ACTHA inc. News

August-September 2021
Newsletter of the ACT Herpetological Association Inc.

In this issue

The local scene

The Australian and International scene

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**denotes life members*

Diary Date

Our next meeting will be held on Tuesday 19th of October, at the Canberra Reptile Zoo, commencing at 7pm. It will also be our AGM.

That month's presentation will be on the monitoring of threatened Gondwanan frog species by Angus Cleary.

Angus will give a presentation on a trip to the New England tablelands and the ranges of Northern New South Wales in November of 2020 with the University of Newcastle. The purpose of the trip was to help monitor the effects of fire on several threatened frog species.

A herp trip to Cooma

Brian La Rance

During mid-May a few ACTHA members and I headed down to a property just west of Cooma, in search of any herpetofauna we could find. John and Narelle kindly let us spend the day searching their property for reptiles. Over the course of the day, we found a great variety of reptiles including several range extensions.

After an early start from Canberra and a car trip filled with excitement of the day to come, we eventually reached our destination just outside Cooma. Wasting no time, Angus and I began herping the property. After a slow start of not seeing much, my spirits were suddenly lifted by hearing Angus yell "*Aprasia*!" from the other side of the hill. *Aprasia* are worm-like, burrowing lizards. Unfortunately, the lizard disappeared down a hole before either of us could photograph it. Despite the disappointment we both kept going, and after a while of turning up not much, we regrouped and met up with a couple of other herpers, Rod and George.

After soldiering on into the day, further signs of reptiles prevailed, the first of which was a small colony of Cunningham's Skinks (*Egernia cunninghami*) living in a rocky outcrop. Continuing down the rocky hillsides we encountered a number or Eastern striped skinks (C*tenotus robustus)* as well as a few Three-lined Skinks (*Acritoscincus duperreyi*). Making our way further around the ridges, we headed back towards the spot the original *Aprasia* was seen earlier that morning.

After finding multiple *Aprasia* shed skins on the walk over to original spot, we were ready as ever to find a live specimen. Despite a few more hours searching which turned up a few Eastern Spotted Skinks (*Ctenotus orientalis*), we didn't find any and headed back for lunch.

In the afternoon, we decided to change our strategy and aim for a small patch of rocky woodland we noticed earlier in the day. Almost immediately we noticed different species, turning up our third Ctenotus of the day, the Copper Tailed Skink (*Ctenotus taeniolatus*). Shortly after this Angus shouted from across the hill, this time "Snake!" after rushing over and seeing the small snake we were all rather confused. Whilst the snake resembled a Dwyer's Snake (*Suta dwyeri*), we weren't 100% sure as Cooma is just out of their known range. Being extremely similar to a very common species in the area, the Little Whip Snake (*Suta flagellum*) we decided to key the snake out. After much discussion and thorough examination, we all agreed the snake was indeed a Dwyer's Snake (*Suta dwyeri*).

With excitement still fresh in the air, we kept searching. Not long after finding the snake, Rod turned up a neonate Eastern Stone Gecko (*Diplodactylus vittatus*). This was the second range extension for the day! We even managed to observe a flock of Diamond Firetails shortly after.

Walking back to the car, we were all extremely happy and satisfied with the finds of the day. Despite not capturing a live *Aprasia* specimen we definitely plan on returning to continue our search. On behalf of ACTHA, I'd once again like to thank Narelle and John for letting us search for reptiles and spend time on their beautiful property.

Dwyer's snake (*Suta dwyeri*) – Brian La Rance

Eastern Stone Gecko (*Diplodactylus vitattus)* – Brian La Rance

Dead, shrivelled frogs are unexpectedly turning up across eastern Australia.

We need your help to find out why

Jodi Rowley* and Karrie Rose*,

A green tree frog. (Supplied: Jodi Rowley)

Over the past few weeks, we've received a flurry of emails from concerned people who've seen sick and dead frogs across eastern Victoria, New South Wales and Queensland.

One person wrote:

About a month ago, I noticed the Green Tree Frogs living around our home showing signs of lethargy & ill health. I was devastated to find about 7 of them dead.

Another wrote:

We previously had a very healthy population of green tree frogs and a couple of months ago I noticed a frog that had turned brown. I then noticed more of them and have found numerous dead frogs around our property.

And another said she'd seen so many dead frogs on her daily runs she had to "seriously wonder how many more are there".

So what's going on? The short answer is: we don't really know. How many frogs have died and why is a mystery, and we're relying on people across Australia to help us solve it.

Why are frogs important?

Frogs are an integral part of healthy Australian ecosystems. While they are usually small and unseen, they're an important thread in the food web, and a kind of environmental glue that keeps ecosystems functioning. Healthy frog populations are usually a good indicator of a healthy environment.

The Stony Creek frog is one of the species hit by this mysterious outbreak. (Supplied: Jodi Rowley)

They eat vast amounts of invertebrates, including pest species, and they're a fundamental food source for a wide variety of other wildlife, including birds, mammals and reptiles. Tadpoles fill our creeks and dams, helping keep algae and mosquito larvae under control while they too become food for fish and other wildlife.

But many of Australia's frog populations are imperilled from multiple, compounding threats, such as habitat loss and modification, climate change, invasive plants, animals and diseases.

Although we're fortunate to have at least 242 native frog species in Australia, 35 are considered threatened with extinction. At least four are considered extinct: the southern and northern gastric-brooding frogs (*Rheobatrachus silus* and *Rheobatrachus vitellinus*), the sharp-snouted day frog (*Taudactylus acutirostris*) and the southern day frog (*Taudactylus diurnus*).

A truly unusual outbreak

In most circumstances, it's rare to see a dead frog. Most frogs are secretive in nature and, when they die, they decompose rapidly. So, the growing reports of dead and dying frogs from across eastern Australia in the last few months are surprising, to say the least.

While the first cold snap of each year can be accompanied by a few localised frog deaths, this outbreak has affected more animals over a greater range than previously encountered.

This is truly an unusual amphibian mass mortality event.

In this outbreak, frogs appear to be either darker or lighter than normal, slow, out in the daytime (they're usually nocturnal), and are emaciated. Some frogs have red bellies, red feet, and excessive sloughed skin.

A browned, shrivelled green tree frog (Litoria caerulea). (Supplied: Suzanne Mcgovern)

The iconic green tree frog (*Litoria caeulea*) seems hardest hit in this event, with the often apple-green and plump frogs turning brown and shrivelled.

This frog is widespread and generally rather common. In fact, it's the ninth most commonly recorded frog in the national citizen science project, FrogID. However, it has disappeared from parts of its former range.

Other species reported as being among the sick and dying include Peron's tree frog (*Litoria peronii*), the Stony Creek frog (*Litoria lesueuri*), and green stream frog (*Litoria phyllochroa*). These are all relatively common and widespread species, which is likely why they have been found in and around our gardens.

We simply don't know the true impacts of this event on Australia's frog species, particularly those that are rare, cryptic or living in remote places. Well over 100 species of frog live within the geographic range of this outbreak. Dozens of these are considered threatened, including the Booroolong frog (*Litoria booroolongensis*) and the giant barred frog (*Mixophyes iteratus*).

The giant barred frog is a threatened species that lives in the geographic range of this outbreak. (Supplied: Jodi Rowley)

So, what might be going on?

Amphibians are susceptible to environmental toxins and a wide range of parasitic, bacterial, viral and fungal pathogens. Frogs globally have been battling it out with a pandemic of their own for decades — a potentially deadly fungus often called amphibian chytrid fungus.

This fungus attacks the skin, which frogs use to breathe, drink, and control electrolytes important for the heart to function. Chytrid fungus is responsible for causing population declines in more than 500 amphibian species around the world, and 50 extinctions.

For example, in Australia the bright yellow and black southern corroboree frog (*Pseudophryne corroboree*) is just hanging on in the wild, thanks only to intensive management and captive breeding.

The teeny tiny southern corroboree frog has been hit hard by Chytrid fungus. (Supplied: Jodi Rowley)

Curiously, some other frog species appear more tolerant to the amphibian chytrid fungus than others. Many now common frogs seem able to live with the fungus, such as the near-ubiquitous Australian common eastern froglet (*Crinia signifera*).

But if frogs have had this fungus affecting them for decades, why are we seeing so many dead frogs now?

Well, disease is the outcome of a battle between a pathogen (in this case a fungus), a host (in this case the frog) and the environment. The fungus doesn't do well in warm, dry conditions. So, during summer, frogs are more likely to have the upper hand.

In winter, the tables turn. As the frog's immune system slows, the fungus may be able to take hold.

Of course, the amphibian Chytrid fungus is just one possible culprit. Other less well-known diseases affect frogs.

The near-ubiquitous Australian common eastern froglet is one species that seems able to live with the Chytrid fungus. (Supplied: Jodi Rowley)

To date, the Australian Registry of Wildlife Health has confirmed the presence of the amphibian Chytrid fungus in a very small number of sick frogs they've examined from the recent outbreak. However, other diseases — such as ranavirus, myxosporean parasites and trypanosome parasites — have also been responsible for native frog mass mortality events in Australia.

It's also possible a novel or exotic pathogen could be behind this. So, the Australian Registry of Wildlife Health is working with the Australian Museum, government biosecurity and environment agencies as part of the investigation.

Here's how you can help

While we suspect a combination of the amphibian Chytrid fungus and the chilly temperatures, we simply don't know what factors may be contributing to this outbreak.

It is still a mystery as to why green tree frogs are dying in large numbers. (Supplied: Sophie Hendry)

We also aren't sure how widespread it is, what impact it will have on our frog populations, nor how long it will last.

While the temperatures stay low, we suspect our frogs will continue to succumb. If we don't investigate quickly, we will lose the opportunity to achieve a diagnosis and understand what has transpired.

We need your help to solve this mystery.

Please send any reports of sick or dead frogs (and if possible, photos) to us, via the national citizen science project FrogID, or email calls@frogid.net.au. The more information we have on this outbreak, the better we will be equipped to solve the puzzle.

* Dr Jodi Rowley is a Curator of Amphibian and Reptile Conservation Biology at the Australian Museum and UNSW. Dr Karrie Rose is a veterinary scientist at the Australian Registry of Wildlife Health, Taronga Conservation Society and at the University of Sydney. This piece first appeared in The Conversation. (29 July 2021)

Canberra weather warms up as eastern brown snakes come out of brumation

Lanie Tindale

16 August 2021

Canberrans were out enjoying exercise at the weekend as snakes (inset) came out of brumation. Pictures: Dion Georgopoulos

On Thursday, the warmer weather led to the emergence of the first monitored brown snake in Canberra. FloJo, the snake, came out from a little under four months of brumation to soak in the warm sun for two hours and bask outside her burrow.

ANU snake conservationist Dr Gavin Smith called the sight a "meditation".

"As I have developed a great affinity with this shy, cautious and graceful native snake, it was very exciting to see her familiar profile," he said.

"Snakes are ... acutely sensitive and behaviourally attuned to the environments in which they live.

"There have been some mild winter days recently with ambient temperatures hitting 15 to 16 Celsius, so it doesn't surprise me that our local population of reptiles have responded accordingly."

FloJo had an hour more than most Canberrans to enjoy this weekend's sunny weather, with temperatures this August a degree warmer than usual.

The Bureau of Meteorology's David Wilke said a high-pressure system moving over from inland Australia was causing the warmer weather.

"It doesn't look like a whole lot of rain over the next seven days, [with] temperatures generally above average during the daytime, and hopefully some reasonably sunny days," the meteorologist said.

He said to expect a windy Monday as a cold front moved over from south of the continent, but said frosty mornings would give way to well-tempered days.

Some showers are predicted, but they are likely to miss Canberra and instead hit the western parts of the territory.

He also said, if the city came out of lockdown this week, residents may be welcomed with a sunny 18-degree day on Saturday.

Although Australia won't enter Spring until September, some have noticed a greater presence of animals as the weather gets warmer.

Mr Wilke said that could be because the four-season calendar was a northern hemisphere definition, and didn't necessary line up with Canberra weather.

"Whether or not it really applies to Australia in the same way [that it did] when that kind of concept was defined is probably debatable," he said.

While there is no Indigenous weather calendar for the ACT region, the D'harawal calendar extends from Sydney Harbour to Shoalhaven river. According to this weather system, the Wiritjiribin season corresponds generally with August. This is when cold and windy weather slowly gives way to gentle spring rains.

Ecologist Dr Smith said the appearance of local reptiles was a good indicator of seasonal change in the bush capital.

However, his snake tracking project is yet to determine whether being active in August is normal for Canberra snakes.

"We are finding that there are certainly degrees of variance in movement behaviours between our tracked snakes, as well as between species of snake more generally," he said.

"It is therefore tricky making generalisations about them as a collective."

A note on disappearing frogs around Canberra and a suggestion

Based on discussions with Anke Maria* and Rosemary Blemings*

Rosemary suggests when doing our allotted lockdown exercises currently, for members to note whether they hear frogs calling where they have always been. This stems from the earlier article on dead frogs appearing along the east coast of Australia. This would be a good way to keep abreast of any spread of the frog deaths to our region.

Anke Maria, Coordinator of Frogwatch has also provided the following info.

Here is a good practice link for local frog calls:

https://ginninderralandcare.org.au/frogwatch-frog-identification

She says that currently there are three frog species calling in the ACT, Whistling tree frogs (*Litoria verreauxii*), Common eastern Froglet (*Crinia signifera*) and also Plains Froglet (*Crinia parinsignifera*).

She added, 'so far there have been no sightings of dead frogs in the ACT - to my knowledge - just shows how tough we are. However, some of the worst hit species elsewhere also call the ACT their home, including *Litoria peronii* (not calling yet as they like it a bit warmer) and *Litoria lesueuri* - strongly associated with Cotter Dam and the Murrumbidgee River and also has been found along the Molonglo River in Queanbeyan.'

For members who would like to go one step further and record where they are hearing frog calls locally, why not download the app, and get to work? The frog calls are also on it. https://www.frogid.net.au

And why not make notes, and be in a position to report sightings or lack of sightings at the end of the season proper?

* Rosemary Blemings is an ACTHA member, strong volunteer at our Snakes Alive event and an enthusiastic environmentalist. Anke Maria Hoefer is the Coordinator of Frogwatch.

A collection of reptiles from North Queensland

At the beginning of 2021 several ACTHA members, ventured to Far North Queensland. Below is a collection of images of the herpetofauna observed on the trip.

Lemon Barred Forest Skink (Concinnia amplus) Eungella, QLD. – Angus Cleary

Yellow Blotched Forest Skink (Concinnia tigrinus) Atherton, QLD. - Brian La Rance

Wood Frog (Papurana daemeli) Cairns, QLD.- Brian La Rance

Eastern Small Eyed Snake (Cryptophis nigrescens) Eungella, QLD. – Angus Cleary

Australian Lace Lid (Litoria dayi) Cairns, QLD. – Brian La Rance

Reaching new heights: A new species of frog found on the second highest mountain in Vietnam

Luan Thanh Nguyen, Benjamin Tapley, Dr Jodi Rowley*

A species new to science has been discovered by an international team of scientists, including Australian Museum Amphibian and Reptile curator, Dr Jodi Rowley. This new species of tiny frog, at only 2-3 cm in body length, has been found in the mountainous forest on Mount Pu Ta Leng, Vietnam.

A tiny species of frog living at over 2,300 metres elevation on Mount Pu Ta Leng in northwestern Vietnam has been discovered by an international team from Vietnam, the UK and Australia. This represents the twelfth new species of frog discovered in the Hoang Lien Range of northern Vietnam in the last 10 years, highlighting the area's rich yet poorly known amphibian diversity.

Mount Pu Ta Leng is the second highest mountain in Vietnam, reaching a height of 3,049 m. It is not an easy place for scientists to conduct surveys, due to its high elevation, steepness, low temperatures and high humidity all year round.

A female of the new species, Mount Pu Ta Leng leaf-litter frog (Leptobrachella graminicola). Image: © Luan Thanh Nguyen

However, in 2019 a small team of biologists led by Luan Thanh Nguyen, braved the conditions search for the Critically Endangered Botsford's Leaf-litter Frog (*Leptobrachella botsfordi*). Instead of finding this rare species on Mount Pu Ta Leng, we found a population of another species of *Leptobrachella*. After carefully checking their appearance and DNA, we confirmed that this frog species was previously unknown to science and have named it as a new species: the Mount Pu Ta Leng Leaf-litter Frog (*Leptobrachella graminicola*).

The common name of the species, the Mount Pu Ta Leng Leaf-litter Frog, refers to its mountainous home, while its scientific name, *Leptobrachella graminicola*, refers to one of the interesting behaviours of the new species. The Latin term, *gramineus* translates to grass-like and *incola* means inhabitant – so *graminicola* means living in grass-like microhabitats. A fitting name, as all the frogs we studied were found on grass-like vegetation along streams at night.

The Mount Pu Ta Leng Leaf-litter Frog is small, at only 2-3 cm in body length. It is only known from forests at 2,300 m elevation in Lao Cai and Lai Chau provinces, Vietnam. Due to its mountain-top habitat, it is likely to be restricted to a very small area and is potentially threatened by habitat loss and tourists' activities.

Although the mountain is within a Nature Reserve, a tourist trek has been created by local people which leads to the top of the mountain. Numerous camps have been built along the trekking route without the permission from the local authorities. Despite our team conducting two surveys in search of frogs on this mountain, we still don't know much about

this species, including its tadpole, ecology, and breeding behaviour. Further studies are essential in furthering our understanding of this species.

The habitat where the new species was found on Mount Pu Ta Leng. Image: ©Luan Thanh Nguyen

All individuals of the new species were found on grass leaves near streams. Image: ©Luan Thanh Nguyen

Since 2015, our team has been working in amphibian conservation in the Hoang Lien Range, with a focus on the conservation of two Critically Endangered species, Botsford's leaf-litter frog (*Leptobrachella botsfordi*) and Sterling's toothed toad (*Oreolalax sterlingae*). This long-term conservation project also facilitates the research and enhanced understanding of other amphibian species within their range. In addition to our achievements on the conservation of the two target species, there have been some significant findings, such as the discovery of new species. This year we welcome the official scientific recognition of Mount Pu Ta Leng leaf-litter frog.

A tourist camp built without official permission at the type locality of the new species. Image: © Luan Thanh Nguyen

The discovery of this tiny new frog species is the fifth new frog species discovered by our team in the Hoang Lien Range since our collaboration "Amphibian conservation on the roof of Indochina" started in 2015. It also highlights the unique and imperilled biodiversity of the Hoang Lien Range – known to be home to more than 85 species of amphibians, many of which are threatened with extinction.

*** Authors:**

Luan Thanh Nguyen is Botsford's Leaf-litter Frog EDGE Fellow, and a member of the Asian Turtle Program of Indo-Myanmar Conservation.
Benjamin Tapley is the Curator of Reptiles and Amphibians, Zoological Society of London.
Dr Jodi Rowley is the Curator of Amphibian & Reptile Conservation Biology at the Australian Museum and UNSW. See http://jodirowley.com

A view of Mount Pu Ta Leng from 2300 m elevation.
Image: ©Luan Thanh Nguyen

Acknowledgements:
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Reference:
Nguyen, L.T., Tapley, B., Nguyen, C.T., Luong, H.V. & Rowley, J.J.L. (2021) A new species of Leptobrachella (Anura, Megophryidae) from Mount Pu Ta Leng, northwest Vietnam. Zootaxa 5016, 301–332. https://doi.org/10.11646/ZOOTAXA.5016.3.1

Diary Date to remember

Our next meeting will be held on Tuesday 19th of October, at the Canberra Reptile Zoo, commencing at 7pm. (Covid-19 permitting) It will also be our AGM.
October's presentation will be by Angus Cleary on the monitoring of threatened Gondwanan frog species.

Angus will give a presentation on his trip to the New England tablelands and the ranges of Northern New South Wales in November of 2020 with the University of Newcastle. The purpose of the trip was to help monitor the effects of fire on several threatened frog species.