




SPRING 2021

FROGSHEET

<http://www.qldfrogs.asn.au/> |  questions [at] qldfrogs.asn.au |  /qldfrogsociety |  @qldfrogs

A healthy green treefrog in happier times, prior to the recent die-offs affecting this species. Credit: Ed Meyer
An update on the recent die-off of green treefrogs on Page 3



QFS Annual General Meeting

2:00 pm, October 30th 2021, via Zoom

More details to follow



A Kroombit Tinker Frog. Credit: Ed Meyer. This species is one of eight frogs at 'high risk' of extinction by 2040. More on Page 5

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President's Report

HELLO AGAIN, ALL OF our QFS members. It has been an interesting period since our last newsletter, with ongoing issues of lockdowns, cancellation of events and fewer people attending venues, but we have been very lucky in Queensland compared to many other parts of Australia and the world. I hope everybody is managing to stay positive and make it through okay.

QFS has had a number of presentations cancelled or postponed recently, but we were lucky enough to still be part of the Queensland Garden Expo, at Nambour from the 9–11th of July. The event was quiet compared with previous years, most likely due to the recent lockdown, and the wet weather also reduced numbers on the first day. Despite lower numbers than we had hoped for, we still managed to speak to lots of people about how to help frogs thrive in their backyards. Many people were also interested in

identifying frog species, as well as how to identify toads correctly.

A big thank you to all the volunteers that helped run the stall at the Queensland Garden Expo, especially to our new volunteers. It was lovely seeing some new faces helping at our displays and I appreciate the effort that you took to get to Nambour for the event. Overall, it was definitely a successful event for us with the QFS sharing lots of information with the general public.

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

Warm regards,

Ashley Keune



QFS at the QLD Garden Expo 2021

THE QLD FROG SOCIETY attended the QLD Garden Expo held in Nambour from the 9–11 July 2021. The event, like most others, had been cancelled in 2020 due to the COVID-19 pandemic, so we were excited to be back!

Our 2021 display looked fairly different compared to previous years, partly due to the fact the entire 'Living Backyard' section of the expo had been relocated (due to COVID-19 considerations), meaning we were now placed on bitumen instead of soggy grass. This year's display also featured a new 1.6-meter-tall footpath sign advertising our Kroombit Tops Threatened Frogs project. Many people actually commented on the sign and expressed interest in the project.



*The QFS display at the Queensland Garden Expo 2021 in Nambour.
Credit: Jono Hooper.*



*Queensland Garden Expo 2021 attendees at the QFS display.
Credit: Jono Hooper.*

Over the course of the 3-day expo we welcomed almost 20 new members to the society. As the event coincided with the launch of our online membership sign-up form, we took advantage of the public's familiarity with QR codes by creating our own. When scanned, the QR code took new members straight to the online form and payment facility, meaning they could pay via credit/debit card rather than only by cash, which was always a limiting factor in previous years.

The frequent showers on the first day noticeably impacted crowd numbers. In contrast, fine, sunny weather helped draw people out over the remaining

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QFS President Ashley Keune engaging in COVID-safe amphibian-related discussions with Queensland Garden Expo attendees.

Credit: Jono Hooper.

two days. Even though crowd numbers were down on previous years, we received many amphibian-related enquiries, and we even had a couple travel all the way from Canungra (in the Scenic Rim) just to see us at the expo!

Unfortunately, this year was the first year Jenny (our Secretary) could not attend – but it did mean she could finally enjoy her birthday with family at home! Our President, Ashley, and I were therefore responsible for picking up, setting up, packing up and manning the display. Ashley put some additional effort into the display's presentation, which was well-received.

We were again very grateful to several other volunteers who answered our call-out for helpers over the three-day event. A big thank you to Victoria, Ray, Mariel and Julia for their assistance and sharing of knowledge. There were many laughs had, and it was great to meet these members and to see their enthusiasm for frogs and volunteering. We look forward to next year's event, fingers crossed without the masks!

Jono Hooper

An update on the recent die-off of green treefrogs

EARLY THIS WINTER, QFS began receiving reports of sick and dead green treefrogs in peoples' backyards and local parks. To better understand the scale of the problem, we put a call out to QFS members and the general public to report sightings of sick, dying and/or dead frogs. We also set-up an online submission form on our website (www.qldfrogs.asn.au) to collect more detailed information. This information may help us to better understand the reasons for the recent die-off.

“... symptoms are consistent with chytridiomycosis... a potentially fatal disease caused by an exotic fungal pathogen...”

Since mid-July, we have received over 160 online submissions, with the majority (84) coming from South East Queensland. We also received a large number of records from eastern New South Wales (80), as well as one or two records from Western Australia and the Northern Territory (Figure 1).

We would like to thank everyone who took the time to submit records, and would encourage members to continue to submit sightings of sick or dead frogs over the coming weeks and months.

What has caused the recent die-off?

The vast majority of records submitted to QFS have been of sick or dead green treefrogs (*Litoria caerulea*).



Figure 1. Map of Australia showing the distribution of sick and dead frog records submitted to QFS via our online submission form.

In most instances, frogs were found sitting out by day exhibiting symptoms consistent with chytridiomycosis ('kit-ridee-oh-my-co-sis'), or 'chytrid' for short, which is a potentially fatal disease caused by the exotic fungal pathogen *Batrachochytrium dendrobatidis* (also known as Bd or the amphibian chytrid fungus). Symptoms of chytrid include unusual posture, lethargy, discolouration of the skin, irregular sloughing, and/or redness (erythema) on the underside of the body and limbs (Figure 2). Preliminary testing by pathologists working with the Australian Museum supports this hypothesis, with sick

Continued on next page...

or dead green treefrogs from New South Wales testing positive for the amphibian chytrid fungus.

Not the first amphibian die-off event

The amphibian chytrid fungus has been implicated in previous die-offs in Australia and abroad as far back as the late 1970s. In Australia, chytrid has caused the extinction of a number of stream-breeding frogs including the southern dayfrog, southern and northern gastric brooding frogs, sharp-snouted dayfrog and mountain mistfrog. Numerous other species, including the critically endangered corroboree frog and Kroombit Tops tinkerfrog, have also been pushed to the verge of extinction by this disease.

In Australia, chytrid has had a disproportionate impact on stream-breeding frogs inhabiting upland or montane rainforest, where cooler, wetter conditions favour the persistence, growth and reproduction of amphibian chytrid fungus. While less common, die-offs attributable to chytrid have been noted in some species inhabiting warmer/drier habitats during periods of cooler weather (e.g., in winter). These conditions favour growth and reproduction of the fungus, and can suppress frogs' immune systems.

Since the mid-to-late 2000s, reports of chytrid-associated frog deaths have become less common, suggesting that affected species might be 'adapting' or evolving greater immunity to the amphibian chytrid fungus. The recent die-off of green treefrogs, however, indicates that this species remains susceptible to chytrid, particularly during periods of cooler, wetter

weather such as that recorded in South East Queensland and southern states as a result of the

recent La Niña event. How other frog species have fared over winter is difficult to say, with the majority of native frog species leading secluded lives in bushland or wetland areas.

What can QFS members do?

With winter drawing to a close and warmer weather returning to Australia's southeast, it is likely that the number of frogs succumbing to chytrid will decline, and we hope that sightings of sick and dead animals will then begin dropping off.

However, further testing of sick and dead frogs is still needed to confirm that the recent die-off is attributable to the amphibian chytrid fungus, or whether other pathogens are involved. We therefore ask QFS members to continue reporting sightings of sick and dead frogs via Facebook or our website, so that we can facilitate collection and testing of affected frogs by qualified pathologists/disease experts.

We also encourage QFS members venturing out into the bush to report sightings of any sick or dead frogs, especially those species associated with wet forest streams and creeks that were severely impacted by amphibian chytrid in the past, such as the cascade treefrog (*Litoria pearsoniana*), tusked frog (*Adelotus brevis*), Fleay's barred frog (*Mixophyes fleayi*), and giant barred frog (*M. iteratus*).

If you are concerned about the welfare of any sick or dying frogs, we recommend you contact a qualified veterinarian for advice regarding appropriate care and treatment.

Ed Meyer and Jono Hooper



Figure 2. A moribund green treefrog (*Litoria caerulea*) exhibiting symptoms of chytridiomycosis, including discoloration of the dorsum/back and redness (erythema) on the underside of the body and limbs. Like most of the other sick/dead treefrogs reported this winter, this animal was found sitting out in the open during the day. Credit: Bernadette Williams.

Just published: Australian frogs most at risk of extinction

ON 20TH AUGUST, A STUDY published in the journal *Pacific Conservation Biology* reported that eight of Australia's amphibian species are at high risk (greater than a 50% chance) of extinction by 2040, with chytrid highlighted as the primary threat. The researchers also identified five species at moderate to high risk (30–50% chance) of extinction by 2040, but for those species, climate change represented the largest threat.

The species at high risk of extinction within the next 19 years are listed below, along with the probability of extinction represented as a percentage.

- Northern gastric-brooding frog (*Rheobatrachus vitellinus*) – 95%
- Mountain mist frog (*Litoria nyakalensis*) – 94%
- Yellow-spotted tree frog (*Litoria castanea*) – 93%
- Northern tinker frog (*Tadactylus rheophilis*) – 92%
- Kroombit tinker frog (*Tadactylus Pleione*) – 70%
- Southern corroboree frog (*Pseudophryne corroboree*) – 66%
- Baw Baw frog (*Philoria frosti*) – 65%
- Armoured mist frog (*Litoria lorica*) – 57%

Eight species of amphibian that have >50% chance of extinction by 2040. (Sadly, it is highly probable that the top four, three of which are found in QLD, are already extinct.)

The authors also noted that, of the 26 frog species in Australia listed as critically endangered or endangered according to IUCN criteria, 21 of these are endemic to a single state or territory, with some species only known from a single location. Those 21 species are more susceptible to extinction due to random events such as bushfires or severe heatwaves than species that are found across broader areas and across different states or territories. Among the 21 species, nine are found in the wet tropics and three in South East Queensland.

The ABC recently reported on this study, and included the expert opinion of QFS committee member Ed Meyer. You can read the ABC article [here](#), and the full scientific publication [here](#). You can also find the most recent update on the QFS Kroombit Tops Threatened Frogs project, in which surveying the critically endangered Kroombit tinker frog is a core component, in the Mid-Winter 2021 newsletter.

Alice Carruthers

Top tips for a frog-friendly garden

IF YOU WANT TO provide a refuge for frogs in your area by making a frog-friendly garden, you'll need to ensure food, shelter and a water source are available, the latter providing breeding opportunities. The best way to make your garden frog friendly is to create a bush-like setting. You can do this by:

- Incorporating a variety of plant species, using as many local native species as possible.
- Ensuring different plant layers/heights by using a mixture of ground covers, grasses, shrubs and small to large trees, which together offer protection from the wind and sun, and provide food for insects.
- Mulching gardens and leaving branches, logs and leaf litter on the ground to create habitat for the frogs. Rocks, hollow logs, and even a frog hotel (for certain species) can create suitable shelter.
- Introducing a pond or watercourse. A wider, shallow pond that is placed out of direct light

(mostly shaded) will be best. Keeping the water level at around 30 cm deep is ideal, but shallower can deter toads from breeding. Around the base of the pond plant a dense barrier of vegetation, as this will also help to prevent toads from entering.

- Limiting or ceasing the use of pesticides and insecticides in the garden, as by removing the insects, you are removing the frog's food source. Frogs can be particularly sensitive to the use of chemicals in the environment.

You can find a comprehensive list of plants species in the Mid-Autumn 2021 newsletter, article "Attracting frogs to your garden" by Wendy Benfer, pg 2–3.

Other hints and tips can be found on our website, but if you would like more information, you can phone or email the Queensland Frog Society.

Ashley Keune

From the Secretary's Desk

Thank you, to all the members who have renewed memberships, and to those who have recently joined the society. Using electronic membership sign-up at the recent Queensland Garden Expo did make for a busier time than usual, but it is great to welcome new enthusiasts!

Enquiries to QFS have increased during the last month or so, largely due to the sick and dead frogs being found in the eastern states, although I also received a phone call from Steve on Boyne Island enquiring about a frog that he couldn't identify. He thought it might be a new species to the island. When the photo arrived, I forwarded it onto a couple of our experts, who replied very promptly. Apparently "it's a *Litoria caerulea* with some whacky pigmentation". I wonder how many colour variations this frog has?!

Spring is just around the corner, so hopefully we get some good rain for the upcoming breeding season. My marsh frogs are testing their voices already.

Jenny Holdway



*A green tree frog with "whacky pigmentation".
Credit: Steve from Boyne Island.*

DATES FOR YOUR DIARY ...

10th September – Presentation for Marchant Park Kindergarten, Geebung

11–12th September – Display at the Off Grid Lifestyle Expo, Imbil Showgrounds

18th September, 10am–12pm – 'Threatened Frogs of the Blackall Range' talk at Mary Cairncross Scenic Reserve, Maleny – Get tickets (\$7) [here](#)

2nd October, 4:30pm – Frog workshop followed by frogging, Kilcoy Information Centre, Kilcoy (more details to follow)

30th October, 2pm – Annual General Meeting, via Zoom (more details to follow)

Executive Committee

PATRON – Dr Glen Ingram

PRESIDENT – Ashley Keune
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A warm welcome to new QFS members!

Bella Steffen, Moira Pinkerton, Julie Sosso, Emily Nutt, Christine Stuart-Nairne, Ken Cross, Scott Gibson, Leida Hermus, Janis Smith, Julian Humphreys, Mark Pickard, Trisha Pickard, Kiki Fong Lim, Sian Gadd, Joan Holloway, McCarthy Family, Oliver Franks, Deborah Saunderson-Warner, William Gamble, Heather Gamble, Erin Wills, Crystal Prange, Cindy Sinclair, Malcolm Purvis, Gail Obrien, Michele Lockwood, Alina Zwar, Kayla Lewis, Lucy Geijskes.

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