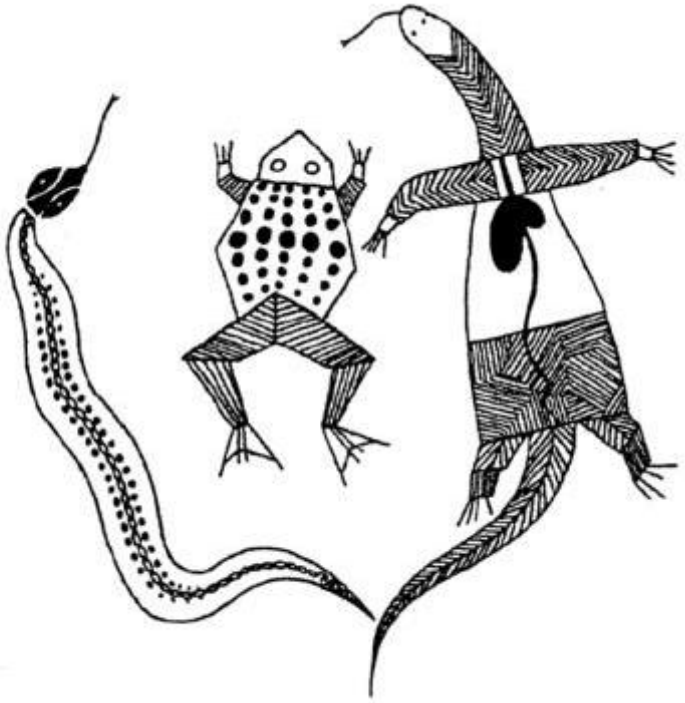
THE AUSTRALIAN SOCIETY OF HERPETOLOGISTS INCORPORATED



NEWSLETTER 52
[Published 27/05/2017]

Letter from the editor

I have distributed the 2017 ASH newsletter before the conference next month to give you the chance to catch up on the latest research and maximize your networking opportunities at the meeting. This also fits in with our usual timing of a winter update, when most people are huddled into the office, rather than off bothering their study species.

Nicki and her team have been working hard to ensure everyone has an enjoyable meeting and I am so looking forward to talking and dancing with friends old and new while learning about the developments in herpetology in Australia and beyond.

It is with great sadness and fond memories that this ASH newsletter update is published. We mourn the loss of three herpetologists and fine people; Professor Michael Bull and his long-term research assistant Dale Burzacott, in addition to Dr Simon Hudson. I would like to acknowledge the society's respects to their family and friends in these difficult times.

Please travel safely to the conference and if you cannot be there, rest assured I will reveal the most compelling photographs in the next newsletter. Thanks as always to Jacquie Herbert for assisting the newsletter with her collection of photographs, drawn this time from our collective archive.

Back legs first,
Deb Bower
Editor

THE AUSTRALIAN SOCIETY OF HERPETOLOGISTS INCORPORATED

History of Office Bearers

Formation Committee (April 1964):- MJ Littlejohn (Convenor); State Reps IR Straughan (Qld), FJ Mitchell (SA), HG Cogger (NSW), G Storr (WA), RE Barwick (ACT), JW Warren (Vic), AK Lee (Editor).
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Please direct all membership enquiries to the Treasurer, Joanna Sumner. Membership forms can be filled out at the ASH web site. Newsletter feedback can be given to Deb Bower. All other enquiries should be directed to the Secretary, Eridani Mulder.

Website
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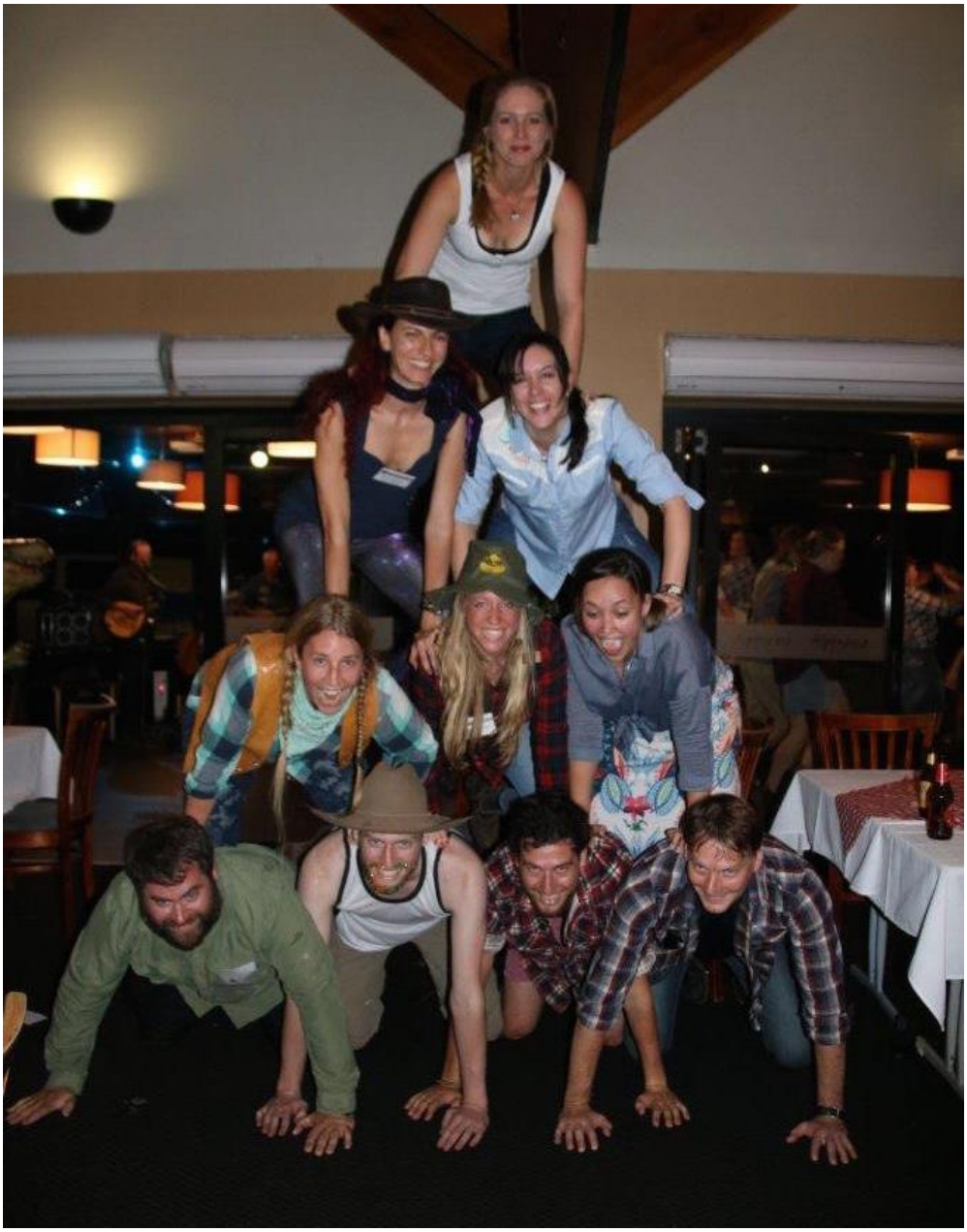

Tasmania

University of Tasmania
Beer Group
www.beergrouputas.wordpress.com

The BEER group is back in full swing after a winter of cold turkey and soul searching following ASH 2016. The most important achievement of the past 12 months has perhaps been the addition of a new website which we made live towards the end of 2016 and which contains extended updates on the group and our research to date (www.beergrouputas.wordpress.com). But for those of you who would prefer the brief version…

Erik Wapstra completed his ARC Future Fellowship last year and has returned to his substantive research and teaching position with the added challenge of being the Associate Dean of Research for the Faculty. Erik continues to build the snow skink model system with his students on a range of questions from climate effects and climate change modelling, telomere and life history dynamics, sex allocation and sex determination. Erik was also recently part of a hugely successful global working group focused on examining the indirect consequences of climate mediated changes in species distributions for a host of biological and anthropomorphic processes, the outcomes of which have recently been published in Science and Biological Reviews. As a reward for this achievement, Erik is about to head off on his 17th field season in Sweden with Mats Olsson.

Geoff While continues to expand his work on the Egernia group, hoping to uncover the evolutionary origins of family living within this unique lizard group. This work involves several large-scale experimental and comparative components as well as substantial collaboration with Dave Chapple, Mike Gardner and Martin Whiting as well as Tobias Uller and Charlie Cornwallis (both at the University of Lund). As part of project, Geoff's long-term natural population of *Liopholis whitii* population moved into its 12th season of sampling this year and has begun to uncover interesting insights into the long-term social dynamics of Egernia. Geoff also continues to spend time at the University of Lund and in Europe more generally, working on the wall lizard system he developed with Tobias. Indeed, Geoff recently returned from his 6th field season in Italy, where he, Tobias and their team are aiming to uncover the evolutionary origins and introgressive spread of the "Tuscan" phenotype that has spread so rapidly among wall lizard's lineages via selective hybridsation. Geoff is actively pursuing keen students and post-docs to begin projects on these topics in 2018.

The BEER group has had a couple of important PhD completions in the last 12 months. Both Ben Halliwell and Hannah MacGregor submitted their PhD theses and have recently been awarded their doctorates. Ben's project focused on using large experimental enclosures to investigate the evolutionary feedbacks between ecology, female promiscuity and social organization in *Liopholis whitii*. Hannah worked with Geoff and Tobias on their wall lizard project and split her time between UTAS and Oxford. Hannah's project examined the role of sexual selection in mediating gene flow between species upon secondary contact and on facilitating colonization of non-native areas. Both Hannah and Ben received outstanding marks

for their theses. Ben is currently working as a post-doc within the BEER group. Hannah is currently living the high life in Trinidad working on guppies with Rob Heathcote.

George Cunningham will hopefully be joining Hannah and Ben in the Doctors lounge soon. George is in the final stages of his PhD examining the ecological drivers of transitions between sex determining systems in *N. ocellatus*. George's project involves lots of field work across multiple snow skink populations as well as a fair bit of time in front of the computer working on simulation models in collaboration with Lisa Schwanz at the University of New South Wales. Kirke Munch and Tom Botterill-James are both continuing their respective projects on the Liopholis system. Kirkes project is focused on cognition and the mechanisms of information transfer and acquisition in *Liopholis whitii* (co-supervised by Dan Noble from the University of New South Wales). Tom's project examines the role that relatedness and resource availability play in mediating family dynamics. On the Niveoscincus side of things, Lu Fitzpatrick is continuing her work using Erik's long-term data set as well as some experimental approaches to examine aging in the *N. ocellatus*. As part of this project, Lu is currently in Sweden at the University of Gothenburg as part of an endeavor scholarship, where she is busily generating data on the snow skinks telomere biology with Mats Olsson.

In addition to the BEER group mainstays, we have added several new members to the group. Peta Hill has joined the group as a PhD student, working with Erik, Chris Burridge and Tariq Aziz on the molecular mechanisms underlying sex determination in *N. ocellatus*. Mara Minano has also joined the group from Spain (via the Netherlands and Sweden). Mara will be working with Geoff and Tobias on the wall lizard system, studying the role that climate plays in mediating the introgressive spread of the Tuscan phenotype/genotype.

The Comparative Endocrinology and Ecophysiology Group is the other area of herpetological research at UTAS. Ashley Edwards continues her work on examining key components of the reproductive physiology of the blue tongue lizard, *Tiliqua nigrolutea*, and has also had an increase in focus on teaching and learning directives at the university level.

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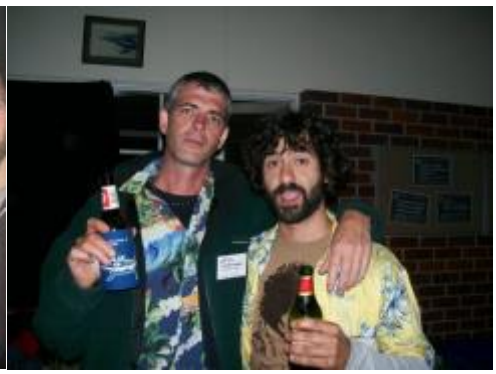

Western Australia

The University of Western Australia
Mitchell lab
http://www.web.uwa.edu.au/people/nicola.mitchell

Over in the Wild West a smorgasbord of herpetological projects are underway, based to a larger or smaller extent in Nicki Mitchell's lab at UWA. Lab members are looking forward to welcoming their brethren from interstate and overseas to the charming surrounds of Fairbridge Village for ASH 2017.

Two new PhD students joined the lab in February to start herpetological projects funded by the NESP Threatened Species Recovery Hub: Emily Hoffman hails from South Australia, where she recently was working in the lower River Murray, investigating frog breeding responses to environmental water delivery and natural flood events. Her PhD will focus on threatened frogs in south-western WA – in particular on the Critically Endangered white-bellied frog, *Geocrinia alba* – investigating the species' hydrological and ecological requirements with the aim of improving translocation success and understanding the longer-term impacts of the drying climate.

JP Emery joined the lab from Queensland, where after an Honours year at UQ researching how reptile communities respond to fire, he found himself fighting fires, spraying weeds and cleaning toilets while working as a Park Ranger in central Queensland. His PhD will focus on the Extinct-in-the-Wild blue-tailed skink (*Cryptoblepharus egeriae*) from Christmas Island, exploring options beyond managing them as a captive breeding population. JP spent six weeks on Christmas Island in March-May 2017 working alongside staff from Parks Australia to monitor the first attempt at 'soft' release into an introduced predator proof enclosure. He also helped track wolf snakes with ANU PhD student Melissa Wynn, and generally adjusted to the pleasant island lifestyle that now includes the NBN.

On the sea turtle front, Blair Bentley has (finally) wrapped up the field work component of his PhD on the thermal biology of embryonic sea turtles. This culminated in a week collecting flatback turtle eggs at a luxurious resort on Thevenard Island with Sabrina Fossette (DPaW) and her team of volunteers. Thevenard Island isn't technically in the Kimberley, which was meant to be Blair's study region, but the air conditioning was very nice. He is now spending every waking hour correcting scripting errors, which itself tends to create more, and writing up this thesis.

Jessica Stubbs is one year into her PhD project on the foraging ecology of green turtles, which forms part of the BHP Billiton-CSIRO Ningaloo Outlook Marine Research Partnership. She has spent time in the field working with CSIRO scientists, leaping from moving boats to capture and satellite tag green turtles, and to take tissue samples for stable isotope analysis. Jess has just finished two solid months in the lab performing respirometry experiments on green turtle eggs collected in January, and is shortly off to Norway to learn how to build Dynamic Energy Budget models. Jess also very much enjoys wearing a lycra turtle suit for her public outreach activities.

Alexandra (Alex) Bouma recently finished monitoring an assisted migration trial for the western swamp turtle (*Pseudemydura umbrina*), and is in the process of analysing the data collected for her MSc thesis. The release received media attention locally and internationally, with ABC news and Science Magazine both featuring the research (http://www.sciencemag.org/news/2016/08/relocating-australian-tortoise-sets-controversial-precedent). The assisted migration trial was around 300 km south of the current range, and was the culmination of many years of work by the WA Department of Parks and Wildlife (DPaW), the Perth Zoo and researchers from UWA and University of Melbourne, all geared toward providing the

data needed to guide decisions on future translocations of this species, which like all species in south western Australia, face a drying climate. Alex worked closely with DPaW's Gerald Kuchling, and was ably assisted in the field by ex-labber Nick Rodriguez, A1 volunteer Marcus Lee, and postdoc Stewart MacDonald, while two international herpers also joined the research team to work with Gerald: Jian Wang, a visiting postdoc from China, and Katja Schmölz a visiting MSc student from Austria.

Tabitha Rudin-Bitterli is preparing for the final field season of her PhD, where she plans to cross-breed (in the laboratory) the aptly named crawling frog (*Pseudophryne guentheri*) from multiple populations across WA, to test the potential for strategic genetic translocations to increase the desiccation resistance of frog embryos. She has her fingers crossed that the rains will come this year, and that her embryos won't be hatching during the ASH meeting. More details on Tabs' project can be found here: http://www.nespthreatenedspecies.edu.au/news/genetic-translocation-spawns-hope-for-frogs. Deanne Cummins joined this project in 2017 as an Honours student, and will use next generation sequencing to identify the population structure and local adaptation of *P. guentheri* populations that span temperature and rainfall gradients. Already the sequence data points to the existence of a new species from the north east of the range, collected in 2016 by Stewart MacDonald and his able assistants Marcus Lee and JP Lawrence, the latter of who was visiting from the Umbers Lab.

And now that we again have mentioned Stewart Macdonald – where do we put Stewart Macdonald? Is there any animal he doesn't like? Stewart finished his tenure as a postdoc in the Mitchell lab late in 2016, after realising that doing frog fieldwork in the middle of winter was just plain uncivilised. Nonetheless, Günther's Grünters (as they were affectionately known) performed valiantly under extreme weather conditions, and our knowledge of Pseudophryne now far exceeds what it was a year ago. Stewart also had to leave the lab because he crashed his drone at a Western Swamp Turtle translocation site, and before Nicki saw his Miley Cyrus wrecking ball video. But then he was back in WA in February to help run the first of two week-long IUCN Red List workshops, aimed at assessing the conservation status of all Australian squamates. The workshop was great, but the highlight was herping with Hal Cogger. The lowlight was not finding very much. Currently Stewart is back in Townsville working on a CSIRO-led project looking at the biodiversity impacts of feral pigs on Cape York Peninsula, and updating his herp apps.

Another postdoc Ruchira Somaweera is on a mission to capture and name every crocodile in the Kimberley. His research based at CSIRO (and funded via the NESP Northern Australia Hub), seeks novel ways to understand and quantify the impact of invasive weeds on the nesting habitats and population dynamics of freshies, while his research with DPaW continues the only mark-and-recapture study of crocodiles in WA for the 4th year. Ruchira is also currently working with Kate Sanders (University of Adelaide) and Vinay Udyawer (James Cook University) to model the distribution of rare sea snakes along the Kimberley coast, with the hope of finding hidden populations.

Lab leader Nicki Mitchell is kept busy organising things (currently the upcoming ASH meeting) while enjoying a six-month sabbatical, which consequently isn't as

restful as she had hoped. It has led her to some exotic locales though, including cloud forests in Malaysia (working on some very cool amphibians – and even cooler birds - with her PhD student Malcolm Soh), and shortly to Norway to attend a Dynamic Energy Budget (DEB) course and to develop a DEB model for flatback turtles. Malcolm is currently based in Singapore, where he is studying the effects of environmental change on montane amphibians and birds in Peninsular Malaysia. He has recently documented range extensions in two species of montane frogs (Theloderma sp. and Limnonectes sp.), and when not conducting field surveys, gets a further workout being a father to two active young children. Back to Nicki – she and David Chapple (Monash University) each recruited some keen undergraduate interns in 2016 to delve into the literature for Australian squamates, in preparation for two IUCN Red List workshops. UWA-based interns Natasha Harrison, Calum Woods and Savannah Victor learnt an astounding amount of potentially useless information for listing assessments, but enjoyed mingling with eminent herpetologists at the Perth workshop. They concluded, not that surprisingly, that 'most of the knowledge needed to make a threat status assessment comes from the experience of the reptile experts, not the literature'. Otherwise, Nicki is continuing her work on what makes turtle frogs tick, and has gratuitously themed the next ASH meeting around this handsome animal.

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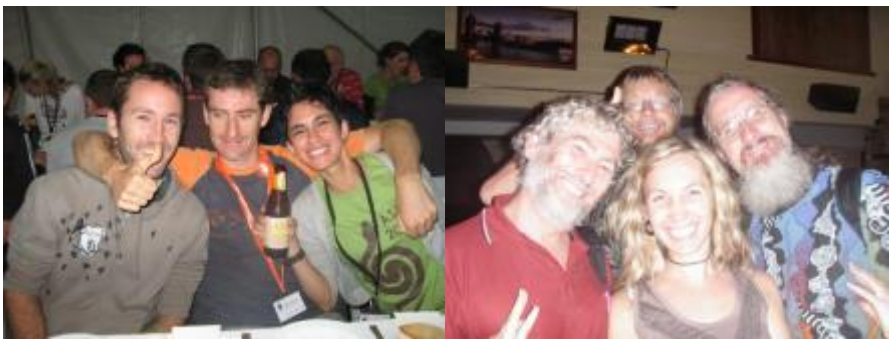

Curtin University
Behavioural Ecology Lab
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We carry out behavioural ecology and wildlife biology research. We have a bias to herpetology - PhD candidates include Ashleigh Wolfe (urban reptiles), Sophie Cross (varanid ecology) & Jimmy Barr (skinks and their predators); Hons students include Christabel Khoo (snakes and sexual selection) and William Oversby (predation on bobtails)

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Bateman, P. W. & Fleming, P. A., (In Press) Are negative effects of tourist activities on wildlife over-reported? A review of assessment methods and empirical results. Biological Conservation

Bateman P.W., Pearlman P., Robertson P., Schultz B. & Wardell-Johnson G. (in Press) Is the Western Australian Biodiversity Conservation Act 2016 fit for purpose? Pacific Conservation Biology

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South Australia

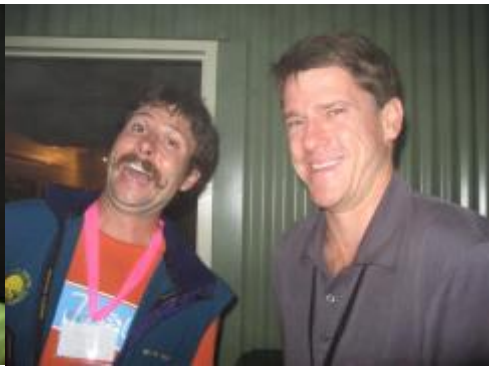
The University of Adelaide
Tyler Lab
P O Box 334, Belair, SA 5052

In collaboration with the artist Frank Knight, a new edition of "Field Guide to the Frogs of Australia" is being prepared. First published in 2009 and revised in 2011, the work was reprinted in 2015. Since 2011, no less than 15 new species have been described. The new edition will continue to recognise *Cyclorana* as a valid genus.

Fossil studies continue with material from three sites: Riversleigh, Queensland, Wellington Caves near Dubbo, NSW, and The Nullarbor Plain. The Wellington Caves material is being examined as part of a major survey being undertaken by Diane Fusco, a PhD student at Flinders University.

The great benefit of frog fossil research is that animal ethics committees cannot dictate to me the minimum size of container in which they must be kept!

Mike.



Menzies' Lab
University of Adelaide

James' current research includes musculature, especially the jaw of various New Guinean frogs.


Gardner Lab/Bull Lab
Flinders University
gardnerschwarzlab.com
www.facebook.com/Flinders.LEGS

Mike Bull and Dale Burzacott: Sadly, in the last six months we have had to mourn the loss of Prof Mike Bull and his long time research assistant Dale Burzacott. Mike's long and extremely successful research career advanced our understanding of evolutionary ecology, reptile conservation and host parasite relationships; as documented in the nearly three hundred peer-reviewed journal articles he authored. He is remembered by his numerous collaborators and students for not only his analytical and insightful thinking, but also for his kindness, eternal good mood and questionable humour. Much of the research that came out of the Bull Lab was facilitated by Mike Bull's research assistant Dale Burzacott. Dale was an integral part of the research conducted on lizards at Flinders University, particularly the Sleepy Lizard Road Survey. This is one of the longest running ecological data sets in the world (35 years and counting). Dale will be missed not only for his contributions to the field, but also his friendly, caring and unique character.

A tribute to both researchers can be found here http://www.abc.net.au/news/2017-04-16/life-death-and-grief-of-the-sleepy-lizard/8442252 and listened to here http://www.abc.net.au/radionational/programs/offtrack/sleepy-lizard-seg/8417826

The group has now joined the Lab of Evolutionary Genetics and Sociality under Assoc Prof Mike Gardner and continues research on lizard sociality, parasites and behavioural ecology. Mike G now supervisors all of Mike Bull's former students who are still studying. Dr Mark Hutchinson is also supervisor to all of the students working on pygmy bluetongue lizard related projects. There are exciting times ahead for our group.

Jess Clayton is finalising her PhD thesis on burrow use by pygmy bluetongue lizards and burrow digging spiders. Jess is also assisting Mike Gardner in running his research group and will be conducting the sleepy lizard road survey's in the upcoming field season.

The sleepy lizard project welcomes three new students, Gerrut Norval, Robbie O'Reilly and Sean Cummings. Gerrut commenced his PhD in March, 2017. He will be investigating endoparasites across a sleepy lizard habitat gradient within the mid north of South Australia. Robbie, who collected data in the 2016 sleepy lizard season is investigating the immune gene variation in sleepy lizards hosting differing tick species and Sean Cummings will shortly commence an Honours project, investigating the movement of ticks through social networks, in conjunction with collaborators from the University of California, Davis.

As such the Gardner Lab will continue collaborating with the Andy Sih and his team University of California, Davis, who will be joining our sleepy lizard team for the coming season. They will be investigating social networks in the sleepy lizard, with a focus on lizard behaviour and how this influences the spread of parasites. Mike Gardner's involvement will naturally mean a genetic component will be introduced.

Our pygmy bluetongue team currently consists of five PhD students and two Honours student. Bonnie Derne and Lucy Clive continue their PhD's investigating the risks of translocation for pygmy bluetongue lizards. Bonnie and Lucy have both completed two field seasons, in which they translocated lizards from two allopatric PBT populations into an existing population near Burra, SA. Bonnie is focusing her research on investigating parasites associated with the lizards and Lucy is focusing on the fitness of PBT's and co-existing lizard species. Tara Daniell, a former Honours student, returned to our pygmy bluetongue team in 2016 to complete her PhD. Tara is working at Monarto zoo, monitoring captive PBT's. She has completed one field season of data collection and is focusing on captive breeding and behavioural types suitable for translocations of the pygmy bluetongue lizard (*Tiliqua adelaidensis*). Her project aims to identify behavioural attributes of good translocators, husbandry methods to improve survival upon release into the wild, and thermal optima in the pygmy bluetongue. Carmel Maher is also in the second year of her PhD, investigating seasonal variation of gene expression in PBT's and other genomic aspects. James Seigel has recently commenced his Honours project on pygmy bluetongue lizards. He will be monitoring populations of lizards in the northern and southern ranges of the lizard to determine if there are any behavioural differences between the populations. Jordan Harries another recent Honours

student will work with James and examine these same populations and nearby areas where the lizards are not found to understand if insect and spider abundance and composition is a factor in the absence of pygmy bluetongue lizards from seemingly suitable habitat.

We currently have two students working with gidgee skinks. Scarlett Graf (PhD) and Alice Woodward (Honours) are both investigating the effects of ecological constraints on gidgee skinks. Scarlett who is in the second year of her PhD is investigating the effects of habitat availability on the social structure of gidgee skinks, while Alice is specifically testing the effect of adding and removing habitats (artificial crevices) on lizard sociality.

Jessica Hacking is in the final stages of writing up her PhD on tawny dragon immune gene variation and its relationship to colouration. This work has been in collaboration with Assoc Prof Devi Stuart Fox from Uni of Melbourne. Jessica aims to hand up her thesis by mid-year.

Aaron Fenner is currently working as a regional ecologist for Arid Recovery and Bush Heritage Australia, but continues to have adjunct lecturer status at Flinders University. Stephan Leu recently left Mike Bull's lab after receiving an Endeavour fellowship at Georgetown University, Washington. Here, he spent six months investigating dolphin social networks. Stephan has now moved to Macquarie University to start a Discovery Early Career Research Award (DECRA) awarded by the ARC. His research focus continues to be social networks, movement ecology and parasitology, both in reptiles and mammals.

Recently we have had five students complete their PhD's. Caroline Hardiman (Transmission pathways in reptiles), Torben Nielsen (Grazing as a management tool: Effects of varying intensity of sheep grazing on the endangered pygmy bluetongue lizard."), Sarah Pearson (Immune gene variation in the group living lizard *Egernia stokesii*), Leili Shamiminoori (Impacts of environmental variation on the fitness of the pygmy bluetongue lizard) and Claire Treilibs (Conservation ecology of Slater's skink, *Liopholis slateri*, in central Australia). Claire has also recently helped convene a two-day community forum dedicated to the recovery of the threatened skink, sharing the findings of her research with indigenous ranger groups and other land managers. Media coverage of the forum can be found here:

http://www.abc.net.au/news/2017-04-11/slaters-skink-makes-remarkable-comeback-after-thought-extinct/8435124

http://www.territorynrm.org.au/single-post/2017/04/10/MEDIA-RELEASE-Central-Australians-rally-to-conserve-native-species-once-thought-extinct

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Queensland

University of Queensland
Venom Evolution Lab
@UQVenomLab
@CNZdenek

Jordan Deborno won the People's Choice award for QLD's Women in STEM prize Christina N. Zdenek won the Young Science Ambassador's award through QLD's Wonder of Science program. A professional Death Adder video is being released from The Death Adder Project by end of April. Kate Baumann won the Smithsonian Institute Fellowship to intern at the Smithsonian Institute in Washington DC. Timothy N.W. Jackson was awarded a post-doc fellowship at the Australian Venom Research Unit at the University of Melbourne. Ivan Koludarov was awarded a post-doc fellowship at the Okinawa Institute of Science and Technology in Japan.

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James Cook University

Despite trying to escape, John Llewelyn is still at JCU. But now he is working on barramundi in aquaculture. However, there's still plenty of work leftover from the rainforest sunskink research to help fill in his spare time #HerpetologistByNight

Llewelyn J, Macdonald SL, Hatcher A, Moritz C, Phillips BL. 2016. Intraspecific variation in climate-relevant traits in a tropical rainforest lizard. Diversity and Distributions. DOI: 10.1111/ddi.12466.

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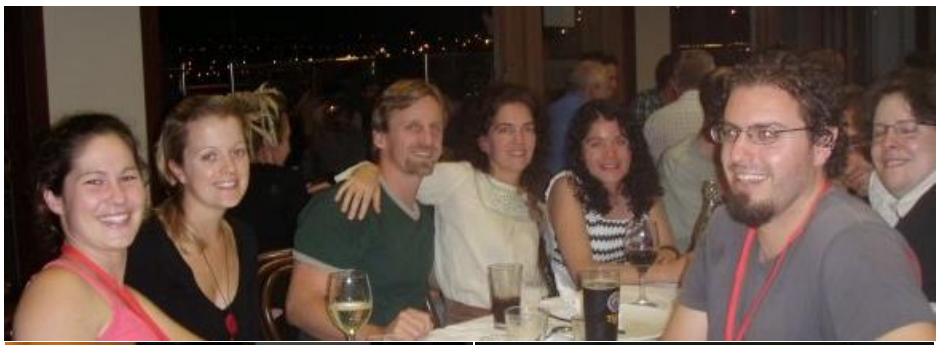
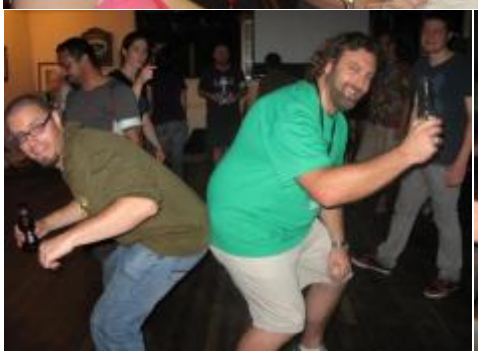


James Cook University
Conrad Hoskin Lab
https://research.jcu.edu.au/portfolio/conrad.hoskin

The Hoskin Lab continues to grow and diversify. Louise Barnett submitted and revised her PhD thesis and has a number of papers accepted or submitted on Asian House geckos getting into the bush, and associated aspects of detection and parasitism in invasive and native geckos. Jessica Waugh did her Honours in 2016 on movements and population sizes in the bush, and Jaimie Hopkins has started her PhD on impacts of Hemidactylus. Stephen Zozaya continues to power ahead on understanding the diversity and role of mating pheromones in Australian geckos. Lorenzo Bertola completed a couple of undergraduate projects in 2016 - one on modelling and genetics of two highly localised leaf-tailed geckos (*Phyllurus gulbaru* and *P. amnicola*), and the other on conservation genomics of the Endangered Kuranda Treefrog (*Litoria myola*). Work continues on the Armoured Mistfrog (*Litoria lorica*) project, looking at coexistence with chytrid and establishment of a second wild population. Herp taxonomy continues, with projects on velvet geckos (Amalosia & Oedura), Nactus geckos, and Carlia skinks. Diego Ortiz joined the lab (from Brazil/Ecaudaor) for his PhD looking at cryptic frog species in Amazonia. Non-herp projects (what!?) include conservation of spotted-tailed quolls in the Wet Tropics, and adaptation studies in native Drosophila.

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Scheele BC, Skerratt LF, Grogan LF, Hunter DA, Clemman N, McFadden M, Newell D, Hoskin CJ, Gillespie GR, Heard GW, Brannelly L, Roberts AA & Berger L (2017) After the epidemic: Ongoing declines, stabilizations and recoveries in amphibians afflicted by chytridiomycosis. Biological Conservation 206, 37-46

Coates A, Barnett LK, Hoskin CJ & Phillips P. (2017). Living on the Edge: Parasite Prevalence Changes Dramatically across a Range Edge in an Invasive Gecko. The American Naturalist 189 (2), 000-000

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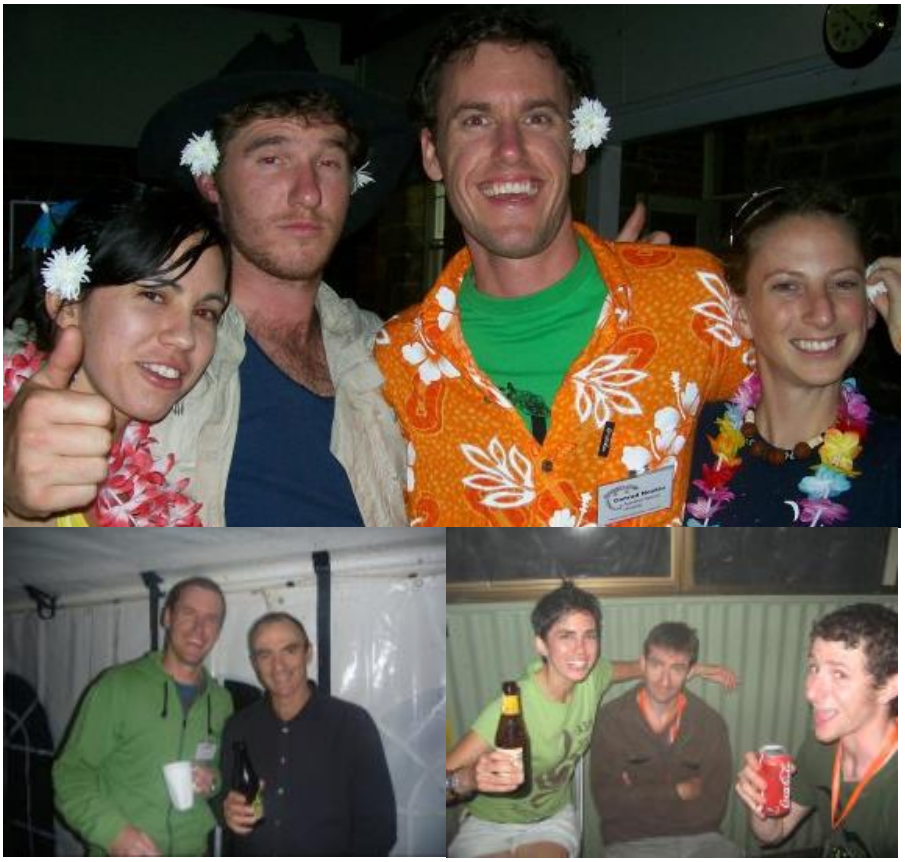

James Cook University
Vertebrate Ecology Lab

Lin Schwarzkopf has been busy with supervising a fantastic crop of students, trying to get toad traps for adults off the drawing board, listening and calling for toads on Groote Eylandt, figuring out how grazing income relates to biodiversity, helping to get all the different aspects affecting the frog host-Bd system to fit in one model, and trying to understand acoustic analyses - among other things.

Ross Alford is now an Emeritus Professor at JCU and though he has officially retired, he has an office somewhere in the dungeons of the campus and remains active on a number of research projects. He occasionally turns up to lab meetings boasting about the fun travels he has been on, he makes retired life look good!

Deb Bower is continuing her postdoctoral studies using bioacoustics to look at cane toad impacts on Groote Eylandt and examining frog biology and disease in the wet tropics of Australia and New Guinea. She recently spoke at the Townsville Women In Science and Technology Group on the importance of salami in remote field studies and at the March for Science in Townsville on the need for science literacy in the community, rather than just relying on Simon's episodes.

Anna Pintor is completing postdoctoral research on modelling threatened species distributions and threatening processes across Northern Australia. She is expanding on her previous reptile specific work with this more broad scale NESP project while also working on further publications from her recent PhD thesis on the effects of physiological trait variation on skink distributions.

Rickard Abom is a technical staff member at JCU now, but still pumping out papers from his PhD on the effect of grader grass and fire on vertebrates.
Lexie Edwards and Jodie Nordine continue to assist our research efforts by building toad lures, annotating acoustic data, looking after critters, ordering equipment and being generally amazing humans.

Donald McKnight is working on a PhD examining the recovery of rainforest frog populations following a chytridiomycosis outbreak. He is using population genetics and metagenomics to examine the impacts of the disease on host genetics as well as the role of microbial communities in population recoveries. Mostly, he sits in the lab all day wishing he was in the field.

Sasha Greenspan is finishing up her PhD focusing on the effects of frog thermal ecology on chytridiomycosis dynamics. She has recently been investigating how realistic frog body temperature regimes influence the progression of Bd infections and how a frog's thermal history influences its immunity.

Leah Carr is starting an undergraduate student research project. The project will involve surveying and swabbing *Litoria dayi* for *Batrachochytrium dendrobatidis* - a fungal disease which affects frogs) in streams throughout the wet tropics. She's hoping to understand more about why these endangered frogs have not recovered to the same extent as their sympatric congeners.

Sheryn Brodie has recently commenced as a PhD student in Lin's lab and is researching frog calling behaviour using big acoustic data. After spending some time in the ultrasonic world of insectivorous bats, Sheryn is now getting her ears around the noises frogs make, and will be investigating frog chorusing and the effect of cane toads on native frogs in the acoustic sense.

Gemma Laird is a 3rd year Zoology advanced student, completing her research internship supervised by Lin and Deb and studying the Acoustic Niche Hypothesis with relation to frogs on Groote Eylandt.

Karlina Indraswari is a student from Queensland University of Technology (QUT) co-supervised by Lin. She is in her second year trying to find the best method to extract frog species choruses from long duration soundscape recordings.

Ben Muller can (finally) see the finish line of his PhD, and has been working feverishly to improve cane toad trapping methods by examining the distance over which toads are attracted to traps, and targeting gravid females by modifying the parameters of calls used as lures. Ben will spend the next 6 - 12 months finishing his PhD, and attempting to secure funding for a postdoc.

Heather Neilly is in the final stages of analysis for her PhD, looking at the response of reptile (and other vertebrate) communities to different grazing strategies. She is investigating how the profitability of certain grazing strategies relates to the fauna assemblages and aims to make management recommendations about off-reserve conservation on rangelands.

Eric Nordberg is working to finish his PhD looking at the ecology of arboreal lizards in grazed landscapes. Recently he has been analyzing predator-prey relationships among birds, lizards, and invertebrates, and looking at habitat partitioning among arboreal lizard species. Eric is busy trying to secure a project and funding for a postdoc when he finishes his PhD at the end of the year. He is trying to avoid returning to the USA for at least the next 4 years...

Jendrian Riedel started his PhD half a year ago on the evolution and ecological adaptation of skin micro-structures in geckos. He is working on shedding frequency of *Hemidactylus frenatus* at the moment and has just started a project on toe pad arrangements and micro-structures in different lineages of *Heteronotia binoei*.

Ayano Fushida is an advanced Zoology and Ecology student, undertaking her research internship with Lin and Jendrian on shedding frequency of *Hemidactylus frenatus* and she will be continuing with this research for another 6 months.

Wytamma Wirth, through his PhD, is working on understanding factors that influence the epidemiology and pathogenesis of ranaviral infection in native Australian freshwater turtle species. Wytamma divides his time between freshwater creeks and rivers in North Queensland and the animal research facilities and laboratories at JCU. Wytamma plans to write something very soon.

Jari Cornelis is finishing up with data collection for his minor project on antipredator behaviour of the invasive Asian house gecko in response to the scent of native species of snakes. Jari is busy collecting the last few geckos for his experiment and will start writing up his first publication in the very near future.

Aurore Fayard is undertaking a minor project for her (French) master's internship on hydroregulation in rainbow skinks. The aim is to understand hydroregulation in different temperatures and humidities, because we don't know how they will behave facing extreme conditions. The best outcome will be if she can compare species with specific tropical habitats, dry and wet.

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Neilly, H., Vanderwal, J., & Schwarzkopf, L. (2016). Balancing Biodiversity and Food Production: a Better Understanding of Wildlife Response to Grazing Will Inform Off-Reserve Conservation on Rangelands. *Rangeland Ecology & Management, 69*(6), 430-436.

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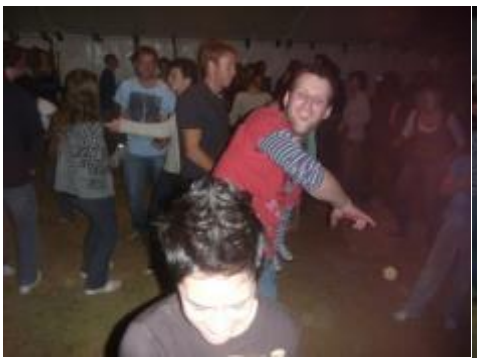


The University of Queensland
Booth Lab, School of Biological Sciences

Herp related activities have focused on sea turtles (are they real herps?) and goannas (definitely real herps). David Booth as become increasingly involved in the Raine Island Recovery project focusing on reasons why green turtle hatchling recruitment has apparently decreased in the last two decades. His work is focused on the within nest environment, particularly nest temperature and respiratory gases. Owen Coffee has more or less finished field data collection on his PhD project examining diet, stable isotopes and reproductive effort in loggerhead turtles, with some green turtle data thrown in for good measure. Juan Lei has finished chasing goannas around in his PhD project studying goanna predation of sea turtle nests at Wreck Rock beach. He is now stuck at his desk analysing data and writing papers (and his thesis) while admiring his collection of snakes and lizards.

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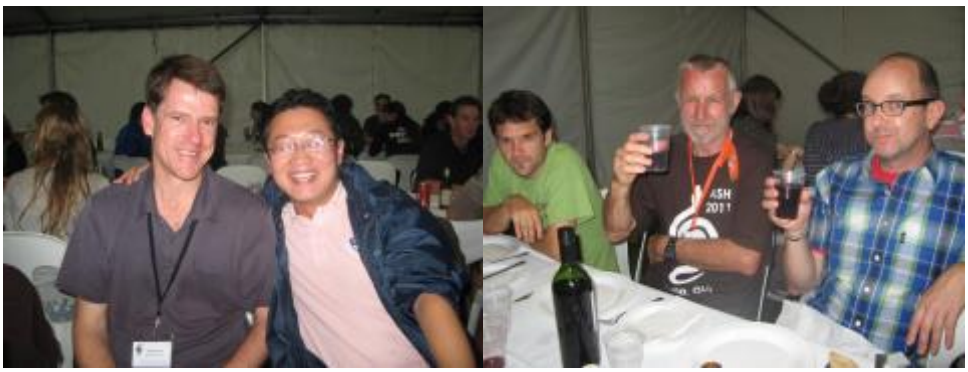


Victoria

Zoos Victoria

Baw Baw Frog (*Philoria frosti*): with magnificent input by field colleagues from Tasmania and much-appreciated accommodation support from the Mt Baw Baw Alpine Resort, another very successful collection in October/November 2016 took place. Our goal this season was to collect adult female Baw Baw Frogs to bolster the captive breeding program. Prior to the 2016 breeding season pitfall trap lines were established around two known breeding sites and remained closed until males moved in and began calling. The resulting activity secured 11 adult female frogs which were transferred directly to Melbourne Zoo. Eight of the females laid egg

masses fertilised by captive wild caught males. Egg mass fertility varied between clutches with a number of larvae reared through to metamorphosis from each clutch. The next big challenge will be to reliably breed Baw Baw Frogs in captivity for release to the wild.

A major focus for the 2017 season is to complete full population survey transects. Additionally, we aim to begin experimental *in situ* egg incubation techniques that will eventually allow us to rear and raise eggs within natural breeding habitat.

Southern Corroboree Frog (*Pseudophryne corroboree*): so far this season over 1600 eggs from Melbourne Zoo and Healesville Sanctuary have been produced for release in Mt Kosciuszko National Park as part of the ongoing reintroduction program. Together with egg releases from Taronga Zoo, this will mark another successful year for captive breeding across all institutions.

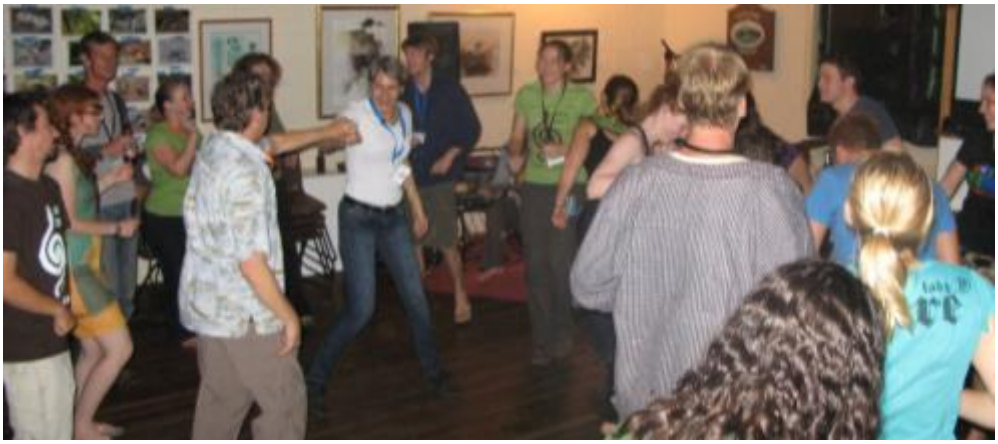
NSW National Parks and Wildlife, together with NSW Office of Environment and Heritage, completed the construction of 16 new field enclosures, providing chytrid free refuge for Southern Corroboree Frog (SCF) release. Taronga Zoo and Melbourne Zoo released 360 frogs into these new enclosures earlier in the year. Zoos Victoria also provided funds to support research at Wollongong University aimed at developing Assisted Reproductive Technologies to support conservation of the SCF.

Northern Corroboree Frog (*Pseudophryne pengilleyi*): breeding is underway at Healesville Sanctuary, with eggs to be transferred to Tidbinbilla Nature Reserve in the ACT for raising to frogs for release later in the season.

Alpine Skinks: thanks to funding through the Victorian State Government's "Little Brown Things" initiative, long-term population monitoring grids have been set up to track Alpine She-oak Skinks (*Cyclodomorphus praealtus*) in the Victorian Alps. Scientists at the Arthur Rylah Institute have been researching this species for decades and it's been great to partner with ARI and continue research with this species. Motion detection cameras have been purchased to monitor predator levels at Guthega Skink (*Liopholis guthega*) warren systems. Zoos Victoria (Healesville Sanctuary) is making progress with captive husbandry thanks to field data supplied by Zak Atkins on overwintering thermal behaviour.

Grassland Earless Dragon (*Tympanocryptis pinguicolla*): we have not given up on GEDs in Victoria and are now engaging with communities and schools in the Corangamite Catchment Management Authority region west of Melbourne, with the aim of locating these little lizards. So far, 16 schools have joined the campaign; see www.zoo.org.au/dragonsearch for more information.

Spotted Tree Frog (*Litoria spenceri*): "Little Brown Things" funding has facilitated continued population monitoring for the spotted tree frog. University of Melbourne post doc Matt West will continue his excellent work following completion of his PhD. The spotted tree frog recovery team is partnering with local Victorian angling groups to provide conservation outcomes for this species.



La Trobe University
Animal Behaviour Group

The Animal Behaviour Group at La Trobe University, headed by Richard Peters, has a strong herpetological focus. The latter half of 2016 and early 2017 was eventful. It started with ARC success for Richard to continue his work on agamid lizards. This was immediately followed by a visit from our collaborator from China, Dr Qi Yin, who joined us on a road trip between Melbourne and Alice Springs to locate and film signaling of various agamid lizards. We also celebrated the PhD thesis submission by Jose Ramos in December, and he has subsequently published a few papers from his thesis, with at least two more to follow (hopefully). Jose's thesis considered habitat influences on motion signaling. In March 2017, Andrea Narvaez submitted her PhD thesis concerning factors affecting assemblage structure of *Anolis* lizards from Ecuador, and we anticipate papers in the near future. We also welcomed new PhD students Bhagya Herath who will work on frogs in Australia and Sri Lanka, Estefania Boada that will study lizards in Ecuador and Jon Salisbury investigating lizard patterns in Australia.

Museum Victoria
Museum Victoria Herp Lab

Jane Melville has been busy with a Victoria Bioscan (Gunnawarra Shire) and two Bushblitz trips (Croajingalong NP) at the end of 2016. She has also been finishing

up some species description and busy writing text with Steve Wilson for a book on Aussie dragons.

Joanna Sumner: the Ian Potter Biobank is now open and much of the tissue collection has been moved into the liquid nitrogen facility. She is currently doing molecular systematics work with Jane on agamids. Jo also been busy with the Bushblitz field surveys in 2016.

Christy Hipsley is working on evolutionary history of squamate reptiles, integrating geologic and genomic records to uncover patterns and processes of morphological transformation. She is currently investigating the fossil record of amphisbaenians (worm lizards), using X-ray CT and geometric morphometrics. She also organised a successful conference and workshop, funded by the Ian Potter Foundation, on molecular paleobiology of Australian vertebrates.

Maggie Haines after finishing her PhD and project officer work here at Museum Victoria, headed off the US in 2016 to undertake a postdoc at the University of Wisconsin-Milwaukee working on landscape genomics of Mule Deer.

Katie Smith Date is currently on maternity leave but will be returning to her collection management position later in the year.

Claire Keely finished her PhD on Growling Grass Frog, *Litoria raniformis*, then undertook a position as an assistant collection manager in the new Ian Potter Biobank transferring tissue samples into the new facility. Claire is now on maternity leave.

Kirilee Chaplin is continuing her PhD research on the conservation genetics and ecology of several grassland earless dragon species in Queensland. Currently she is working on the final genetics research and about to learn how to integrate X-ray CT and geometric morphometrics.

Brittney Carter completed her masters project on military dragons and has now moved to Canberra to undertake a graduate course on science communications.

Sakib Kazi is a Masters student, supervised by Christy, investigating the ecology and morphology of limbless, burrowing amphisbaenians. He is currently modelling their distributions on Puerto Rico, as well as trying to understand how their biogeography and skull morphologies relate to patterns of diversification in the Caribbean.

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The University of Melbourne
Quantitative and Applied Ecology Group

The herpetological node of QAECO has been an epicenter of change in 2016/17. Claire Keely handed in her PhD and has taken a job at Museum Victoria. Stef Canessa took up a postdoc at Ghent University in Belgium. Geoff Heard left to take up a Lecturer position at CSU. Matt West and Reid Tingley are the sole survivors. Matt continues his work as a postdoc with the NESP Threatened Species Recovery Hub. Reid is currently wrapping up an ARC Linkage Project on environmental DNA sampling. In July 2017, Reid will start an ARC DECRA project on the environmental and evolutionary drivers of geographic variation in developmental strategies of bell frog tadpoles.

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New South Wales

Environment and Heritage

Jo Ocock is still fighting the good fight for frogs of the Murray Darling Basin from within NSW Office of Environment and Heritage. Early spring rains and floods saw huge frog responses in some areas, probably most ending as bird food for the massive waterbird breeding colonies that also established. Jo successfully oversaw how frogs will fit in with long term environmental water planning that NSW is committed to. The highlight has been the Pilliga Forest echoing with calling crucifix and Sudell's frogs as we drove through in September after huge rains.

Papers and book chapters

Ocock JF and Wassens S (in prep). Status of decline and conservation of frogs in arid and semi-arid Australia. In, Status of Conservation and Decline of Amphibians in Australia, New Zealand and the Pacific Islands. Eds Heatwole, H. & Rowley, JJL. CSIRO.

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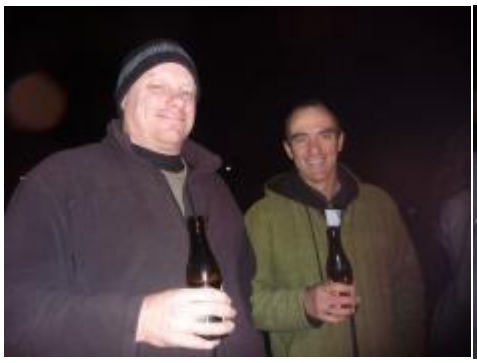
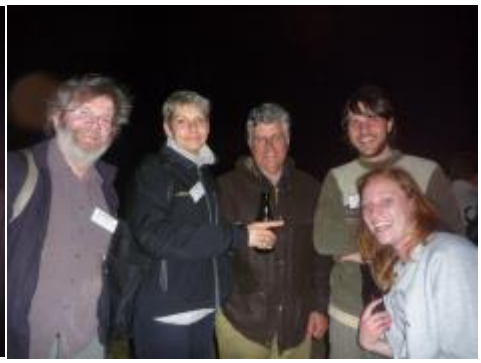

University of Newcastle
Frog Lab

In the top end of Australia, Simon Clulow is continuing his work with Sean Doody (SLU) and Colin McHenry (Monash) on the cane toad invasion and monitor lizard nesting behavior across the NT, Kimberley and Pilbara. In Papua New Guinea, he is continuing to work on amphibian ecology and disease with Deb Bower (JCU) and Arthur Georges (UC), with another successful field trip in November 2016 leading to the discovery of more new species of frogs. Deb and Simon are currently trying to get a captive breeding and genome storage facility for frogs established in Port Moresby in advance of chytrid hitting New Guinea. Closer to home, Simon is working on disease and population ecology of threatened frogs and continues to develop genome storage and assisted reproductive technologies in frogs and lizards, with some great success in monitor lizard sperm storage coming out of PhD student Lachlan Campbell's work recently. John Gould is starting to write up chapters on his work on some really neat nesting behavior in the sandpaper frog.

Abu-Bakar, A., Bower, D., Stockwell, M., Clulow, S., Clulow, J. & Mahony, M. (2016). Susceptibility to the lethal disease chytridiomycosis varies with ontogeny in a threatened frog. Oecologia, 181: 997-1009.

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Valdez, J., Klop-Toker, K., Stockwell, M., Clulow, S., Clulow, J. & Mahony, M. (In Review). Microhabitat selection varies by sex and age class in the endangered green and golden bell frog *Litoria aurea*. Australian Zoologist, 38(2): 223-234.

University of Sydney
Wildlife Health and Conservation University of Sydney
sydney.edu.au

Research areas: Emerging diseases of wildlife and endangered species conservation.

Media interest: Investigating a novel bacterium threatening endangered reptiles on Christmas Island.

Recent graduations: Shannon Donahoe – PhD- Impact of *Neopsora caninum* and *Toxoplasma gondii* on native Australian marsupials.

New people in the laboratory: Jessica Agius – PhD student, Impact of an Emergent Bacterial Disease on Endangered Lizards on Christmas Island

Adams-Hosking, C., McBride, M. F., Baxter, G., Burgman, M., de Villiers, D., Kavanagh, R., Lawler, I., Lunney, D., Melzer, A., Menkhorst, P., Molsher, R., Moore, B. D., Phalen, D., Rhodes, R. J., Todd, C., Whisson, D., McAlpine, C. A. (2016). Use of expert knowledge to elicit national population trends for the koala (*Phascolarctos cinereus*). Diversity and Distributions. 22: 3; 249–262.

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Phalen, D. N., Hall, J. Ganesh, G., Hartigan, A., Smith, C., De Jong, C., Field, H., Rose, K. Genetic diversity and phylogeny of the Christmas Island flying fox. 2017. (*Pteropus melanotus natalis*). J. Mamm. 98(2):428–437, 2017

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University of Sydney
Shine lab
http://sydney.edu.au/science/biology/shine/

Highlights over the last few months include three PhD students submitting their theses, and all receiving enthusiastic assessments; and Rick receiving the two biggest prizes in Australian science in the same week. Various long-term ecological studies are continuing, despite occasional setbacks like cyclones and coral bleaching events; and progress has been good on delving into the arcane mysteries of cane toad biology as well.

Rick Shine had a very peculiar week in October, when he was named NSW Scientist of the Year on Friday evening, and awarded the Prime Minister's Prize for Science the following Wednesday evening. After a merry-go-round of formal dinners, ceremonies, trying to make small talk with Premiers and Prime Ministers, and feeding an intense but short-lived media frenzy, he was happy to return to his cane toads. He will talk about the events during his Plenary in Fairbridge at the ASH meetings later this year, and promises to reveal how assorted members of his lab look in tuxedos. And for the record – special thanks to Scott Keogh and Damien Esquerre for bringing a couple of pythons to Parliament House for Rick to fondle for the media scrum.

Rick is current president of the US-based Society for the Study of Amphibians and Reptiles, so duly attends all their annual meetings and continues to be astonished at how much work it entails, compared to being president of ASH (admittedly, in the dim distant past). He is continuing his (now 15-year-long) mark-recapture study of turtle-headed seasnakes in New Caledonia, and this year (with collaborators Vinay Udyawer and Claire Goiran) managed to catch some of the larger hydrophiid species as well and implant acoustic transmitters. It went well, but tragically one of his long-term sites has been badly affected by coral bleaching.

Postdocs

The Northern Territory-based postdocs, Greg Brown and Michael Crossland, just keep on going. Cane toads, snakes, students … the work at Fogg Dam near Darwin continues to keep them busy. Jayna DeVore and Simon Ducatez join them regularly for joint experimental work, mostly on cane toad tadpoles. We continue to collaborate with Rob Capon (chemistry, University of Queensland) and Lee Ann Rollins (genetics, Deakin University) on the toad work. Lee Ann now has students

based up at Fogg Dam for varying periods of time. Roshmi Sarma and Andrea West are doing epigenetic manipulation experiments to tease apart the underpinnings of the rapidly-evolved divergences we see in toads.

Matt Greenlees continues to run the southern studies on cane toads, plus teaches various undergrad courses both in Sydney and the Northern Territory. Matt has been introducing Chris Friesen to his study areas, where Chris is conducting experimental work on toad reproductive biology (especially, the joy of sperm). He is investigating sperm traits (performance and morphology) and their influence on fertilization success. He is also working on egg-sperm and egg jelly-sperm interactions across the distribution of cane toads across Australia.

Wei Chen has returned to China after a successful project looking at sex differences in the distribution of toxin-containing glands in (you guessed it) cane toads.

Graduate students

Three students submitted their theses in December 2016 and January 2017, and all three will be awarded their degrees when (and if) they ever visit Sydney again. Dan Natusch's PhD was on metallic starlings and tropical snakes in Cape York Peninsula. He is now busily writing papers on snakes, wildlife trade (sustainable harvesting of pythons in Indonesia, etc.), and other things (including a baby named Huxley). Cam Hudson's PhD was on genetic versus environmental underpinnings of the phenotypic variation we have documented in cane toads across their native and invaded range. Cam focused on morphology, with an emphasis on traits that affect rates of dispersal. He is currently in the Netherlands, catching up with the love of his life (who is doing her own PhD over there) and trolling for postdoc opportunities. Georgia Ward- Fear's PhD was on teaching goannas not to eat cane toads, at a remote site in the Kimberley. It worked, and she and Rick are now hoping to roll out the "teacher toad" method to educate imperiled predators across the Kimberley. They are working closely with David Pearson (Department of Parks and Wildlife, Western Australia) and a host of people from other groups, including indigenous organisations.

Sarsha Gorissen, who finished her PhD on an endangered montane skink last year, is currently employed by the state government in NSW to keep studying the species.

Like almost everyone who has a field project based in northwestern Australia, Sam McCann is wondering how you do fieldwork when your study sites are a meter underwater. But she's managing to find other ways to explore and enhance the effectiveness of our new toad-control methods.

Georgia Kosmala has assembled extensive datasets on hydric and thermal physiology of cane toads, from Brazil (the original home both of Georgia and of the cane toads) as well as Hawaii and Australia. She has discovered lots of divergence among locations, just as we have found for other traits involving morphology and behaviour. Georgia is co-supervised by Keith Christian (Charles Darwin University), as well as by Rick and Greg. Keith knows a lot about toads whereas Rick knows very little, and Greg is intermediate. So it's a well-balanced group.

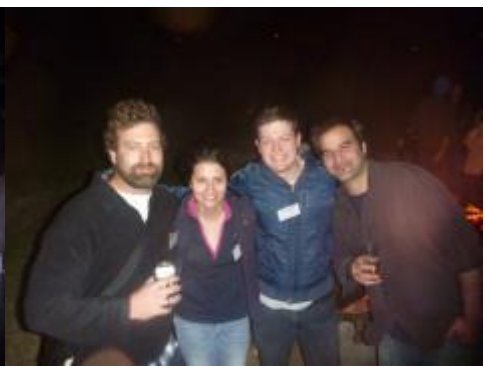
Greg Clarke (co-supervised by Ben Phillips) is running head-to-head competition trials to look at how geographic divergence in phenotypes of cane toads plays out when toads from each side of Australia are put into contact. As well as its intrinsic interest, the study should tell us what would happen if we tried to slow down the invasion front by diluting the “fast-disperser” invasion-front genes with “slowpoke” Queensland genes.

Dan Selechnik’s project examines the divergence of immune responses in cane toad populations as they have dispersed across Australia. To do this, he is conducting phenotypic experiments surveying immune responses in live toads after stimulation with experimental antigens. He is also investigating the effects of population genetics on immune function by performing differential gene expression and alternative splicing analyses in spleen tissue, as well as evaluating genetic diversity through SNPs. Through this work he hopes to develop a better understanding of the functioning of invasive species’ immune systems.

Jodie Gruber is close to finishing her PhD, and is merrily analysing data and writing-up her thesis on geographic divergence in cane toad behaviour. Jodie has discovered that cane toads at the Australian invasion front are bolder and more exploratory than are conspecifics from long-colonised populations. She has also found that variation in these behavioural traits seems to have a genetic component as the same pattern of variation occurs in F1 common-garden toads.

Lachlan Pettit not only survived his Honours year investigating how translocation modifies cane toad behaviour, but has returned for more. Shifting study species, Lachlan will be exploring the rate and trajectory of goanna recovery following cane toad invasion, specifically looking at how quickly, and by what mechanisms, invaded populations change post-arrival; and how those changes influence the invader’s impact. He will work with Rick (and hopefully Georgia Ward-Fear, if the funding comes through).

Nicky Rollings was supervised by Mats Olsson, and switched across to Rick (and Chris Friesen and Camilla Whittington) when Mats headed back to Sweden. Nicky is looking at the biology of telomeres in a variety of species, mostly lizards but with a few snakes thrown in as well.



Honours students

Patt Finnerty and Kat Stuart both did their Honours work up at Fogg Dam, under the brutal dictatorial hand of Greg Brown as main supervisor. Patt looked at the effects of lungworms on cane toads, both in the field and in captivity, by experimentally de-worming toads. The results were striking: their parasites appear to have a huge impact on their hosts, at least in a year (like 2016) when dry conditions make life difficult for anurans. Kat raised baby toads to explore phenotypic plasticity in Queensland versus Western-Australian clutches. She found lots of intriguing cases of phenotypic plasticity in response to exercise levels and diet, whereas other traits were unaffected by rearing regime but showed strong heritability. Complex little buggars, these cane toads!

Technical staff

Melanie Elphick and Chalene Bezzina continue to hold the group together, running the Sydney lab with awesome efficiency and remarkable tolerance. Maddie Sanders plays the same role at Fogg Dam. Mel continues in her role as Senior Research Assistant in what will be her 22nd, and last (sob), year of full-time employment in the Shine Lab. Mel still derives great pleasure from assisting with the dynamic research projects underway in the lab. Additionally, Mel is co-author on two papers published this year, and has assisted in figure preparation and formatting of numerous other manuscripts for publication in top-ranking journals. Mel's goal is to see Rick hit the 1000 publications mark!

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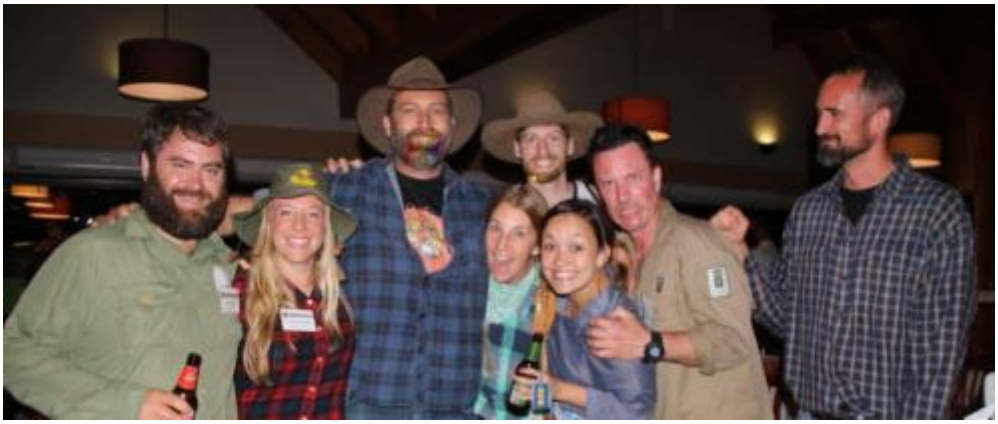

University of Sydney
Thompson and Whittington lab
https://www.facebook.com/EIZlab/

Mike is still working with community groups in South Australia on turtles in the River Murray, and recently ran a review of the Nature Foundation of South Australia. He is still travelling week in and week out between the University of Sydney and his farm in South Australia.

Camilla Whittington is rapidly turning the lab over to the dark side (genetics!) and continues to study pregnancy in lizards, mammals, fish, and invertebrates. Last year she received a L'Oreal-UNESCO For Women in Science Fellowship to work on the evolution of vertebrates, including in Australian skinks. The work of Camilla and collaborators was reported in several radio interviews and newspaper articles, which showcased viviparity in seahorses and lizards, as well as snake ageing research Camilla co-authored with collaborator Dr Chris Friesen. Camilla also presented papers at various conferences including as an invited speaker at the NSW Reproduction Forum.

Camilla and Mike's symposium *Evolution of Complex Traits* was selected for the 2017 Society of Molecular Biology and Evolution conference in Austin, USA this coming July, where Camilla will also present a paper on the genetic basis of vertebrate pregnancy and birth.

Van (James Van Dyke) started a lectureship in Ecology at Charles Sturt University in April, 2017. He has been working hard on turtle conservation throughout the Murray River and has supervised one Masters student and two 3rd year students on projects investigating turtle reproduction and population health in the Murray. He has also sampled DNA of Murray River Turtles (*Emydura macquarii*) throughout the South Australian Murray catchment, and is completing a catchment-wide rapid assessment of turtle populations. At CSU, he will be continuing his work in turtle conservation, and also has plans for further study of *Pseudemoia* placentation.

Claudia Santori has joined the lab as a PhD student co-supervised by Mike, Ricky Spencer and Van. Claudia is conducting a study on the conservation of turtles in the River Murray, focused on two broad themes: understanding the ecological role of

these animals, and investigating the causes of their mortality at different life stages. She has been working on the citizen science project TurtleSAT, which tracks turtle mortality on roads, as well as setting up controlled-environment and field experiments to quantify the impacts of Murray River turtles' scavenging behaviour.

Josh Kemsley has started honours with Camilla and Mike, working on lizard parition.

Katie Howard is in the final year of her PhD at Western Sydney University with Ricky Spencer, co-supervised by Mike, Arthur Georges and Bruce Chessman, studying survivorship and threats to freshwater turtles of the River Murray. She has discovered that short-necked turtles move vast distances along the Murray River, occupying a wider range of habitats than previously published. Katie has also recorded positive outcomes for turtle nest survivorship following adaptive, broad-scale fox baiting programs. The focus of this last year will be on survivorship and management implications.

Celine Goulet has handed in her PhD thesis, submitted papers and is currently working for David Chapple at Monash.

Jessica McGlashan graduated from her PhD in December 2016, and is still continuing to publish her research. She is in search of a Postdoctoral position so she can continue her love of research and being in the field.

Henrique Braz and Karina Braz have sadly gone back to Brazil after Henrique's Brazilian fellowship came to an end. Henrique continues to finish work he was doing while here on the evolution of viviparity in reproductively bimodal Brazilian water snakes. We loved having Karina work for us for the last 4 months, running the lab, looking after our animals and helping with a few current projects. They are both missed and we wish them all the best in the future.

Matt Brandley is still an honorary member of the lab and contributes to research on viviparity in lizards when he can.

Jacquie Herbert still attempts to keep control of things in the lab during her two days a week. The rest of her time she surrounds herself with Christmas and of course, glitter…

Our "non-herp" PhD students, Melanie Laird and Jess Dudley, are still working on pregnancy in mammals, and recently presented papers at the Australian and New Zealand Society for Comparative Physiology and Biochemistry Conference and posters at the Society for Reproductive Biology (SRB) on the Gold Coast. Alice Buddle graduated with Honours working on marsupial pregnancy and will be joining the lab as a PhD student later in the year co-supervised by Camilla, Mike and Van working on shark reproduction. Sadequr Khan is working hard on his PhD exploring the evolution of viviparity in sea stars, co-supervised by Mike, Camilla and Maria Byrne. He also presented at the ANZSCPB Conference.

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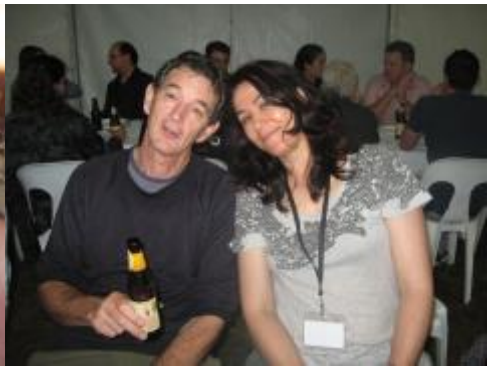

Australian Museum
Australian Museum Herpetology

Jodi Rowley (Curator, AM & UNSW) is busy trying to figure out what a joint-appointed Curator is and is spending a lot of time chasing frogs that may or may not exist. Her recent work in NSW (funded by NSW Environmental Trust) focuses on resolving mysteries surrounding three poorly-understood threatened NSW frog species. She's spent most of her recent field time searching for the Peppered Tree

Frog (*Litoria piperata*), and working on resolving its taxonomic status via morphology (with Marion Anstis) and DNA once and for all. She's also collaborating with lots of awesome people on the Green-Thighed Frogs (*Litoria brevipalmata*), and with Liam Bolitho and David Newell on the Mountain Frog (*Philoria kundagungan*). She's also keen to help resolve frog diversity, distributions and conservation status of Aussie frogs, and is working with the DNA lab at the Australian Museum to get qPCR testing for Bd up and running. Much of Jodi's work remains focused on poorly-known amphibian fauna of SE Asia (including describing new species of tiny brown frogs), and the threats that they face (including the pet trade). Her recent work in Vietnam has focused on the conservation of mainland Southeast Asia's most threatened frog species (*Oreolalax sterlingae* and *Leptolalax botsfordi*), which inhabit the highest mountain in Vietnam- she co-developed a Conservation Action Plan for these species and other amphibians in the Hoang Lien mountain range in northern Vietnam. Jodi chairs the mainland SE Asia Amphibian Specialist Group and is responsible for assessing and updating the global conservation status of all Southeast Asian amphibians on the IUCN Red List of Threatened Species. She is co-editing a book on the conservation of Australian frogs with Harold Heatwole and helping develop a national citizen science program at the Australian Museum around frogs (stay tuned!).

Tim Cutajar (Research Assistant) is continuing to work with the IUCN Amphibian Red List Authority on an update of the Red List for all Mainland Southeast Asian amphibians as well as a project with Jodi Rowley and Chris Portway on the conservation and ecology of the Green-Thighed Frog (*Litoria brevipalmata*). He is also involved in a number of projects in amphibian systematics, assisting with molecular and bioacoustic analyses across a range of Australian and Southeast Asian amphibian taxa. Tim was also involved in much of last season's field work in eastern NSW and will likely be joining Jodi Rowley in the field in Vietnam later in the year.

Stephen Mahony (Technical Officer) has joined the Australian Museum herpetology team and is in the process of hunting down those with overdue loans - he sincerely hope this isn't you!

Chris Portway (Research Assistant) has been searching for Green-Thighed Frog (*Litoria brevipalmata*) in Ourimbah State Forest for an Environmental Trust study that includes mark-recapture and swabbing for chytrid fungus detection.

Ross Sadlier (Senior Fellow) has co-authored with John Cann the revised version of Australian Freshwater Turtles which should be available in June or July - the Australian distributor will be CSIRO publishing. Ross in retirement is working on several projects including recognition of the Kaputar Rock Skink resulting from the Museum's recent Holt Grant studies on the Nandewar Ranges, a review of the Mallee Dragon *Ctenophrus fordi* with Cecilie Beatson and Don Colgan, and a review of *Strophurus assimilis* and intermedius with Ian Brennan, Cecilie Beatson and Aaron Bauer, of course the *Egernia cunninghami* review with Steve Donnellan. He also continues work on the New Caledonian lizard fauna with longtime collaborator Aaron Bauer.

Cecilie Beatson departed the Museum in October 2016, she misses the collection dearly.

Harold Cogger (John Evans Memorial Fellow) is working on three main projects: (1) completing a chapter on Australian frog demographics for the Heatwole/Rowley volume, (2) producing a phone app for the identification of Australian snakes from an earlier unpublished Lucid key of his, and (3) Completing a paper on comparative allometric growth in three large lizard or lizard-like lepidosauriens: *Sphenodon punctatus*, *Intellagama lesueurii* and *Brachylophus vitiensis*

Marion Anstis (Research Associate) was asked by New Holland to do a pocket book guide to Australian Frogs, which was published in March 2017. The book readily fits in a pocket and covers a range of species in summary, which colour photo of each. (Reed Concise Guide: Frogs of Australia. Retails for $14.99). New Holland are also doing a revised second edition of her book, Tadpoles and Frogs of Australia, which is due out mid 2017 sometime. Anyone interested in being informed when it is out can email Marion: frogpole@tpg.com.au. It includes the 5 new species described since the first edition, and some additional photos plus revised text throughout and a new cover and some internal design changes. Marion described with colleagues a new species of the *Cyclorana platycephala* group from Western Australia and was a co-author with Simon Clulow and colleagues on the description of *Uperoleia mahonyi*.

Frank Lemckert (Research Associate) is monitoring Giant Barred Frogs at Port Macquarie as part of a long-term program to assess the impacts of road upgrades. This work consists of three surveys per year at six sites with pit tags for mark-recapture. Finally, after four years, he is getting recapture rates that may actually allow him to provide some more robust population size estimates. At the broad level at least, the frogs look to be doing okay. Frank is also having a chance to survey for Green-thighed Frogs to determine how they are going around the same upgrade and if they are successfully using the created breeding ponds. It's too early to say anything and they are proving to be as unpredictable as always. Finally, Frank has been undertaking surveys for Green and Golden Bell Frogs at Meroo Lakes (NSW South Coast) as part of the OEH Saving Our Species (SOS) program. The initial surveys were hampered by extremely dry conditions, but once the rains came, the frogs came out to play and the population seems to be doing well, being located at nearly all of the 30 sites monitored and with quite a large number of sub-adults seen. High levels of salt in the lakes did not seem to bother them at all and a number were seen sitting in highly saline waters. That survey will form part of a broader ongoing strategic management program for this species in NSW.

Gerry Swan (Research Associate) is working primarily on establishing the extent of the Liopholis population at Yathong NR and working with OEH to determine the real distribution of *Ctenophorus mirrityana* in western NSW.

Liam Bolitho (Research Assistant/Masters student) is working on Mountain Frog (*Philoria kundagungan*) as part of a Masters at SCU, and mapping/modelling on other projects. Sophie Collins (Research Assistant/PhD student) has joined the search for the Peppered Tree Frog and in the very early days of her PhD at UNE research on resurveying frog populations on the New England Tablelands of NSW.

Victoria Graham (Research Assistant) is assisting with frog fieldwork in NSW. Duong Le (PhD student) is still hard at work on her PhD research examining the effect of habitat fragmentation on Vietnamese frogs. Harriet Simes completed her Honors research at USyd on Asian Horned Frog (Megophrys) tadpoles.

Harry Leung is assessing species for the Red List and working with Tim on the project updating the status of amphibian conservation in Mainland Southeast Asia. Kathy Potter, Catherine Welsh, Jordann Crawford-Ash and Collin Van Buren are also helping with Red List assessments.

Glenn Shea (Research Associate), when not dealing with the merry-go-round of changes to administrative structure and names at the University of Sydney, and sorting more boxes of reprints and journals culled by various institutions and retiring researchers, is continuing to work primarily on the systematics of skinks of the genus *Sphenomorphus* and *Scincella* in New Guinea, Indonesia, the Solomon Islands and SE Asia, on various species of eastern Australian typhlopid snakes, and on the ecology of New Caledonian skinks (the latter in collaboration with Hervé Jourdan, Ross Sadlier and Aaron Bauer). He is also working on the systematics of the *Egernia striolata* complex in eastern Australia and on *Eulamprus* in New South Wales and Queensland, now that genetic studies on these complexes have been finalised (the former in collaboration with Ross Sadlier, Greta Frankham and Mark Eldridge at the Australian Museum, the latter in collaboration with the Keogh lab at ANU). In 2016, he supervised a University of Sydney B.An.Vet.Biosci final year project on morphological variation in *Cyclodomorphus gerrardii*, by Isabella Tomassetti.

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Charles Sturt University
School of Environmental Sciences
https://gwheardresearch.wordpress.com/
@HeardGW

Geoff Heard has recently moved from the University of Melbourne to take up a lectureship with Charles Sturt University in Albury. At CSU, Geoff will continue his research on the spatial dynamics of amphibians, and the ecological and demographic consequences of chytridiomycosis, but also plans to broaden his herpetological horizons, re-tackling reptile spatial ecology and pursuing biogeographically-themed projects on the Australian herpetofauna. Hope springs eternal…

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University of Wollongong
Evolution and Assisted Reproduction Laboratory (EARL)

EARL (led by Dr Phillip Byrne and Dr Aimee Silla) has a new website, check it out at ***https://evolution-assistedreproduction.com/.***
You can also hear about all our latest news via our facebook page ***https://www.facebook.com/EvolutionAssistedReproductionLaboratory/.***

We study the evolution of gametes and mating systems, conservation behaviour, captive nutrition and assisted reproductive technologies. EARL believes in integrated conservation, employing scientific research to aid species recovery. We have long-standing collaborations with the NSW Office of Environment and Heritage, Taronga Conservation Society and Zoos Victoria.

Postgraduate students:
This year EARL has welcomed a new PhD student to the team, Shannon Kelleher, who will be investigating conservation from a behavioural perspective: Understanding patterns of individual behavioural variation and intersexual selection to assist with the captive breeding and reintroduction of the critically endangered corroboree frog. In 2016, we also welcomed three postgraduate students who have hit the ground running and are all busy collecting data. Emma McInernery, has just commenced a large nutrition experiment involving 200 individually housed corroboree frog tadpoles, they hatched just last week and will keep her busy for the next 9-months until they are released. Deon Gilbert is collecting data on the influence of temperature on the growth, development and fitness of the critically endangered baw baw frog, studying part-time while working full-time at Melbourne Zoo. Michael McFadden (Herpetofauna Supervisor, Taronga Conservation Society), has collaborated with us for several years and has recently commenced his PhD with EARL. Mike will be looking at improving the output of Australian ex-situ conservation breeding programs for threatened amphibian recovery. PhD students Leesa Keogh (developing assisted reproduction technologies for the booroolong frog) and Daniel O'Brien (studying the mating system of the red-backed toadlet) have completed data collection and are both busy writing manuscripts; they are aiming to submit their theses in 2018. Finally, 2016/17 saw two PhD completions. Brian Kearney (joint enrolled through Monash University) had his thesis accepted, titled 'Developmental sensitivity, acclimation and adaptation to elevated salinity in South-East Australian Anurans', well done Brian! Second, Stephanie K Jones has

recently submitted her PhD thesis for examination titled ‘Freeing the phenotype: Generating phenotypic variation to improve animal reintroduction success.’ Steph worked mainly on mice, but does have one chapter dedicated to the striped marsh frog.

Media:
To Mate, This Frog and Her Sex Partners Work Up a Lather
(http://www.nationalgeographic.com/magazine/2017/03/basic-instincts-gray-foam-nest-tree-frog/)

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Other scaly places…

CNRS

Oulalab
https://oulalab.wordpress.com/

Fabien's research group has been growing significantly since he was awarded a research cooperation program between France, Andorra and Spain (INTERREG POCTEFA ECTOPYR). This project uses ectotherms from the Pyrénées as bio-indicators of the impact of climate change along altitudinal gradients and will aim at modelling future range shifts.
Check out progresses with our websites:
http://poctefa-ectopyr.com/fr/
https://www.facebook.com/ectopyr/

Eric Gangloff from Iowa State University recently secured a Marie-Curie post-doctoral fellowship and will be joining Oulalab mi-June to look at the effects of altitude related hypoxia on range shifts driven by climate change. This is part of an on-going collaborative project with Tobias Uller (Lund University).

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The Australian Wildlife Conservancy

North-west Region (Kimberley)

The Kimberley has come alive with frogs this wet, wet, wet, wet, wet season! Whilst experiencing flood after flood, the Mornington team have been attempting to reduce the impact of the ever-advancing toad front on local predator populations, particularly goannas. The team are moving metamorph toads around the landscape (using helicopters!), to change the age-structure of the frontline. This means instead of having 100% large lethally toxic adult toads at the frontline, there will now also be small aversive but not lethal toads to teach susceptible predators not to eat the fatally toxic toads. This builds on the Shine Lab's ground-breaking research in this arena. After completing baseline pre-toad surveys at the end of the dry last year, Melissa Bruton and James Smith are now collecting metamorphs from behind the frontline (which is proving to be a challenge!) and dropping them at the front line. In this way, susceptible predators have a chance of encountering a small toad, having an unpleasant experience (but not dying!), and learning to avoid the big lethally toxic toads in the future. We'll find out over the coming years if this management action is successful.

North-east Region (QLD, NT)

Long-term monitoring continues across all of AWC sanctuaries including the range of Queensland and Northern Territory sanctuaries. In 2016 Eridani Mulder and Gina Barnett collected genetic samples from Yakka Skinks *Egernia rugosa* for Dan Ferguson, had data from Wongalara included in the Top End lizards paper led by Dan Rosauer and trapped several hundred *Carlia sexdentata* on Cape York Peninsula in the October. In a surprising turn-up, we recorded the first records of Carpet Python *Morelia spilota* in the last 10 years at two of our northern sanctuaries: Brooklyn and Piccaninny Plains.

Across all AWC sanctuaries the team of herp-loving ecologists currently wrestles with the difficulties of designing a long-term monitoring program for large snakes and varanids – more on that at the conference!