

FROG CALL

THE FROG AND TADPOLE STUDY GROUP NSW Inc.

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NEWSLETTER No. 174 AUGUST 2021

Red-eyed Tree Frog *Litoria chloris* image Brad McCaffery



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

7pm Friday 6th August 2021

**FATS WILL MEET
BY ZOOM PLATFORM**

FATS ZOOM MEETING 7PM FRIDAY 6th AUGUST 2021

THE FATS AGM WILL BE HELD BY ZOOM PLATFORM

**WE WILL NOT BE ABLE TO MEET FACE TO FACE
IN AUGUST DUE TO COVID RESTRICTIONS**

7.00 pm It is expected that the FATS ANNUAL GENERAL MEETING will take between 30 and 45 minutes to complete.

There will be no other speakers or activities to follow the AGM.

If you would like to attend the AGM you can visit the FATS website www.fats.org.au 24 hours before the starting time of the meeting to get the link details for Zoom.

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**THE AUGUST 2021 FROGCALL
NEWSLETTER No. 174
WILL ONLY BE SENT AS A PDF**

FATS will send out our August 2021 FrogCall 174 newsletter electronically by Email. The October issue will be sent as a pdf and black and white hard copy. December will be our bumper, glossy colour collectors' edition sent by Email and hard copy.

There may be unintentional mistakes with photo identifications and spellings. Please let the editor know if you see any.

FATS NEXT MEETING: AGM

COVID restrictions have forced a major change to the format of the next FATS public meeting (set down for a 7.00 pm on Friday 6 August 2021). We cannot have a face to face meeting so we will be holding the AGM using the Zoom platform. As it will not be face to face, we have also decided to shorten the meeting. The most important action to be held at this meeting is the running of the 2021 Annual General Meeting.

It is expected that the AGM will take between 30 and 45 minutes to complete. There will be no other speakers or activities to follow the AGM.

If you would like to attend the AGM you can visit the FATS website www.fats.org.au 24 hours before the starting time of the meeting to get the link details for Zoom.

If you have anything to raise at the AGM, you should contact Arthur White arfawhite@gmail.com at least 48 hours prior to the meeting to include items on the agenda.

You will be able to vote at the AGM (by texting within the ZOOM platform).

Hopefully, the lockdowns and other restrictions will ease before the October meeting and we will be able to resume normal meeting formats again. **AW**

FATS AGM NOTICE FRIDAY 7 AUGUST 2021

The FATS AGM will be held on Friday 7/8/2021, commencing 7pm. FATS will meet VIA ZOOM. 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 days 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**

**2021 FATS FROG-O-GRAPHIC
COMPETITION**

The FATS financial members' 2021 Frog-O-Graphic competition closes on 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:

- 1 your name,
- 2 confirm that you are a financial FATS member,
- 3 identify the frog species preferably by scientific name (in the file name) and location, if known,
- 4 whether the image is a pet frog and
- 5 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



Australian Lace-lid *Litoria dayi* image Mark G Sanders

The 'Photographic Field Guide to Australian Frogs' aims to provide a detailed and wonderfully illustrated guide for adult frog identification. Frogs can be subtly different and often lack consistent features for identification. <https://www.publish.csiro.au/book/7951/>



Electron micrograph of chytrid fungus *Image adapted from: Lee Berger; CC0 Australian Academy of Science <https://www.science.org.au/curious/earth-environment/chytrid-frog-killing-fungus>*

WHAT TO DO WITH DEAD AND DYING FROGS

If you find any wild (including your back yard) sick or dying frogs please contact Wildlife Health Australia (WHA). They are the coordinating body for wildlife health in Australia. They work with a variety of government and non-government stakeholders. One of their roles is to monitor and detect early emergence of novel and emerging diseases outbreaks. They are not seeking information on frogs accidentally killed.

<https://wildlifehealthaustralia.com.au/AboutUs/ContactDetails.aspx>

Wildlife Health Australia is a group of specialist wildlife vets and pathologists who keep a register of disease and outbreaks of Australian wildlife populations. They are involved in One Health Initiatives. WHA evolved from the Wildlife Disease Registry at Taronga Zoo, and is still run by Rupert Woods, who operated it at Taronga

<https://www.wildlifehealthaustralia.com.au/AboutUs/OurSupporters.aspx>

Although swabbing for chytrid in frogs is something the Australian Museum can do, some tests of dead frogs are more difficult. For the best results, the necropsies need to be done immediately, on freshly dead frogs.

WHA may be the best contact point, depending on the state of the frog. Alternately the Australian Museum, WIRES or your local vet may be the most practical point of contact.

REPORT AN INCIDENT If you see any unusual signs of disease or deaths in wildlife you can report it to:

- Your State/Territory WHA Coordinator (see links)
- the 24 hour **Emergency Animal Disease Watch Hotline** on freecall 1800 675 888
- your local veterinarian or WIRES

- the Department of Primary Industries or Agriculture in the State/Territory in which the event is occurring/occurred or
- The Australian Museum

The Frog and Tadpole Study Group of NSW inc, FATS, based in Sydney, remains available to accept translocated frogs into their rescue, quarantine and the adoption program. See www.fats.org.au

The WHA **Emergency Animal Disease Watch Hotline** is a toll-free telephone number that connects callers to the relevant state or territory officer to report concerns about any potential emergency disease situation. Anyone suspecting an emergency disease outbreak should use this number to get immediate advice and assistance. Wildlife disease investigations by veterinary practitioners may be eligible for funding support though the **National Significant Disease Investigation Program (NSDI)**

AMPHIBIAN DISEASES KNOWLEDGE BASE
Please go to the link below for full information.

<https://arwh.org/amphibian-disease-knowledgebase/>

WHAT TO DO WITH DEAD AND ILL FROGS

Please see link below to full details.

<https://arwh.org/amphibian-disease-knowledgebase/what-to-do-with-dead-or-ill-frogs/>

If you find a frog that is ill, do not allow it to die in the wild; collect it and allow it to be used. If in a national park, take very clear photos and record as much detail as possible. Please seek clarification from WHA about protocols in national parks. Any stage (eggs, tadpoles, metamorphs, juveniles and adults) should be sent if dead, ill or abnormal. Dead or ill cane toads should be treated in the same way as frogs. Sterilize your hands and equipment between sites. See frog disease field protocols.

BASIC INFORMATION REQUIRED

Please record the following information: Species of frog
Date and time Where found, very detailed. Use map, brief description of area Why you think it is abnormal.
Appearance and behaviour Whether other frogs were ill or dead What proportion of population was affected Is finding ill or dead frogs a common? If "yes", please provide details on locations, dates, signs, and species.



Green Tree Frogs *Litoria caerulea* are the ones that appear to be dying. image Dr Jodi Rowley
Continued on page 4

PROBLEMS WITH ILL FROGS Terminally ill frogs and toads usually die in transit. Once an amphibian dies, degeneration occurs rapidly. If a frog is terminal, it is better to process it prior to dispatch, or to dispatch it in a cooled container.

- Please check legislation about removing native animals and plants from national parks.
- Be absolutely sure the frog is ill and not in torpor (winter sleep).
- WHA is not interested in frogs damaged accidentally eg by lawn mowers and pets.
- If you take the frog to the vet, let them know about WHA and the Australian Museum.

Thanks to Glenn Shea, Jodi Rowley and Georgiana Sheridan for alerting FATS to this resource or providing further information.



Infected frogs are lethargic and experience excess skin shedding image: *Mixophyes fasciolatus*. Lee Berger

In Australia, six species of frogs have already been driven extinct, and another seven are on the brink. Fortunately, we also have the unique expertise and perspective to prevent further losses if we devote adequate resources to the problem. <https://theconversation.com/frogs-v-fungus-time-is-running-out-to-save-seven-unique-species-from-disease-57432>

EDIT: Please be careful not to spread Chytrid, which is a water borne fungus. Relocating frogs could spread disease. Don't relocate frogs unless they are being moved out of harm's way (such as off a road) or collected for treatment or testing.

Dead or dying frogs should be carefully collected to avoid cross infection. Check if the frog may be in winter torpor (asleep) and not sick at all. If in torpor, please don't disturb them.



MESSAGE FROM THE CAIRNS FROG HOSPITAL AND DEBORAH PERGOLOTI

From the reports we've had from people in NSW and southern Queensland, there is a serious outbreak of chytrid fungus this year because of the colder than normal weather. By the time finders are seeing chytrid-affected frogs in their yards, it is too advanced to respond to treatment, even when attempted. To try to reduce the carnage, we are suggesting the following to everybody who has frogs in their back yards in any area that has been cold. Do not relocate frogs.

- 1) Get a very large bowl or storage container (about 10L) of filtered or bottled water and leave on a patio or covered spot.
- 2) For every 5 litres of water in the container, add 1/4th of a teaspoon of sea salt OR use 20ml of 0.9% sodium chloride solution (don't overdo it).
- 3) Get an aquarium heater and keep the heater in that bowl 24 hours a day set to 32 to 34 degrees.
- 4) Depending on permitted State regulations, if you see any frogs in your backyard, use disposable gloves or a plastic bag over your hands to pick up the frogs. Put them in the water bowl. It is ok if the frogs stay in that bowl for extended periods. Heat is one of the most accessible ways to thwart chytrid fungus. Make sure the frog can get out or they may drown. All Australian frogs are terrestrial (not aquatic).
- 5) If there is a local group who can assist with rescue and more comprehensive treatment, please contact them. Otherwise, if you want to do a bit more to help the frogs and no-one is near you, you can consult the chytrid treatment page in our website www.frogsafe.org.au or phone us on 07 4068 9402. **DP**

DATES FOR YOUR DIARY ...

For our Brisbane Froggers :

21 August 2021, 10am-12pm

Talk: Gardening for Frogs

\$10 - Bulimba Creek Catchment

Coordinating Committee,

(Cnr Wright St & 1358 Old Cleveland Rd)

Carindale Brisbane QLD Frog Society



WHY FROGS' TONGUES ARE THE ULTIMATE WEAPON

Frogs can lift 1.4 times their body weight with just their tongues. That's like a human lifting a refrigerator with their tongue. Researchers found that frogs can snatch their prey in under .07 seconds, five times faster than you can blink.

Following is a transcript of the video.



Image David White Green-eyed Tree Frog *Litoria serrata*

Imagine if you could stick out your tongue and lick your belly button. Turns out that would be an easy feat for a frog if they actually had belly buttons. A frog's tongue is one-third of its body length, and that's just the start of this miraculous body part. That long tongue is covered with thousands of mucus glands, which secrete some of the stickiest spit on Earth. In fact, when researchers studied horned frog saliva in 2014, they found these frogs could lift 1.4 times their own body weight with their sticky tongues. That's like a human lifting a refrigerator with their tongue!

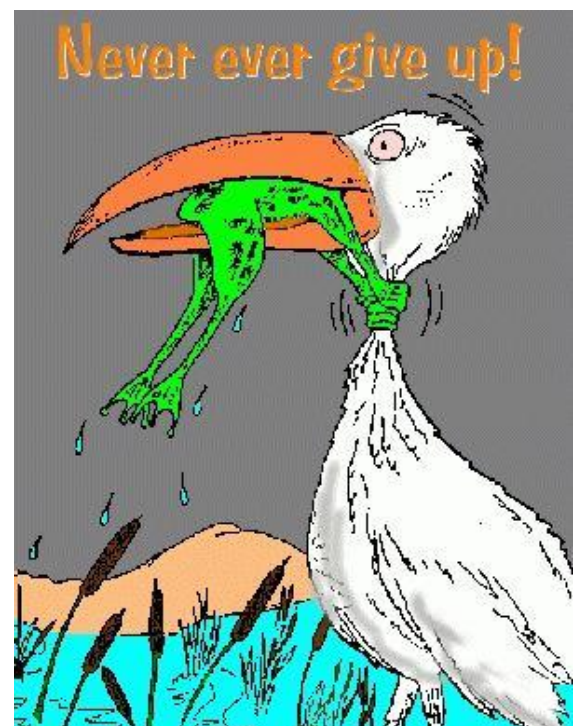
Because of this, frogs don't go whipping out their tongues for fun, but when they finally do, it can grab a meal straight out of the air. You see, although frogs can't fly, many hunt some of the fleetest, most agile winged animals like flies, moths, and dragonflies. They don't even have to chase their meals. They just sit and wait.

It's even more impressive when you consider that flies experience time more slowly than other animals. Each second feels like four seconds to a fly, so they have all the time in the world to escape a predator. Just think about the last time you tried swatting a fly. Not so easy, right? Well, frogs have a trick up their sleeve: an ultra-fast tongue. Their tongue is made of two powerful muscle groups: an extender and a retractor. The extender fires the tongue towards its prey at an astounding 4 meters per second. At the same time, the frog flicks its jaws open, which rotates the tongue as it fires, like a speeding bullet. Bam! Before you can blink, it's all over. Researchers found that frogs can snatch their prey in under .07 seconds, five times faster than you can blink. But speed isn't a frog's only weapon.

A frog's tongue is 10 times softer than ours, about as pliable as your brain, in fact. And this softness makes it super flexible so it can wrap itself around its victim, slathering the fly with a super sticky saliva, trapping it in place like glue. This fly is going nowhere. All that's left to do is reel it in.

The frog's retractor muscle yanks on the tongue, which zooms backwards like a bungee cord. Within 15/100s of a second, it disappears back into the mouth. To dislodge its prize, the frog sucks its eyeballs back into its head. That pressure slides the prey off its tongue, ready to be swallowed whole. Gulp! G-g-gulp! **Uma Sharma, Shira Polan May 2021: The video was originally published in March 2019. Forwarded to FATS by Marion Anstis**

<https://youtu.be/hFei1BMFXw0>



NEW SPECIES *LITORIA MIRA*, NEW GUINEA

Litoria mira holotype (SAMA R70446) from the Purari River Basin in life.
Photograph: S. Richards.



MULTIPLE TRANS-TORRES STRAIT COLONISATIONS BY TREE FROGS IN THE *LITORIA CAERULEA* GROUP, WITH THE DESCRIPTION OF A NEW SPECIES FROM NEW GUINEA

Paul M. Oliver ^{id}^{A F}, Eric N. Rittmeyer ^B, Janne Torkkola ^C, Stephen C. Donnellan ^D, Chris Dahl ^E and Stephen J. Richards ^D + Author Affiliations *Australian Journal of Zoology* 68(1) 25-39

<https://doi.org/10.1071/ZO20071>

Published: 20 May 2021 Journal Compilation © CSIRO 2020 Open Access CC BY-NC

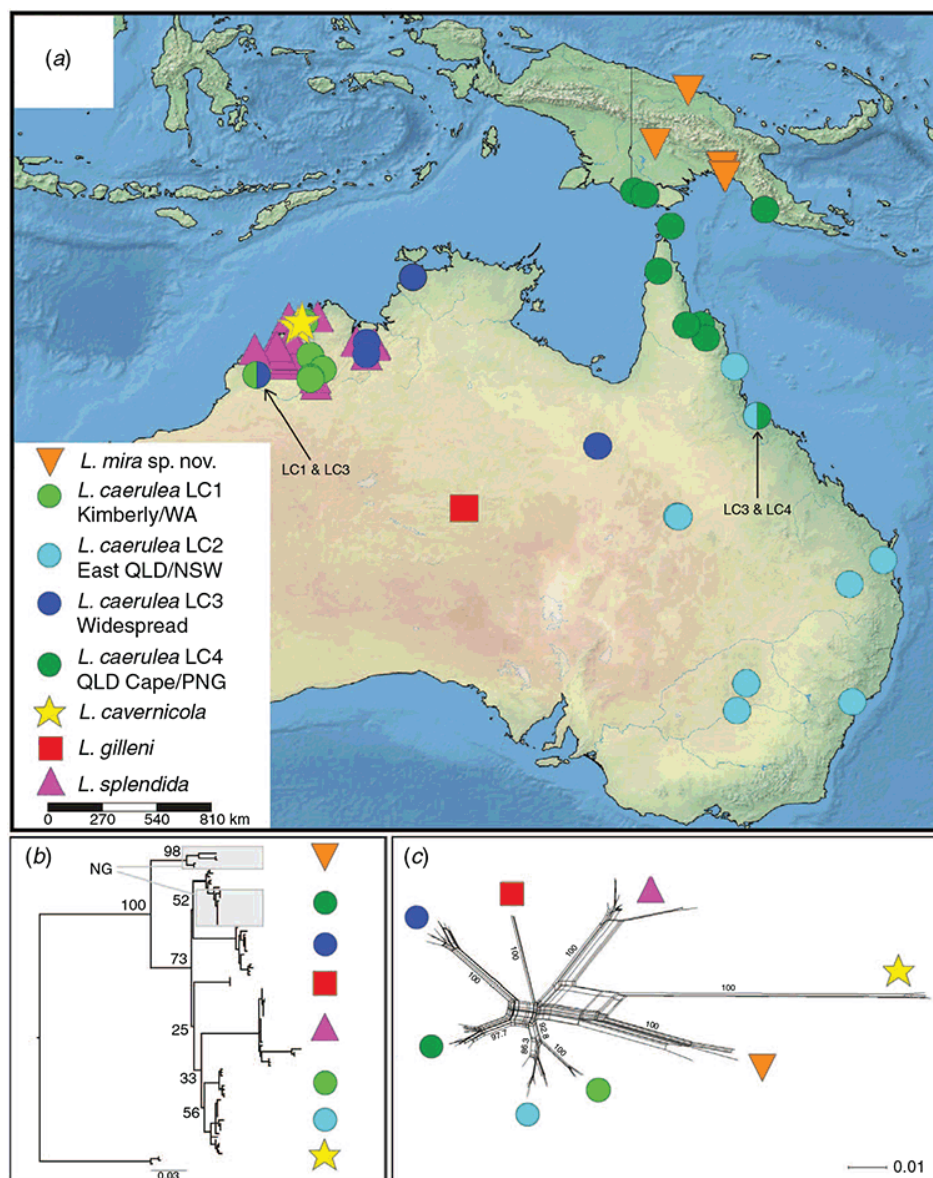
Abstract: Australia and New Guinea (together referred to as Sahul) were linked by land for much of the late Tertiary and share many biotic elements. However, New Guinea is dominated by rainforest, and northern Australia by savannah. Resolving patterns of biotic interchange between these two regions is critical to understanding the expansion and contraction of both habitat types. The green tree frog (*Litoria caerulea*) has a vast range across northern and eastern Australia and New Guinea.

An assessment of mitochondrial and morphological diversity in this nominal taxon in New Guinea reveals two taxa. True *Litoria caerulea* occurs in disjunct savannahs of the Trans-Fly, Central Province and across northern Australia, with very low genetic divergence, implying late Pleistocene connectivity.

A previously unrecognised taxon is endemic to New Guinea and widespread in lowland swampy rainforest. Date estimates for the divergence of the new species suggest Pliocene connectivity across lowland tropical habitats of northern Australia and New Guinea. In contrast, the new species shows shallow phylogeographic structuring across the central mountains of New Guinea, implying recent dispersal between the northern and southern lowlands. These results emphasise that the extent and connectivity of lowland rainforest and savannah environments across northern Australia and southern New Guinea have undergone profound shifts since the late Pliocene.

<http://zoobank.org/urn:lsid:zoobank.org:pub:A577A415-0B71-4663-B4C1-7271B97298CD> Forwarded to FATS by Punia Jeffery

The chocolate frog lives in lowland swamp forest and swampy rainforest, and due to the low genetic diversity between the populations studied, the research team suspect that the newly described species occupies a wide area of difficult-to-access lowland swamp forests across the island of New Guinea.
<https://www.publish.csiro.au/zo/Fulltext/ZO20071>





ABOVE Species in the *Litoria caerulea* group in life: (a) *L. mira* paratype SAMA R70446 from upper Fly River Region, Papua New Guinea, (b) *L. mira* paratype SAMA R71656 from Purari River Basin, Papua New Guinea, (c) *L. caerulea* from near Kuranda, Australia, (d) *L. cavernicola* from Theda Station, Australia, (e) *L. gilleni* from Simpson's Gap, Australia, and (f) *L. splendida* from the King Leopold Ranges, Australia. Photographs: (a–c) S. Richards, (d) B. Schrembri, (e) C. Jolly and (f) P. Horner.

LEFT MAP on page 6 Summary of genetic sampling and phylogenetic analyses based on mitochondrial data: (a) distribution and clade allocation of samples included in genetic analyses, (b) Maximum Likelihood tree for species in the *Litoria caerulea* group, and (c) output of splitstree bootstrap analysis of same data.

TRICKY TOADLETS...
BIBRON'S OR BROWN TOADLET
***PSEUDOPHYRNE BIBRONII* EAST OF WODONGA.**



Some individuals in this area like this darkly coloured one look a bit like Dendy's Toadlet *P. dendyi*, although a combination of more subtle features including less extensive yellow patches on the upper arm (and overall) and a finer yellow rear (supracloacal) line fit Bibron's. Both species are very closely related, and the late David Woodruff who studied them during and after his PhD suggested they hybridise in several locations between Albury and Jervis Bay, and in the Victorian highlands further south.

Bibron's Toadlet is considered Endangered in Victoria and listed under the Flora and Fauna Guarantee Act. While it's possible that the amphibian chytrid fungus might have played a role in Bibron's Toadlet's decline, further study will be needed to assess potential impacts to the species from infection. However, several populations like this one persist sharing their habitat with the Common Froglet *Crinia signifera*, which can act as a reservoir host for chytrid (Brannelly et al. 2018). Severe or prolonged drought has affected breeding success in some areas (Humphries 1979; Osborne 1990), and the threat posed and interventions to mitigate impacts from drought at local breeding sites are being investigated by Deakin PhD student Jawad Jilani. As remains the case for many threatened frogs though, there's no doubt habitat loss is one of the main reasons for the species' decline.

Greg Moore recently wrote about the often overlooked importance of 'puddles' for fauna <https://theconversation.com/the-secret-life-of-puddles...>, which in this case can provide breeding habitat for Bibron's Toadlet, and Nick Clemann has highlighted the importance of wider habitat connectivity for pool-breeding species such as this https://www.facebook.com/permalink.php?story_fbid=4056357271081173&id=294933390556932. As far as the latter goes, Bibron's Toadlet has been found up to ~150 m or more away from breeding sites (e.g. Gillespie et al. 1995). This population was found in a narrow area of roadside vegetation, with males calling among wheel ruts. The area had obviously been driven over and periodically slashed, and was dominated by the introduced pasture grass *Paspalum*. The species' occurrence here and in

similar situations shows it is capable of persisting in habitats not often thought of as being important for threatened frogs. This is known to have resulted in the loss of some toadlet breeding sites through works like road grading and mulching. Combined with the cryptic and seasonal habits of these species, it also means there is potential for populations to be overlooked during assessments of areas subject to development proposals. I've come across both scenarios including during my work as an ecological consultant.

Refs: Brannelly, L. A., Webb, R. J., Hunter, D. A., Clemann, N., Howard, K., Skerratt, L. F., Berger, L. and Scheele, B. C. (2018). Non-declining amphibians can be important reservoir hosts for amphibian chytrid fungus. *Animal Conservation* 21: 91–101.
Gillespie, G. R., Osborne, W. S. and McElhinney, N. A. (1995). The conservation status of frogs in the Australian alps: A review. Report to the Australian Alps National Parks Liaison Committee, Canberra.
Humphries, R. B. (1979). Dynamics of a breeding frog community. PhD Thesis. Australian National University, Canberra.
Osborne, W. (1990). Declining frog populations and extinctions in the Canberra region. *Bogong* 11: 4–7.
David De Angelis April 2021 Victorian Frog Group



**Southern Barred Frog *Mixophyes balbus*
image Josie Stokes December 2015**

THREE NEW NATIONAL PARKS IN VICTORIA

Together, we've just helped bring into existence the most significant addition to our parks estate in over a decade – 50,000 hectares of protected bushland into Victoria's wonderful parks estate. The Andrews Government announced the creation of three new national parks for Victoria, which will provide permanent protection for over 370 rare and threatened animals, plants and insects.

A commitment to create the new Wombat-Lerderderg National Park (near Daylesford), Mount Buangor National Park (near Beaufort) and the Pyrenees National Park (near Avoca), along with other parks and reserves including a new regional park at Wellsford near Bendigo, has been formally tabled in Victorian Parliament. **This is a win for our wildlife, their habitats and the communities who can enjoy these new parks, whilst protecting their natural values at the same time.** Victoria National Parks Association 24 June 2021

UNDER FIRE extracts

The extent of the environmental devastation wrought by the bushfires will take years to assess. But even before the smoke has fully cleared on our worst fire season in recorded history, the numbers are staggering. Over 12 Million hectares has burned
Over 1 Billion animals perished

Rare frogs of Gippsland Martin's Toadlet *Uperoleia martini*



The forests of Gippsland in north-east Victoria are a frog hotspot. Gippsland not only has the greatest diversity of amphibians in Victoria, it is home to species found nowhere else on Earth.

It was also the epicentre of the state's 2019-2020 bushfire crisis.

Museums Victoria herpetologist Jane Melville has been surveying the frogs of Gippsland since 2016. Her study sites are in the Croajingolong National Park, near the town of Mallacoota. By 11 January, 69 per cent of the park had burnt—and fires have continued to burn in the area in the weeks since.

But Jane's previous experience with frogs and fire make her most concerned about what happens after the embers have cooled.

In 2009, Jane returned to a separate frog survey near King Lake—in the Yarra Ranges to the immediate north-east of Melbourne—after the area was ravaged by the infamous Black Saturday fires. While she was pleased to find frog numbers bouncing back—DNA testing back at the lab told a more troubling story. The frogs were far less genetically diverse—basically, they were inbreeding.

A diverse gene pool allows species to better adapt to change. While a homogeneous gene pool makes species far more vulnerable to things like disease.

Over the last two decades, chytrid fungus has decimated frogs around the world, driving many species to extinction. Now, with fire having ripped through the heartland of Victoria's frogs, Jane fears more species could follow suit. And she holds grave fears for one little-known frog.

EDIT Congratulations to Jane Melville, a past president of ASH, for being awarded Member of the Order of Australia in the Queen's Birthday Honours List, for services to herpetological research and to the museum sector.

<https://youtu.be/vM8vbDPIu-w>

WHY SHOULD WE CARE?

If a frog disappears from a forest and nobody knew it was there in the first place, does it matter?

Ecosystems are a mind-boggling complex web of interactions. When you start to subtract a bee here, a frog and a fish there, you change the equation in ways that are often beyond our ability to predict, Ken Walker says.

Our knowledge of how ecosystems operate is already limited—Ken points to the fact that about 80 per cent of the world's insects don't even have a name.

'We are already in a very fragile state of knowledge and the planet is changing, it's changing rapidly,' he says.

Credits and acknowledgments

Writer Joe Hinchliff **Video** Jesse Taylor Smith

Design and Development

Sandy Houston and Michael Mason

Images and footage courtesy of

Zoos Victoria; Conservation Ecology Centre, Cape Otway; Robertwhyteus

Thanks to

Ken Walker, Jane Melville, Dianne Bray, Joseph Schubert, Kevin Rowe

<https://museumsvictoria.com.au/article/australian-animals-under-fire/#:~:text=Museums%20Victoria%20herpetologist%20Jane%20Melville,area%20in%20the%20weeks%20since>

https://www.environment.vic.gov.au/__data/assets/pdf_file/0015/33081/Martins-Toadlet-Uperoleia-martini.pdf



ENDANGERED FROGS COLLECTED FROM FIRE IMPACTED AREAS FOR SAFEKEEPING

The deadly chytrid amphibian fungal disease and predation by non-native fish have driven large declines in the endangered Spotted Tree Frog, which is found in small parts of New South Wales and Victoria.

In north-east Victoria bushfires and flooding have added to this already perilous state. In response 19 frogs have been collected from the wild for a captive breeding recovery program at Zoos Victoria's Healesville Sanctuary.

The Spotted Tree Frog Project forms part of the Victorian Government's \$51.5 million Bushfire Biodiversity Response and Recovery program, which supports on-ground action to help at-risk species impacted by the 2019/20 bushfires.

The project is also being supported by the Australian Government's National Environmental Science Program through the Threatened Species Recovery Hub and funding from the Australian Government's Bushfire Recovery for Wildlife and their Habitats program, the Calvert-Jones Foundation and Cadbury's Save The Frogs initiative.



Spotted Tree Frog habitat after the fires. Credit Matthew West

Over the past couple of weeks Spotted Tree Frogs *Litoria spenceri* have been collected from fire-affected rivers in the Upper Murray and Wonnangatta areas, and 19 are in quarantine at Healesville Sanctuary where they are being screened for the deadly disease Chytridiomycosis caused by Amphibian Chytrid Fungus.

Zoos Victoria Threatened Species Biologist Deon Gilbert said the frogs are adapting well to their new surroundings and will be managed under strict quarantine and hygiene protocols for the next few months.

"These highly important founders will go on to form the basis of a conservation breeding program at Zoos Victoria," Mr Gilbert said. "We anticipate that in the next few years we will be in a position to begin reintroduction trials at key wild release sites. This program is an optimistic step forward for the conservation of this species and is the result of many decades of intensive work by program stakeholders."

The Spotted Tree Frog is critically endangered across Victoria and New South Wales, and in the past three decades has continued to decline due to a range of threats.

In the aftermath of the 2020 fires, researchers from the Department of Environment, Land, Water and Planning (DELWP), the University of Melbourne and the Threatened Species Recovery Hub conducted field surveys across seven locations in north-east Victoria.

The surveys confirmed multiple bushfires, flash flooding and sediment events, and a high incidence of the deadly fungal disease, had significantly impacted the population.

DELWP, Senior Natural Environment Programs Officer, Glen Johnson, said the surveys undertaken post-fire and last spring confirmed that action needed to be taken. "Taking this small number of frogs with genetic diversity from multiple sites to establish the captive breeding program maximises the potential for successful breeding and longer-term reintroduction programs, which is incredibly important for their survival," Mr Johnson said.

Threatened Species Recovery Hub amphibian ecologist, Dr Matt West from the University of Melbourne has been working closely with the Victorian Government and Zoos Victoria to support their efforts to recover the Spotted Tree Frog for many years.

Dr West said the captive breeding program had to balance impacts on the wild populations now and into the future. "The majority of the frogs collected are juveniles to reduce the potential impact on the remaining wild populations," Dr West said. "If the program is successful, we will release animals back into the wild and increase their resilience to existing threats like disease caused by chytrid, and also future bushfire events."

Another aspect of Dr West's work for the spotted tree frog focuses on identifying and enhancing wild refuge sites for the species in collaboration with partners that include recreational fishing groups. You can read more about the refuge work in their factsheet.

9 July 2021 Threatened Species Recovery Hub, National Environmental Science Programme
https://about.unimelb.edu.au/newsroom/news/2021/july/endangered-frogs-rescued-from-fire-zones-for-breeding-program2?utm_content=story&utm_medium=social&utm_source=facebook

Forwarded to FATS by Wendy Grimm

The FATS meeting usually 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, **however the August 2021 meeting will be by ZOOM platform and not face to face.** 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 3,770 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.



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LAST FATS MEETING 4 JUNE 2021



Roy Farman image by Phillip Grimm

This was the first meeting when COVID restrictions did not limit the number of people who could attend. The main speaker was Roy Farman from the University of New South Wales. Roy is a Ph. D student working on fossil frogs. Roy gave a great presentation entitled “Fossil Frogs – an Australian perspective”. In his talk he showed many of the frog fossils that are coming out of the Riversleigh deposits in north western Queensland.

It is very rare to get an entire skeleton preserved but partial skeletons and isolated bones are common in the more “aquatic” sites at Riversleigh. Perhaps the most surprising result of his work so far, is that all of the fossil frogs found at Riversleigh (from sites ranging in age from 25 million years old to 10 million years old) are from extant genera. No new genera were found. This means that the genera of Australian frogs have a long ancestry and were generated within 10 million years of the separation of Australia from Antarctica.

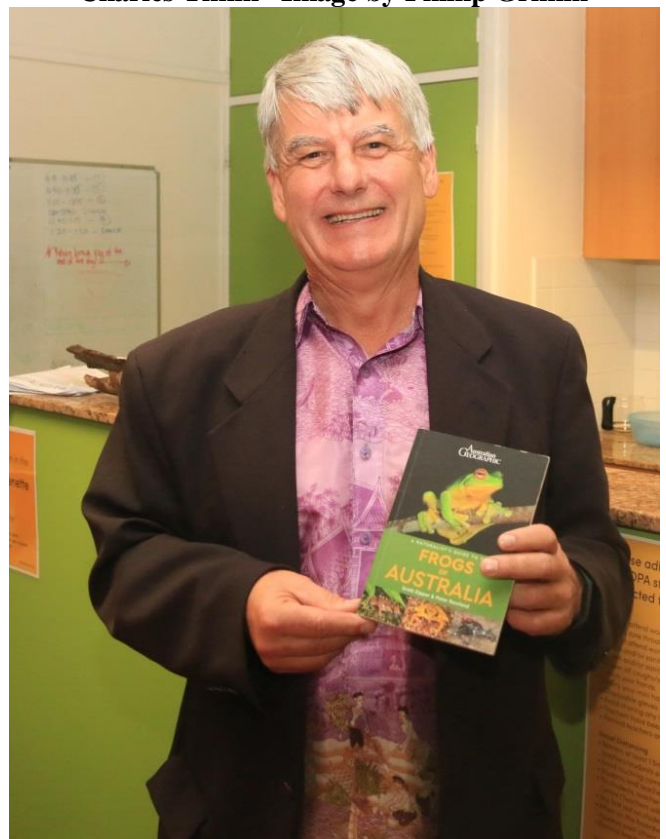
In addition, some of the genera present were not expected. Riversleigh, during the Miocene, was tropical and contained large areas of rainforest. It was also low-lying terrain. Amongst the fossil frogs are a number of species of *Phyloria* (Mountain Frogs). The modern-day *Phyloria* are only known from remote mountain-top areas, not from lowland rainforest. These frogs are also present as fossils in another site (Mt Etna) in southern Queensland during the Pleistocene (1.5 million years ago). Mt Etna was also lowland rainforest. This implies that *Phyloria* have only become mountain-dwellers in the last 1.5 million years – but why?

Arthur White also gave a talk about how environmental DNA can be used to find scarce or supposedly extinct species. He showed how a frog from Brazil that was only known from one specimen collected 68 years ago was regarded as extinct. As the DNA was available from the preserved specimen, a team of scientists developed a field sensor probe that could analyse water samples and test for the presence of this frogs’ DNA. Within a year of sampling across a large area of Atlantic coastal rainforest, they had a hit; shortly afterwards they had the first

live frog in their hands. E DNA appears to be an extremely useful tool to find rare or elusive species, so long as a sleeve an environmental signal. Frogs are ideal as they slough their skins regularly and poop often, leaving a signal that the sensor can detect.

Arthur then gave a talk about the efforts to save *Heleioporus*, the Giant Burrowing frog, in Victoria. This species is uncommon in Victoria. During the drought years of 2016 to 2019 no detections of this species were made in Victoria. It was feared the species may have become a victim of climate change. Scientists from the Arthur Rylah Institute undertook detailed searches for the frogs once the drought broke in 2020. They managed to locate *Heleioporus* in a secret location in the Gippsland. Given the scarcity of these frogs, it was decided to collect some of these frogs and bring them into captivity where they could be bred up and potentially re-released into the wild. Melbourne Zoo set up holding and breeding facilities for the frogs, which have now bred. No releases of tadpoles will occur yet until safe habitats have been found for the frogs.

Charles Timm Image by Phillip Grimm



At the end of the meeting, new member Charles Timm, gave a presentation about his garden and frog ponds in New Zealand. Charles created a large area of habitat for Green and Golden Bell Frogs *Litoria caerulea* and was extremely successful. The frogs quickly colonised the new ponds and have bred there ever since. **Arthur White**