

FROG CALL

THE FROG AND TADPOLE STUDY GROUP NSW Inc.

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NEWSLETTER No. 187 OCTOBER 2023



Associate Professor Jodi Rowley, Curator of Amphibian & Reptile Conservation Biology at the Australian Museum. Lead scientist for FrogID. 2023 Australian Museum Research Institute Medal for multi-disciplinary and innovative work at the forefront of biodiversity conservation.

Photo by Stuart Humphries

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

Arrive from 6.30 pm or a 7pm start.

Friday 6 October 2023

FATS meets at the Education Centre, Bicentennial Pk, Sydney Olympic Park

Easy walk from Concord West Railway Station and straight down Victoria Ave.

Take a torch in winter.

By car: Enter from Australia Ave at the Bicentennial Park main entrance, turn off to the right and drive through the park. It's a one way road.

Turn right into P10f car park.

Or enter from Bennelong Rd/Parkway. It's a short stretch of two way road. Turn left.

Park in P10f car park, the last car park before the Bennelong Rd. exit gate.

FATS MEETING 7PM FRIDAY 6 OCTOBER 2023

6.30 pm Lost frogs seeking forever homes: Please bring your membership card or join FATS on the night and \$50 donation. **CREDIT CARDS ACCEPTED** but bring cash for the raffle, unless you spend over \$10. Your NSW NPWS amphibian licence must be sighted on the night. Adopted frogs can never be released. Contact us before the night and FATS will confirm if any frogs are ready to rehome.

7.00 pm Welcome and announcements.

8.00 pm Main speaker: Marion Anstis "Animal Adventure in Borneo" Arthur White "Dry Season frogging in Berry Springs" Judging of Peoples' Choice in Frog-O-Graphic competition.

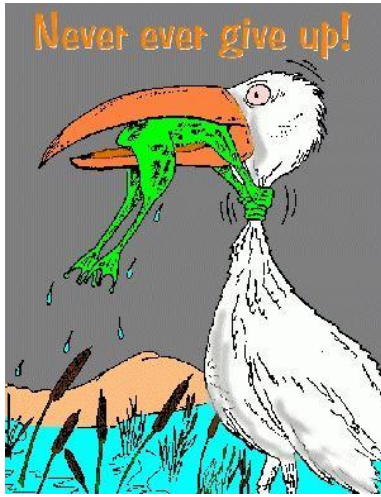
9.30 pm Show us your frog images. Tell us about your frogging trips or experiences. Guessing competition **Credit cards can be used for raffle purchases over \$10, but we prefer cash**, frog adoptions continue, supper, relax and chat with frog friends and experts.

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FATS NEEDS YOUR HELP



At the recent Annual General Meeting, I addressed those present to inform them of a dire situation facing FATS. The executive of FATS was re-elected without any new faces. This is not new - the same people get re-elected to the same positions year after year. A number of FATS councilors have been running the Society for more than 25 years. It is not good for any Society to have the same people in charge for a long period of time. While saying this, I acknowledge that the executive is very competent and willing- but they (and I) have been there too long.

I have asked the membership for a number of years now to consider stepping up and joining the executive. This request has not produced new blood. Quite the reverse, the members keep telling us that they are happy with what we are doing and for us to continue on.

We have reached crunch time. A number of the executive (including myself) have indicated that they will stand down at the next AGM. If there are no people prepared to take up the vacant positions, the Society will fold. FATS is an incorporated society and must have a number of designated executive officers.

So this is a call for help and a warning. Societies survive through the input of its members and not through the input of the same people over and over again.

Please think carefully about how you might help FATS. If you are worried about not being able to do the tasks at hand, don't. The outgoing executive will still be around to help you with the work and to show you the ropes. A new executive may choose to operate FATS quite differently to the present administration and may choose to drop a number of our current activities, or they may choose to add new ones.

The future of FATS is in your hands. As a member of FATS, you need to think carefully about how much you value the Society and whether you want to see it continue or not.

IF you want to discuss any of this, feel free to contact any of the FATS executive (including myself). Be brave and do what you can for FATS. **Arthur White President 1999-2023**

2023 FROG-O-GRAPHIC COMPETITION

Thank you to all the FATS members who submitted entries to the FATS 2023 Frog-O-Graphic competition. It has now closed for 2023. The People's Choice award selection will be conducted at our Friday 6 October meeting by those in attendance.

Winners will be announced prizes awarded at our 1 December FATS meeting. **MW**

FATS PROMOTING THE PLIGHT OF FROGS AT PUBLIC EVENTS

In 2023 FATS was represented at a variety of events including the Penrith Reptile Expo and the Easter Show. FATS wish to especially thank Kathy and David Potter as well as Sarah, Ryan and Harriet, Ayeesha and Michaeline for manning the stall at the Easter Show and holding displays such as those at the Australian Museum.

Many promotional activities on behalf of FATS and the plight of Australian frogs, were carried out by members of our committee and their families. Kathy has done a frog talk for the Kalkari Wildlife Group. Arthur White did a frog talk for the Gynea Garden Club. FATS is planning displays for Frog Week. **MW**

FROGID NEWS

FrogID welcomed to nearly 600 new members in August 2023. FrogID has gathered thousands of recordings from winter-breeding frogs recently, including the Squelching Froglet (*Crinia pseudinsignifera*) from WA, endangered Sloane's Froglet (*Crinia sloanei*) from VIC and NSW, and Sudell's Frog (*Neobatrachus sudellae*), from arid regions of SA, NSW and VIC after rain.

They are thrilled with the rising tide of frog call submissions, especially from the east coast where frog calling and breeding is kicking off. Many of Australia's frog species rely on water for breeding, and some specifically breed in temporary or impermanent water bodies.

As our bureau predicts a drier September for most of Australia, we encourage you to record frog calls whenever you hear them to help us understand how frogs are doing. You can also submit "no frogs calling" from areas where they used to call from.

Your continuous contributions to FrogID greatly enhance our understanding of frogs and ecosystem health across Australia. Email calls@frogid.net.au to report dead or dying frogs information. FrogID app: <https://www.frogid.net.au/>

FIRE ANTS



Red imported fire ants (*Solenopsis invicta*) are very small ants between 2 to 6mm long, reddish-brown in colour with a dark abdomen. Report suspected sightings to the Biosecurity Hotline on 1800 084 881 NSW or 13 25 23 Queensland Photo April Noble, Antweb.org, Bugwood.org

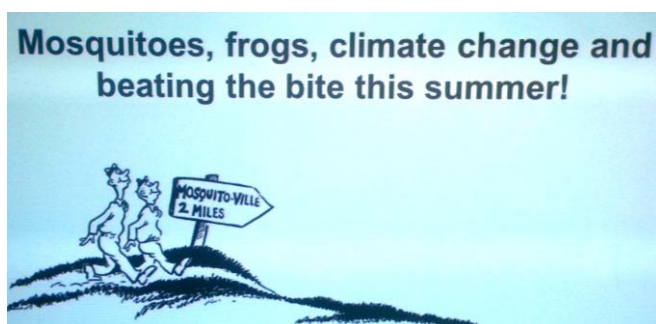
Look, snap and report: Join the fire ant fight. Almost everyone carries a fire ant fighting tool in their pocket. With a smartphone you can easily take a picture or video and immediately send it to the eradication team to check. With fire ants just a few kilometres from the NSW border and surging through the Gold Coast or north towards the Sunshine Coast, we need the community to step up and do their part. As the weather warms up, fire ants will be more active and community reporting is the main way fire ants are being found. Our politicians need to know that their legacy is tied to fire ants. Will they be remembered as the leaders who saved Australia from fire ants or the ones who stepped aside as one of the world's worst invasive species conquered the continent?

Ongoing containment and suppression means it is still possible to eradicate fire ants from Australia if we all do our part. While out in the garden, at the park, taking a walk, camping or at the beach, we should all be on the lookout for suspicious ants.

Fire ants could devastate our environment, economy and outdoor way of life we know and love. Together we can eradicate them and protect our Australian lifestyle.

<https://www.fireants.org.au/>

<https://invasives.org.au/our-work/invasive-insects/ants/red-fire-ants/>



BEATING THE BITE THIS SUMMER

Looking to create a garden pond this spring for your froggy friends? It's not just frogs that can make a home in your backyard pond, mosquitoes love it too. Check out these "wrigglers" in the local garden centre's aquatic plants section!

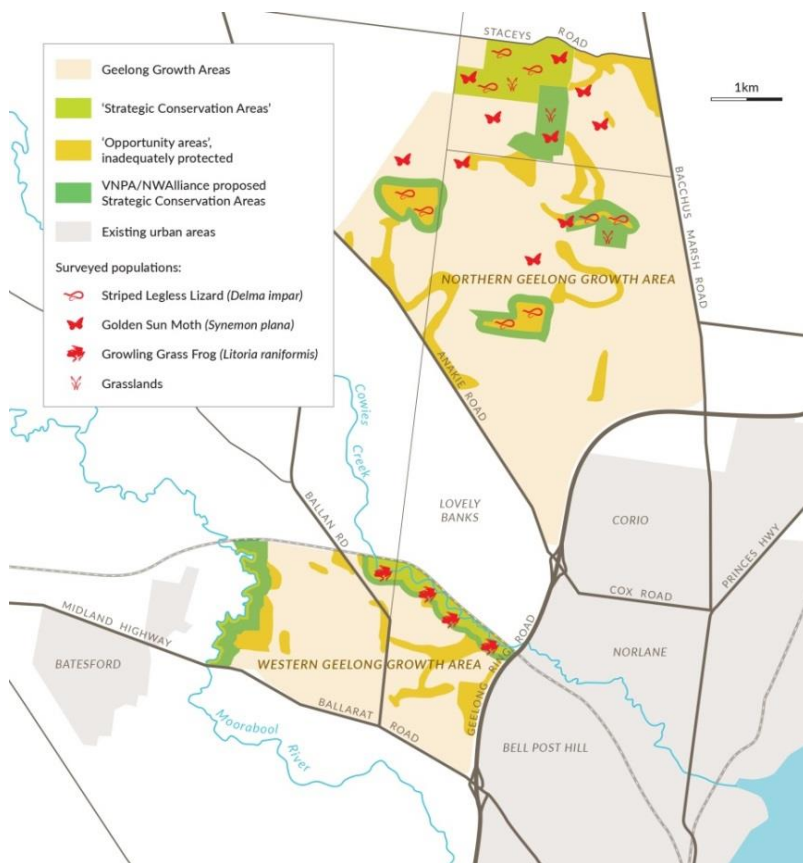


Unless you're adding native fish (perhaps not great news for young tadpoles) you should expect at least some extra mosquito activity. You can reduce numbers with a fountain (to help water circulation and discourage egg laying) and maintaining consistent water levels will discourage some mozzie species.



Over time, mosquito predators will move in and assist keeping numbers down too. For more information on how to create a home for frogs in your backyard, check out Frog and Tadpole Study Group of NSW inc. - FATS and don't forget to record calling frogs using the Frog ID app!

It's hot already. It's been a while since we've had any substantial rainfall. You might be thinking you should leave some water out for pets and wildlife. But you don't want to create a home for mosquitoes! Here are some tips I shared via [The Conversation Australia + NZ](https://theconversation.com/you-can-leave-water-out-for-wildlife-without-attracting-mosquitoes-if-you-take-a-few-precautions-128631?fbclid=IwAR2IEaxk0pWN7Mb28OHLPyjnFOT7HIHu7Cq_13PBV24fX7vMRnU2e1NUbqM) the last time we were facing a hot and dry spring and summer https://theconversation.com/you-can-leave-water-out-for-wildlife-without-attracting-mosquitoes-if-you-take-a-few-precautions-128631?fbclid=IwAR2IEaxk0pWN7Mb28OHLPyjnFOT7HIHu7Cq_13PBV24fX7vMRnU2e1NUbqM From Associate Professor Cameron Webb Thanks for sharing Giselle Howard.



Proposed protections in the plans for new suburbs leave little habitat for endangered wildlife.

TELL THE CITY OF GEELONG TO PROTECT THE GROWLING GRASS FROG HABITAT

Striped Legless Lizards, Growling Grass Frogs and Golden Sun Moths are critically endangered. The rolling farmlands that now flank Geelong were once abundant wildflower meadows. Eastern Quolls rustled through Kangaroo Grass and Spiny Rice-flowers, along with bouncy Bettongs and Fat-Tailed Dunnarts. Today Geelong and Melbourne are bursting at the seams, and our towns and cities are looking for ways to accommodate our growing communities. The farmlands that were once grassy plains are now set to become Geelong's newest suburbs.

While Eastern Quolls are long gone, endangered creatures like Striped Legless Lizards and Growling Grass Frogs still live here. **The challenge now is finding room for everyone without destroying the remnant grasslands and their precious critters.** We're at a critical crossroads – we need your help to make sure things move in the right direction.

The plans include clearing important habitat for endangered plants and animals like the Fragrant Saltbush, Golden Sun Moths and more. Some land will be protected for conservation, but most bulldozed. How towns and cities plan the housing needs of growing populations is complicated. But it's often the most vulnerable whose stories end badly. In Victoria's case, it's been the grasslands and its original inhabitants who have been forced to make way for urban growth. **Let's make sure this time grassland critters are front and centre for decision-makers. The Victorian national Parks Association asks you to write to the City of Greater Geelong. Submissions closed at 5pm Monday 25/9/2023 but please still raise your concerns in writing to the Council and Councillors. Write to**

GeelongGrowthAreas@geelongcity.vic.gov.au now.

THREATENED SPECIES BAKE OFF

The Threatened Species Bake Off is an invitation to Australians to bake a dessert in the shape of a threatened species. The Bake Off aims to build awareness in the community about Australia's remarkable and unique threatened wildlife.

The Threatened Species Commissioner is delighted to announce the Threatened Species Bake Off for the seventh year running in 2023! It has just closed.

Here are a few previous entries from 2018.

<https://www.dceew.gov.au/environment/bio-diversity/threatened/commissioner/tsbakeoff>

<https://www.bastillepost.com/global/article/2494033-frogs-whales-and-snakes-created-for-threatened-species-bake-off-competition>



Bake off entries from 2018



Southern Corroboree frog by Taronga Zoo/The Threatened Species Bake Off. (PA photo)

HUNDREDS OF FROGS DIE AT BOOL LAGOON NEAR NARACOORTE IN SUSPECTED CHYTRID FUNGUS OUTBREAK



Endangered southern bell frogs have died in the suspected chytrid fungus outbreak. Supplied: Anna Turner

Hundreds of frogs have died at a lagoon near Naracoorte in what the South Australian Department for Environment and Water (DEW) is calling a mass frog mortality event at the Bool Lagoon. The Department for Environment and Water's chief ecologist says chytrid fungus may be to blame. The fungus has devastated frog populations worldwide. Hundreds of southern bell and striped marsh frogs have died at Bool Lagoon Game Reserve and Hacks Lagoon Conservation Park in the state's south-east.

Testing is underway to determine if the deaths involve the chytrid fungus, which has wiped out whole species of frogs in Australia and overseas. Southern bell frogs are considered to be endangered species. The Bool Lagoon campground and walks at Hacks-Bool Peninsula will be closed until Thursday, while the department investigates.



Bool Lagoon has plenty of water in it after good rain at the start of winter. Supplied: National Parks and Wildlife Service South Australia

DEW principal ecologist Karl Hillyard said it was "an unusual event". "The deaths are believed to involve the chytrid fungus," Dr Hillyard said. "However, further testing is underway to investigate other possible causes. "A sample of dead frogs has been collected for laboratory testing and the results are being analysed by department staff and frog experts."

Chytridiomycosis is an infectious disease caused by the chytrid fungus and is blamed for wiping out more than a third of the world's frog species. It is a type of fungus that

spreads infection by releasing small bodies known as "zoospores". It gets into the skin of frogs, disrupting the flow of electrolytes and eventually giving them a heart attack.

Frog deaths reducing after closure Bool Lagoon is one of the largest freshwater lagoon systems in southern Australia and is popular among birdwatchers, especially when full of water. The closure of the campground and paths will be reviewed later in the week. The deaths were first noticed by authorities in mid-July "Our regular monitoring at the site indicates the number of frog deaths has been reducing each week," Dr Hillyard said. "There remains evidence of active frog populations, which is a good sign."

Live southern bell frogs at Bool Lagoon. Supplied: Department for Environment and Water



Similar mass mortality events have struck New South Wales, Victoria and Queensland over the past two years, although chytrid did not appear to be the sole reason for the deaths. While acknowledging that investigations were still underway into the deaths at Bool Lagoon, frog ecologist Rupert Mathwin said the mortality event was concerning, as South Australia was normally considered too hot for the chytrid fungus. "The fact that this is occurring now in South Australia, and also a little bit later than winter, it's an unusual thing and it's not ideal," he said. Forwarded to FrogCall by Marion Anstis https://www.abc.net.au/news/2023-08-29/hundreds-of-frogs-die-at-bool-lagoon-sa-chytrid-fungus-suspected/102788838?fbclid=IwAR0sqzs7INMLdV1sCf14YxkPJAKq8_FdkxT2IBleu2v19XJndZkJNrJIWnc&mibextid=Zxz2cZ ABC South East SA By Eugene Boisvert 29 Aug 2023

A Striped Marsh Frog. Supplied: Ray Draper



THE AUSTRALIAN HERPETOLOGICAL SOCIETY



Wrangling South African Reptiles with Dingo on Wednesday 27th September 7pm for a 7:30pm start In August Andrew Melrose was in South Africa for 2 weeks (hopefully) catching some of the world's coolest and most dangerous reptiles. Assuming he made it home alive, Andrew will be sharing all the details of an incredible adventure. <https://ahs.org.au/> Email: info@ahs.org.au Meetings are held on the fourth Wednesday of every month excluding December and January at the Sydney Mechanics' School of Arts Mitchell Theatre, 280 Pitt St, Sydney NSW. All are welcome to attend. There is a \$5 cover charge at the door for non-members. Throughout the warmer months, the AHS organises field trips and surveys around the Sydney area and beyond. These trips are for AHS members only. AHS IS ON YOUTUBE Catch up on the talks you missed, re-live the presentations you loved. Subscribe to the channel. <https://www.facebook.com/TheAusHerpSociety>

NORTH COAST HERPETOLOGICAL GROUP



NCHG meet on the first Friday of every month at the Lions Club Hall, Hamilton Green, 176 Hastings River Drive, Port Macquarie. Next meeting 7pm Friday 6 October 2023. <https://www.northcoastherpetologygroup.org.au/> northcoastherp@gmail.com Facebook <https://www.facebook.com/profile.php?id=100069989780073>

THE ILLAWARRA REPTILE SOCIETY



Meets at Fairy Meadow Community Hall, the first Monday of every month, at 6:30pm. Email: illawarrareptilesociety2015@gmail.com website: <http://illawarrareptilesociety.com.au/> Facebook: <https://www.facebook.com/groups/262254127185488/about>

WESTERN AUSTRALIA HERPETOLOGICAL SOCIETY



Meets at 7pm on the first Friday of every month at the Wembley Community Centre, 40 Alexander Street Wembly 6014 <https://www.wahs.org.au/> info@wahs.org.au

SOME OF OUR AUSTRALIAN HERPETOLOGICAL GROUPS

FATS welcomes new and updated announcements from any Australian herpetological groups. Please email the editor (see page 11) if you would like to add an article, event or announcement in any of our future newsletters, FATS Facebook page or web site.



Photos from left Gary Wilson, Michael Anthony, Eleanor Duignan

THE NORTH QUEENSLAND NATURAL HISTORY GROUP (NQNHG) formed to learn, share and enjoy north Queensland's natural history and to support the sustainable management of the natural values of the region. The group aims to promote citizen science, environmental sustainability, ecosystem services, protected areas and any other land of environmental value as assets to landowners and the community. The association produces a journal called the "North Queensland Naturalist". They undertake regular field events to properties in North Queensland such as Barrabadeen Scout Camp at Lake Tinaroo, Beatrice River Retreat, a property on Walsh River Rd and most recently South Endeavour Station near Cooktown, Contact PO Box 952, Ravenshoe, Qld 4888 IA56429 Web: <https://www.nqnhg.org/> Facebook: <https://www.facebook.com/NQNaturalHistory/> Email: nqnhgroup@gmail.com Secretary, Michael Anthony 0427 367 888



THE WILD EXPO - REPTILE FESTIVAL is on Sun 8 October 2023 from 9AM to 3PM at Fairfield Showground 443 Smithfield Road, Prairiewood, NSW. Get up close to a wide variety of reptiles. See native birds, mammals and marsupials including kookaburras, flying foxes, dingoes and Tasmanian Devils. There will be an amazing interactive dinosaur experience! Engage with knowledgeable experts. Representatives from Shoalhaven Zoo and the Australian Reptile Park will be there with an array of reptiles. <https://www.facebook.com/events/705835038056896/?ref=newsfeed>

FROGS VICTORIA SOCIETY



Frogs Victoria holds events on the first Thursday of the month March – November from 6pm for dinner and drinks (available for purchase), talks start at 7:30pm at The Elgin Inn, Hawthorn Melbourne Victoria. <https://www.frogsvic.org/events> No RSVP necessary. <https://www.facebook.com/frogsvic> Membership not needed to attend events. Contact info@frogsvic.org for more information. Instagram @frogsvic. <https://www.frogsvic.org/>

MACARTHUR HERPETOLOGICAL SOCIETY



The Macarthur Herpetological Society MHS meets every third Friday each month, except January. Doors open at 7pm at the Scouts Hall 48 Broughton Street, Campbelltown, NSW for a 7:30pm start. Meetings: 20/10 Harry Sollom Kellyville “Masterclasses & Central Bearded Dragons and why the go to the Vet!” 17/11 Karen Russell “Breeding the Alabaster Bluetongue” 15/12 Michael Gough “Keeping rare Australian Turtles” Website <https://macarthurreptiles.com.au/>

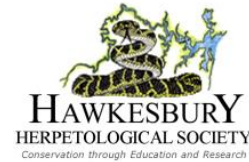
Email president@macarthurreptiles.com.au Facebook <https://www.facebook.com/profile.php?id=100064370722234>

ACT HERPETOLOGICAL ASSOCIATION



The ACT Herpetological Association (ACTHA) in partnership with the Australian National Botanic Gardens (ANBG) have a week long exhibition in January showcasing a variety of Australian reptiles and frogs. email info@actha.org.au Facebook: <https://www.facebook.com/actha.org.au> Snakes Alive! will run from 8 to 14 January 2024. Everyone is welcome at ACTHA bi-monthly meetings held at 7pm on the third Tuesday of every second month (February, April, June, August, October and December) at Canberra Reptile Zoo, O’Hanlon Pl, Nicholls (Gold Creek). <http://www.actha.org.au/> PO Box 440, Jamison, ACT 2614

HAWKESBURY HERPETOLOGICAL SOCIETY



The Hawkesbury Herpetological Society HHS holds monthly meetings at 30 Herbert Street Cambridge Park NSW 2750 Every 2nd Friday of the month at 7:30 pm with guest speakers and topics to suit a wide range of herpers. Everyone is welcome. Mailing address PO Box 680 Penrith BC 2751 HHS conduct field trips comprising one-day outings, and others taken over a weekend. HHS hold regular events throughout the year. Our Reptile Expo, Annual Photo Competition, member’s picnic, and in December most years we join the other herpetological societies of Sydney and surrounds for a Christmas BBQ run by the The Australian Reptile Park with free entry for herp society members, and access to behind-the-scenes tours. info@hawkesburyherps.org.au <https://www.facebook.com/hawkesburyherps> <https://hawkesburyherps.org.au/>

THE QUEENSLAND FROG SOCIETY



Each year QFS take a display to community events and garden expos to spread the word about frogs. <https://www.facebook.com/qldfrogsociety> <http://www.qldfrogs.asn.au/> PO Box 7017 East Brisbane Queensland 4169 qldfrogs@bigpond.net.au Instagram: <https://www.instagram.com/qldfrogs>

EVENTS: 7 October 2023 Workshop and Field Event Sandgate, QLD Frog Friendly Gardening, from 4:30pm.

20-22 October 2023 Sunshine Coast Bioblitz inc. frog spotlighting Maroochy Bushland Botanic Gardens

22 October 2023 Annual General Meeting at Karawatha Forest Discovery Centre This will be our first in-person AGM in several years so we look forward to catching up with everyone in person after the business-end of the meeting! For those who live some distance away but still wish to participate, there will be the option to join in via Zoom.

Meetings are held the third Wednesday of every second month via Zoom. The meetings start at 7:30pm. Next meeting is on 15th November 2023 Any of our members are able to join these meetings but they will need to be sent a Zoom code prior to the meeting if they wish to attend.

BIOLOGISTS THREW A FLUORESCENT FROG RAVE IN THE AMAZON, FOR SCIENCE

Turns out many of the frogs glow, maybe to communicate. Of the 151 species they studied, all of them, including this tree frog, *Dendropsophus rhodopeplus* (shown under blue light), displayed some level of fluorescence. Santiago Ron



The Amazon rainforest is full of color—and not just the enveloping green of palms, shrubs, and vines. From scarlet macaws to yellow eyelash vipers to pink river dolphins to countless flowers, it's bursting with other hues, too. And that vibrancy somehow seems to continue after the sun goes down, if you have the right eyes to see it.

During the dwindling hours of daylight, according to a new study, certain [frogs may actually glow to communicate](#). These frogs don't shine on their own like bioluminescent fireflies, but they biofluoresce. This means that they absorb light at one wavelength, or color, and shoot it back out at a longer wavelength. Against a dark backdrop, this gives them a dim glow. Using a colorful array of lights—from violet to cyan to green—researchers from Florida, Peru, Brazil, Ecuador, and Colombia tested what wavelengths made frogs stand out. They found that more frogs give off such evening light displays than previously thought. The paper, released as a preprint at [bioRxiv.org](#), has more than tripled the number of frog species tested for biofluorescence, adding 151 species of frogs and toads in total.

Each day, the team discovered more species that biofluoresce, says lead author Courtney Whitcher, a doctoral candidate in ecology and evolutionary biology at Florida State University in Tallahassee. “We’re living in a glowing fluorescent world that’s just waiting to be discovered.” Every single species they studied showed some level of fluorescence.

The closest we humans get to this glowing, psychedelic world is when we step under a black light. Our teeth and fingernails, as well as many bodily fluids, absorb ultraviolet light and reemit it at a different wavelength, causing them to shine brightly. Just because parts of us can fluoresce doesn't mean they're doing so for any particular purpose. The same is true for many other fluorescing elements in the natural world, from glowing fur to feathers, says visual ecologist Michael Bok at Lund

University in Sweden, who was not involved in the study. “There’s a lot of meaningless fluorescence in the world,” he says. But that doesn’t appear to be the case for these rainforest frogs.. Their skin absorbs ambient blue light and bounces it back as an eerie green glow—which their eyes are sensitive enough to pick up.

“Courtney’s extraordinary fieldwork allows us to demonstrate that amphibians’ sensory world is quite different—they have capabilities that we humans can only dream of,” says coauthor Santiago Ron, a biologist from Pontifical Catholic University of Ecuador.

Like humans, frogs have rods and cones in their eyes. Rods help us see dim light, and cones help us see bright light and colors. Unlike humans and all other terrestrial vertebrates, amphibians have two types of rods, which let them discriminate between colors in near-dark conditions. Some rods are attuned to blue light—which dominates the evening—and even more are sensitive to green light, which allows them to sense even subtle glowing green. So it stands to reason that, if many of these frogs can see green glows that other creatures can't, then maybe they're making green glows as a way to signal one another, or at least declare their presence to each other.

Researcher Courtney Whitcher holds a tree frog under fluorescent testing lights during data collection at Yasuni Scientific Station in Ecuador. Courtney Whitcher



Biofluorescence in frogs is a relatively new discovery. The phenomenon [was first spotted in the polka-dot tree frog](#) of South America in 2017, and by complete accident. Researcher Julián Faivovich and his colleagues at the Natural Sciences Museum in Buenos Aires, Argentina, shined a UV light on a frog to look at some tissue samples and were shocked to see its whole body fluorescing. Before this new study, some 42 frog species had been tested for fluorescence, with about half exhibiting it. But those studies only used one or two different light sources (often ultraviolet and violet), says Whitcher.

The new study enlisted five wavelength ranges that more accurately represent the light available at twilight. With this novel approach, they were able to identify fluorescence in many new species, and six previously dismissed as non-glowing.

Whitcher and the South American research team spent 10 weeks, from March to May 2022, sampling 528 individual frogs across Colombia, Peru, Ecuador, and Brazil. Their evenings involved scouring trees, leaves, and pools for subjects. The frogs they caught were then whisked to a local research station for long nights of rave lights. Until the wee hours of the morning, researchers donned filtered goggles—to help block out added light sources and better see fluorescent markings—and peered at frogs under a series of fancy flashlights, using filtered cameras and wavelength-reading instruments to record their findings.

“They were long days,” says Whitcher, “but they were a lot of fun and full of discovery as well.” Every one of the 151 species they found showed some level of fluorescence—from glowing back markings to belly splotches to entire faces and limbs. Some barely glowed, while others reemitted almost all the light they absorbed. They found that frog skin absorbs the bountiful blue of dusk and sends it back out to match the sensitivity of those green-sensitive rods in their eyes. It’s a vision double-whammy. And it takes place in a way that matches frogs’ activity and ecology, and the physiology of their eyes. Researchers can’t hop to any definitive conclusions, but this suggests that fluorescence may allow frogs to communicate with each other, says Whitcher. While frogs are very vocal communicators, this may serve as a secondary means of being in touch, she adds.

Amartya Tashi Mitra, a doctoral student who studies lenses and eye development in insects at the University of Cincinnati, says that the evidence is convincing. “It also seems that the species that they found to fluoresce seem to be things like tree frogs with really big eyes,” he says. “It’s quite likely that those species are using their vision to perform complex tasks like signaling. They didn’t find this kind of fluorescence in aquatic species, which have much smaller eyes and live in murky waters, so it does seem that this is something that evolved by a sensory drive to serve a very specific purpose.”

“We’re living in this glowing world that anyone has the ability to discover.” And because they tested a range of wavelengths, there were other intriguing observations. They saw that some frog skin also fluoresces orange, sometimes in addition to or instead of green. But frog eyes aren’t well adapted to seeing this wavelength. This fluorescence, they propose, could be for a different target audience, such as predators. The orange could suggest they’re poisonous, or help camouflage them in the leaves around them, which biofluoresce red due to their chlorophyll, says Whitcher.

Bok says he is generally skeptical about the role fluorescence actively plays in animals’ lives, but that this

research stands out. “This paper is an example of actually trying to examine these fluorescent patterns in the context of natural light and the observer’s visual system, which is the correct starting point,” he says. “They’re coming at it from the right angle. I’d be very happy and excited if there was a case where it’s actually being used. That’d be a neat thing to discover.

“There is a chance that these frogs are actually using fluorescent signals in a narrow window at twilight when the natural light conditions are very specific, but we still need to see evidence, not just that their eyes can detect the fluorescence, but also that the animals care, and alter their behavior based on the fluorescent cues,” he adds.

Many frogs absorb blue light and reemit it as an eerie green glow, like this *Boana atlantica* in Brazil. Courtney Whitcher



Whitcher is continuing to look into that. In the study, she noticed that most strongly fluorescing body parts were often the undersides and throat, which are used in communication and can be especially important for attracting mates. Now, she’s testing what difference fluorescence makes in the mates that females choose. We’ll see who gets glowing reviews.

There is so much left to learn about the secret lives of frogs, Whitcher says. “There’s over 7,000 frog species known currently, so we still know just a minuscule amount of what this fluorescent pattern looks like across all of the frog species that are known,” she says.

To help, Whitcher has enlisted the public. In July 2020 she launched [Finding Fluorescence](#), a citizen science project where people can take black lights into their own backyards and record which organisms biofluoresce. So far there have been 36 observations uploaded, with almost every one completely new to science. “Not only is it a fun activity to take a blacklight out into your backyard and get to look at cool glowing things, but that can legitimately help scientists make new discoveries,” says Whitcher. “We’re living in this glowing world that anyone has the ability to discover.”

by Roxanne Hoorn 22 August 2023

<https://youtu.be/rQ3PtNV6Okk> Forwarded to FATS

by Joy Horton and Punia Jeffery

https://www.atlasobscura.com/articles/glowing-frog-rave-in-the-amazon-for-science?utm_source=share_by_email&utm_medium=email&utm_campaign=mailto_share

NEW FINDINGS: FROGS, DISEASE, AND FARM DAMS

A significant challenge in conserving frog species in Australia has been our lack of knowledge, but your FrogID recordings have become invaluable in rapidly filling continental-scale knowledge gaps and unravelling frog mysteries.



In this edition of our eNews, we share two recently published FrogID-informed studies that shed light on Australia's frogs, both co-authored by Australian Museum's Lead Scientist of FrogID, Dr Jodi Rowley. The most recent study, led by Deakin University, delves into the vital role that farm dams play in supporting frogs, including threatened frog species, and features of farm dams that can better support frogs. The second study, led by Australian National University, uncovers how the distribution of frogs and the environmental spaces they live have been reshaped by the arrival of the amphibian chytrid fungus, a pathogen causing amphibian declines globally.

Thank you for your frog call submissions from near and far to help inform vital frog research. Stay tuned for more exciting FrogID-informed studies this year, and please keep your submissions coming. Every call counts! **Email** calls@frogid.net.au **Website** frogid.net.au

DARK NOISE

Clara Chong is the writer/director of a new Australian environmental thriller called "Dark Noise" about frogs, coffee & cocaine. FATS president Arthur White graciously allowed us to film his frogs for the film, and FATS member Josie Styles recorded all of our original frog audio for the film. Josie is on the panel with us in Kyogle at our Q&A at 6:45. They have a promo featuring frogs. Michael McFadden from Taronga Zoo was our frog advisor on the film.



Clara Chong's *Dark Noise* is an adventure thriller about young sound professional Abigail "Jack" McFadden, who begins receiving audio recordings from her estranged frog biologist father when he suddenly goes missing in a remote rainforest.

Jack heads to Birra where she discovers the park is closed for the off-season. However, she does meet Kristian, a ranger for Birra Mountains National Park. Born in Kenya, Kristian has seen horrors most people have never even imagined after organised crime cartels forced his family out of their coffee farm and flee to a new life in Australia.

Jack and Kristian discover there are some sounds you're not meant to hear as they navigate an unlikely alliance in order to find her father before the cartel finds her, while also going to great lengths to keep a lucrative secret.

Written by Chong, the film was produced and shot by Ben Allan for Main Course Films and stars newcomers Imogen Sage and Callan Colley, as well as veterans Steve Le Marquand and Philip Quast. Locations for the shoot included Sydney, the Hawkesbury region, the Blue Mountains, Armidale, Berrima, and the Northern Rivers. Here is the link: <https://app.frame.io/r/603c9c14-1576-4024-8612-c3b4df75bf32>

Dark Noise
will hold exclusive previews in selected cinemas



Q&A SCREENINGS are across NSW:

KYOGLE at Kyogle Cinemas on Thursday Sept 21 at 6:45pm (with Josie Styles)

ARMIDALE at Belgrave Cinema on Saturday Sept 23 at 4:20pm

WOLLONGONG at Gala Cinema Warrawong on Saturday Sept 30 at 7:00pm

SYDNEY at Randwick Ritz on Wednesday Oct 11 at 6:30pm

Kyogle, Armidale and Wollongong will also have regular screenings after our Q&A. The full trailer for "Dark Noise" can be viewed here:

<https://if.com.au/dark-noise-trailer/>
clarachong@maincoursefilms.com M: +61 (0) 412 472 862 W: +61 2 8916-6101

The FATS meeting 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. FATS meetings are usually held on the **first Friday of every EVEN month** February, April (**except Easter Friday**), June, August, October and December. **If the FATS meeting falls on Easter Friday, then the meeting will probably be one week earlier.** 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. Credit cards can now be used for raffle and other purchases over \$10.

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FATS ON FACEBOOK: FATS has over 4,620 Facebook members and visitors worldwide. 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 11 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, Karen & Arthur White, Andrew Nelson, Wendy & Phillip Grimm, Marion Anstis, George Madani and Punia Jeffery.



FROGWATCH HELPLINE 0419 249 728

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FIELD TRIPS

Please book your place on field-trips; due to strong demand, numbers are limited. Be sure to leave a contact number. Regardless of prevailing weather conditions, we will continue to schedule and advertise all monthly field-trips as planned. It is YOUR responsibility to re-confirm in the last few days, whether the field trip is proceeding or has been cancelled. Phone Robert on 02 9681 5308.

28 October 7-30pm

Darkes Forest

Leader: Ken Griffiths

Take the Princes Highway south (not the freeway), then take the Darkes Forest Rd turn-off. Meet 200m from the corner. The early French explorers and naturalists contributed much to the understanding of Australian natural history. Amongst other things, they discovered and described many species of frog. Today, many frogs retain a *scientific epithet* (i.e. scientific name) honouring these French naturalists. Many frogs also bear common names such as Peron's Frog, Lesueur's Frog and Bibron's Toadlet. Tonight, we will look at some of our frogs in an historical context, and we will examine some of those species first discovered by, or named in honour of, the French. We will also discuss the importance and enlightened scientific role of French exploration in Australia. Ken will also be on hand to provide tips on photographing frogs in their natural environment, so a good opportunity for all those budding photographers in our society.

10 – 12 November

Smiths Lake

Leaders: Karen and Arthur White

Our Smith's Lake trip has become such a popular field trip destination that changes are needed to ensure that everyone gets a chance to go. Previously, it has been first in goes to the head of the list, but this approach has meant that the same people often get to go and newcomers miss out. In addition, we have people cancel late so their place goes unfilled. To overcome both of these problems we have changed the booking arrangements in recent years, including a **non-refundable** pre-payment for the booking. Most people will still be able to attend. This arrangement is in case we have too many people wanting to go on the field trip.

1. For the next field trip, you must email Karen White white.kazzie@gmail.com by the 8 October and indicate that you (and others in your group) want to attend and what day you intend to arrive. Karen will then put your name on a list. If you attended the previous Smith's Lake field trip you will automatically go on the Reserve List.
2. Karen will send you a reply email to let you know which list you are on. If you are on the A list you must pay your accommodation by 13 October to confirm your booking. If you do not pay by this date you will be removed from the A list. You can pay electronically to the FATS account: - **Account Name: Frog and Tadpole Study Group - BSB 082 342 Account No. 285 766 885**. Cost is \$20.00 per person, per night.
3. Karen will send you confirmation of your booking when your payment has been received.
4. Karen will email people on the Reserve list, at least 2 weeks before the field trip dates 27 October. You will be told if there are spaces available for you or not. If are able to go, you will now need to forward your payment to guarantee your place. Payment must be received by the 3 November. If not, your place will be given to the next person on the list. We think that this will be the fairest way to ensure that everyone gets a chance to go to Smith's Lake.

18 November 12-00pm – 4-00pm

Darkes Forest

Tadpole Hunt Leader: Marion Anstis

Take the Princes Highway south (not the freeway), then take the Darkes Forest Rd turn-off. Meet 200m from the corner. The award-winning book "*Tadpoles of S-E Australia*" needs no introduction to frog lovers. Today, we have author, Marion Anstis, on hand to help us look more closely at tadpoles.

Identifying tadpoles can be a very useful method of determining frog populations and can be carried out in the more comfortable daylight hours. Today, we go in search of taddies. Marion will guide us through the sometimes difficult task of identifying tadpoles. Please note the afternoon start time. We will look at both stream-dwelling tadpoles as well as some pond-dwellers. We may be visiting private property on this fieldtrip. We will definitely require contact phone numbers and email addresses of all participants so that we can co-ordinate the day's activities. Please leave all details when booking your place on the fieldtrip.

DECEMBER 2023 The Australian Reptile Park will hold a BBQ for all financial members of Australian herpetological groups. Please contact them to confirm the event date and details. <https://www.reptilepark.com.au/>

In the event of uncertain frogging conditions (e.g. prolonged/severe drought, hazardous and/or torrential rain, bushfires etc.), please phone 02 9681 5308. Remember, rain is generally ideal for frogging! Children must be accompanied by an adult. Bring enclosed shoes that can get wet (gumboots are preferable), torch, warm clothing and raincoat. Please be judicious with the use of insect repellent. Frogs are very sensitive to chemicals! Please observe all directions that the leader may give. Children are welcome, however please remember that young children especially can become very excited and boisterous at their first frogging experience – parents are asked to help ensure that the leader is able to conduct the trip to everyone's satisfaction. All fieldtrips are strictly for members only. Newcomers are welcome to take out membership before the commencement of the fieldtrip. All participants accept that there is some inherent risk associated with outdoor fieldtrips and by attending agree to; a release of all claims, a waiver of liability and an assumption of risk.