

NEW YEAR 2022

Happy New Year from Frogs Victoria!

We are looking forward to seeing you in person again this year (starting on March 3rd with the AGM). If you are a member in regional Vic or can't make it, you can send a proxy vote to us – details [on the website](#). And as always, we will continue to endeavour to record our talks throughout the year for you to enjoy online.

This issue of Pobblebonk has a decidedly *loud* feel to it – read about Victoria's latest frog species, the Screaming Tree Frog, *Litoria quiritatus*, as well as our usual round up of news and frog fun, the latest research, and stories. Big thanks to all of our contributors!

Thank you all for your continued support. We wish you all the very best for a happy and healthy 2022 and hope to see you soon.

For the frogs,
Lynette Plenderleith, Pobblebonk Editor



Dawn Nelson, in Melbourne's north-eastern suburbs sent us this photo of her gorgeous garden resident, an Emerald Spotted Tree Frog (also known as Peron's Tree Frog or the Maniacal Cackle Frog), *Litoria peronii*. Dawn says that she hears their laughing croaks and has seen them hanging out in her hanging basket, a watering can, and climbing her fence!

Emerald Spotted Tree Frogs are fairly common around Victoria – they are best distinguished by their distinct, cross-shaped pupils as well as their emerald-green spots and laughing call.

[Image Description: An Emerald Spotted Tree Frog pokes its face and toes out of a plastic hanging basket drainage hole]

AROUND THE (PIT) TRAPS

[Giant Burrowing Frogs are growing up at Zoos Victoria](#)

[New home for Growling Grass Frogs in Rockbank](#)

[University of Melbourne genetics research aims to help threatened frogs](#)

[Goulburn Murray Catchment Management Authority calls 2022 The Year Of The Frog](#)

[Relict population of Toadlets found](#)

Got a news story? Email us at ed@frogsvic.org

FROGS VICTORIA AGM 3RD MARCH – ALL WELCOME

Frogs Victoria Annual General Meeting - The Elgin Inn, Hawthorn, 7:30 pm, 3rd March 2022

The AGM is an opportunity for members to hear a summary of Frogs Vic's 2021 and to help direct the 2022 year. It is also the best time of year to get involved in the committee, either as a member, or by voting for the elected members.

Please forward agenda items to secretary@frogsvic.org by 28th February 2022.

All are welcome to attend the meeting, but only financial members are eligible to vote or be nominated to a role. You can apply for membership at www.frogsvic.org/membership. If you are a member unable to attend the meeting but wish to vote, notification of proxies can be sent to secretary@frogsvic.org before the meeting. Your proxy does not need to be a Frogs Vic member.

If you are interested in nominating for a position on the committee, please have a look at our Committee Roles and Responsibilities document at www.frogsvic.org/committee for more details. Please email secretary@frogsvic.org if you would like to nominate yourself for a position.

Please join us Thursday 3rd March 2022, from 6 pm - Meeting starts 7:30 pm at Elgin Inn 75 Burwood Rd, Hawthorn VIC 3122

Previous AGM minutes can be found at www.frogsvic.org/agm.



FROGS ON IN VICTORIA

February

8th [Discover the frogs and micro bats of Merri Park Wetland](#) 7-8pm. Guided tour of Merri Park Wetland to monitor microbats and listen and look for local frog species. Family friendly event. Meet near the western gate (Merri Creek side) of the wetland, Merri Park Northcote, see [Google map](#); **Merri Creek Management Committee**

23rd [Discover the frogs and micro bats of Moomba Park](#) 7-8pm. Guided tour of Moomba Park, Fawkner to monitor for microbats and listen and look for local frog species. Family friendly event. Meet at car park near the Moomba Park tennis club, see [Google map](#); **Merri Creek Management Committee**

26th [Frogs of the Yarra Ranges: Identification, Ecology and Conservation](#) 10-11:30am; Webinar with David De Angelis; Online; **Yarra Ranges Council**

March

3rd [Frogs Victoria Annual General Meeting](#)
7:30pm; Elgin Inn, Hawthorn; **Frogs Victoria**

April

7th [The Effects of Climate Change on Frog Development, Physiology and Immunity](#) 7:30pm; Talk by Dr Laura Brannelly; Elgin Inn, Hawthorn; **Frogs Victoria**



Got an upcoming event? Submit it to pobblebonk@frogsvic.org and we'll include it next time!

GROWING GROWLERS

Stephanie Tomic, Animal Keeper, Melbourne Museum

It may sound obvious- but some species of frogs are easier to breed than others. One relatively easy species to breed is the Growling Grass frog, *Litoria raniformis*. Melbourne Museum are lucky enough to have a population that we breed when we need to grow our population, with the extra frogs used to swap with other organizations for other animals needed for our collection.

We set up our group of breeding individuals in a modified IBC (Intermediate Bulk Containers) on a back of house balcony area in spring/summer, in full sun. This species is quite robust and very happy in water, so with a bit of floating board and some water plants they are right as rain. They respond to warmer weather and storms, growling their lungs out, and soon eggs appear. The adults can be removed at this stage, or they can be left to enjoy the weather a bit more. They do have to be separated before metamorphs appear, as this species is well known for its cannibalistic behaviour!

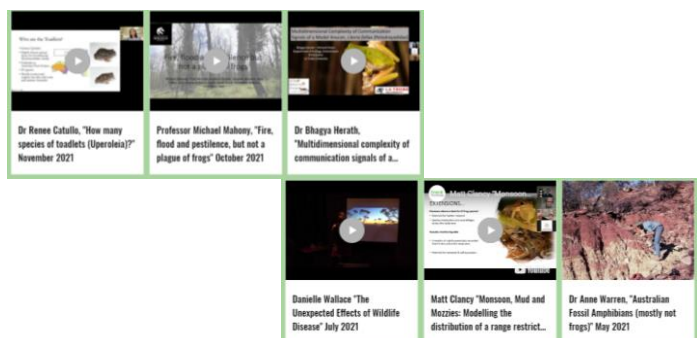
Tadpoles eat the algae that has naturally grown in the water, and if more food is needed frozen cos lettuce and fish flakes are added. Within 3 months they grow up to 10 times their original size and hind legs form, and within another couple of weeks their forelimbs emerge, tails shrink, and they start to emerge on land.



Steph is an animal keeper at the Melbourne Museum and Frogs Victoria Committee member. Follow her on Instagram @frogandfigbotanicals

THANKS TO OUR 2021 SPEAKERS!

- ☛ [Dr Anne Warren](#)
- ☛ [Matt Clancy](#)
- ☛ [Danielle Wallace](#)
- ☛ [Dr Bhagya Herath](#)
- ☛ [Professor Michael Mahony](#)
- ☛ [Dr Renee Catullo](#)



Frogs Vic could not hold events without the generous speakers who share their time, energy and expertise. We thank you!

NEW VICTORIAN FROG SPECIES DESCRIBED

Lynette Plenderleith, Frogs Victoria

In 2010, I began my PhD research – to investigate the origins of the Bleating Tree Frog, *Litoria dentata*, population that lives on Lord Howe Island. The Lord Howe Island Group rose out of the ocean as a volcano and therefore the salt-phobic amphibians would have had to have been carried there by something more inclined to cross the seas. Like people..

Once I had collected genetic samples (a tiny piece of frog toe tissue) from Lord Howe, I wanted to compare the genetic patterns of those frogs with some from mainland Australia, the only place in the world the Bleating Tree Frog is found. Whilst we (a whole team of ecologists, geneticists and academics) were studying the frogs up and down the east coast, it became apparent that there were probably two “types” of Bleating Tree Frog. The frogs in the south looked and sounded very subtly different to the northern ones.

Just recently, further work was carried out to properly investigate those differences. The outcome was a bit of a surprise too – what had been classified as the Bleating Tree Frog since the 1800s was actually three species!

The research team led by [Jodi Rowley](#) and [Steve Donnellan](#) analysed genetics, frog size, shape and colour and the sound of the frog’s advertisement calls to assess the differences between the frogs from different regions. They discovered that there are three distinct genetic lineages that differ in size, colour and sound.

The team determined that the Victorian/south-east New South Wales version, only fairly recently documented in the state by Graeme Gillespie and Kwai Chang-Kum, is sufficiently different from the others to be considered a separate species. This southern-most Bleating Tree Frog is now known as the **Screaming Tree Frog, *Litoria quirritatus* sp. nov.** The “sp. nov.” indicating that it is a species nova (“new species”) – a species only recently described by the scientists. It is currently listed as Critically Endangered in Victoria under the Flora and Fauna Guarantee Act.

The frogs on Lord Howe Island are still considered Bleating Tree Frogs, *Litoria dentata*, as we had discovered that they were (probably accidentally) shipped over from northern New South Wales. The third species, the Slender Bleating Tree Frog, *Litoria balatus*, is the most northerly found species – in Queensland.

Check out the links below for more details!

Bleating Tree Frog, *Litoria dentata*,
now considered a different species to its Victorian relative,
the Screaming Tree Frog, *Litoria quirritatus* sp. nov.



Gillespie & Kum’s documentation of *L. dentata* in Victoria:

[Gillespie, G. R., & Kum, K. C. \(2011\) The bleating tree frog “*Litoria dentata*” Keferstein \(Anura: Hylidae\): An addition to the frog fauna of Victoria. *The Victorian Naturalist*, 128\(6\), 256–259](#)

The paper from my PhD research:

[Plenderleith, T.L., K.L. Smith, R.D. Reina & D.G. Chapple \(2015\) Human-assisted invasions of Pacific islands by *Litoria* frogs: a case study of the bleating tree frog on Lord Howe Island. *PLOS ONE* 10\(5\): e0126287. doi:10.1371/journal.pone.0126287](#)

The new descriptions of the three species:

[Rowley, J.J.L., Mahony, M.J., Hines, H.B., Myers, S., Price, L.C., Shea, G.M. & Donnellan, S.C. \(2021\) Two new frog species from the *Litoria rubella* species group from eastern Australia. *Zootaxa* 507\(1\), 1-41](#)

Lynette is Co-founder and President of Frogs Victoria. Find her on Twitter or Instagram @netteplenders

STUDYING THE MULTIDIMENSIONAL COMPLEXITY OF COMMUNICATION SIGNALS OF *LITORIA FALLAX*

**Dr Bhagya Herath, Dr Richard Peters, Dr Jose Ramos, David DeAngelis and Angela V. Pinilla,
Animal Behaviour Group, La Trobe University**

To fully understand the functional and evolutionary significance of complex communication systems in animals, we must examine each dimension of communication together with possible genetic, environmental and ecological constraints. With the extensive use of acoustic signals, frogs are excellent models for studying the evolution of such communication systems. However, there is a lack of detailed knowledge on the multi-level complexity of communication systems in frogs. Australia's high diversity of frogs gives a great opportunity to study complex communication further.

There is a long history of studies of communication systems in Australian frogs. Australian scientist Murray Littlejohn, regarded by many as the "godfather of frog recordings", was a pioneer in the field and started making acoustic recordings of frogs in the 1950s with basic equipment that he adapted for use in the field.

The Eastern Dwarf Tree Frog, *Litoria fallax*, is an excellent model system for further studies of anuran communication, given its complex communication system and wide and common distribution along the east coast of Australia. Moreover, this species has been accidentally translocated and breeds in greater Melbourne, which is assumed to be a result of transportation with fresh food produce from New South Wales and Queensland ("banana box frogs"). The [La Trobe University Animal Behaviour Group](#) has been studying this species because of their ability to thrive in ecological conditions nearly 600 km away from their natural distribution.

The main objective of this study was to quantify the complex communication system of *L. fallax*, in particular to quantify both the acoustic and visual signalling repertoire of the species with information on geographic variation of the signals along their broad distribution. This study comprised a combination of fieldwork and an accompanying experimental playback component.

Male *L. fallax* emit a characteristic loud acoustic signal during the breeding months in order to attract conspecific females from around the semi-permanent or permanent pools the species use in spawning. Although *L. fallax* may call throughout the year, calling and mating are most common during spring and summer. Therefore, fieldwork was mainly done in the summer months at 18 study sites, comprised of 14 sites within the natural distribution of the species (NSW and QLD) and four sites from Melbourne, which is outside the natural range of the species.

Continued on Page 6

3D printed
tiny frog models



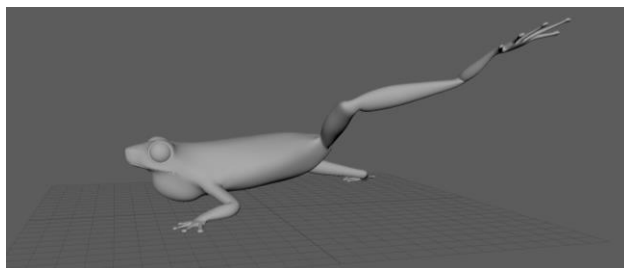
Male *Litoria fallax*
By Jose Ramos



Dr Bhagya Herath
during fieldwork

STUDYING THE MULTIDIMENSIONAL COMPLEXITY OF COMMUNICATION... CONT FROM PAGE 5

By integrating multiple levels of analysis in investigating how different components of communication signals function across contexts, it was possible to identify previously unknown multiple levels of complexity in both acoustic and visual signalling repertoires of *L. fallax*, providing novel data on the complex communication system of an Australian anuran. While generating data on the behaviour is vital in species conservation practices, this study encourages undertaking detailed careful and systematic investigation of communication systems of the wonderful and diverse Australian frog fauna.



3d Model of the frog in making
By Angela Pinila

Main references

Gillespie, G., & Clemann, N. (2000) The Eastern Dwarf Tree Frog *Litoria fallax* (Peters)(Anura:Hylidae): a Recent Introduction to Victoria? *Victorian Naturalist*, 117(2), 60-62

Anstis, M. (2013) Tadpoles and Frogs of Australia, New Holland, London.

Herath, B. (2021) Multidimensional complexity of Communication Signals of a Model Anuran, *Litoria fallax* (Pelodrayadidae), amid Genetic, Ecological and Social Constraints (Unpublished doctoral dissertation), La Trobe University, Melbourne

Bhagya is a biologist and behavioural ecologist of the Animal Behaviour Group of La Trobe University. Find her work on [the Animal Behaviour Group website](#).



THE UNIVERSITY OF
MELBOURNE

CALL FOR PHD STUDENTS AMPHIBIAN CONSERVATION, GENOMICS, AND SYNTHETIC BIOLOGY



*Want to help save frogs declining from a pandemic disease?
Interested in functional genomics and using the latest methods in synthetic biology?*

[The One Health Research Group](#) at the University of Melbourne is recruiting PhD students to investigate advantageous genetic traits against the disease chytridiomycosis and develop synthetic biology methods to increase disease resistance in declining frog species, and/or decrease virulence in the fungus.

The team's research includes a Genome Wide Association Study and developing RNA interference approaches. The projects are **funded** through the Australian Research Council, and PhD scholars will be advised by Drs Lee Skerratt, Tiffany Kosch, Lee Berger, members of the One Health Research Group and collaborators including Zoos Victoria. The project will be based at the Melbourne Veterinary School Werribee campus.

[Click here to read the full advertisement,
including eligibility criteria and how to apply](#)

For more information about The One Health Research Group:

[Lab webpage](#) | [Facebook page](#) | [Twitter](#)

AN INTRODUCTION TO THE SCREAMING TREE FROG, *LITORIA QUIRITATUS*, IN EAST GIPPSLAND

David De Angelis, Frogs Victoria

I was fortunate enough to visit a conservation property in far East Gippsland that supports the recently described Screaming Tree Frog, *Litoria quiritatus*, on two occasions this summer. The first visit took place while accompanying Conservation and Land Management students from Holmesglen Institute on a fauna survey of covenanted forest affected by the Black Summer fires, while on the second I was treated to a tour of the property's wetlands by the landowner. Not only were adult frogs found and later reported to be calling in response to recent heavy rain, but it was fantastic to later find a metamorph recently emerged at the edge of a wetland. Given the species' limited known range and small number of populations in this corner of Victoria, hopefully it continues to do well on the few properties where it's known to occur.

Importantly, given the risks that can be posed to endangered frogs as a result of finding and photographing them (mainly from disease transmission, habitat disturbance and disseminating their locations), strict hygiene procedures need to be followed, and permission or guidance sought from experts responsible for managing or studying those populations.

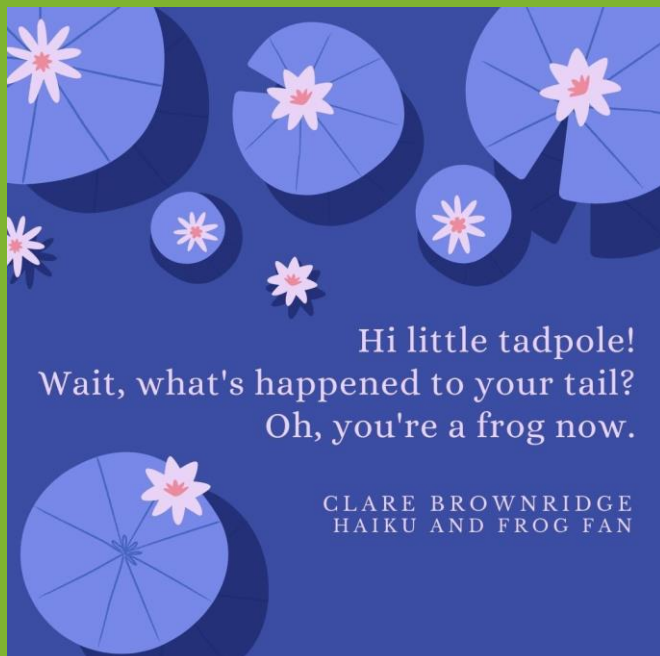


A recently emerged Screaming Tree Frog, *Litoria quiritatus*, in far East Gippsland, approaching the end of its development.



An adult male Screaming Tree Frog, *Litoria quiritatus*, in far East Gippsland.

Dave is Treasurer of Frogs Victoria and Associate Editor of Pobblebonk.



NEW VIC FROGS RESOURCES WEBPAGE

As a networking hub for all things Victorian frogs, we have put together a page of helpful links for you to peruse and utilise! It's designed to help point enquiries in the direction of who can help with frog-related advice, services and resources.

Check it out at

www.frogsvic.org/resources



By Madeleine Karutz, freelance illustrator and animator. Find her at www.madeleinekarutz.com or on Instagram @memeleine

[Image Description: Two Southern Corroboree Frogs that are black with yellow splotches in a leafy wet bog. One is in the water and one is sitting on a rock holding an ant in its webbed hand. The one on the rock is looking at the reader and says 'Getting bogged down? Well I'd argue that it's quite the treat' and the second one in the water says 'Love me a bog']

SHOW US YOUR FROGS!

Have you got an idea for a talk? It doesn't have to be scientific, it doesn't have to be long, it just has to be about frogs!

We are looking for speakers for 2022 and would love to see you talk. Please email events@frogsvic.org

THE FROGS ARE CALLING YOU

Frogs Vic is collaborating with Department of the Environment, Land, Water and Planning to run a citizen science program in regional Victoria.

If you live in or travel to northern or western Victoria, you are eligible to join in! More information can be found at www.frogscalling.org.

GOT MEMBERSHIP?

Frogs Vic membership fees:

- Pay for speakers' dinners, drinks and gift
- Pay Frogs Vic admin costs (including Zoom registration for online meetings)

Thanks to everyone that supports us financially. We could not continue to operate without you!

If you are not a member and would like to help support Frogs Vic, it's easy to sign up at www.frogsvic.org/membership Current pricing is \$30 Full Membership / \$15 Concession.

Have something you'd like to contribute to Pobblebonk? If you have an idea for a newsletter article, or a photo you'd like us to include, please email the editor: ed@frogsvic.org

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