . No person can keep, move or release a cane toad from captivity in the Cane Toad Biosecurity Zone unless permitted for pest control, research or exhibition.



Cane Toad spawn (eggs)

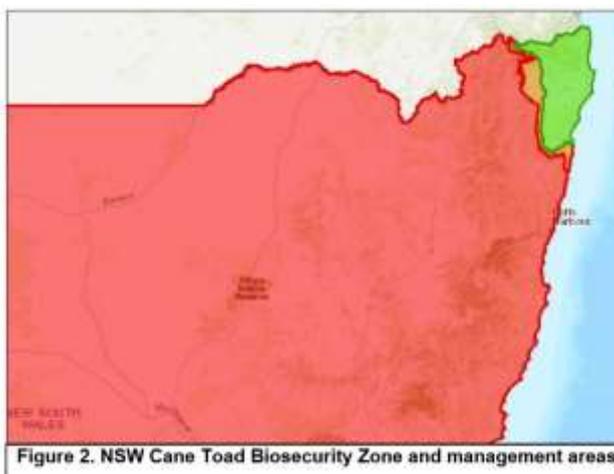
<https://watergum.org/cane-toad-or-native-frog/>



Small juvenile Cane Toad

Please check with an expert before killing suspected Cane Toads

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June 2021

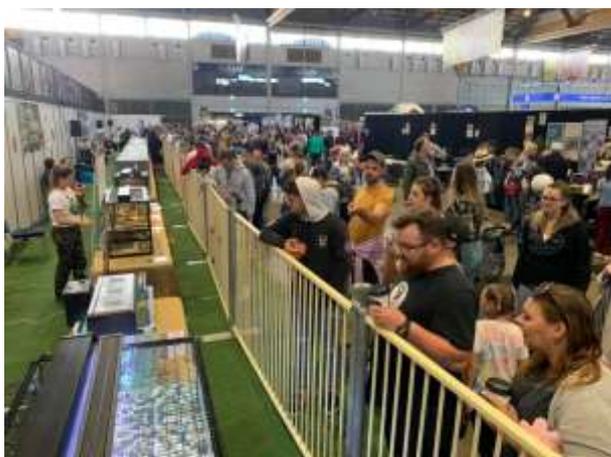


FATS AT THE SYDNEY ROYAL EASTER SHOW 2021

Photos by Rob Burns



Photo George Madani *Neobatrachus sudelli* - Trilling Frog



FATS MEETS AT THE EDUCATION CENTRE, BICENTENNIAL PARK



Photo George Madani *Litoria verreauxii alpina*



**IN NSW, FROG KEEPER RECORD BOOKS
NEED TO BE LODGED BETWEEN 1 & 30
APRIL 2021**

Licence holders must keep records of their native animal pets in an electronic record book or 'e-book'. If you hold a Native Animal Keeper Licence you must keep records. The electronic native animal keeper record book, or e-book, is an easy-to-use web-based record. It is a condition of your licence to keep your native animal records up-to-date.

This includes records of:

- native animals you own
- details of how you acquired and disposed of them
- breeding events
- deaths or escapes.

These records help keep track of the supply chain and ensure that captive-bred animals, and not animals taken from the wild, are being bought and sold. If you don't have access to a computer you can complete a paper record.

There are even simpler requirements if you only have one "companion animal" pet frog.

Companion Animal Keeper Licence

With this licence you can keep one native frog bred in captivity or FATS rescue, as a pet. If you want to buy and keep more than one frog you will need to change to a Native Animal Keeper Licence. Animals covered by the Companion Animal Keeper Licence have basic keeping requirements and are readily available in captivity. Licences cost \$50, less for pensioners and last 5 years.

Keep a record of when you buy your frog (including supplier's details, your details and date of purchase) to demonstrate that it has been legally obtained. You do not have to submit records to the NPWS Wildlife Team for animals kept under a Companion Animal Keeper Licence.

For licences:

<https://www.environment.nsw.gov.au/licences-and-permits/wildlife-licences/native-animals-as-pets/frog-keeper-licences>

To complete your yearly frog returns if you have more than one frog:

<https://www.environment.nsw.gov.au/licences-and-permits/wildlife-licences/native-animals-as-pets/native-animal-keeper-record-book>



Inner city garden pond Jill Streit



Litoria rubella Dampier Peninsula West Kimberley

FATS ON FACEBOOK MEMBER, HELEN MONETA Veranda pot plant. These guys have set up home here. This is not the half of it! For wild frogs that can come and go in your garden and pot plants, you do not need a licence.



Marion Anstis Smiths Lake Palm magic



Litoria revelata Whirring Tree Frog Springwood Scott Eipper

The FATS meeting commences at 7 pm, (arrive from 6.30 pm) and ends about 10 pm, at the Education Centre, Bicentennial Park, Sydney Olympic Park, Homebush Bay. FATS meetings are usually held on the **first Friday of every EVEN month** February, April (except Good Friday), June, August, October and December. Call, check our web site, Facebook page or email us for further directions. We hold 6 informative, informal, topical, practical and free meetings each year. Visitors are welcome. We are actively involved in monitoring frog populations, field studies and trips, have displays at local events, produce the newsletter FROGCALL and FROGFACTS information sheets. FATS exhibit at many community fairs and shows. Please contact Events Coordinator Kathy Potter if you can assist as a frog explainer, even for an hour. No experience required. Encourage your frog friends to join or donate to FATS. Donations help with the costs of frog rescue, student grants, research and advocacy. All expressions of opinion and information in FrogCall are published on the basis that they are not to be regarded as an official opinion of the FATS Committee, unless expressly so stated.

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FATS ON FACEBOOK: FATS has over 3,710 Facebook members from across the world. Posts vary from husbandry, disease and frog identification enquiries, to photos and posts about pets, gardens, wild frogs, research, new discoveries, jokes, cartoons, events and habitats from all over the world. The page was created 10 years ago and includes dozens of information files – just keep scrolling to see them all. <https://www.facebook.com/groups/FATSNSW/>

RESCUED FROGS are at our meetings. Contact us if you wish to adopt a frog. A cash donation of \$50 is appreciated to cover care and feeding costs. Sorry we have no EFTPOS. FATS must sight your current amphibian licence. NSW pet frog licences, can be obtained from the NSW Department of Planning, Industry and Environment (link below). Please join FATS before adopting a frog. This can be done at the meeting. Most rescued frogs have not had a vet visit unless obviously sick. Please take you new, formerly wild pet to an experienced herpetological vet for an annual check-up and possible worming and/or antibiotics after adoption. Some vets offer discounts for pets that were rescued wildlife.

<https://www.environment.nsw.gov.au/licences-and-permits/wildlife-licences/native-animals-as-pets/frog-keeper-licences>

FATS has student memberships for \$20 annually with electronic FrogCall (but no hard copy mail outs).
<https://www.fats.org.au/membership-form>



Thank you to the committee members, FrogCall supporters, talented meeting speakers, Frog-O-Graphic competition entrants, event participants and organisers David, Kathy and Harriet Potter, Sarah and Ryan Kershaw. The FrogCall articles, photos, media and webpage links, membership administration and envelope preparation are greatly appreciated. Special thanks to regular newsletter contributors, Robert Wall, George Madani, Karen & Arthur White, Grant Webster, Andrew Nelson, Josie Styles, Wendy & Phillip Grimm and Marion Anstis.

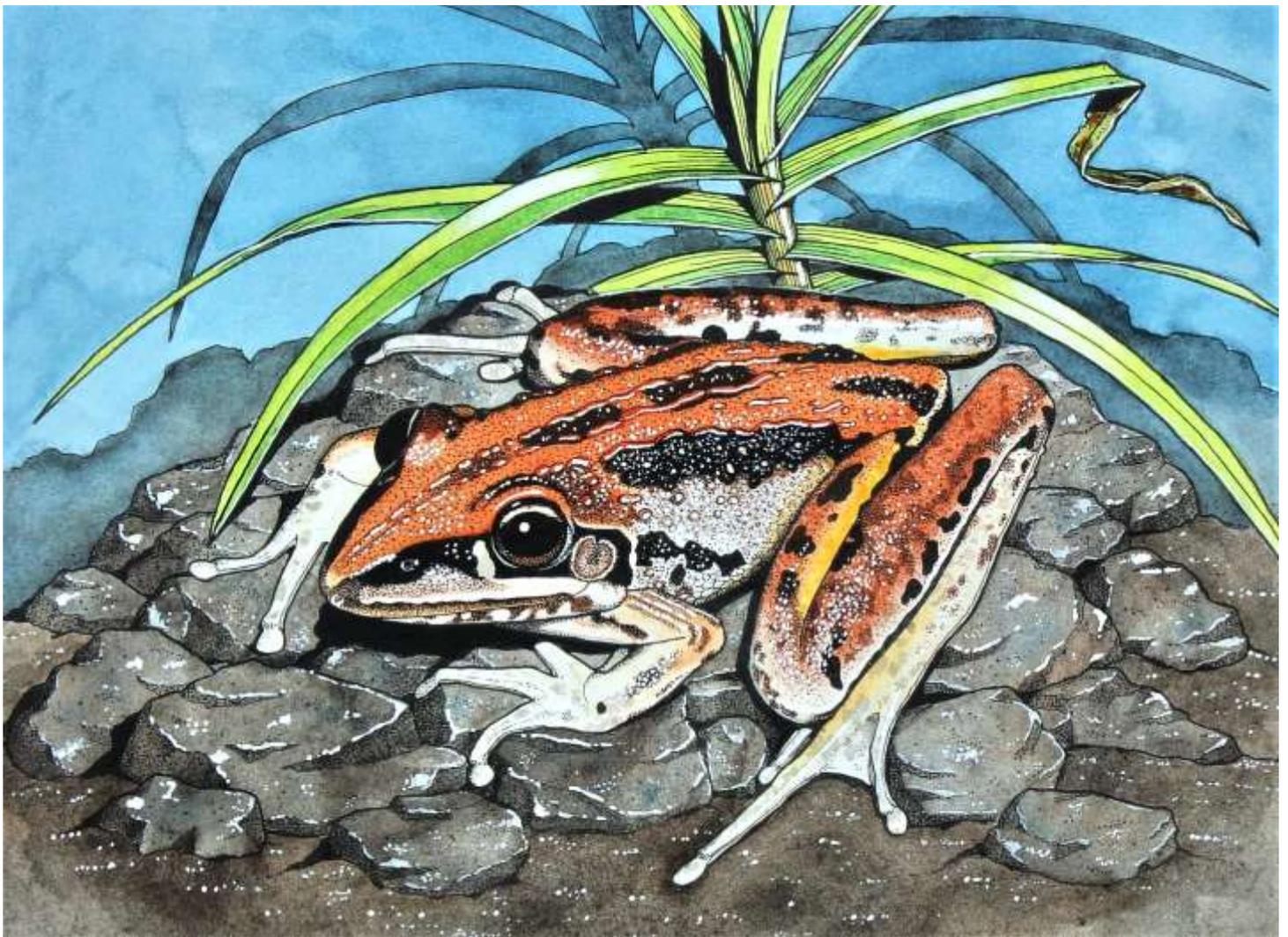


FROGWATCH HELPLINE 0419 249 728

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Andre Rank	General Committee member		



Beautiful watercolour, compliments of multi talented Garth Coupland, for FATS members to enjoy.

Striped Rocket Frog *Litoria nasuta*

Photocopy the image below and colour in.

