1 JUNE 2025 WWW.QLDFROGS.ASN.AU WINTER EDITION

FROGSHEET

Mixophyes iteratus; Photo by Jono Hooper

IN THIS ISSUE

Litoria wilxcoxii; Photo by Ashley Keune

Thank you to our supporters!

Public Trust Fund: Total now stands at $12,376.31

Any donations over $2.00 are tax deductable, and all are added to our **research grant fund**, which is awarded annually

President's Report

Hello once again to all of our QFS members. This year is going so fast as we're already approaching the midpoint of the year. Winter has now arrived, yet the wet weather continues in Southeast Queensland. I'm hoping Winter can bring some cooler and drier weather with lots of Sunshine! Many areas of the state have had plenty of rain for the foreseeable future.

On Tuesday, April 29th, at 7:00 pm, the QFS hosted its first webinar of the year, featuring special guest Sean Morrow. Sean's expertise in designing frog ponds and landscaping in general made the session highly sought after, with registrations full and of these, about 45 attendees showed up on the evening. The webinar, which concluded around 8:45 pm, received excellent feedback. Sean Morrow, a leading expert in his field in SEQ, is a great friend of ours, and we sincerely appreciate his time and effort in sharing his knowledge. Special thanks also goes out to Jono for his behind-the-scenes work organizing and promoting this event. Given the popularity of the webinar, we may plan another session with Sean later this year for those who missed out.

The annual Queensland Garden Expo is just around the corner, taking place at Nambour Showgrounds on July 11th, 12th, and 13th. This event is perfect for anyone with a passion for gardening, whether you're a seasoned green thumb, a beginner, or simply looking for an enriching day out.

The Queensland Frog Society will once again have a stall in the Living Backyard section of the expo, which is kindly sponsored by the Sunshine Coast Council. We extend our gratitude to the council for providing us with this opportunity again. The Garden Expo is one of our busiest events of the year, drawing curious visitors seeking advice on attracting frogs to their gardens, identifying species, and crafting frog friendly habitats like ponds and hotels. This year, a QFS member will also deliver a talk on frog identification and fostering frog friendly gardens at one of the free live stages which is a wonderful chance to share knowledge with the public.

To ensure the smooth running of our stall, we're always in need of volunteers, and it's heartening to see many new faces stepping forward this year. The quick response from members eager to contribute has been truly encouraging, and we look forward to collaborating with you at the event.

As the end of the financial year approaches, now is an excellent time to support the Public Trust Fund. Donations to this fund enable students and researchers from tertiary institutions to secure grants, which help uncover vital information about frogs. Such findings could play a crucial role in safeguarding the future of numerous frog species. If you're keen on making a difference, you can donate to the Public Trust Fund via our website and remember that donations over $2 are tax-deductible.

Continued...

A big thank you goes out to everyone contributing recyclable containers to the Queensland Frog Society as well. In less than 18 months, this initiative has raised $490.50 for the Trust Fund! Our team member number for donations is C11218433, and feel free to share it with family and friends.

Take care of yourselves, look out for each other and our environment.

Regards
Ashley Keune

QUEENSLAND'S FOSSIL FROGS REWRITE HISTORY

New fossil evidence from south eastern Queensland is rewriting the evolutionary timeline of Australia's beloved tree frogs. In a discovery that jumps 30 million years ahead of previous estimates, researchers have identified *Litoria tylerantiqua*, Australia's earliest known tree frog species, from fossilised remains near Murgon.

Dating back to the Early Eocene epoch around 55 million years ago, this newly named species belonged to a lush ancient ecosystem that also included bats, snakes, marsupials and possibly the world's oldest songbirds. Remarkably, these fossils show that tree frogs were thriving in Australia far earlier than once believed, at a time when the continent was still connected to Antarctica and South America through the last remnants of Gondwana.

The discovery sheds light on a long standing mystery: when did Australian and South American tree frogs diverge from their common ancestor? Previously thought to be around 33 million years ago, this research pushes that split back to at least 55 million years.

The study used advanced 3D scanning techniques to compare the fossilised bones to modern specimens, confirming their place within the tree frog family Pelodryadidae. It also honours renowned frog researcher Michael Tyler, with the new species named in his memory.

This discovery is not just about deep time. It has important implications for the present. Understanding how frogs have survived past climate shifts helps us predict how they might fare in today's warming world, especially species now at serious risk like the Southern Corroboree Frog.

For frog lovers and conservationists alike, these ancient remains tell a story of resilience and offer a reminder that the more we learn from the past, the better equipped we are to protect the future.

A NEW FRONT IN THE FIGHT AGAINST CANE TOADS

A surprising new approach to cane toad control could see the invasive species turn on itself, thanks to a clever genetic twist.

Researchers at Macquarie University have developed what they're calling "*Peter Pan toads*" - cane toads that never grow up. By switching off a single gene responsible for the hormone that drives metamorphosis, these toads remain in their tadpole stage indefinitely. The result? Larger, long-lived tadpoles that are hyper-cannibalistic, consuming up to three times more eggs than regular tadpoles.

Professor Rick Shine, who leads the project, believes this could be a breakthrough in controlling cane toads in Australia. With up to 200 million cane toads across the north and traditional methods like "toad busting" falling short, the idea is to fight biology with biology. Cane toad tadpoles already prey on their own species, but these gene-edited versions may dramatically amplify that effect.

The challenge? These tadpoles can't reproduce. So researchers are exploring ways to breed a few adults by reintroducing the missing hormone, potentially leading to mass production of non-breeding cannibal tadpoles.

While the idea of releasing genetically altered toads may raise eyebrows, especially given the species' disastrous introduction in 1935, early trials are cautious and strictly controlled. Field tests in Western Australia are on the horizon, pending risk assessments.

Experts say the risks appear low since the gene knockout prevents reproduction. Still, the ecological impact of large, long-lived tadpoles remains to be seen.

As the science evolves, these forever-young toads could become unlikely allies in restoring balance to our native ecosystems.

SOUTHERN CORROBOREE FROG GENOME SEQUENCED FOR THE FIRST TIME

Australia's most striking frog, the critically endangered southern corroboree frog, has taken a major leap forward in conservation science. Researchers have successfully mapped its entire genome, offering new hope for the species once considered functionally extinct.

Famous for its vivid black and yellow stripes, the southern corroboree frog survives only in a small alpine region of Kosciuszko National Park. Climate change and the deadly chytrid fungus have pushed this species to the brink, with survival now largely dependent on zoo-based breeding and reintroduction programs.

After a decade of work, researchers have revealed that this tiny frog carries one of the largest genomes ever recorded in any amphibian. The genetic material, three times the size of the human genome, is rich in non-coding DNA and repeated sequences. Scientists are still working to understand what this means for the frog's unique evolutionary story.

The completed genome provides the foundation for vital new research. Conservation biologists are now exploring whether genetic traits could be identified to improve resistance to chytrid fungus through selective breeding or advanced gene editing. These efforts may eventually guide strategies for saving other frog species facing similar threats.

The southern corroboree frog has become a powerful symbol of the dual crises of biodiversity loss and climate change. As one of the 110 priority species listed under the national Threatened Species Action Plan, its survival could serve as a model for future conservation science.

While the sequencing achievement marks a major milestone, it is just the beginning. Continued funding and support are essential to ensure that the science translates into real-world outcomes for this iconic and fragile frog.

Executive Committee

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A WARM WELCOME TO NEW QFS MEMBERS!

Carolyn O'Neill, Sonya Nicol, Ruth Robertson, Olivia Tyson, Nick Rogers, Cherryl Baker, Ariel Roberts, Mary Cook, Jade Franklin, Rae Bassett, Isabelle Erbacher.

DATES FOR YOUR DIARY...

11-13 July 2025
QLD Garden Expo, Nambour

2-3 August 2025
Off Grid Expo,
Gympie Showgrounds

2pm-3.30pm 17 August 2025
Toowoomba Bromeliad and Succulent Society Inc.

PLEASE EMAIL **EDITOR@QLDFROGS.ASN.AU** WITH ARTICLES FOR INCLUSION IN FROGSHEET!

DEADLINE FOR THE WINTER FROGSHEET CONTRIBUTIONS IS

27 JUNE 2025