FROGSHEET

Official Newsletter of the Queensland Frog Society Inc. **Spring 2014**

W: www.qldfrogs.asn.au | E: questions@qldfrogs.asn.au | Camps E: frogcamps@qldfrogs.asn.au |

In this edition...

(Interactive pages)

Welcome and thanks to our New Members

Wendy Craggs, James Prentice, Glis Wotton, Marnie Smith-Besson, Julie Schubert, Felix Webb, Judith Roland, Michael Miley, Alana Hildred, Ashley Keune, Berry-Leyden Family, Greg Worthington, Leonie Shanahan.

Featuring in this Edition...

Bundaberg Report by newly appointed Area Coordinator, David Flack

Tree planting by QFS's Central QLD dedicated team

President's Report

As our president Dan is away on a road trip exploring the wilderness of Cape York Peninsular, I'm filling in for the President's report for this edition. Ahh Spring is here! The days are already starting to warm up and just a few days ago much-needed rain fell across parts of south-east Queensland, and this combined with the higher humidity has already got some species active and calling, such as the eastern sedge frog (*Litoria fallax*) and emerald-spotted treefrog (*Litoria peronii*). Although the situation is much the same as the last President's report (Winter edition) with weather conditions being drier than average and a large part of the state is now drought-declared. So here's hoping the weatherman is proved wrong and some drenching rains come sooner rather than later this spring/summer season, to give our frogs some opportunities to breed!

How time flies? It is hard to believe it's already that time of the year again with our up-coming AGM on Saturday 4th of October. First and foremost, I'd like to thank the Committee and area coordinators for all their hard work throughout the past year as well as commend Jono, as always, on the great job he is doing with the *Frogsheet* and as our website manager. We strongly encourage members to get involved in any way they can, and seeing fresh faces on the Committee to bring forward new ideas into the Society are most welcome. You don't need to know about frogs as there are a variety of different tasks you could get involved with, depending on what your interests are and what skills you have or anything you would like to learn more about. We're very excited to announce that our 2014 scholarship recipient, Lynette Plenderleith, will give us a presentation on the progress of her frog research, looking at the phenology and detectability of Queensland's frogs. In addition, we're mixing things up a bit this year with the AGM being held at a new (officially opened in 2013) venue - the Cubberla-Witton Catchments Network centre, right next to Cubberla Creek in Chapel Hill (west Brisbane). Details will soon follow.

The Queensland Garden Expo weekend (11-13th July) at the Nambour Showgrounds continues to be a great success for QFS, with hordes of interested folk visiting our display this year - many thanks to all members who were involved, including Committee members, and a special mention to Jono, Brittany, Desley and Ashley (a new member), for giving up their time and doing a fantastic job helping out at the display!

I would also like to bring to your attention National Threatened Species Day (Sunday 7th September). This day commemorates the tragic loss of

FROGSHEET - Spring 2014

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QFS supported by the Brisbance City Council

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QFS Public Trust Fund - Ric Nattrass Research Grant

The QFS Trust Fund was created with the purpose to help save Queensland frogs through education and research, and now stands at **$1,586.27**.

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Coming Up

Annual General Meeting

4th October
10.30am – CWCN Centre, 47-57 Hepworth Street, Chapel Hill. Come listen to our guest speakers.

SGAP Spring Flower Show

11th & 12th October
Botanical Gardens, Toowong. QFS Display and Sales

Frog ID Workshop

16th November, 2-8pm, Mooloolah.
Workshop followed by BBQ and frogging.
RSVP Jan on 5494 5074.

QFS Management Meetings

7:30pm, 3rd Wednesday of every month
All welcome! Phone/email Jenny. H for location.

Frog Habitat Site Working Bees

Bowman Park, Bardon

8-11am - Contact Phil for more info

Grinstead Park, Alderley (off Short Street)

Contact Debbie Dolby for more info
ddolby@hotmail.com, Ph: 3355 4134

Carseldine Bush Crew

Cabbage Tree Creek, Carseldine
Contact James Hansen for more info at
jamna@powerup.com.au.

Working bees in frog habitat

If you are undertaking bush-care in frog habitat and would like your working bee dates included above, please email Jono at editor@qldfrogs.asn.au

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the last known thylacine (Tasmanian tiger) in captivity. Sadly, about a third of all frog species around the world are threatened with extinction due to various threats, however the main ones are: habitat loss, fragmentation and degradation, and chytrid fungus. This global trend is unfortunately reflected in Queensland, for example, there more than a dozen frog species listed as endangered at the state level. So on this day, please spare a thought for our threatened frogs as well as other native wildlife, many of them don't occur anywhere else in the world and they need our help. There are a range of things you can do to help out such as donate to and/or volunteer with conservation organisations, making your garden wildlife-friendly and spreading the word about the plight of our threatened frog species, including on social media. As you can see in the picture above - we can't live without frogs!

Source: Vancouver Aquarium

Lastly (and coincidentally!), the Happy Earth Festival is also on Sunday 7th September at Mooloolah, so check it out if you're in the area and interested, some of our keen members will be there flying the QFS flag.

Look forward to seeing you at the AGM if you can make it!

All the best and happy frogging, Jesse

Changed your email address?

Please notify the Secretary of your current email address to avoid the risk of missing out on *Frogsheet* newsletters via email.

Updated Diary Dates

Please visit the QFS website and our Facebook page for updated and new events that arise between *Frogsheet* newsletters.

Want to help spread the word?

If you're a coordinator, why not set up a QFS display in at a community event and raise awareness of our awesome frogs? No expert knowledge is necessary, just a passion for frogs. Contact Jenny to arrange display and brochure pick-up.

From Jono

HI Fellow Froggers,

Once again it was a tonne of fun helping out at our QFS display at the QLD Garden Expo in July! Our stall display attracted many people and their questions. We also had our largest attendence of volunteers helping at the stall which lightened the load.

In other news, hasn't this rain been great?! Has brought out the Striped Marshfrogs and Tusked Frog at my pond - and frog spawn. Still trying to get out and about for some good frogging, but did happen to find this Whistling Treefrog (*Litoria verreauxii*) whilst frog monitoring for work. This is a new species for me with a really cool call, too. They are a winter breeder that favours farm dams. We found this one calling beside a sediment basin at a construction site! Not the best shot as my own camera had a flat battery!

Cheers, Jono Hooper

Ashgrove Report

How wonderful the rain was on the 16th and now I have some more water in my ponds. I am hoping for more follow up rain so that the ponds in the habitat areas are also ready for the frog breeding season which won't be too far away. Even the striped marsh frogs have been quiet this winter.

The last working bee at Bowman Park was quiet successful and Phil, Margie and I plus a couple of students. Nikita and Maxine are Graduate Diploma of Education student studying at QUT. Currently they are researching frog numbers in Brisbane and surrounds for a Primary Science assignment. As a part of their assignment they are required to look into efforts to restore frog numbers in Brisbane. Both of them were a great help in digging out lots of Cat's Claw Vines which were heading up the trees. Also found some more *Dyschoriste depressa* and we started to reduce this so it doesn't spread. Hopefully the rain washed the pools out as the water was quite smelly and dank looking.

Our display at Nambour Garden Expo was very well manned and received by the public who had quite a variety of questions to ask and stories to tell. I don't know how many people came to our display but I hear there was 38,000 visitors to the showground over the 3 days.

Recently I had a trip to the [Red] Centre with friends which was wonderful and exciting. On all the walks we went on there were plenty of display boards with plants, frogs and bird species described for the new comers and I was very pleased to see how other NPs work. They really do cater for their visitors.

Jenny Holdway

Support Your Queensland Frog Society

We offer gift cards for all occasions! For a donation of over $5 to the Queensland Frog Society you can choose from four frog cards. There is a space for your own personal message to the person you are gifting it to.
You can donate by either a direct deposit to our account or by sending a cheque/money order to our postal address (on page 1).
Account details are: Westpac Bank - Annerley Branch; BSB: 034 046; Account No. 13 43 4.
Please send an email to secretary@qldfrogs.asn.au to inform the Secretary of the deposit.

Bundaberg Report

G'day fellow frogaholics,

Please allow me to introduce myself. My name is David Flack and I am the QFS Area Coordinator for the Bundaberg region. I am also the team leader at Alexandra Park Zoo in Bundaberg, and have been in the zoo/wildlife industry for the past six years. I have also worked as a spotter catcher, crocodile farm stationhand, and have permits to relocate problem reptiles, birds and possums – I wear many hats! But through it all, my primary passion is FROGS and has been ever since I was a small boy. I am looking forward to the warmer months of spring and summer and the opportunities to explore this region and discover where the frogs are hiding.

In June, I was lucky enough to attend a reptile conference in Brisbane called Reptecon. One of the speakers was Michael McFadden. Michael is the Unit Supervisor for Herpetofauna at Taronga Zoo and is one of the co-ordinators of their amphibian conservation programs, in particular the southern corroboree frog (*Pseudophryne corroboree*). He spoke on the general husbandry of Australian frogs and the most common issues that frog keepers have with maintaining their frogs in captivity. In short, most cases of sick frogs are due to improper husbandry. Michael spoke on different aspects of frog husbandry such as heating, air exchange (ventilation), substrates, water quality, diets, UV requirements and amphibian chytrid fungus. He finished off his talk with an update on how the corroboree frog project is progressing at Mount Kosciusko.

Happy frogging,
Dave Flack

REMINDER: Membership Renewals

Members will have received a renewal form via email or post for the 2014-15 year. Please fill out and return if not already.

Payment accepted through direct deposit or cheque/money order to QFS Post Box address.

Direct deposit details:
Name: Queensland Frog Society Inc.
Bank: Westpac – Annerley Branch.
BSB: 034 046. Account No: 13 43 41

Many thanks to those who have already renewed – it is greatly appreciated and allows the society to fight for our amphibians.

Froggers Busy at Bouldercombe

On Sunday 27th July the Rockhampton and CQ Group of the QFS hosted a Tree Planting day near Bouldercombe for Planet Ark's National Tree Day. Thirty-three adults and children and 2 fluffy dogs were on hand to plant, mulch, water and place guards around 197 trees in two hours. The site will provide much-needed connectivity between Four Mile and Teatree Creeks, with habitat galore for birds, insects, mammals, reptiles and frogs.

(Most of) the team responsible for Tree Planting day near Bouldercombe for Planet Ark's National Tree Day *Credit: B. Bell*

Plenty of help and a Police escort at the QLD Garden Expo

Our frog display was very well attended to this year during the QLD Garden Expo from the 11-13th July, by both visitors and QFS members! As always, visitors has many questions regarding their local frogs and how they can entice frogs into their

yard. Their answers were provided by a bumber attendence of nine QFS members who shared in the fun and laughs of assisting at the display over the three days.

During the Friday, whilst carrying about our business, we looked up and happened to find three police officers walking by our area, with none other than the very passionate Desley walking amongst them, scoring her own escort. Jenny jokingly told the officers she could vouch for Desley, and they replied they'd cuff the two of them in that case. It was a 'you had to be there moment', I asure you!

Other highlights included being told be visitors "you've made my day; I had no idea you guys (QFS) existed!". Sean Morrow again presented several informative frog talks over the three days, whilst never forgetting to mention our Society as the 'go to for answers' place and to contribute to frog conservation.

A big thanks goes to Brittany, Desley, Julia, Ashley, Jesse, Janice, Victor, Jono and as always, Jenny.

Can we stop one of the deadliest organisms in nature?

Cosmos Magazine | Cathal O'Connell | 14th July 2014

Vaccinating frogs against a killer fungus that has wiped out 200 species may stop more endangered amphibian species from croaking it. Cathal O'Connell reports.

If you were trekking through the leafy D'Aguilar mountain range in south-eastern Queensland around 1970 or before you might have noticed, clinging to the underside of a boulder near a fast-flowing stream, a little brown frog with a distinctive 'H' on its back.

The Mount Glorious Day Frog was one of the first victims of the spread of the deadly fungus Batrachochytrium dendrobatidis (Bd). This indiscriminate amphibian killer, also known as chytrid fungus, has caused the extinction of at least 200 species of frogs around the world in the past four decades. It has also wiped out toad, newt and salamander species, helping make amphibians the most endangered animal group in the world with nearly one third of known species now extinct or nearly extinct."It could be the second most deadly organism on the planet, behind

humans," says Jason Rohr of the University of South Florida. "I know of no other species implicated in that many extinctions."

Rohr and his colleagues are testing whether a vaccination program could help to save the remaining amphibians. Their latest results, published this week in Nature, look promising.

Rohr and his team showed that infecting captive frogs with Bd, and then curing them using heat therapy, left the animals better equipped to fight future exposure to the fungus. When these frogs were directly re-exposed to Bd they became less sick than frogs encountering Bd for the first time. What's more, the frogs' resistance increased when they were infected and cured several times.

This inoculation strategy may lead to improved conservation measures, says Rohr. So far, the only way to save Bd-ravaged frog species has been through the Amphibian Ark project in which conservationists transfer members of threatened species from the wild to captive breeding zoos. The problem is, when such frogs are re-introduced into the wild they still often die from exposure to Bd. "To improve the chances of success," says Rohr, "these zoos might be able to induce acquired resistance before these species are released back to the wild."

Even more encouragingly, the study also shows that frogs can build resistance through exposure to Bd killed by heat treatment. This means wildlife managers might be able to release dead fungus directly into ponds – that is, immunise amphibians right in the wild. "It's not like you have to actively give the animal the infection itself," says Teagan McMahon, co-author of the Nature paper. This finding, she says, provides hope for establishing positive management plans.

Bd researcher Lee Skerratt of James Cook University praises the new experimental approach. He is cautionary, however, about its possible impact on wildlife management. Skerratt notes that although the study shows that inoculating frogs with the dead fungus does provide some protection against the disease, the size of the effect is relatively small. "[Bd] is still killing the majority of frogs after a short period of time," he says.

On a global scale, Skerratt adds, Bd has been so devastating within a few short decades because it has been able to hitch a ride with humans to every corner of the planet. Consequently, Bd was able to expand at an alarming rate into territories where frogs had no previous exposure and so no immunity. "It's globalisation," he says. "The big lesson is that we need to get some sort of biosecurity system in place globally; otherwise, we're just going to have more of these types of events occurring with other species and other pathogens."

Source: http://beta.cosmosmagazine.com/life-sciences/can-we-stop-one-deadliest-organisms-nature?utm_source=This+Week+in+Cosmos&utm_campaign=5e2d25acfd-This_week_in_Cosmos_14_July7_13_2014&utm_medium=email&utm_term=0_1df827744a-5e2d25acfd-113849349 to read more of the article

Amphibian Contributions to Ecosystem Services [Abstract]

Herpetological Conservation and Biology 9(1):1–17 | Hocking, D.J & Babbitt, K.J | 13th July, 2014

Ecosystems provide essential services for human society, which include provisioning, regulating, cultural, and supporting services. Amphibians provide provisioning services by serving as a food source for some human societies, especially in Southeast Asia. They also serve as models in medical research and provide potential for new pharmaceuticals such as analgesics and anti-viral drugs derived from skin secretions. Amphibians contribute to regulating services by reducing mosquito recruitment from ephemeral wetlands, potentially controlling other pest species, and indirectly through predation of insect pollinators. Often neglected, ecosystems also provide cultural services to human societies that increase the quality of human life through recreation, religion, spirituality, and aesthetics. As an abundant and diverse class of vertebrates, amphibians also play promi-

nent roles in the culture of human societies through pathways such as mythology, literature, and art. Most research on the role of amphibians in ecosystems has been on their contribution to supporting services. This is also the area where amphibians are likely to have the largest contribution to ecosystem services. Supporting services have structural (e.g., habitat) and functional (e.g., ecosystem functions and processes) components. Amphibians can affect ecosystem structure through soil burrowing and aquatic bioturbation and ecosystem functions such as decomposition and nutrient cycling through waste excretion and indirectly through predatory changes in the food web. They also can control primary production in aquatic ecosystems through direct consumption and nutrient cycling. Unfortunately, amphibians are experiencing major declines and humans may be losing associated ecosystem services. It is important to understand how declines affect ecosystem services for human societies, but these declines can also serve as natural experiments to understand the role of amphibians in ecosystems.

See-Through Frogs With Green Bones Discovered in Peru

National Geographic | Owen, J. | 25th August, 2014

Four new species of see-through frogs, three of which reveal green bones, have been discovered by researchers in northern Peru.

Showing their beating hearts and other body organs in x-ray detail, the newfound amphibians belong to the aptly named glass frog family (Centrolenidae).

Uncovered during extensive surveys in the Peruvian Andes, the "four remarkable species" were described August 12 in the journal Zootaxa.

The tiny frogs, which live alongside streams, include Centrolene charapita—named for a chili pepper that the yellow splotches on the back of this species resemble. Curiously, the two specimens that were collected had hind legs lined with fleshy, zigzag protuberances.

"We have no clue" why that is, acknowledged study co-author Santiago Castroviejo-Fisher, a herpetologist at Pontifícia Universidade Católica do Rio Grande do Sul in Brazil. Of the 150 known species of glass frogs, "less than ten have such ornamentation," he said.

Fellow discoverer Evan Twomey, a frog researcher at East Carolina University in North Carolina, speculated that the leg frills could help to break up the frog's outline and mask it from predators. "That's a possibility, but it's hard to know," he said.

Gaudy Coloring

Cochranella guayasamini, which like many glass frogs is mostly green where it isn't see-through, has distinctive yellow circles around the eyes. However, its tadpoles—which emerge from spawn laid on leaves overhanging mountain streams—are a vivid reddish pink before later turning green, according to the study.

The team said this gaudy coloring could be explained by a ramped-up system of blood vessels in the transparent tadpoles' skin, which enable them to live in oxygen-poor sediments in the streambed.

But again, that's only a guess: Glass frog tadpoles have barely been studied, and their natural history remains largely unknown, Twomey said.

A photo of the ventral side of a transparent frog, Chimerella corleoneA belly shot of Chimerella corleone, one of three transparent frog species discovered in Peru. Photograph by Evan Twomey

A third new species, *Chimerella corleone*, owes its mafia clan title to one team member's obsession with The Godfather novel and film trilogy.

Detected only in the spray zone of waterfalls, the

frog hardly looks menacing considering it's just two centimeters (0.79 inches) in length. However, it does happen to conceal a spike-like bone in its upper arm, Twomey said.

"I guess it's used for fighting between males," he added. "So, for a frog that size at least, I'd say it's fairly ruthless."

C. corleone, along with the two species so far mentioned, were found to have green bones—a bizarre trait that's actually widespread among glass frogs. The research team suspects the strange bone coloration is caused by an accumulation of a metabolic byproduct called biliverdin, a green bile pigment.

Green Bones Puzzle

Whether having green bones might in some way be advantageous to the frogs hasn't been studied, Castroviejo-Fisher said, but "I have noticed that most frogs with green bones are arboreal [dwell in trees]."

A photo of a new species of transparent frog, *Hyalinobatrachium anachoretus*. Researchers found *Hyalinobatrachium anachoretus* residing much higher in the mountains than other species in this genus. Photograph by Evan Twomey

The fourth newly described species, *Hyalinobatrachium anachoretus,* was recorded in cloud forest at an altitude of 6,725 feet (2,050 meters). Other known species in this genus are found up to a maximum elevation of 3,280 feet (1,000 meters), so the find was "very unexpected," Castroviejo-Fisher said.

The team discovered this frog in large numbers, but only on one particular night. Other nighttime surveys of the same area failed to turn up a single specimen.

The bigger mystery scientists are struggling to solve is why these and other glass frogs allow us to see straight though them. "Without a doubt, the adaptive, developmental, and genomic basis for the transparency of glass frogs is a long-standing question in zoology," Castroviejo-Fisher said.

In the meantime, the backlog of undescribed glass frogs in South America is mounting. "We have a bunch of new species awaiting description in our offices," Castroviejo-Fisher said.

The see-through frogs clearly have a lot more to reveal.

Photography by Evan Twomey

Jump to it! A frog's leaping style depends on the environment

Society for Experimental Biology | 3rd July, 2014

A frog's jump is not as simple as it seems. Scientists have discovered that different species adopt different jumping styles depending on their environment.

Credit: M. Vidal-Garcia

Tree frogs reach great heights with their jumps, but do not cover much distance. Lead researcher, Miss Marta Vidal-Garcia (PhD candidate, Australian National University), found that tree dwelling frogs reached great heights but didn't cover much distance with their jumps. Aquatic frogs, meanwhile, jumped very long distances but remained close to the ground. On the other hand, the jumps of burrowing frogs were low both in height and distance. The scientists used high speed video cameras to film the jumps of approximately 230 wild frogs, from 30 different species.

'We searched actively for the frogs at night after heavy rains during their breeding season, as they are more likely to be active', Miss Vidal-Garcia said. The frogs were caught by hand and filmed in the field with two high-speed filming cameras in order to get a Three-Dimensional view of their jumps. The videos were then analysed frame by frame by computer software and variables including height, distance and speed were measured. The results showed that frogs from different habitats adopt distinct jumping styles.

Frogs from different habitats also had distinct shapes. 'Burrowing frogs have very squat bodies and short limbs' explained Miss Vidal-Garcia. 'This is because they tend to occupy arid environments so this helps to minimise water loss through their permeable skin. The aquatic frogs, however, have more streamlined bodies with longer limbs to improve swimming ability'.

Miss Vidal-Garcia added 'In the future, I am hoping to do more fieldwork so that I can collect data from fifty species and cover all the Australian frog clades. I also want to investigate how the shape of the pelvis influences jumping style'.

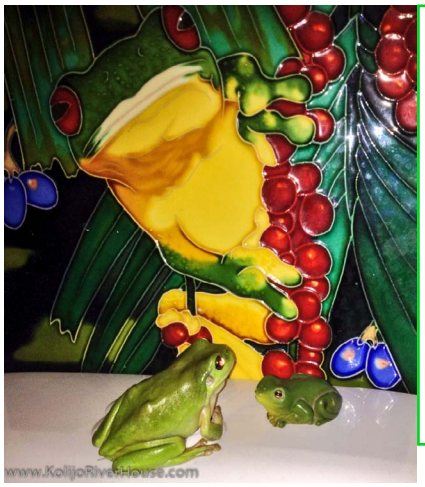
Frotography

Members Frog Photos

Have some neat frog photos you'd like to share here? Email them to editor@qldfrogs.asn.au by the next newsletter deadline (see below).

Large Green Treefrog (*Litoria caerulea*)
Credit: R. Preater

Emerald-spotted Treefrog (*Litoria peronii*)
Credit: D. Flack



A Green Treefrog (*Litoria caerulea*) checking out a plastic look-alike, at Kolijo River House in Tropical North QLD

Credit: L. Drew

Thanks to those who contributed to this newsletter!
Remember, we're always after member-contributed content.
Deadline for Summer *Frogsheet* contributions is
20th November, 2014

If undelivered, please return to
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East Brisbane, QLD 4169

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