

FROM THE PRESIDENT

I am sure you can make up your own “unprecedented times” statement to go in here! But know that I have been thinking of you all and I hope you are safe and well. Frogs have been around for over 200 million years. They’ll still be here when we can celebrate them again and I look forward to it!

In this issue you can read about how the frog world has changed since before unprecedented times were fashionable in a wonderful piece from our magnanimous Patron Murray Littlejohn. The esteemed Angus Martin has written a beautiful tribute to our much-missed colleague and frogger- extraordinaire Mike Tyler, who sadly passed away earlier this year. Seemingly tireless field biologist and Frogs Vic Vice-President Nick Clemann has written an update about bush-fire effected frogs. There are also reports from our AGM, about our feral horse position statement, a La Trobe Uni workshop, looking after the Museum’s frogs during the pandemic, and of course no publication is complete these days without a COVID update. Thanks to everyone that contributed to this issue. If you have something you’d like to go in our next newsletter, please do drop me a line at lynette@frogsvic.org.

Thankyou all for your continued support and I sincerely look forward to the next time we all get to hang out safely.

For the frogs,
Lynette

POSITION STATEMENT RELEASED

The Frogs Victoria committee has released a position statement, outlining our knowledge of the threat posed to frogs by feral horses in the Victorian High Country. You can review it [on the Frogs Vic website](#).

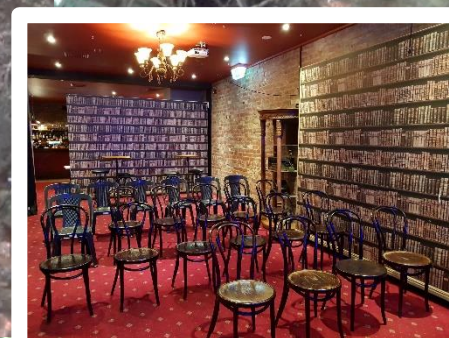


AGM DEBRIEF

A massive thanks to everyone who turned out for the AGM – our first (and as yet, our only) event of 2020. We formed our first fully elected committee and hatched some plans for the year that turned out to be surprisingly optimistic, but that we hope we can employ sooner rather than later!

Lynette Plenderleith was re-elected as President; Nick Clemann continues as Vice President; Colin McHenry drew the shortest straw of all and became Secretary for his Frogs Vic committee debut; David De Angelis joins the Frogs Vic committee as Treasurer; Stephanie Versteegan and Matt Clancy became our first extraordinary Ordinary Members and Teish Sloane-Lay took on the role of Events Co-ordinator.

If you missed it, you can find the [minutes](#) on the Frogs Vic website.



COVID-19 UPDATE

We miss you! We have heard that some of you miss us too... As time goes on, it is clear that we are unlikely to be holding many, if any, “in-person” events this year. We have been investigating options for online events and hope to find some Zoom-keen speakers for future talks. If you would like to give a talk online, please drop us an email (info@frogsvic.org). We can help as best we can with technology. Ok, so that might not be very helpful, but we’ll try!

Either way, we will endeavour to find a way for us to all have a herpy hang out of some description in the spring.

In the meantime, please keep a lookout on the Frogs Victoria Facebook page and website for updates, including froggy events being planned by Melbourne Water, local councils and other organisations.

FROM OUR PATRON

Reflections by Murray Littlejohn on our early field work on Victorian frogs (1959 –1980)

In late 1959, there were no publications that dealt with the biology of the frogs of Victoria as a local or regional fauna, only references to particular taxa, usually associated with descriptions of new species. This contrasts markedly with the present comprehensive state of knowledge.

My field experience with Victorian frogs began during two short visits in August of 1955 and 1957, while studying for a PhD in zoology at the University of Western Australia. In October 1959 I began a lectureship in the Department of Zoology at the University of Melbourne. My field work was started shortly afterwards and continued until mid-2004. The initial research was focussed on the *Crinia signifera* complex, the *Litoria ewingii* complex, and the two species of *Geocrinia*. Observations were also made on all other south-eastern Australian species that I encountered. I concentrated on acoustic communication, particularly the structure of advertisement calls - their function and evolution, and their value in the identification of species and the detection of new species.

In 1962 Angus Martin was appointed to the Department of Zoology and began studies on the biology and evolution of the *Limnodynastes dorsalis* complex for his PhD research topic. Angus also carried out broad studies on the biology, development and morphology of tadpoles of south-eastern Australian frogs.

Arthur Brook, a secondary-school teacher, later joined our group and enrolled for a part-time MSc degree in Zoology. He produced a biogeographic synthesis of the available information on Victorian frogs, derived from our field notes and his own surveys and later used these sources to summarise information on their breeding seasons.

The above work led to a series of articles in *The Victorian Naturalist* on the frogs of the Melbourne area, starting with adult frogs (Littlejohn 1963), tadpoles (Martin 1965), eggs (Martin, Littlejohn and Rawlinson 1966) and calls (Littlejohn and Martin 1969). Distribution maps and information on breeding seasons for all then known taxa in Victoria followed (Brook 1975, 1980).

Later syntheses extended the geographic scope to all of Victoria and noted changes in taxonomic nomenclature, and also included: (1) a compilation of available audio recordings of calls of known species of Victorian frogs as an analogue compact cassette (Littlejohn 1987); (2) a field guide to the frogs of Victoria (Hero, Littlejohn and Marantelli 1991); and (3) a review of the research on zones of hybridisation and intergradation, many of which are located in Victoria (Littlejohn and Watson 1993).

Thus there was now sufficient accessible published material to facilitate further studies of this regional fauna.



Southern Brown Tree Frog, *Litoria ewingii* and Victorian Smooth Froglet, *Geocrinia victoriana*, photographed by Matt Clancy

References

- Brook A. J. (1980). The breeding seasons of frogs in Victoria and Tasmania. *The Victorian Naturalist* 97: 6-11. (All of the other early papers published in *The Victorian Naturalist* are cited).
- Hero, J-M, Littlejohn, M.J., and Marantelli, G. (1991) *Frogwatch Field Guide to Victorian Frogs*. Department of Conservation and Environment, East Melbourne. 108 pages.
- Littlejohn M. J. (1987). Calls of Victorian Frogs. Department of Zoology, University of Melbourne, Parkville. (audio cassette tape recording).
- Littlejohn, M. J. and Watson, G. F. (1993). Hybrid zones in Australian frogs: their significance for conservation. Pages 239-249. In: *Herpetology in Australia - A diverse discipline*. D. Lunney and D. Ayers (eds). Royal Zoological Society of New South Wales, Mosman.

IMPACTS OF 2019-2020 FIRES ON VICTORIAN FROGS

By Nick Clemann

The late 2019 – early 2020 ‘Black Summer’ fires were frightening in their ferocity and sheer scale. Massive tracts of the coastal side of the Great Dividing Range in south-eastern Australia were affected, and entire towns lost - not only many homes and other buildings, but the very character of the bush and coast that made them desirable places to live and holiday.

And, of course, the fires took a predictably awful toll on nature. Ecosystems that “shouldn’t burn”, such as rainforests, went up as surely as the dry forests that we know burn so well. The faunal death toll is literally unimaginable. Estimates were made by shocked experts, but the caveats of those estimates matter almost as much as the necessarily rubbery figures: were we counting invertebrates too? What about eggs and tadpoles of frogs – do they count in the tally?

Further muddying the estimates of loss was the mud. Tonnes of it, washed with ash (and probably fire retardant) from the now-barren surrounding hills into the stream channels as heavy rains helped to finally slow and stop the angriest of summers. As this slurry washed into the streams entire cobble banks, so important for our riverine frogs like Spotted Tree Frogs and Blue Mountains Tree Frogs, were buried outright. And the spaces between rocks in streams and streamside pools where these frogs lay their eggs filled with the muck.

So what does this mean for the frogs of eastern Victoria? Are they all still there? And even if they are, are their populations still healthy enough to carry on over a very uncertain short- and longer-term future?

Targeted surveys for most species have simply not yet happened. By the time the smoke cleared, and the tracks were gradually re-opened, it was autumn. And then, while your scribe was racing along as many of those tracks as we could manage, surveying fire-affected reptiles in a brutally truncated field season, Covid-19 was beginning its insidious emergence back in the cities, putting a stop to the autumn frog surveys.

So, we don’t know much, but at this stage this is what we do know:

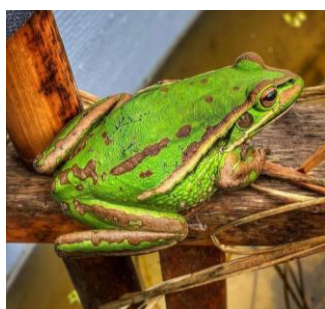
Matt West and Glen Johnson made a heroic effort to get into the Spotted Tree Frog streams and begin the post-fire assessment. Some populations were in areas that were hit hard by both the fire and the post-fire sediment inputs. It will be the coming spring/summer before Matt can say for sure how things are looking for those populations. But already there is talk of getting some of the survivors into the care of Zoos Victoria in order to work on a captive population designed for maximum health and vigour to rejuvenate affected populations.

As long as there is some water left, Victorian populations of the Green & Golden Bell Frog are remarkably tough. During our post-fire work around Mallacoota we stood respectfully amidst the charred ruins of the home previously occupied by young Mallacoota naturalist Bryce Watts-Parker; Although Bryce’s home had been flattened in the conflagration, a lovely wading pool in the backyard had survived; and there sat four beautiful Bell Frogs, acting like the world hadn’t really collapsed after all. Despite the savagery of the fire around and in Mallacoota, we found this species at several other local sites too. Tough.

As for the rest of the species? Right now we can only make educated guesses. There is simply no way that losses have not been enormous. And we know from work done before and after Black Saturday 10 years ago that just because some frogs survive a fire does not mean that all is A-OK. If recolonisation is based on too few founding animals, genetic bottlenecking is a problem. And increasing fire frequency under our “new” climate trajectories means that such bottlenecking might not be an infrequent event – a whole new challenge for conservation managers!

Surveys this coming spring / summer / autumn will tell us more. But one thing we know with absolute certainty is that we cannot be complacent; with disease and habitat degradation / destruction and non-native species (on the land and in the water) already pushing so many Victorian frog species in unhealthy directions, the last thing they need is events like these “mega” fires. And, frighteningly, events of this magnitude can mean that species that were not really on the conservation “radar” are suddenly in a very precarious position.

But, like the frogs, we need to hang tough. Perhaps these fires can be part of the wake-up call that is so urgently needed if we are going to stop the losses. We need to use these fires to help educate our communities that the frogs need our attention and our help, and that “she’ll be right mate” is not good enough. It’s time to get fair dinkum about frog conservation.



Left to right:

Genoa River after 2020 fires;

Green and Golden Bell Frog, *Litoria aurea* in Bryce Watts-Parker’s backyard, Jan 2020;

Silt in small stream, NE Vic, March 2020

WORKSHOP ON ADVANCES IN AMPHIBIAN SURVEY AND MONITORING TECHNIQUES AT LA TROBE UNIVERSITY'S WILDLIFE SANCTUARY

By David De Angelis

On 7 September last year, over 50 people including academics, students, consultants and citizen scientists came together for a workshop on advances in amphibian survey and monitoring techniques at La Trobe University's Wildlife Sanctuary.

Experts demonstrated different techniques that have been developed or advanced in the past couple of decades, including eDNA sampling, call site visualisation in the field using 'Firefly' (Mizumoto *et al.* 2011), remote acoustic recording using Song Meters and AudioMoths, mark-recapture using Visible Implant Elastomer and Alphanumeric tags, web clipping as a substitute for toe clipping to collect tissue from larger frogs (Keely *et al.* 2015), radio telemetry using miniaturised (0.15-0.2 g) transmitters, baited tadpole trapping with glow sticks, and the latest hygiene procedures. In between day and night sessions, everyone was treated to a barbeque dinner courtesy of the University's caterers.

For anyone interested in looking at these techniques further, methods papers or shorter technical descriptions should be relatively easy to search for online where no references have been cited above.

Thanks to everyone who helped in the leadup and on the day, particularly Ally Borgelt, Vern Steele, Michael Cincotta and Claire Lowe. Also to Tom Burns (Deakin University), Brendan Casey (RMIT University), Josh Griffiths (CESAR), Claire Keely (Museums Victoria), and Reid Tingley (Monash University) for leading many of the sessions.

References:

Keely, C. C., Hale, J. M., Heard, G. W., Parris, K. M., Sumner, J., Hamer, A. J. and Melville, J. (2015). Genetic structure and diversity of the endangered growling grass frog in a rapidly urbanizing region. *Royal Society Open Science* 2: 140255. <http://dx.doi.org/10.1098/rsos.140255>

Mizumoto, T., Aihara, I., Otsuka, T., Takeda, R., Aihara, K. and Okuno, H. (2011). Sound imaging of nocturnal animal calls in their natural habitat. *Journal of Comparative Physiology A* 197: 915–921.



Left to right:

Explaining water sample collection for eDNA analysis to participants. Photo by Asha Billing

Tom Burns demonstrating water sample collection for eDNA analysis. Photo by Claire Lowe

Taking a closer look at aquatic fauna caught while tadpole trapping. Photo by Asha Billing

Demonstration of how to sample toe webbing. Photo by Claire Lowe



TALES FROM THE PANDEMIC: CHALLENGES 2020 HAS BROUGHT FOR THE ANIMALS OF MELBOURNE MUSEUM

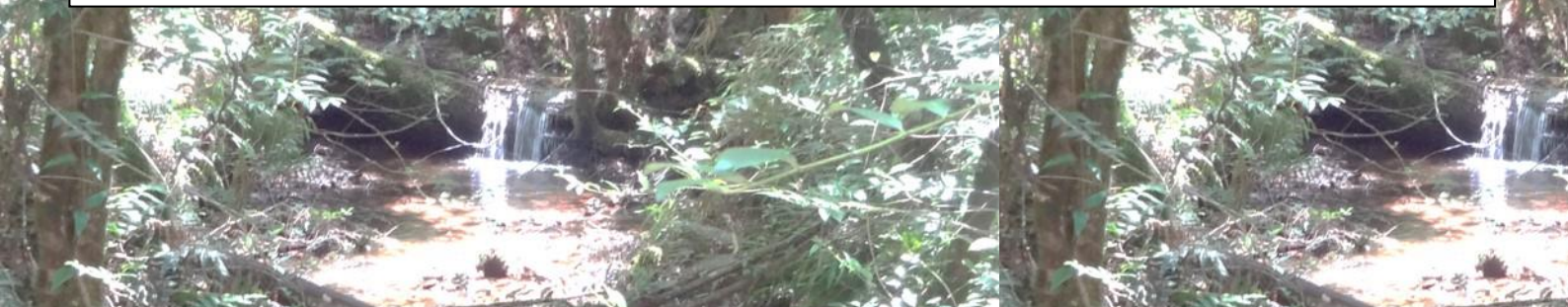
By Stephanie Versteegan, Animal Keeper, Melbourne Museum

Well 2020 is not a year like any other year - by anyone's standards. COVID-19 and its many challenges has not left the zoo and animal-keeping industry unscathed either. For Melbourne Museum and all our live animals (including the frogs) lockdown is very different from the norm.

In lockdown 1.0 just about all our animals went home with staff. We all had garage zoos or spare rooms full of all sorts of creepy crawly spiders and scorpions, scaly lizards and snakes and of course the ribbiting frogs! Keeping each animal away from its well organised and designed house at the museum brought all different issues and hurdles to deal with. Some animals required heating as well as lighting, others were in a jar on a shelf and just needed food and water for the weeks they were home with us. We currently have 5 species of frogs at the Museum- Pobblebonk (*Limnodynastes dumerilii*), Green Tree Frog (*Litoria caerulea*), Spotted Tree Frog (*Litoria spenceri*), Growling Grass frog (*Litoria raniformis*) and the Rocky River Frog (*Litoria lesueuri*), split into 2 groups- back of house and front of house.

The front of house frogs stayed at the museum in their large, planted out enclosures in the Forest Gallery. These enclosures have a large water section, lots of plants and moss to hide in and lights on timers. They were checked by the keepers 3 times a week. It was manageable in Autumn, going into Winter, so it did not get too hot and cause issues, even when the water pump was turned off. The back of house frogs went home with our keeper Brigette Bell- who cared for them in glass enclosures in her garage (pictured below) along with our Spinifex Hopping Mice, 6 species of stick insects, numerous scorpions and spiders and a couple of Shingle Back Lizards! She did a fantastic job caring for all these animals and all were returned happily to the Museum by the first week of June. We then spent 3 weeks re-setting up, re-designing and completing the displays for front of house visitors. But alas, after being open for barely 2 weeks, the Museum closed again!

Lockdown 2.0 was different than the first. We had a better idea of what we were going into, and the animals remained on site and our team continue to care for them there. Bugs Alive and the Forest Gallery- our 2 main front of house galleries- are currently ghost towns. In Bugs Alive the lights are off, and we maintain a few exhibits, but there is hardly any movement and silence greets us instead of the sound recordings mingled with the excited kids voices that usually fills the gallery. The Forest Gallery is still full of sounds and movement- the birds, fish, frogs and lizards might be enjoying a bit of quiet from the visitors they usually see every day- but I personally am missing the sounds of the laughter and talking that usually fills this immense Forest. But what can we do? We can care for the animals- get deafened by the Growling Grass Frogs as they call all day back of house, feed the Thorny Devil and maintain its tasty little ants, smile as the new Musk Lorikeets chatter to each other in the Forest. We can wait. We can plan. We can be ready for the day the doors open again and the amazing animals can entertain, enthrall and delight once more!



DR MICHAEL JAMES TYLER AO

By Angus Martin

Mike Tyler left England in 1959, spent his whole working life in Australia, and died on 26th March 2020, a few hours short of his 83rd birthday. He and his English-born wife Ella made their home in Belair, South Australia.

Mike was 'the man who loves frogs': they were the ruling passion of his life. A boyhood fascination with nature led to his volunteering at the British Museum (Natural History); among the things he learned there was that frogs were most diverse and least studied in the tropics. Accordingly, at the age of 23, he set out for New Guinea by the only means he could afford: walking, hitching, and eventually working his passage on a tramp steamer. He ended up in Adelaide, but managed to secure a 6-month posting to the New Guinea highlands in 1960: he was among abundant and exotic frogs at last!

He was appointed to a technical position in the Department of Physiology and Pharmacology at the University of Adelaide in 1961, later becoming Laboratory Manager. He was also made an Honorary Associate at the South Australian Museum, where he lodged his large collection of New Guinea frogs. This was his basic research resource for years, it led to his first major paper, 'Papuan hylid frogs of the genus *Hyla*' in 1968, a foundation step in his production of more than 400 publications on the Australo-Papuan frog fauna.

He was first and foremost a taxonomist, but as well as taxon descriptions his list includes contributions to anuran biology, anatomy, systematics, pharmacology, zoogeography and palaeontology; with popular and scientific articles, books and book chapters, reviews and field guides. It is thanks to Mike's work, for instance, that *Cyclorana* was recognised as a hylid, and that within Australia the generic designation *Hyla* was replaced by *Litoria*. He undertook pioneering fieldwork in Arnhem Land and the Kimberley.

His research earned him MSc and DSc degrees at the University of Adelaide, where he was appointed to an academic position in Zoology in 1975. He was generous in his support of a number of societies and institutions, including the World Congress of Herpetology. His contributions to the general community were widely recognised, most notably by his investment as an Officer of the Order of Australia (AO) in 1995.

Those who had casual acquaintance with Mike tended to be most struck by his light-hearted manner and mischievous sense of humour; these disguised the fact that he struggled with chronic illness for much of his adult life. That his spirit of adventure, his curiosity and his passion for sharing his enthusiasms were unquenchable are tributes to his own courage, to the support of many colleagues and particularly to Ella and daughters Libby and Sally.

SHOW US YOUR FROGS!

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

We are looking for speakers for the 2020 online season and would love to see you talk. Please email lynette@frogsvic.org

THE FROGS ARE CALLING YOU

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

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

Frogs 
Victoria

More information: www.frogsvic.org

Find us on social media: @frogsvic #frogsvic

Email: info@frogsvic.org

Frogs Victoria Society, August 2020