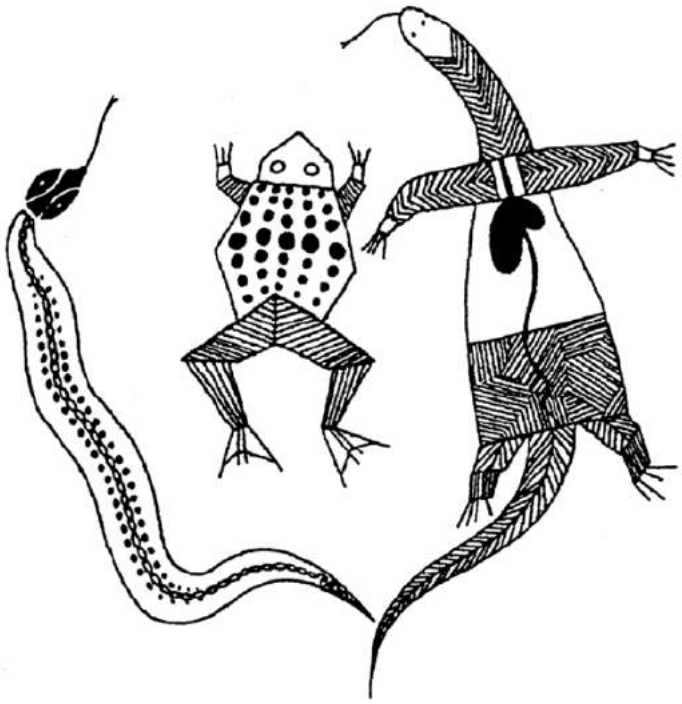
THE AUSTRALIAN SOCIETY OF HERPETOLOGISTS INCORPORATED



NEWSLETTER 51
Published 5.5.2017

Letter from the editor

Six months has passed since the society last convened, a migration that took some of us to the far south of Australia, to our island state. It was an enjoyable conference in the comfort of luxurious cabins, and my dream of an ASH bush-dance came true. Thank you Erik!

Mini-herpetologists roamed the grounds with new contributions to the gene pool from Doctors Pepper and Eisemberg. It is a fine step forward that the amazing minds of these women can continue to contribute towards science by attending these conference with their little ones in tow.

The presidency was passed from Erik Wapstra to Nicki Mitchell and we all look forward to meeting in the beautiful bushland of Western Australia.

Many of us were able to add some travel onto the conference excursion and I experienced some incredible encounters with gems of the island including devils, *Cyclodomorphus* and *Litoria burrowsae*. The recent fires in Tasmania meant some rearranging of plans but after a hike up Frenchman's Cap involving a badass quoll that came within metres of us, no one was complaining.

I know a few members of ASH headed over to New Orleans this year for JMIH and a few more visited China for the 7th World Congress of Herpetology. I look forward to hearing reports on the international news in reptile and amphibian research.

This newsletter brings you up-to-date with research groups in the society and will keep you in the loop until we convene next year, west side. Thanks again to Jacquie Herbert for the photos and to my Behavioural Ecology undergraduate student - Dayna Chapman for helping to piece this newsletter all together.

Back legs first,
Deb Bower

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
http://www.australiansocietyofherpetologists.org/

Membership form
http://www.australiansocietyofherpetologists.org/new-members/

Upcoming conference
http://www.australiansocietyofherpetologists.org/conference/

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Save the date! ASH 2017

Our next ASH conference will be held at Fairbridge village near Pinjarra in Western Australia in from Tuesday June 20 to Friday June 23 2017. Fairbridge was established in 1912 as a farm school for war orphans, but is now better known for the Fairbridge world music festival and the site of a death-defying high ropes course. The village is just over an hour's drive from Perth Airport, so ASHer's coming from the eastern states will just need to hop on an early flight on June 20 to get to WA in time for the bus.

Fairbridge has plenty of accommodation in cottages scattered across the village, and lots of quirky venues for talks and evening entertainment. Check out their website: http://www.fairbridge.asn.au/

There are plenty of herps to be found at Fairbridge and in the surrounding biodiverse south west, but those wanting a serious fix can consider signing up for a post conference herp tour to the Western Kimberley, guided by our very own Ruchira Somaweera, Ru is organising a five-night camping/4WD trip capped at a maximum of ten people. The highlights will include mud snaking in the mangroves for Homalopsids, night-time off-shore spotlighting for sea snakes off Broome, herping in several habitats along the Gibb River Rd (especially limestone boulders), visiting the biodiverse Devonian reef, freshwater crocodile and turtle watching at Windjana and Giekie Gorge National Park, and a night visit to Tunnel Creek National Park. Ru will organise all the logistics and approvals, and the tour cost should be $800-$1000. Participants will also need to organise their flights to and from Broome. The tour will start in Broome on the evening of Saturday June 24 (the day after ASH finishes).

Expect further information on the ASH conference and Kimberley tour will appear on the ASH website over the next few months, but for now, put the dates in your diaries and start getting your lab group (or lab leader) in training for some serious outdoor challenges.

Nicki Mitchell, ASH president

The ASH Presidential Crown 2016

A golden snake crown to honour the president of the Australian Society of Herpetologists was presented to the society at the Launceston conference on 18 Feburary 2016. The crown, which rests on a bronze stand composed of different species of Australian reptiles and amphibians was created by artist, Steven Holland in collaboration with Scott Keogh. As a work-of-art the crown symbolizes a cerebral connection to, and a deep respect for herpetology and is a celebration of the ongoing history of ASH.

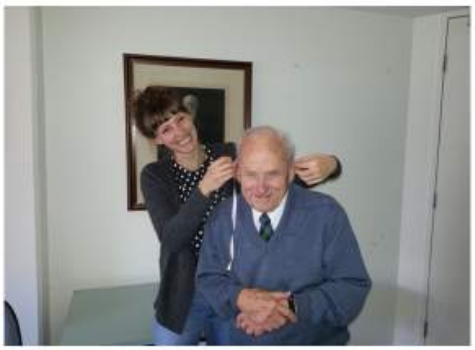
The idea of making a crown for the president of ASH was first considered before the 2014 conference in Canberra and the opportunity to realize it came about through the Australian National University, Vice Chancellor's College Artists Fellowship Scheme some time later. This initiative allowed Steven to work on the crown as a visiting artist at the ANU Division of Evolution, Ecology & Genetics in the Research School of Biology throughout 2015. Steven received a small stipend and a materials allowance and the outcome of the project was the result of a collaborative dialogue with Scott.

The ASH crown had several starting points. One was the recently published history of ASH called, *From Lineages to Webs* by Glenn Shea. (1.) This states that the ASH came into existence over 50 years ago and was *formalized at a meeting of foundation members at Canberra High School on 23 Jan 1964*. Now the ANU School of Art, it is a place where Steven has worked and studied for many years and where the ASH crown was cast.

The next point of entry of the project was the head of Murray Littlejohn. To work out how big to make the crown Scott asked to have Murray's head measured. The first president of ASH and a pre-eminent scientist in the field of Australian Frogs, Murray pioneered a technique of

recording frog calls in 1957. In honour of his work the dimensions of his head were used as a standard around which the crown was formed.

Murray Littlejohn's head is measured by Claire Mclean.



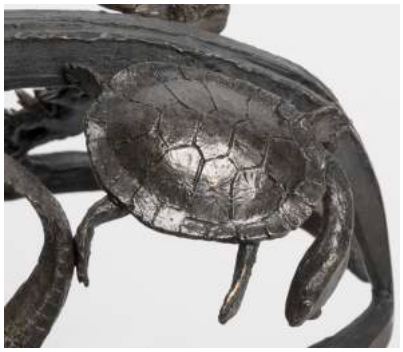
Circumference 56.5 cm

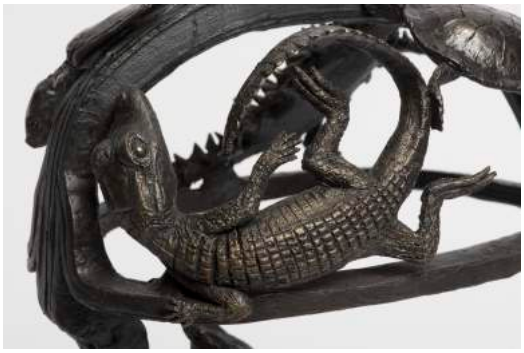
Ear to ear 30.5 cm

There are three great minds in the photos – Claire, Murray and Darwin. Photos by Devi Meian Stuart Fox

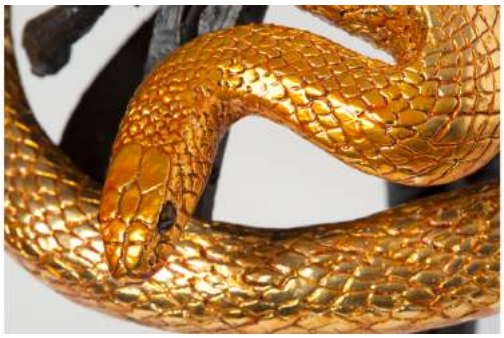
Another starting point was a shed skin from an Eastern Brown Snake that Steven found next to his outdoor bronze sculpture, called *Snake picnic*. By flattening the skin out and tracing it onto tissue paper he used it as a template to make a wax model of the snake that would later be cast in aluminium and electroplated in 24 caret gold.

Working with Scott, Steven selected several different types of amphibians and reptiles to represent the biological scope of ASH. This involved locating museum specimens of a Southern Brown Tree Frog, two different kinds of baby turtles, a crocodile hatchling and a Thorny Devil that were modelled in plasticine, cast in wax and bronze and welded into a stand for the crown.





At the conference in Launceston a new ASH tradition began when Nicola Mitchell was crowned the 2016 president by outgoing president, Erik Wapstra. This was when Nicki commenced the advancement of scientific study into reptiles and amphibians through the aims of the society for another eighteen months. It is also when the crown began to have a life of its own; constantly forming connections to human minds devoted to understanding and protecting the unique fauna that encompasses herpetology.



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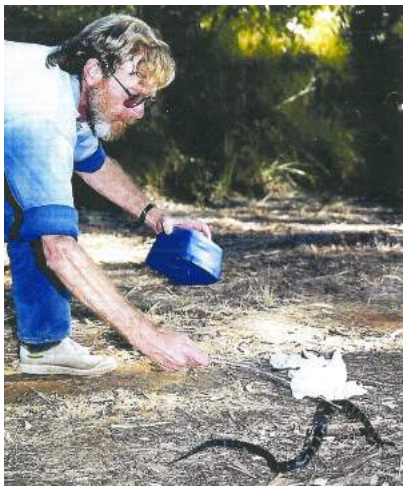
Images by Brenton McGeachie and Devi Meian Stuart Fox

To see more of Steven's artwork visit; stevenmarkholland.com.au

Announcement of the
Paul Webber Research Fund for Herpetology



Paul Nagle Webber came from England in 1970. He worked as a technical assistant to Hal Cogger at the Australian Museum. Paul joined ASH in the late 1970's and loved attending the annual general meetings. He was social and liked having a beer. He was particularly close with Ric Longmore and appreciated the special "Brumby". Paul was a dedicated herpetologist who passed away in Armidale on 9 April 2014, aged 64.

Paul wanted to support herpetological research and discussions with ASH began around 2009. He bequeathed a sum of $200,000 to ASH to establish a Trust Fund to which others can contribute. This is an extraordinary gift and legacy and will make a lasting impact on Australian herpetological research. The interest generated from the Trust will be used to give out competitive research grants. These grants will be in addition to the existing ASH student research grants.

Tasmania

University of Tasmania
BEER Group

The BEER Group is currently still recovering from the serious bootscootin', barn storming, hay baling, herp wrangling, jumbucking and Matilda waltzing that was undertaken at ASH 2016. The process of recovery has been long and painful but as a group we feel like the end is in sight and we can get back to the job of doing some science. On that note…

Erik Wapstra has just returned from his 16th field season in Sweden with Mats Olsson and still speaks no Swedish. Erik has just completed his ARC Future Fellowship and has returned to his substantive research and teaching position with the added challenge of being the Associate Dean of Research for the Faculty. He 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.

Geoff While, was awarded an ARC DECRA and Discovery Grant in 2015 to expand his work on the Egernia group. These projects aim to uncover the evolutionary origins of family living within this unique lizard group and involves collaboration with Dave Chapple, Mike Gardner and Martin Whiting as well as Tobias Uller and Charlie Cornwallis (both at the University of Lund). Geoff is currently running several large experiments and supervising students on projects related to these grants. He also spends time at the University of Lund and in Europe more generally, where he continues to work on the wall lizard system he developed with Tobias Uller. Geoff is actively pursuing keen students to begin PhD projects in 2017.

Mandy Caldwell recently submitted her PhD thesis and is currently dealing with a set of positive reviewer's comments. Mandy's project examined the potential for behavioural, physiological, and ecological traits to buffer climate impacts in snow skinks. The ultimate goal of Mandy's work was to develop a mechanistic model to predict snow skink species response to climate change. This work has been undertaken in collaboration with Mike Kearney at the University of Melbourne. Two other PhD students currently feeling the thesis pinch are Ben Halliwell and Hannah MacGregor, both of whom are in the final stages of writing up. Ben's project focused on using large experimental enclosures to investigate the evolutionary feedbacks between ecology, female promiscuity on social organization in *Liopholis whitii*. Ben will be hanging around the BEER group following his PhD as a post-doc. 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. Although it also appeared to involve an in depth comparative analysis of the quality of chocolate based biscuits between Australia and the UK.

Despite recent and upcoming completions, the BEER group continues to grow. Kirke Munch and Tom Botterill-James both work 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. Tom is currently in Edinburgh on a Bicentennial scholarship taking a break from the herps and examining similar questions using burying beetles with Per Smiseth. On the Niveoscincus side of things, George Cunningham is continuing his work on modelling transitions between sex determining systems. Georges modelling skills have been greatly enhanced through collaboration with Lisa Schwanz at the University of New South Wales. Lu Fitzpatrick has also joined the group from the University of Western Australia. Lu is using Erik's long-term data set and some specific experimental approaches to examine aging in the Niveoscincus.

We have also been fortunate enough to have a number of extremely talented honours students within the group over the past 12 months or so. Peta Hill and Kaely Kreger worked with Erik and Chris Burridge on the mechanisms of sex determination in *Niveoscincus ocellatus* and the phylogeography of *Niveoscincus metalicus*. Jacinta Silince worked with Erik and Geoff on sibling competition and cooperation in *Liopholis whitii*. Rachel Lewandowsky and Vitoria Russell worked with Geoff and Tobias on the wall lizard system examining the introgression of chemical signals across the hybrid zone and the causes and consequences of developmental instability. Following her honours, Rachel stayed on as a research assistant working on a variety of research projects as well as playing a fundamental role in the organization and success of the recent ASH conference.
Finally, we were lucky enough to have Sozos (McSteamy) Michaelides grace us with his presence on a short term post-doc over the summer. Sozos did his PhD on colonisiation dynamics of introduced wall lizards in the UK with Tobias and came to Tasmania to work on various projects related to Geoff's *Liopholis whitii* system with a specific focus on phylogeography within Tasmania.

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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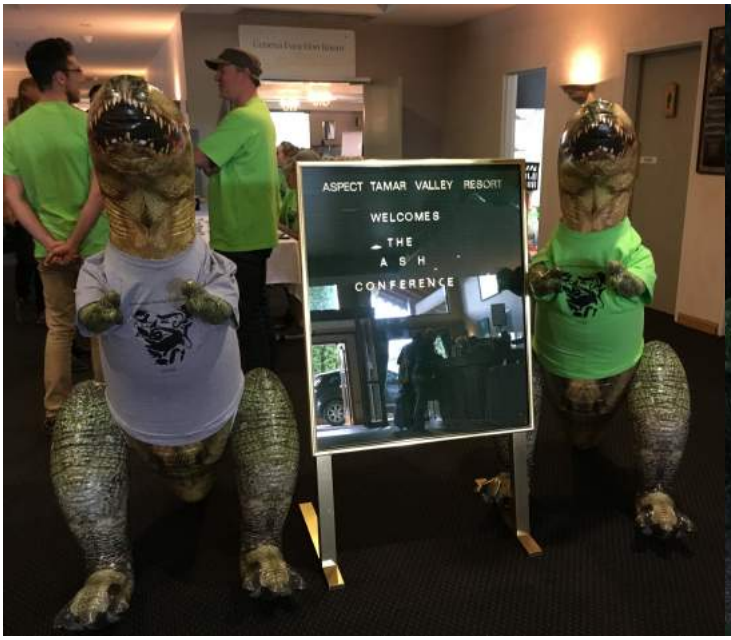
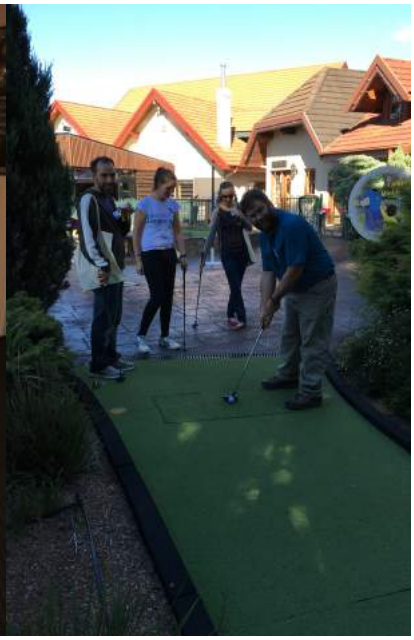




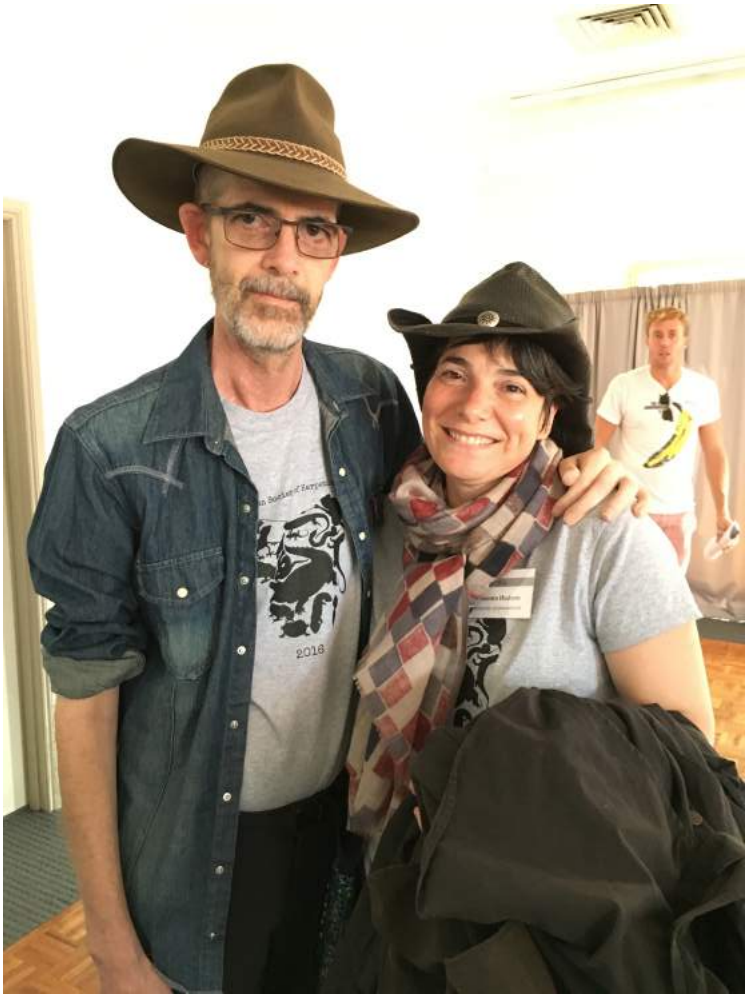
Northern Territory

Museum and Art Gallery of the Northern Territory (MAGNT)
Terrestrial Vertebrates Department

Despite the lack of a current Terrestrial Vertebrate Curator, the Terrestrial Vertebrates Department is still in action and open for business. For access to the collection and loans please contact:

Gavin Dally, Senior Collections Manager, Natural Sciences
Phone: +61 08 8999 824
Email: Gavin.Dally@nt.gov.au

Last year Michael Hammer, Curator of Fishes led an Expedition to Judbarra/Gregory National Park as part of the Bushblitz Program. Research Associate Dane Trembath (MAGNT), Graeme Gillespie (Director Terrestrial Ecosystems) and Gaye Bourke (Moritz Lab, ANU), joined forces to collect a large range of herpetological specimens for the MAGNT collection on the trip. In addition, Dane Trembath and Graeme Gillespie have been spending many hours debating science, while conducting snake surveys at Dane's long-term study site south of Darwin.



Western Australia

Western Australian Museum

The WAM crew along with collaborators from ANU, Villanova University, Adnan Menderes University (Turkey) and the WA Department of Parks and Wildlife have spent a decent amount of time in the field collecting specimens for current and upcoming taxonomic projects and sampling from areas poorly surveyed in the past.

Field surveys were carried out in the Esperance region, Gibson Desert, the Kimberley and the Pilbara (twice).

Earlier in the year saw the move of the entire wet collection, including approximately 165,000 herp specimens, to the new wet store located in a brand new building at the Welshpool site. The new building, dubbed the Harry Butler Research Centre, also includes a shiny new laboratory which everyone is enjoying, especially those who also scored new microscopes as well. The old wet store is currently in the process of being remodelled to accommodate the larger wet specimens which are currently stored off-site at a chemical storage depot. Finally the entire collection will all be housed in a single location. Over the last year the team has also been busy with the closure of the WA Museum's public site located in the city which involved breaking down and moving all the exhibitions to the collection and research facility in Welshpool. Following a busy year, the team is now settling down and catching up on the massive backlog of loans, unregistered specimens and general collection chaos.

Research-wise, Paul Doughty's projects continue to progress through collaborations with ANU, SA Museum, Museum Victoria, Murdoch University and the WA Department of Parks and Wildlife. New species include Kimberley geckos and new names for western populations of the large-bodied water holding frogs and marbled velvet geckos. Despite numerous distractions, progress has been made on a number of large projects that have been hanging over our heads for some time so watch this space.

Bec Bray has spent most of this year either moving collections or adding to them through fieldwork (including the furry and feathered non-herp material). Bec is lucky enough to have headed out in the field to see some of the diverse range of herps that occur in WA and the stunning landscapes that it has to offer. Whilst she now wears Akubras and is addicted to red rocks and sand, it's back to business at WAM with collection audits and database updates.

Ryan Ellis's ominous and peculiar fasciation for blindsnakes continues with the description of a new species from the Kimberley region in press and a species revision in prep and currently with co-authors for input. Just what everyone wants, more blindsnakes. Ryan is also slowly progressing on a thorough type specimen audit and subsequent publication of type catalogues between projects and attending to various museum duties. With over 8,000 type specimens it will be a time consuming task but has provided an opportunity to identify and correct numerous errors, and organise the type specimens appropriately. Next on the list is the frog and gecko type lists, keep an eye out.

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Moritz, C., Fujita, M.K., Rosauer, D., Agudo, R., Bourke, G., Doughty, P., Palmer, R., , M., Potter, S., Pratt, R., Scott, M., Tonione, M. and Donnellan, S. (2016). Multilocus phylogeography reveals nested endemism in a gecko across the monsoonal tropics of Australia. Molecular Ecology 25: 1354–1366.
Oliver, P.M. and Doughty, P. (2016). Systematic revision of the marbled velvet geckos (*Oedura marmorata* species complex, Diplodactylidae) from the Australian arid and semi-arid zones. Zootaxa 4088: 151–176.
Oliver, P.M., Bourke, G., Pratt, R.C., Doughty, P. and Moritz, C. (2016). Systematics of small *Gehyra* (Squamata: Gekkonidae) of the southern Kimberley, Western Australia: redescription of *G. kimberleyi* and description of a new restricted range species. Zootaxa 4107: 49–64.

The University of Western Australia
Mitchell lab

Nicki confesses that she did not submit a lab update for the last newsletter, but now that she has been crowned ASH President she really can't do this anymore. Somewhat indulgently, here is an update for 2015-16.

New herpy students since last reporting are Malcom Soh, Jessica Stubbs (both PhD), Alexandra Bouma (MSc) and Brighton Downing (honours). Malcolm is investigating the effects of habitat degradation on amphibians and birds from the cloud forests of Peninsular Malaysia, comparing responses across a disturbance gradient (pristine, agricultural and urban habitats) at three levels – community diversity, population demographics and population genetics. He has just finished his first field trip, with the aim to complete all fieldwork by mid-2018 so that he can help run the ASH conference. Malcolm is currently ably assisted in the field by herpetologist Marcus Lee from the UK, who also runs a great field kitchen unless he is distracted by a snake.

Jess worked as a research assistant for Nicki in 2015, modelling the nest temperatures and sex ratios of loggerhead sea turtles nesting in Western Australia, and started a PhD in January 2016. Her project is in collaboration with CSIRO and supported by BHP Billiton, and focuses on the foraging ecology and energetics of green turtles at Ningaloo, and uses satellite tagging, accelerometry, stable isotope analysis, and naturally a bit of modelling. Alex has just started her MSc project on a trial assisted colonisation of the western swamp turtle to wetlands near the southern

coast of WA. We think this is the first assisted colonisation of a vertebrate due to climate change (declining rainfall) – a project that has been seven years in the planning with lots of collaborators. Brighton Downing worked alongside Tabitha Rudin in 2015, looking at how chemicals influence mate choice in *Pseudophryne guentheri*, co-supervised by Kate Umbers at UWS. Brighton picked up a Peter Rankin Trust Fund grant to analysis volatile and non-volatile compounds in skin secretions, but had a tough field season that kept samples sizes small – a double whammy of fire followed by drought.

Tabitha has just wrapped up her second field season hunting for *Pseudophryne* across a rainfall gradient, and the particularly good froggy conditions in 2016 allowed Tabs and her dedicated field crew to collect frogs from six populations many hundreds of kilometres apart. She is now determining whether adults and their offspring show signs of adaptation to water stress, which involves measuring traits and caring for around 2000 tadpoles. PhD student Blair Bentley is two years into his project, and has utilised every form of transport imaginable to find nesting sea turtles in the Kimberley for his thermal biology and transcriptomic research. He has also started the more challenging task of getting R to cooperate, and is still (not) avoiding crocodiles. Jamie Tedeschi completed her PhD in 2015 on assessing the resilience of sea turtle embryos to high nest temperatures. She was married in Hawaii earlier this year, where she was lucky to swim with green sea turtles in Maui and Kauai. Since then she has moved on to less-herpy work with ghost bats, quolls, and mulgara, but hopes to return to the fold soon, doing some genetic work on Pilbara olive pythons. Anna Carter (New Zealand) also finished her PhD in 2015, modelling tuatara in their island habitats, and recently started a postdoc with Fred Janzen at the University of Iowa.

Honours students Stephanie van Lohuizen and Nick Rodriguez finished their projects on flatback turtles and western swamp turtles in 2015, both ending up with nice publications. Steph worked for Rio Tinto in 2016, while Nick did some research assistance work for Nicki and will be back from Norway soon to help with swamp turtle monitoring.

On the postdoc front, 2015 saw the arrival of Sabrina Fossette and Adrian Gleiss from Stanford, to work with Nicki on sea turtle and sawfish (not a reptile, but close) projects respectively. Sabrina was funded by an Endeavour award, and is now a research scientist at WA Department of Parks and Wildlife. Adrian was funded by the Human Frontier Science Program, but had the tough choice of a DECRA postdoc offer as well, which he is now undertaking at Murdoch University. They are now the proud parents of baby Nora. Stewart Macdonald joined the lab in April 2016 from James Cook University to work on various projects funded by the NESP Threatened Species Recovery Hub. In Stewart's words, he has achieved very little as he's been far too distracted by what can be found in the biodiverse southwest – numbats, turtles, frogs and turtle frogs. But in all seriousness, Stewart has driven heroic distances in a single night to capture gravid female *Pseudophryne* breeding at sites 200 km apart for Tabitha's PhD project, often accompanied by an endless supply of herpetological cronies that he apparently met online. Successful fieldwork was celebrated with stale Star Wars cake but otherwise fuelled entirely by chocolate. Last but not least, Ruchira Somaweera landed a 3 year postdoc through CSIRO and funded via NESP Northern Australia Hub. He returns to the freshwater

crocodile sites of his PhD – this time trying to understand the impact of an invasive weed on the nesting habitats and population dynamics of freshies.

Nicki has been busier than usual since joining the Commonwealth Threatened Species Scientific Committee (TSSC) in April 2015, as well as juggling full time academia. She is looking forward to considering threatened species nominations for herpy critters, rather than birds, mammals and orchids, but is learning a lot. This role has led to helping the planning of assessments of the conservation status of all Australian squamates, where about 970 species will be considered over two week-long workshops in 2017. She is also kept on her toes as a project leader in the NESP Threatened Species Recovery Hub, which will bring online new projects on Christmas Island reptiles and endangered WA frogs in 2017. She also has to organise the 2017 ASH meeting while on sabbatical…

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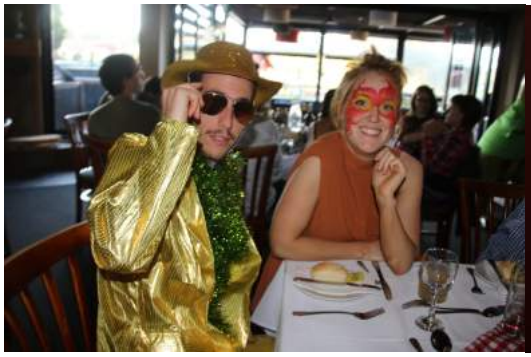

Centre of Excellence in Natural Resource Management, Albany & University of Western Australia, Centre for Evolutionary Biology

J Dale Roberts

I have broad interests: mostly green - frogs, plants and occasionally birds! Biogeography, speciation, sexual selection frog polyandry - acoustics. No research group - I am trying to wind that down!

Current research:
Thinking about papers that come out of the review of the conservation status of Australian frogs.

I have just submitted a second paper with Bruno Buzatto, Evan Thyer, and Leigh Simmons on patterns of paternity in polyandrous matings in *Crinia georgiana*. Thinking about detailed mapping of *Litoria moorei*/*L. cyclorhyncha* distributions - why is chytrid not an issue in WA?

Still have a vault full of *Geocrinia leai* call data to analyse!

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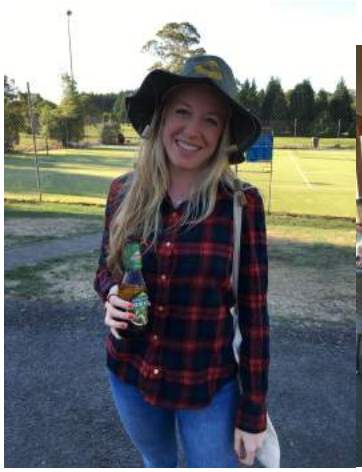
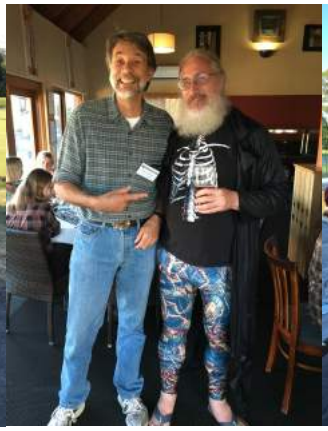
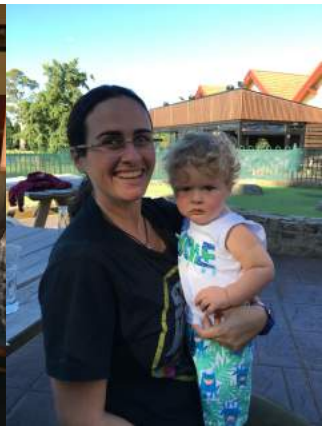
Anstis M, Price LC, Roberts JD, Catalano SR, Hines HB, Doughty P & Donnellan SC 2016. Revision of the water-holding frogs, *Cyclorana platycephala* (Anura: Hylidae), from arid Australia, including description of a new species. Zootaxa 4126 (4), 451-479

South Australia

The University of Adelaide
Tyler Lab

The period 2015 – 2016 has involved several distinct herp projects. Firstly, in collaboration with Gavin Prideaux at Flinders University our work on the fossil frogs from a cave on the Nullarbor Plain has been published, reporting *Neobatrachus*, *Pseudophryne* and a news species of *Litoria*.

Work on the activity of peptides in the skin of *Litoria caerulea* has demonstrated that the family named Caerin 1 inhibit HIV at very low concentrations (12 – 25 μM). The third activity has involved a study of skeletal abnormalities in frogs at a copper mine site in Australia.

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Read, J.L., Tyler, M.J. and Robinson, M. (2015) Recruitment and abnormality rates of a desert frog assemblage at an Australian copper mine. Ecological Management & Restoration. 16 (3): 224 – 228.
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The University of Adelaide
Menzies

I continue work on the osteo-myology of the New Guinean frogs *Baragenys maculata* and *Ceratobatrachus guentheri.*

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Menzies, J.I. (2014c) Notes on tree frogs, *Nyctimystes* species (Anura: Hylidae), of New Guinea; the *Nyctimystes papua* Species Group. Alytes 31, 59-76.
Menzies, J.I. (2014d). Notes on the tree frogs (Anura; Hylidae; Nyctimystes) of New Guinea:; the *Nyctimystes montanus* Species Group. Submitted to Raffles Bulletin of Zoology.
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Menzies, JI and G.R. Johnston (2015). The structure of the male proboscis in the New Guinean tree frogs *Litoria pronimia* and *Litoria havina* (Anura: Hylidae). Australian Journal of Zoology. 63(3), 172-180

Australian Capital Territory

Australian National University
The Awesome Keogh Lab

Departed but not forgotten:
Gabi Openshaw (recent Masters graduate) finished up her MPhil Thesis on the evolution of head shape in goannas. Gabi is now working in Sydney. Dan Hoops (recent PhD graduate) recently finished his PhD on the evolution of brains in Australian dragons. He is now doing a three-year postdoc at McGill University in Montreal on teenage (human) brains.

The current lab:
Maxine Piggot (ARC DECRA Fellow). Maxine is currently working on new methods to analyse water samples for detecting overall biodiversity using environmental DNA. One part of this project is seeing how well eDNA methods can work on detecting stream dwelling frogs such as Booroolong frogs at different life stages.

Paul Oliver (ARC DECRA Fellow). Paul Oliver is having a 'year of consolidation' forced upon him by a) children, b) a mountain of unfinished projects and c) growing number of collaborators spread across the world patiently awaiting finalisation of projects. Current foci are a number macroevolutionary projects for the DECRA postdoctoral project looking for evidence of how mass turnover and regional biogeographic processes have shaped the Australasia biota (ie how did Australia get so many lizards), results are not out yet - but they are close and looking very cool. The other biodiversity inventory work is also proceeding - including description of new hotspots of vertebrate endemism in northern Australia and a novel paleoendemic gecko from Central Australia. He also recently published an updated phylogeny for *Strophurus* - cool cool geckos!

Mitzy Pepper (Postdoc) didn't realize at the Tassie ASH that she had another baby on the way, so life is about to get a little more complicated! I am currently working 3 days a week as a postdoc for Scott, helping him stay on top of things while he concentrates on running the department, being an architect, mediator, etc etc. We have submitted papers on the genetics and natural history of Frillnecks and the Turtle frog, and are currently working on a revision of Hemiergis, the African Platysaurus, and the water skinks Eulamprus.

Marta Vidal-Garcia (Postdoc) submitted her thesis earlier this year, and she is now continuing her work on morphological evolution of Australian frogs as a postdoc in the Keogh Lab. She has been rendering and analysing 3D morphological data of Australian frogs, to study the tempo of morphological diversification in the three big groups of Australian frogs.

Emma Sherratt (Postdoc) has recently joined the Keogh lab (since April) and is applying her geometric morphometrics skills to two projects: she is measuring tadpoles of Australian frogs, and she is continuing the goanna cranial shape research of Gabi. She continues to write and maintain code for analysis and visualisation of morphometric data in the R package geomorph (https://cran.r-project.org/web/packages/geomorph/index.html).

Thomas Merkling (Postdoc, Endeavour fellow) went back to Europe at the end of 2015 but will be back in Australia as an Endeavour fellow to do meta-analyses on maternal effects and their effects on fitness across vertebrates, with Lisa Schwanz and Shinichi Nakagawa (UNSW). He is still working on some frilly stuff and has a paper on water dragon colouration currently under revision (in collaboration with Martin Whiting, Macquarie Uni). He will be moving to Canada for a one-year fellowship at the start of 2017.

Damien Esquerré (PhD student) is now in his second year of his PhD. He published his paper on the convergent evolution between pythons and boas in Ecology Letters and he is finishing his project on the evolution of allometry in pythons, and has several projects line-up for the coming years. He is going to be working on the phylogenomics of pythons, the evolution of body size and shape in pythons and boas and phylogeography of the dwarfed *Antaresia* among other things. He also has an active participation in his native Chile herpetology. As usual he is very involved in the South American *Liolaemus* lizard taxonomy and systematics. The journal he founded and edits along with other fellow herpetologists

(www.boletindeherpetologia.com) is preparing its third volume and his book on reptiles of the Metropolitan Region of Chile is being published this year.

After a little over a year in Canberra, Ian Brennan (PhD Student) has settled in with the riff-raff of the Keogh lab, studying macroevolutionary patterns in Australian squamates. People are still asking him where Mitzy's gone, but that's less competition for Scott's $$$. Good gecko stories can be sent to ian.brennan@anu.edu.au

Scott Keogh and the Keogh lab are now on twitter
@scottkeogh101
@Keogh_Lab

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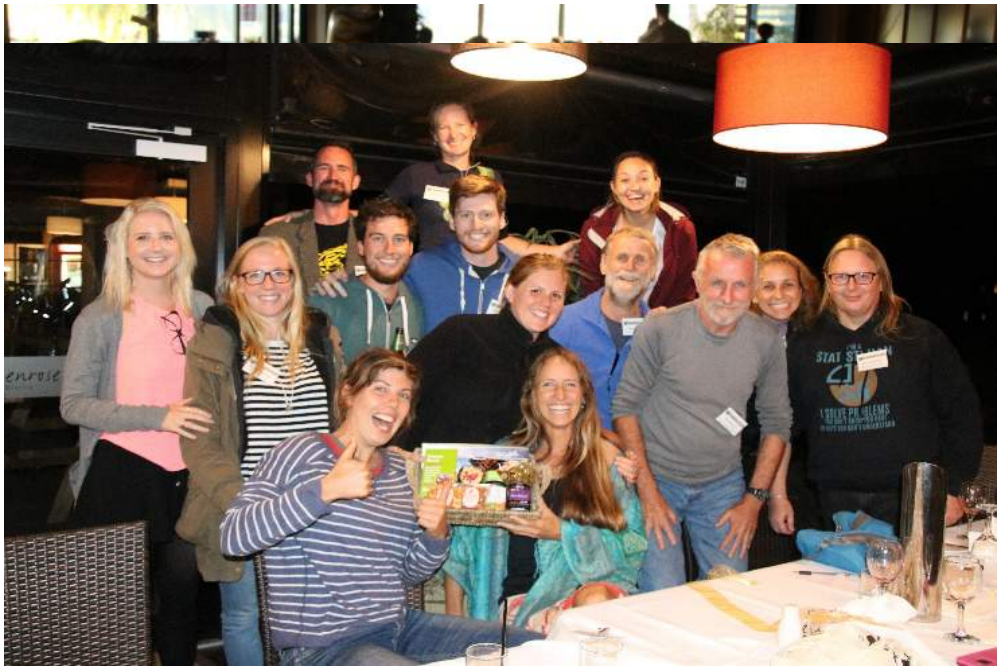

Queensland

James Cook University.
Vertebrate Ecology research group (Schwarzkopf lab)

The vertebrate ecology research group headed by Lin Schwarzkopf continues to grow and diversify. Robin Andrews from Virgina Tech in the US recently visited as part of her collaboration on gecko development and habitat choice, and even managed to make it to the ASH conference. Ross Alford officially retired and took an extended trip to the U.S. to attend conferences and travel around. The corridor was lined with wheely bins and everybody scored free books when he moved offices. Deb Bower recently accepted two part-time postdocs and undergraduate subject coordination for a both a second and a third year subject. Lecturing in Behavioural Ecology has been a lot of fun and Deb wears her rainbow unicorn pants to inspire creative thoughts in lectures. Her current research is a mixture of amphibian chytrid fungus ecology and the acoustics of frogs on Groote Eylandt. She also took on interns Leah Carr, Dayna Chapman, Helen Wolfe and Sarah Ardill to help her finish off various bits of research. Our Groote Eylandt project is a collaborative one, working with software development engineers at QUT in Paul Roe's group, including PhD student Karlina Indraswari, and the Anindilyakwa Land Council, Land and Sea Rangers, and NT Land Resource Management.

Lexie Edwards and Jodie Nordine are superhuman research assistants that can do anything from programming incubators to crocheting platypus. Minor project student Courtney Meek has been frantically writing up her results from heat wave experiments on gecko development and performance. So far, the heat seems to make them perform better. Bartek Cwiklinski will be chasing tropical water dragons when he gets going on his minor project. Paul Murray is finding out whether we can use genetics to describe gecko diets for his minor project, and Sam Scherk is looking for sexier toad calls to add to the arsenal of trapping sounds.

PhD students dominate the lab: Ben Muller is helping set-up toad traps on Groote Eylandt, and hopes to collect some toad calls from Darwin. Don McKnight is wrapping up his first chapter on genomics of populations of rainforest frogs recovered from Bd, and ramping up for work on microbiome sampling. He has recently started working with the Nywagi Aboriginal group who are becoming involved with research on their country at Paluma, and submitted his literature review. Sasha Greenspan is midway through her PhD on Bd growth and temperature, and has already finished collecting her data. She recently published a methods manuscript on how to make a fluctuating temperature incubator and a paper on calling in frogs infected with the amphibian chytrid fungus. Heather Neilly has been writing up results from measuring the biodiversity in different grazing regimes, as part of a 19-year study working with with DAF and Meat and Livestock Australia. So far, the heavy grazing strategy is the least profitable and most damaging to vertebrate biodiversity. She is due to take leave for her second baby any minute. Eric Nordberg is midway through his PhD chasing geckos around the different grazing regimes and examining predatory behaviour on these geckos. So far, we know that habitat structure is likely to be a critical driver of gecko abundance – and boy are they abundant!

Juan Laguna has joined us from Spain to conduct a PhD on endangered Black-throated Finches, focussing on the declines in seed-eating birds in Northern Australia. Wytamma Wirth has joined us for a PhD on ranavirus in turtles - do they get it? Arnaud Gourret is completing his MPhil on leaf-tailed geckos – luckily there are more than we thought, but they are hard to detect. Justin Perry completed his PhD on fire in the Cape York Peninsula and, while still working full time for CSIRO, he is working with the group providing acoustic data from Cape York. Anna Pintor completed her PhD and is working on a postdoc at JCU modelling climate effects on every threatened species, ever. Rickard Abom has completed his PhD, and is cranking out papers on fire, weeds and fauna, while working as the head technician in Science at JCU. Hannah Jones has left us to work for the council after incredibly devoted volunteering – she sorted thousands of bugs! Rod Budd and Kirilly O'Reilly also go above and beyond, volunteering and feeding and caring for many critters. Elizah Nagombi has joined us from Papua New Guinea to complete a Masters of Science in Tropical Conservation Biology.

Abom R and Schwarzkopf L (2016*)* Short-term responses of reptile assemblages to fire in native and weedy tropical savannah. Global Ecology and Conservation, 6. pp. 58-66

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(4): 997-1009.

Bower, D.S., Scheltinga' D.M., Clulow' S., Clulow, J., Franklin, C.E., Georges' A. In Press) Salinity tolerances of two Australian freshwater turtles, *Chelodina expansa* and *Emydura macquarii* (Testudinata:Chelidae). *Conservation Physiology.*

Pollard, C.J., Stockwell, M.P, Bower, D.S., Clulow, J., Mahony, M.J. Combining ex-situ and insitu methods to improve water quality testing for the conservation of aquatic species. (In Press). *Aquatic Conservation: Marine and Freshwater Ecosystems*: In Press.

Stockwell, S.P., Bower, D.S., Clulow, J., Mahony, M.J. (In Press) The role of non-declining amphibian species as reservoirs for *Batrachochytrium dendrobatidis* in an amphibian community. *Wildlife research*

Stockwell, S.P., Garnham, J.I., Bower, D.S., Clulow, J., Mahony, M.J. Low disease causing threshold in a frog species susceptible to chytridiomycosis*. FEMS Microbiology letters:* 363 (12), fnw111

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James Cook University
Hoskins Lab

Conrad Hoskin's lab has radiated rapidly into a diverse assemblage of projects and students. Conrad continues to work on a variety of different projects under the very broad banner of evolution, ecology and conservation. These include projects on adaptation and speciation in hybrid zones (in green-eyed treefrogs), phylogenetics

and taxonomy (frogs, geckos, skinks), invasive species (Asian house geckos), and conservation (*Litoria lorica, Litoria myola*, microhylid frogs, leaf-tailed geckos). He has also branched out into non-herp projects, including experimental adaptation studies (on Drosophila, with Megan Higgie) and conservation genetics of spotted-tail quolls across the Wet Tropics mountains. Along with collaborators (Stewart Macdonald, Gordon Grigg & David Stewart) he also released an app for Australia's frogs (Frogs of Australia: a complete electronic field guide; available on i-tunes). Louise Barnett spent 2016 finishing up the major elements of her PhD. A lot of time was spent looking at gecko feet and analysing morphological data to investigate whether populations of Asian house geckos in the bush have diverged morphologically from urban populations. Louise has a paper accepted on *Hemidactylus* invasion of natural habitats (Austral Ecology, in press), another in near submission on parasites of *H. frenatus* and native geckos, and is currently finishing another assessing which factors affect detection probability of *H. frenatus* in natural environments. Louise is planning to submit her thesis at the end of August. Stephen Zozaya is doing a PhD, co-supervised by Megan Higgie, investigating the role of pheromones as a mating trait in lizards. Specifically, he's using the taxonomic nightmare that is the Bynoe's gecko complex to understand how divergent pheromones can maintain reproductive isolation between divergent genetic lineages. It turns out different genetic lineages of Bynoe's geckos do have unique pheromone blends! Stephen is now assessing the influence of pheromone differences on mate choice and reproductive isolation. Diego Ortiz has started a PhD on the diversification, landscape ecology, and taxonomy of the *Osteocephalus taurinus* tree frog species complex in the Amazon Basin. Jessica Waugh is doing her Honours on movements and population size estimates of *Hemidactylus frenatus* in the bush. Ylenia Coquille completed an MSc minor project on crypsis and colour change in *Hemidactylus frenatus* and is now applying for a PhD to look at this in more detail. Jaimie Hopkins finished her MSc minor project on the phylogenetics of *Nactus* and *Amalosia* geckos. She's now applying up to start a PhD on adaptation in *Hemidactylus frenatus* and their ecological impacts. Lorenzo Bertola just completed an undergraduate project, co-supervised by Megan Higgie, using genetic and distribution modelling tools to assess the conservation status of two poorly understood leaf-tailed geckos, *Phyllurus amnicola* and the endangered *P. gulbaru*. He is now starting a project on the endangered tree frog *Litoria myola*, in which he will use SNP data to answer a number of questions regarding their population structure and history of connectivity.

Barnett KL, Phillips BL & Hoskin CJ (accepted). Going feral: Time and propagule pressure determine range expansion of Asian house geckos into natural environments. Austral Ecology.

Hoskin C. 2016. Cape Melville's lost world. Australian Geographic 132, 85–92.

Hoskin CJ & Couper PJ (2015). A new skink (Scincidae: Liburnascincus) from rocky habitat on Cape York, north-east Australia. Zootaxa, 3994: 222–234.

Scott ML, Llewelyn J, Higgie M, Hoskin CJ, Pike K & Phillips BL. (2015). Chemoreception and mating behaviour of a tropical Australian skink. Acta Ethologica, 1–11.

Hoskin CJ, Grigg GC, Stewart DA & Macdonald SL. 2015. Frogs of Australia: An electronic field guide to the frogs of Australia. http://www.ugmedia.com.au


Victoria

Leigh Landcare & Ballarat Environment Network
Ray Draper

Started amphibian chytrid fungus swabbing in March and have postponed until spring as the weather is too cold, Chytrid is active at temps between 18 and 25 Degrees.

Nil as yet

University of Melbourne
Phillips Lab

Ben Phillips spends more time helping his son catch lizards than his students. Herpetophilia is, apparently, heritable. He still has recurrent nightmares about physiological plasticity, Heisenberg uncertainty, and swimming through a featureless ocean of base pairs. He is often plucked, in these dreams, from the ravening maw of a *Lampropholis* by the graceful back legs of a toad.

John Llewelyn has achieved Nirvana, being currently a gentleman naturalist at large in the humid tropics. He is looking for a modest vicarage to support him as he ponders the finer points of physiological plasticity in rainforest lizards. Stewart Macdonald theoretically finished (and was awarded) his PhD, and has left the world changed. He also left the Lampropholis nest for the bright and happy postdocian waters of Western Australia (with Nicki Mitchell). Here he will frolic with *Pseudophryne, Pseudemydura, Pseudocode*, and *Pseudomyrmecobius*.

Louise Barnett is locked in an epic struggle with a nearly-defeated PhD thesis. She has finally stopped seeing Hemidactylus whenever she closes her eyes (having worked her way through >3000 of them) and instead sees the gentle light at the end of the tunnel. To conquer the stats, she has ditched the tropics in favour of living closer to Fisher's grave, in SA. Andrew Coates typed out a sterling Masters thesis, and promptly fled to South America. He left no forwarding address and was last seen talking with imaginary animals, drinking Ayahuasca, and twining his toes in the parasite-laden mud. Emily Gregg survived a punishing round of fieldwork just north of the Pilbara where she discovered what the future feels like. She also discovered

that, just like cattle, toads can't survive out there without free water. She will be finishing her Masters thesis shortly, having mastered much else besides.

Matt West joined the fold as a NESP postdoc working on chytrid, frogs, metapopulations, biophysics, and a few other puzzling mysteries. He is going to squeeze information from data all over the country, and sneak off whenever he can to play with actual frogs. Chris Jolly also joined the fold, but in the guise of a mammal nerd rather than a herpo. He is dead to you all, no doubt.

The University of Melbourne
QAECO (Quantitative and Applied Ecology Group)

Stefano Canessa was awarded his PhD early this year, and came back to Melbourne just to have his celebration drinks in April. After a long winter of grant applications and workshops, he is now spending a happy northern summer monitoring pond turtles and breeding yellow-bellied toads for reintroduction in Italy. Stef will soon start a three-year postdoc at Ghent University in Belgium, assessing risk and mitigation options for salamander chytrid across Europe.

Geoff Heard has settled back into Oz for the last two years of his current post doc. He continues work on the role of chytridiomycosis in Bell Frog metapopulation dynamics and means of mitigating its impact through environmental refugia. The coming spring and summer will see the 16th year of monitoring completed for Growling Grass Frogs across Melbourne's north, bringing the dataset close to 2500 surveys. He's got more data than he knows what to do with, so get in touch if you've got a froggy-themed spatial ecology question in mind.

Claire Keely just completed her final PhD seminar and is about to submit here thesis entitled "Conservation Genetics of the Growling Grass Frog, *Litoria raniformis*, in an Urban Landscape". Hooray Claire!

Reid Tingley has been working with David Chapple and Shai Meiri on a Special Issue on Reptile Conservation to appear in Biological Conservation. Keep your eyes peeled for that one later this year! Reid continues to work on an ARC Linkage Project on the sensitivity and cost-efficiency of environmental DNA sampling, which is set to wrap up in 2017. Matt West submitted his PhD thesis examining the role of chytrid, trout and sympatric species in the decline of *Litoria spenceri*. His PhD includes analyses using 55 years of occupancy data and seven years of mark-recapture data - several manuscripts resulting from this work will be out soon. Matt landed a NESP (CAUL and TSR) post-doc position at Melbourne Uni with Kirsten Paris (see below) and Ben Phillips investigating options to manage frogs impacted by chytrid and urbanization. In his spare time (if only) Matt continues to monitor *L. spenceri* populations. Contact Matt if you're interested in starting a Masters/PhD as he has a few ideas for frog and disease related projects.

UrBEC (Urban Biodiversity, Ecology and Conservation)

Kirsten Parris' new UrBEC lab has been busy. Most notably, Kirsten published a new book in June (with a cute *Litoria ewingii* on the cover; see publications). Matt West started his NESP CAUL postdoc with Kirsten on urban bell frogs in May.

Vanessa Lucy completed her Master of Environment project with Kirsten on the distribution of *Geocrinia victoriana* along an urban-rural gradient in Melbourne. Courtney Parker is currently investigating impacts of traffic noise on calling behaviour of frogs in rural Victoria for her MSc project. Michael Sievers is continuing his PhD research on urban wetlands as ecological traps for frogs, and recently won a Quarry Life Award to study frog populations at a sand quarry in Clarence, NSW and some nearby reference wetlands.

Canessa S, Converse SJ, West M, Clemann N, Gillespie G, McFadden M, Silla AJ, Parris KM, McCarthy, MA (2016) Planning for ex-situ conservation in the face of uncertainty. Conservation Biology, 30, 599-609.

Canessa S, Genta P, Jesu R, Lamagni L, Oneto F, Salvidio S, Ottonello D (In press). Challenges of monitoring reintroduction outcomes: insights from the conservation breeding program of an endangered turtle in Italy. Biological Conservation.

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Phillips BL, Shine R, Tingley R (In press) The genetic backburn: using rapid evolution to halt invasions. Proceedings of the Royal Society of London B: Biological Sciences.

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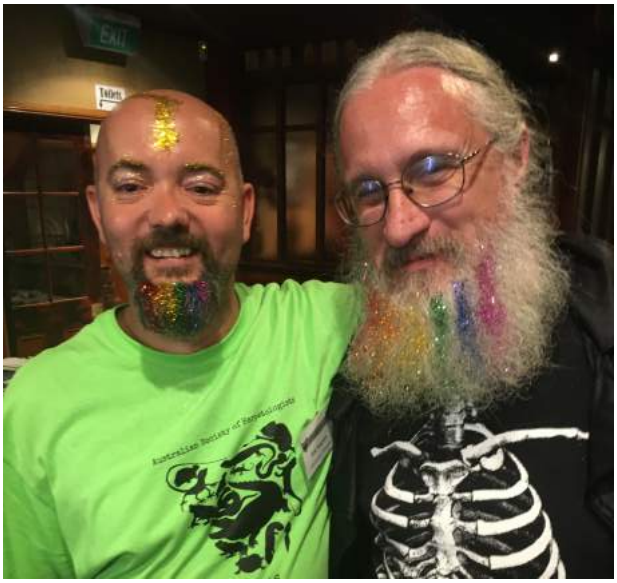
Southwell D, Tingley R, Bode M, Nicholson E, Phillips BL (In press) Cost and feasibility of a barrier to halt the spread of invasive cane toads in arid Australia: incorporating expert knowledge into model-based decision-making. Journal of Applied Ecology.

Tingley R, Meiri S, Chapple DG (In press) Addressing knowledge gaps in reptile conservation. Biological Conservation.

Tingley R, Mahoney PJ, Durso AM, Tallian AG, Moran-Ordonez A, Beard KH (In press) Threatened and invasive reptiles are not two sides of the same coin. Global Ecology and Biogeography.

Tingley R, Thompson MB, Hartley S, Chapple DG (2016) Patterns of niche filling and expansion across the invaded ranges of an Australian lizard. Ecography, 39, 270-280.
Skerratt L, Berger L, Clemann N, Hunter D, Marantelli G, Newell D, Philips A, McFadden M, Hines H, Scheele B, Brannelly L, Speare R, Versteegen S, Cashins S, West, M (2016) Priorities for management of chytridiomycosis in Australia: saving frogs from extinction. Wildlife Research, 43, 105.



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 2015 resulted in 10 frogs and five egg masses, all transferred to and raised at Melbourne Zoo (MZ). One egg mass was compromised prior to being located and resulted in few metamorphs, but 60-100% metamorph emergence was recorded for the other four egg masses. Although there is ongoing focus on continual adjustment and improvement, we are confident that raising from eggs to young frogs can be repeatedly achieved (Banks and Gilbert, in press). More than 230 young frogs are now being raised at MZ, including 50 individuals that are 28 months old at the time of writing this report. A major focus for the 2016 season is collection of known female frogs, as only male frogs have been collected to date. Without adult females, captive breeding will be reliant on raising young frogs to maturity, and assuming that these include females, that will be 2018 at the earliest. Pit-traps will be installed as soon as access is possible after the snow clears, at sites that have been identified as most likely to secure females. These will remain closed until female frogs are considered to be moving in mid-spring.

Captive management of the frogs at MZ has been adjusted towards an experimental research framework, in part aligned with a PhD being undertaken by Deon Gilbert, the Zoo's Amphibian Specialist. Southern Corroboree Frog

(*Pseudophryne corroboree*): 2,200 eggs from Melbourne Zoo and Healesville Sanctuary were released in April and May in Mt Kosciuszko National Park as part of the ongoing reintroduction program. Together with egg releases from Taronga Zoo, this is the largest number of eggs provided by Zoos Victoria to date for the release program. Staff at Melbourne Zoo successfully trialled an outdoor enclosure (approx. 2m diameter) for a group of *P. corroboree*. Six frogs adjusted well to the conditions over summer and use of in-ground cooling allowed frogs the flexibility to move away from high temperatures. Further work is underway to expand this approach as a means to raise frogs under more natural conditions and reduce reliance on resource-intensive systems used to date.

Zoos Victoria also provided funds to support research at Wollongong University aimed at developing Assisted Reproductive Technologies to support conservation of the Southern Corroboree Frog. Northern Corroboree Frog (*Pseudophryne pengilleyi*): more than 800 eggs were laid at Healesville Sanctuary, with 658 viable eggs and 29 tadpoles subsequently transferred to Tidbinbilla Nature Reserve in the ACT for raising frogs for release. This year, frogs at Healesville Sanctuary produced more eggs than in the entirety of the program's history. ZV also funded field surveys aimed at refining understanding of the distribution and abundance of the frog.
Alpine Skinks: two of ZV's Fighting Extinction species are the Alpine She-oak Skink (*Cyclodomorphus praealtus*) and Guthega Skink (*Liopholis guthega*), both of which are confined to a handful of sites on the Bogong High Plains and adjacent areas in NSW. Wild populations are at risk from a range of factors. In order to minimise the risk of extinction, ZV (Healesville Sanctuary) is establishing husbandry requirements of these lizards so that we can respond in the event of catastrophic events and/or significant population declines by initiating a breed-for-release program. This is an excellent example of wildlife researchers identifying a need for, and supporting ex situ involvement before a cry for last ditch emergency rescue.

Grassland Earless Dragon (*Tympanocryptis pinguicolla*): following on from the surveys in 2014 /15, ZV funded further surveys for GEDs at five sites south-west of Ballarat and two sites in the Werribee Treatment Plant in February-March 2016. The surveys were again managed by Wildlife Profiles and used Reconyx remote-sensor cameras positioned over artificial spider burrows and drift fences. Just over 400,000 images were taken, but no GEDs were detected. A consolidated report from both rounds of surveys is being prepared.

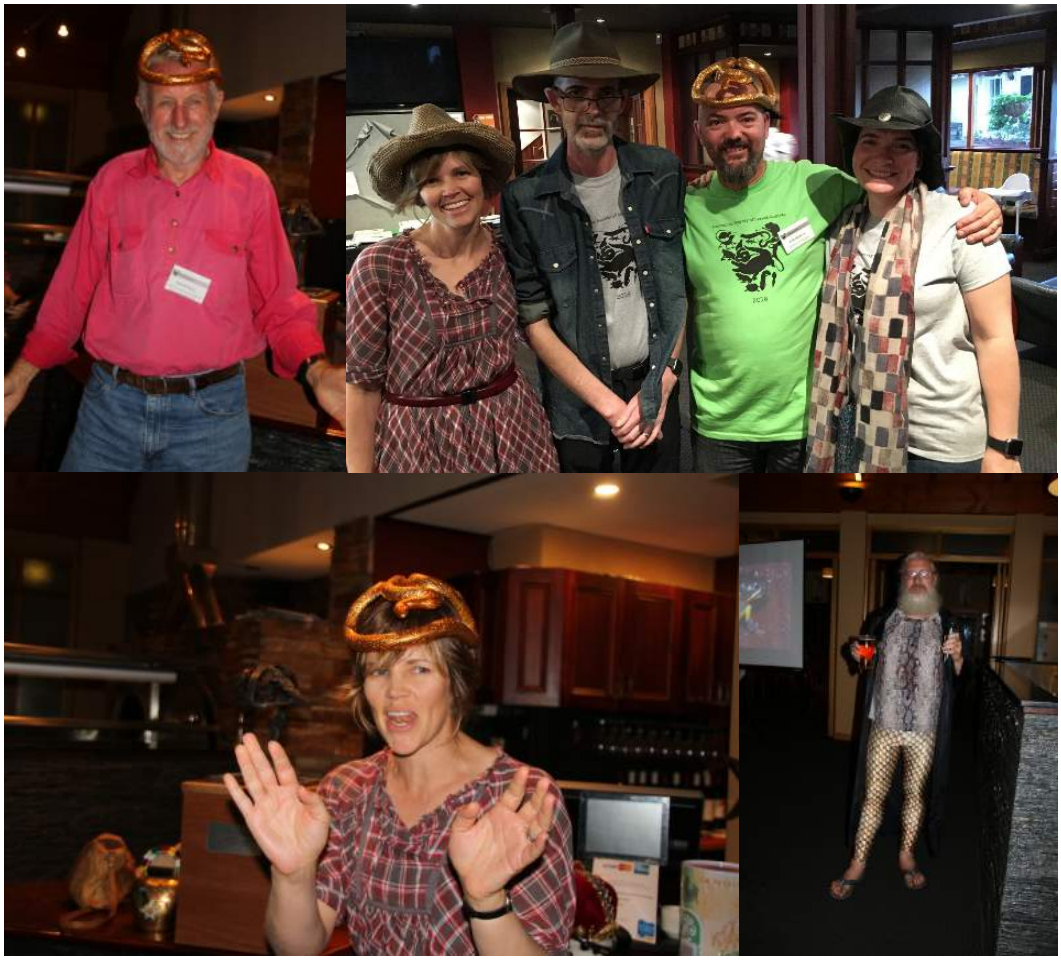
Spotted Tree Frog (*Litoria spenceri*): Zoos Victoria currently houses Spotted Tree Frogs for display and awareness raising across multiple sites at Healesville Sanctuary and Melbourne Zoo. A sustainable captive population is housed at Healesville Sanctuary to provide animals for display and research.
Philippine Crocodile (*Crocodylus mindorensis*): the Zoo's conservation partner in the north-east Philippines, the Mabuwaya Foundation, continues to achieve significant gains for the Philippine Crocodile. Over the last three years:

- The wild population has increased by an average of 16% per year, with total numbers for the end of 2015 being just over 100 recorded individuals.
- A 20% increase in the area occupied by the species. This includes records of crocodiles (released through the head-start program) in localities where the species had been extirpated in the 1950s.

- Establishment of additional crocodile sanctuaries, bringing the total to eight.

Given that this is the only wild population able to be safely and readily accessed, these gains are critical for the wild survival and recovery of the species as a whole. A major focus for the next two years is establishment of a captive breeding facility to generate more animals for release and a visitor centre with the Provincial Government to enhance community awareness and support.
Photo: Crocodile hatchlings at Daduguen Sanctuary-July 2016

Banks, C. and D. Gilbert (In press) Developing Baw Baw Frog husbandry at Melbourne Zoo. Frog Log.



New South Wales

University of Newcastle
Frog lab

Simon Clulow is continuing to study the cane toad invasion in the Kimberley (with Sean Doody, Colin McHenry), developing genome storage and assisted reproductive technologies in frogs and lizards for conservation, and working on disease ecology of threatened frogs. He has also started working on amphibian ecology and disease in Papua New Guinea with Deb Bower (JCU) and Arthur Georges (UC).

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(4): 997-1009.

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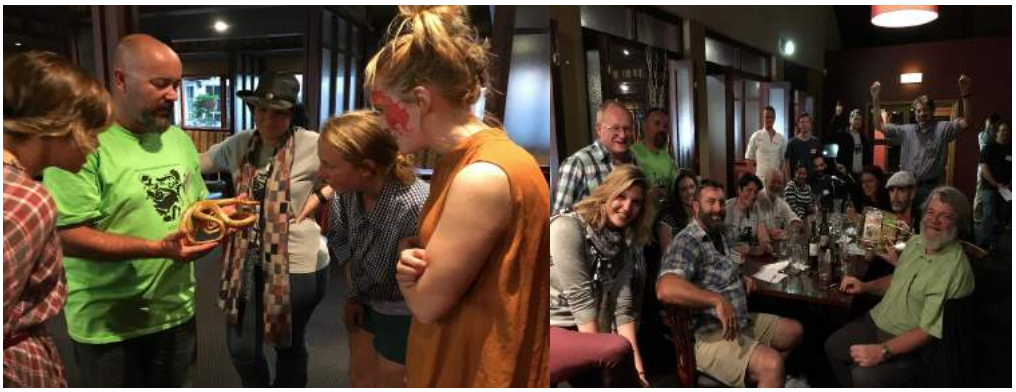
University of Newcastle and Australian Museum
Marion Anstis

2015-2016: Working on taxonomic revisions of Australian frogs and tadpoles e.g. *Cyclorana platycephala* revision plus new species (published), *Uperoleia mahonyi* sp. nov. (ms in review), *Litoria piperata* complex assessment, *Limnodynastes dumerilii* revision.
Newcastle University: Description of tadpoles of new species of *Uperoleia* (see publications), and the genus *Assa.*
Australian Museum: Working on clarification of frogs of the *L. phyllochroa* complex with J. Rowley.
Submitted a pocket book guide to Australian frogs (commissioned by New Holland).

Anstis, M., Rowley, J. J. L. & Altig, R. (2016). Morphological clarifications of Australian hylid and limnodynastid tadpoles. Zootaxa 4126 (1): 146-150;
Anstis, M., Price, L.C., Roberts, J.D, Catalano, S.R., Hines, H.B., Doughty, P. & Donnellan, S.C. (2016). Revision of the water-holding frogs, *Cyclorana platycephala* (Anura: Hylidae), from arid Australia, including a description of a new species. Zootaxa 4126 (4): 451-479;
Clulow, S., Anstis, M., Keogh, J.S. & Catullo, R. (2016 in review) A new species of Australian frog (Myobatrachidae: Uperoleia) from a populated region of the New South Wales mid-north coast sandplains. Zootaxa (ms accepted).



Australian Museum
Australian Museum Herpetology

Ross Sadlier left the museum in November 2015 after 36 years in the Herpetology Section. Ross continues to work on lizard projects in retirement. Current Australian projects are: the systematics of *Strophurus ciliaris* species group of geckos with Ian Brenner and Cecilie Beatson; a review of the dragons currently under *Ctenophorus fordi* with Cecilie Beatson and Don Colgan; the status and description of a new species of *Egernia* from Mt Kaputar in NSW, likely to be the state's most restricted lizard species; a forensic review of the status of the holotype of *Crocodylus johnstoni* initiated by Cecilie Beatson and also including collaboration from Glenn

Shea; and yes, the review of *Egernia cunninghami* with Steve Donnellan and Glenn Shea is ongoing. Major collaborative New Caledonian projects with Aaron Bauer include: the systematics of the gecko genus Bavayia; molecular species boundaries of taxa within the scincid genus *Caledoniscincus*; and evolution of the island's lizard fauna on ultramafic surfaces. Recent publications on the New Caledonian lizard fauna include the recognition of the three new genera of skinks (with Aaron Bauer, Sarah Smith and Glenn Shea) and on the tempo of evolution of the island's gecko fauna (with Phillip Skipworth, Aaron Bauer & Todd Jackman).

In February this year, Jodi Rowley took up the position as Curator of Amphibian & Reptile Conservation Biology at the Museum, a joint appointment with UNSW (in the Centre for Ecosystem Science). She is continuing her research and conservation work in Southeast Asia, with two trips to Vietnam in the last year, focusing on mainland Southeast Asia's only Critically Endangered amphibians; Sterling's toothed toad (*Oreolalax sterlingae*) and Botsford's leaf-litter frog (*Leptolalax botsfordi*)- both species are restricted to the summit area of Vietnam's highest mountain, and on the Endangered Helens' Flying Frog (*Rhacophorus helenae*), from imperilled lowland forests in southern Vietnam. She continues her role as Chair of the Amphibian Specialist group for mainland SE Asia and leading IUCN Red List assessment updates for the region, along with various taxonomic & systematic work on SE Asian frogs, particularly the small brown frogs that sound like crickets (*Leptolalax* spp.) that she's so obsessed with. After almost a decade of not-so-much work on Australian frogs, in her new role she's happy to be working closer to home much more (and will maybe get back to publishing all her PhD research one day), working primarily on the ecology and conservation of *Litoria brevipalmata* with Timothy Cutajar and of *Philoria kundagungan* with Liam Bolitho and David Newell (SCU), as well as resolving taxonomic uncertainty around *Litoria piperata* with Marion Anstis….and getting her head back around Aussie frog diversity.

Glenn Shea spent the second half of 2016 on sabbatical, visiting European and American museum collections to gain the last major block of specimens for his taxonomic revision of *Sphenomorphus* skinks in New Guinea and the Solomon Islands. This has been a major project for the last few decades, and has resulted in counting scales and measuring about 10,000 specimens in collections around the world. He is working with Jodi Rowley on the skinks she has collected in Vietnam and Cambodia, and with Ross Sadlier and Cecilie Beatson has explored the taxonomic history and nomenclature of the Australian freshwater crocodile, described three times by Gerard Krefft. In collaboration with Scott Keogh, Jo Sumner and Mitzi Pepper, who have been finalising the huge genetic tree, Glenn is now looking forward to updating Hayley Pearson's preliminary morphological analysis of the water skinks from 2008, to describe new species of water skinks. After discussions with Dave Blackburn at the Californian Academy of Sciences, he has also begun work on the morphology of *Eugongylus*, examining specimens in various collections while visiting to look at *Sphenomorphus*. Now that he's finished writing a historical chapter for Dave Chapple's upcoming book on New Zealand lizards, Glenn is also finalising a manuscript with Dave, Ross Sadlier and Sarah Smith extending Sarah and Dave's previous genetic work on the New Zealand and New Caledonian skinks to the relationships of the Australian and New Guinean

Eugongylus group skinks. And there are odds and ends of typhlopid work to fill in the cracks.

Hal Cogger is currently writing up two long-standing projects: (a) a comparative study of allometric growth in three analogous saurians - *Intellagama lesueurii*, *Brachylophus vitiensis* and *Sphenodon punctatus* and (b) the final (?) paper arising from his 1969 PhD thesis, in which he records the results of irregularly monitored population trends in the same *Ctenophorus fordi* population over 45 years, and its recent decline to local/regional extinction.

Tim Cutajar, a member of the IUCN Amphibian Red List Authority, has been working on an update of the Red List for all Mainland Southeast Asian amphibians (http://australianmuseum.net.au/blogpost/amri-news/amri-closing-the-gap). He is also involved in a number of projects in amphibian systematics, taking part in molecular analyses across a range of Australian and Southeast Asian species. Christopher Portway is currently producing factsheets for Australian frog species, as well as assessing Southeast Asian amphibians for the IUCN Red List and will be assisting in the field once the weather warms up. Liam Bolitho has joined the Museum as both a Masters student (at SCU) and research assistant for fieldwork. Harry Leung is working on amphibian conservation assessments for the Red List, has also been working with Tim in generating up-to-date, species distribution and density mapping of all Southeast Asian amphibians Maddie Sheard, Steven Allain, Collin Van Buren are also helping with SE Asian amphibian conservation assessments. Duong Le (University of Science, Vietnam National University, Ho Chi Minh City, Vietnam) is currently working on her PhD on the effect of habitat modification on amphibian communities in southern Vietnam, supervised by Jodi. Harriet Simes (University of Sydney) is examining the usefulness of Asian horned frogs (*Megophrys* & *Ophryophryne*) tadpoles in delineating species with morphologically conserved adults for her B.An.Vet.Biosci. final year project with Jodi.

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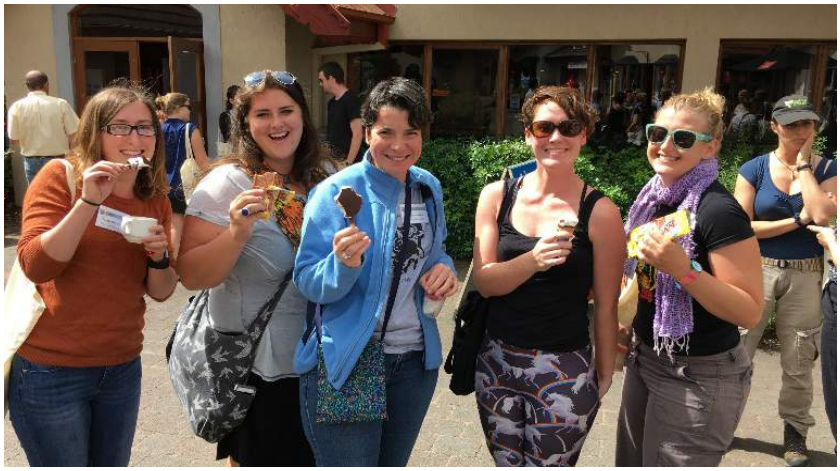

Taronga Conservation
Herpetofauna

Research Outcomes:
Captive breeding and constructing disease-free frog habitats for declining NSW frogs, chytrid disease research and hormonal manipulation of frog reproduction with our many partners, captive breeding of extinct-in-the -wild Christmas Island lizards, establishing an insurance population of Bellinger River turtle (*Myuchelys georgesi*) and Fijian Crested Iguana field conservation programs dominate our current research. This work is being coordinated by Michael McFadden and Peter Harlow at Taronga Zoo, with help from all 8 staff in the Herpetofauna Division.

Corroboree Frogs:
The southern and northern corroboree frogs (*Pseudophryne corroboree* and *P. pengilleyi*) are two of Australia's most threatened amphibian species, with both species largely impacted by amphibian chytrid fungus. Taronga Zoo currently maintains insurance colonies of both species, in collaboration with other captive facilities, under a recovery program co-ordinated by Dr David Hunter, NSW Office of Environment and Heritage. Successful breeding of the southern corroboree frog at the zoo and partner institutions has permitted the continuation of an experimental reintroduction program, led by Dr Hunter. This currently involves utilising a number of techniques, including release into artificial and natural pools at extinct sites, establishing populations in large disease-free enclosures and translocation to montane sites in the absence of other amphibian species that may act as a reservoir host for chytrid fungus. In the northern corroboree frog, we have continued an experimental translocation in the Northern Brindabellas to determine the effect of life-stage at release on survival.

Disease-free southern corroboree frog habitats
In order to improve the efficiency of the corroboree frog program and broaden the insurance colony, experimental translocations have been undertaken to two large, fenced corroboree frog habitats that have been constructed within Kosciuszko NP. The enclosures have been designed to exclude species of frog that may be carrying chytrid fungus. This project is being led by Dr Hunter at NSW OEH and has involved releases from Taronga Zoo, Zoos Victoria and the Amphibian Research Centre. Additionally, we have been trialling smaller, fenced enclosures in the field as a means of rearing captive-bred young frogs in a cost efficient manner to be utilised for release and or conservation research. This is currently being further expanded, with fenced enclosures to be constructed by NSW OEH at a further two sites.

Hormonal manipulation of frog reproduction
In a project being led by Dr Aimee Silla and Dr Phil Byrne at University of Wollongong, the northern corroboree frog population at Taronga Zoo has been utilised to establish hormonal induction protocols for the species. This will permit greater success in achieving pair-wise reproduction, which will assist in genetic management of the species.

Captive Breeding of Christmas Island lizards
In the last 20 years, five of the six native reptile species occurring on the Australian Territory of Christmas Island in the Indian Ocean have rapidly declined, and four species are now thought to be extinct. In 2009-10 small numbers of the endemic blue-tailed skink (*Cryptoblepharus egeriae*) and Listers gecko (*Lepidodactylus listeri*) were captured to start a captive breeding program. In 2011 the captive populations were split and half sent to Taronga Zoo, while half remained in the breeding facility on Christmas Island. The initial aim of the program was to hold and breed both species for a maximum of 10 years, by which time the threatening process should be identified, and hopefully reversed. Captive breeding of the skinks is by Maximal Avoidance of Inbreeding, whereby 8 colonies were initially held and males from each colony transferred to a new colony every generation. The Listers geckos are bred in pairs (Mean Kinship), as this species can be easily sexed. Today there are over 1000 blue-tailed skinks and 600 Listers gecko in captivity, but unfortunately we are no closer to identifying and ameliorating the threatening

process on Christmas Island. Possible long term solutions are to construct and maintain predator-free enclosures on Christmas Island, or to consider 'assisted colonisation' of these lizards to another tropical island.

Bellinger River Turtle Insurance population

The Bellinger River turtle (*Myuchelys georgesi*) is restricted to the Bellinger River catchment in northern NSW and can only be found in the Bellinger River and Kalang River and their associated tributaries. In February 2015, a catastrophic mortality event occurred in the wild population, resulting in at least 400 dead animals. The cause of the mortality event is a new virus that has resulted in 100% mortality of known infected turtles. Surveys in November 2015 and March 2016 located very few individuals of this species, and almost no adult animals.

A multi-agency Incident Management Team (IMT), led by NSW Office of Environment and Heritage (OEH), was established to oversee the mortality event and guide the management response. An initial small insurance population of 16 individuals were collected from upstream reaches of the catchment in early 2015 and established at University of Western Sydney University (UWS). Subsequent testing shows that all 16 individuals were free of the virus.

The NSW OEH requested Taronga Zoo to assist the recovery program by acquiring and maintaining the existing captive insurance colony. In early 2016, a quarantine facility for this species was completed at Taronga Zoo with funding provided by NSW OEH. This facility has nine large dedicated pools, with individual filtration systems. All 16 individuals (9 males, 7 females) from UWS have recently been transferred to the new facility at the zoo for long-term genetic management, and hopefully, future reintroduction of captive bred turtles.

Fijian Crested Iguanas

The Fijian Crested Iguana is a critically endangered species that has only a single secure population. Best estimates are that in the early 2000's the island of Monuriki had a total population of between 20 and 40 iguanas, due to long-term overgrazing by goats. Between April 2010 and February 2012, twenty-one Crested Iguanas were captured on Monuriki Island by National Trust of Fiji staff, and delivered to captive breeding facilities at Kula Eco Park, Korotoga, Fiji.

In late 2011 all goats (with funding from Pacific Invasive Initiative) and Pacific rats (with funding from Birdlife International) were eradicated from Monuriki Island. In the absence of goats the dry forest vegetation has begun to recover, so in May 2015 the first 32 captive bred Monuriki crested iguanas were released back on Monuriki Island. See summary chapter of the reintroduction project by Chand et al. 2016.

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University of Sydney
Thompson and Whittington lab

Mike retired from the University last August, in part to focus on conservation of turtles on the River Murray. However, he returned half-time to the University in November to work on a project for the University, and to continue the lab research on viviparity, turtles and other things that take his interest. He was recently part of an invited symposium to celebrate the 100th anniversary of the American Society of Ichthyologists and Herpetologists in New Orleans as an Honorary Foreign Life Member of ASIH. The symposium was part of the Joint Meeting of Ichthyologists and Herpetologists. He has also been appointed as an Adjunct Professor at UniSA and will supervise three senior research students (Adam Biggs, Ivy Nguyen, Kylie

Dankiw) in a project on turtles in created urban wetlands in Adelaide in second semester.

This year Camilla Whittington was appointed as a lecturer at the University of Sydney and she is now running the lab with Mike. She is continuing to study pregnancy in skinks as well as mammals, fish, and invertebrates. In the past year, Camilla received a 2015 NSW Young Tall Poppy Award, a University of Sydney Animal Biosciences Fellowship, and was a plenary speaker at the Australasian Society for the Study of Animal Behaviour Conference.

Van (James Van Dyke) continues to share his time between Western Sydney University and University of Sydney. He has been working hard on turtle conservation throughout the Murray River and has supervised one honours student and two 3rd year students on projects investigating turtle diets in the Gunbower, VIC region. He has also sampled DNA of Murray River Turtles (*Emydura macquarii*) throughout the Victorian Murray tributary rivers. In collaboration with Arthur Georges and Bruno Ferronato, Ricky Spencer and Van are using these data to determine how connected the various populations of *E. macquarii* are throughout the Murray-Darling catchment. He is also co-supervising student Kristen Petrov on a project to recover the Bellinger River Snapping Turtle (*Myuchelys georgesi*).

Henrique Braz was welcomed to the lab in September 2015 as a postdoctoral research fellow. He completed his PhD in Brazil and is here on a fellowship funded by the National Council for Scientific and Technological Development (Brazil). Henrique is investigating the uterine modifications associated with the evolution of viviparity in the reproductively bimodal water snakes from Brazil.

Oliver Griffith is enjoying his Post-doc at Yale, but is still engaging with projects of *Pseudemoia entrecasteauxii* in the lab in Sydney. Matt Brandley continues as an honorary member of the lab, visiting from Orange to contribute to research on viviparity in lizards from time to time. Jessica McGlashan handed in her theses, submitted papers and is currently traveling around Africa. Celine Goulet is in the final stages of her PhD write up at the moment on *Lampropholis delicata* with David Chapple at Monash, cosupervised by Mike. This year she also co-supervised an honours student working on the White's Skink, *Liopholis whitii* along with having several manuscripts published. Katie Howard began her PhD at Western Sydney University with Ricky Spencer, co-supervised by Mike, on the ecology of freshwater turtles on the River Murray and associated wetlands as part of the ARC Linkage grant to Ricky, Mike, Arthur Georges and Bruce Chessman. She has already discovered amazing things about the movements of short-necked turtles in the Murray.

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…

Other "non-herp" PhD students in the lab, Melanie Laird and Jess Dudley, are working on pregnancy in mammals, and recently presented papers at the Society for Integrative and Comparative Biology in Oregon, USA and the International Congress on Animal Reproduction in Tours, France respectively. Hanon McShea,

an undergraduate research student from Harvard University, joined the lab for 10 weeks in the middle of 2016 on a fellowship from Harvard. She came to study the evolution of viviparity, a topic that piqued her interest during courses with David Haigh and Jonathan Lossos. Most of her time was spent working with tissues from brush-tailed possums. Sadequr Khan has also joined the lab from Bangladesh as a PhD student and is working on the evolution of viviparity in sea stars, co-supervised with Mike, Camilla and Maria Byrne.

Other Conferences
Most of the herp members of the lab attended ASH 2016 in Lanceston, Tasmania.

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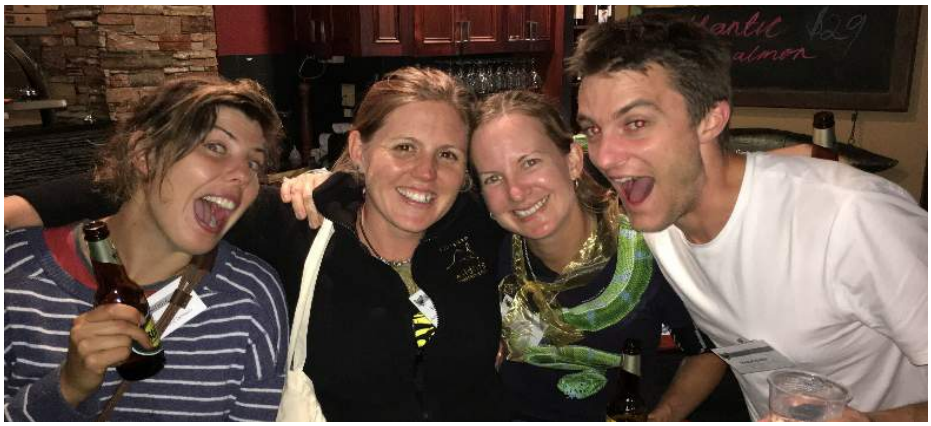

University of Sydney
Rick Shine Lab

Rick Shine has recently returned from the US herpetology meetings in New Orleans, and is about to head off to the World Congress in Hangzhou. Having agreed to become president of the Society for the Study of Amphibians and Reptiles, he spent much of his time at the New Orleans meetings in committee meetings, watching sadly as his bureaucracy-unencumbered colleagues went off to listen to talks that he would have enjoyed attending. But he nonetheless managed to catch up with many colleagues, including numerous Australians who he never sees in Australia. And he attended several talks by students of his ex-students, making him feel very ancient indeed. With three Honours students last year, and the current cohort of PhD students submitting their theses (or soon about to), Rick has been tied up with polishing manuscripts, suggesting publication tactics, and stress counselling. He is putting the final touches to his book “Cane Toad Wars” (University of California Press); with luck it will be published in 2017.
With the successful Hawai’ian adventure behind us in 2015, the next challenge for Team Bufo is to gather ecological data on cane toads in their native range in South America. The permit problems are daunting but hopefully surmountable, and we plan to gather native-range data from French Guiana (and perhaps Puerto Rico) early in 2017. Cam Hudson and Jayna deVore are currently over there, doing reconnaissance. Brazil is another possible location for the work.

Postdocs
Greg Brown continues to trudge up and down the wall of Fogg Dam every night, counting toads and catching snakes. Well into his eighteenth year as a postdoc (surely a world record?), Greg shows no signs of losing enthusiasm. He is currently on a Future Fellowship from the ARC, allowing him to explore the immune systems

of snakes as well as toads. To his delight, a fatal amoebic dysentery disease (dubbed “Shilton’s Blight”) has appeared among cane toads at Fogg Dam, creating all kinds of opportunities for research.

Michael Crossland continues to be based at Fogg Dam also, and is working on collaborative projects (mostly about tadpoles) with other Shine lab postdocs Jayna deVore and Simon Ducatez as well as with Prof. Rob Capon (University of Queensland) on a range of projects relating to suppression and cannibalism of toad eggs by conspecific tadpoles. Matt Greenlees is still focussing on cane toads in NSW, and is basking in the glory of his success in supervising two Honours students and one PhD student to completion of their projects. He is gearing up to teach an undergrad course at Mary River (in Kakadu) in February 2017.

Jayna deVore is the Queen of Tadpoles, and (by Rick’s count) now has more data points on toad tadpole biology than there are molecules in the known universe. After three years of ambitious experimental work both in Australia and Hawai’i, Jayna (and Michael and Simon, her collaborators) are seeing clear and interesting patterns in geographic variation in larval biology. Simon Ducatez has taken a year off to spend time in Quebec and Europe, pursuing his interests in comparative analyses and (much as we hate to admit it) birds. He’ll be back with the toad team in 2017. If anyone has experience with methods for negative conditioning of postdocs to remove their enthusiasm for birds, please let Rick know.

Chris Friesen has just joined the toad team, having moved across from Mats Olsson’s lab when Mats decided to head back to Sweden. Chris will be looking mostly at reproductive biology, with a special emphasis on sperm, sperm, and sperm. He may also look at sperm. Wei Chen is spending a year with us, looking at sexual dimorphism in cane toads with special emphasis on the spatial location of toxin glands on the toads’ bodies. He is also conducting experiments on the functional role of the jelly coat that surrounds toad eggs. Hong Li has returned to China after a year looking at behaviour of lizards. His paper (collaboratively with Rick, Mel, Clare Holleley and Arthur Georges) on the “personality” consequences of sex reversal in Bearded Dragons got extensive media coverage. Hong also looked at incubation-temperature effects on personality in skinks.

Graduate students
Uditha Wijethunga (PhD, 2012 to 2015), cane toad ecology and evolution – is now living in rural NSW, but still working with Rick and Matt to publish her final manuscripts on toad larval ecology.
Sarsha Gorissen (PhD, 2012 to 2016), conservation biology of endangered reptiles – has just been awarded her PhD for her research on the "Conservation Biology of the endangered Blue Mountains Water Skink (*Eulamprus leuraensis*)". Sarsha's thesis is broadly on the ecology and biology of the skink and its swamp habitat, with a focus on the impacts of fire, urbanisation and alterations in hydrology on the species. Currently she is addressing her examiners' comments, and applying a final edit to her manuscript in press in *Oryx*: "A skink out of water: Impacts of anthropogenic disturbance on an endangered reptile in Australian highland swamps". Sarsha's research on this endangered system aired nationally on the ABC on *Australia Wide* (linked here: http://www.sarshagorissen.com/media/).

Sarsha thanks everyone at ASH for their help with her project over the years and for being the coolest society around ;)

Georgia Ward-Fear (Ph. D., from 2013), invasive toad impact and control – is in the throes of completing her thesis, as well as running around giving lots of talks and media interviews on her research. She has been looking at how to buffer the impact of the toad invasion by educating predators in advance of the toad front. The logistics of training large goannas on a remote Kimberley floodplain would have deterred any sensible human being, but Georgia didn't seem to notice. Her efforts were very successful, and she hopes to follow them up in postdoctoral work. Daniel Natusch (PhD, from 2013), ecology of tropical pythons – has had occasional minor distractions like becoming a father and getting married, but mostly has been studying Scrub Pythons at the tip of Cape York. He and Rick have also collaborated on a project to reassess sustainability of the commercial harvest of pythons for the leather industry in Sumatra, by repeating Rick's work 20 years later (at the same processing sites). Encouragingly, the snakes are just as big and just as common as they were 20 years ago. Despite their agreement on the sustainability of python harvesting in Sumatra, Rick and Dan have been unable to agree on whether Dan's new baby Huxley should ultimately play for the All Blacks (Dan's preference) or Wallabies (Rick's demand). Unless resolved, the disagreement may well jeopardise Dan's career in science. Or Rick's.

Cameron Hudson (PhD, from 2013), cane toad morphology and locomotion – was last seen in Paris, on his way to French Guiana to gather morphological data on native-range populations of cane toads. Cam is well on the way to completing his thesis on rapid evolution of morphology and locomotor performance within invasive toads. He is also foster-father to several hundred now-adult toads that he raised from eggs laid at our field station near Fogg Dam. Those offspring have revealed that many of the traits that differ between range-core (Queensland) and range-edge (Western Australian) toads exhibit significant heritability. Thus, toads have indeed evolved during their Australian adventure.

Samantha McCann (PhD, from 2014), cane toad control – having supervised the construction of 30 large ponds near Kununurra, Sam is now testing various issues associated with tadpole control. In late-breaking news, she was awarded the Jill Landsberg Trust Fund Scholarship from the Ecological Society of Australia. Georgia Kosmala (PhD, from 2014), cane toad physiology – has almost finished chasing cane toads around circular race-tracks under a range of thermal and hydric conditions. That work has been done in Darwin (under Keith Christian's co-supervision), as well as Brazil and Hawai'i. Georgia found that native-range and Hawai'ian toads are wimps, but Aussies are tough. Her future plans focus on more physiological issues involving corticosterone levels and heat-shock proteins.

Dan Selechnik (PhD, from 2015), cane toad epigenetics – Dan's PhD focuses on comparative immunogenetics in the cane toad. Current theory in ecoimmunology suggests that invasive species are released from many co-evolved pathogens/parasites in their native ranges, but are also confronted with an array of new potential threats. Thus, successful invaders must upkeep their immune systems, but reallocate energy investment away from more taxing immune responses which can threaten their own survival, and into less costly forms of

immunity. Dan's studies aim to test if these hypotheses are applicable to the invasive Australian cane toad. He is not only investigating the divergence of immune functioning in these two population types, but also the underlying source of this variation by looking at differential gene expression in spleen tissue. Immune parameters he plans to look at include complement activity, phagocytosis, and antibody production.

Greg Clarke (PhD, from 2015), cane toad ecology and control – is running competition trials between Queensland and Western Australian toads (in the tadpole stage as well as metamorph stage), to explore the consequences of the toads' rapid evolution in Australia. Jodie Gruber (PhD, from 2013), cane toad behaviour - has just finished a 'behavioural-trial-a-thon' comparing personality and plasticity in common-garden raised versus wild-caught cane toads. Literally living with her toads for several months, Jodie filmed repeated tests of traits such as boldness, risk-taking and neophobia with the aim of disentangling environmental and genetic effects on cane toad behaviour. Jodie now looks forward to several months of video analysis and sleep-filled nights unaccompanied by the disgruntled chuckling of a male being mistakenly amplexed by one of his lascivious tub-mates.

Honours students
Camilla Raven (2015-16), tadpole aggregation (jointly supervised by Rick and Ashley Ward) – Milly looked at why toad tadpoles form groups. They proved to be clever little devils, capable of eavesdropping on the feeding behaviour of fellow tadpoles. Milly is now roaming around South America for a few months to recover from the trials and tribulations of the Honours year (and hopefully, to say hello to a few native-range toads). Lachlan Pettit (2015-16), translocation ecology (jointly supervised by Rick and Matt Greenlees) – Lachlan compared movement patterns and spatial ecology of translocated toads with those of resident toads. It worked so well he got the University Medal for it. Since graduating, Lachlan has been experiencing the joys of manuscript submission, and is splitting his time between working as an ecologist and demonstrating in first year biology labs.

Renee Silvester (2015-16), toads and bees (jointly supervised by Rick and Matt and Ben Oldroyd) – Renee looked at how beehives affect toads (a lot), and how toads affect beehives (not much). Her research revolved around the ecology of invasive cane toads in northern NSW, and their impact upon the local apiary industry. During three months of fieldwork surveys in the region, she recorded higher densities of cane toads around commercial apiaries, with those toads in better body condition than their conspecifics found in adjacent natural habitat (that lacked bee hives). Though the invasive anurans receive nutritional benefits from these agricultural hotspots, with potential flow-on effects to their reproductive capacities and spread through the region, she found little to no impact of toads on beehive productivity. Cane toads in apiaries consume lots of honeybees, but this foraging activity did not negatively impact honey production, nor rates of brood production in commercial hives.

And two new Honours students are getting underway as well, both planning to spend time up at Fogg Dam …. Patt Finnerty will conduct experimental field trials to look at the effect of lungworm infection on cane toads; and Katarina Stuart will look at developmental plasticity in toads.

Technical staff

Melanie Elphick continues in her role as Senior Research Assistant in the Shine Lab (getting more and more senior as the years go by!) Her 21st year in the lab has been a mixed bag on both a personal and professional level. Mel had a run-in with a stray cat in late November 2015, with two nasty bites putting her in hospital for 5 days. The timing was terrible and effectively ended the long-running *Bassiana* project, as her injuries meant the annual Brindabella fieldwork had to be cancelled. However, there have also been many highs for Mel since then. She has derived great pleasure from assisting 2 post-grad and 3 Honours students complete their theses and graduate with high praise. Mel has also been co-author on two papers published this year, and has assisted in figure preparation and formatting of many other manuscripts for publication in top-ranking journals. And remarkably, Mel maintains a happy disposition around the lab despite the ever-increasing volume of new forms she has to fill in.

Chalene Bezzina has been running other aspects of the Shine Lab (and Olsson lab) activities, mostly revolving around keeping captive herps happy and healthy.

Publications from the Shine Lab since late 2015

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Wijethunga, U., M. Greenlees, and R. Shine. 2016. Living up to its name? The effect of salinity on development, growth and phenotype of the "marine" toad (*Rhinella marina*). Journal of Comparative Physiology B 186:205-213.
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Ward-Fear, G., D. J. Pearson, G. P. Brown, Balanggarra Rangers, and R. Shine. 2016. Ecological immunisation: *In situ* training of free-ranging predatory lizards reduces their vulnerability to invasive toxic prey. Biology Letters 12:20150863.
Ballen, C., R. Shine, R. M. Andrews, and M. Olsson. 2016. Multifactorial sex determination in a chameleon. Journal of Herpetology, in press.
Mayer, M., R. Shine, and G. P. Brown. 2016. Bigger babies are bolder: effects of body size on personality of hatchling snakes. Behaviour 153:313-323.
Phillips, B. P., R. Tingley, and R. Shine. 2016. The genetic backburn: using rapid evolution to halt invasions. Proceedings of the Royal Society (London) B 283:20153037.
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Ward-Fear, G., M. J. Greenlees, and R. Shine. 2016. Toads on lava: spatial ecology and habitat use of invasive cane toads (*Rhinella marina*) in Hawai'i. PLoS One 11:e0151700.
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Jolly, C. J., R. Shine, and M. J. Greenlees. 2016. The impacts of a toxic invasive prey species (the cane toad, *Rhinella marina*) on a vulnerable predator (the lace monitor, *Varanus varius*). Biological Invasions 18:1499-1509.
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Brown, G. P., and R. Shine. 2016. Maternal body size influences offspring immune defence in an oviparous snake. Royal Society Open Science 3:160041.
Witjethunga, U., M. Greenlees, and R. Shine. 2016. Far from home: responses of an American predator species to an American prey species in a jointly invaded area of Australia. Biological Invasions 18:1645-1652.
Haramura, T., H. Takeuchi, M. R. Crossland, and R. Shine. 2016. Biotic resistance to an alien amphibian: larval competition between Japanese frogs and

invasive cane toads. PLoS One 11:e0156396.
Ujvari, B., G. P. Brown, R. Shine, and T. Madsen. 2016. Floods and famine: climate-induced collapse of a tropical predator-prey community. Functional Ecology 30:453-458.
Gorissen, S., M. Greenlees, and R. Shine. 2016. A skink out of water: impacts of anthropogenic disturbance on endangered reptiles in Australian highland swamps. Oryx, in press subject to revision.
Ward-Fear, G., J. Thomas, J. K. Webb, D. Pearson, G. P. Brown, and R. Shine. 2016. Eliciting Conditioned Taste Aversion in lizards: live toxic prey are more effective than scent and taste cues alone. Integrative Zoology, in press.
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Hudson, C. M., G. P. Brown, and R. Shine. 2016. Athletic anurans: the impacts of morphology, ecology and evolution on climbing ability in invasive cane toads. Biological Journal of the Linnean Society, in press.
Ducatez, S., and R. Shine. 2016. Drivers of extinction risk in terrestrial vertebrates. Conservation Letters, in press.
Natusch, D., J. Lyons, Mumpuni, and R. Shine. 2016. Jungle giants: assessing sustainable harvesting in a difficult-to-survey species (*Python reticulatus*). PLoS One, in press.
Li, H., C. E. Hollelely, M. Elphick, A. Georges, and R. Shine. 2016. The behavioural consequences of sex reversal in dragons. Proceedings of the Royal Society (London) B 283:20160217.
Brown, G. P., and R. Shine. 2016. Frogs in the spotlight: a 16-year survey of the abundance of native frogs and invasive cane toads on a floodplain in tropical Australia. Ecology and Evolution, in press.
Lillie, M., J. Cui, R. Shine, and K. Belov. 2016. Molecular characterization of MHC class II in the Australian invasive cane toad reveals multiple splice variants. Immunogenetics, in press.
Shine, R., S. Wang, G. Madani, K. N. Armstrong, L. Zhang, and Y-M. Li. 2016. Using genetic data to predict the vulnerability of a native predator to a toxic invader. Endangered Species Research, in press.

Charles Sturt University
Animal Endocrinology Lab

The Animal Endocrinology Lab at CSU has been in action through Dr Edward Narayan's 'Lecturer in Physiology' appointment in 2015. The main frog research has been on-going work on cane toads and ground frogs and conservation physiology research in India (publications).
If you are interested in studying frog reproductive and stress physiology please contact Edward on email (enarayan@csu.edu.au). We also routinely assay reproductive and stress hormones in frog urine, buccal/skin swabs, faeces and blood plasma at low cost.

Narayan, E. (2016). Assessing the physiological sensitivity of amphibians to extreme environmental change using the stress endocrine response. In: Amphibian and Reptile Adaptation and Environment: Interplay Between Physiology and Behavior. Editors: Denis Vieira de Andrade, Catherine R. Bevier, José Eduardo de Carvalho. CRC Press, Taylor and Francis Group. In-press. ISBN 9781482222043 - CAT# K22266

https://www.crcpress.com/Amphibian-and-Reptile-Adaptations-to-the-Environment-Interplay-Between/Vieira-de-Andrade-Bevier-de-Carvalho/p/book/9781482222043

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Narayan, E., Jessop, T. and Hero, J-M. (2015). Invasive cane toad triggers chronic physiological stress and decreased reproductive success in an island endemic. Functional Ecology. 29(11), 1435-1444.
Jessop, T.S., Anson, J., Lockwood, T., Narayan, E., Boonstra, R. (2015). An Introduced Competitor Elevates Corticosterone Responses of a Native Lizard (*Varanus varius*). Physiological and Biochemical Zoology. 88(3):237-45.
Joshi, A. M., Narayan, E.J. and Gramapurohit, N. P. (2015). Non-invasive endocrinology: a novel tool to investigate the reproductive health of Indian amphibians. International Symposium on Reproductive Endocrinology and Stress Physiology. 25-27 February, 2015, Department of Zoology, Banaras Hindu University, India.

Other scaly places…

Station d'Ecologie Théorique et Expérimentale
Oulalab

The Oulalab is sailing smoothly. Mat Vickers finished his Post-doc last may to embark on a bike ride across the universe with Queensland as a final destination (why??). Fabien is currently developing projects in collaboration with Tobias Uller, Antonio Cordero and Dan Noble looking at the effects of high-altitude hypoxia on colonisation dynamics and incubation success in Wall lizards and water snakes. Fabien was recently awarded a European funded grant INTERREG POCTEFA (ECTOPYR; 1, 400 000 Euros) to look at the effects of climate change on the distribution of ectotherms across the Pyrenees in collaboration with French, Andorran and Catalan partners. Jérémie Souchet will be soon starting a PhD with us, as part of this project.

Aubret, F. 2015. Island colonisation and the evolutionary rates of body size in insular neonate snakes. Heredity 115(4): 349-56.
Michaelides S, Cornish N, Griffiths R, Groombridge J, Zajac N, Walters GJ, Aubret F, While GM and Uller T. 2015. Phylogeography and conservation genetics of the common wall lizard, *Podarcis muralis*, on islands at its northern range margin. PlosOne 10(2), e0117113.
Aubret F, Tort M & Sarraude T. 2015. Evolution of alternative foraging tactics driven by water temperature and physiological constraints in an amphibious snake. The Biological Journal of the Linnean Society, 115(2), 411-422.
Aubret F, Blanvillain G & Kok PJR 2015. Myth busting? Effects of embryo positioning and egg rolling on hatching success in the water snake *Natrix maura*. Scientific reports, 5: 13385.
Kok PJR, Ratz S, Tegelaar M, Aubret F & Means DB 2015. Out of taxonomic limbo: a name for the species of *Tepuihyla* (Anura: Hylidae) from the Chimantá Massif, Pantepui region, northern South America. Salamandra 51(4): 283-314.
Aubret F, Blanvillain G, Bignon F. & Kok PJR 2016. Heartbeat, embryo communication and hatching synchrony in snake eggs. Scientific reports, in press.
Kok PJR, Russo VG, Ratz S, & Aubret F. 2016. On the distribution and conservation of two “Lost World” tepui « summit endemic frogs, *Stefania*

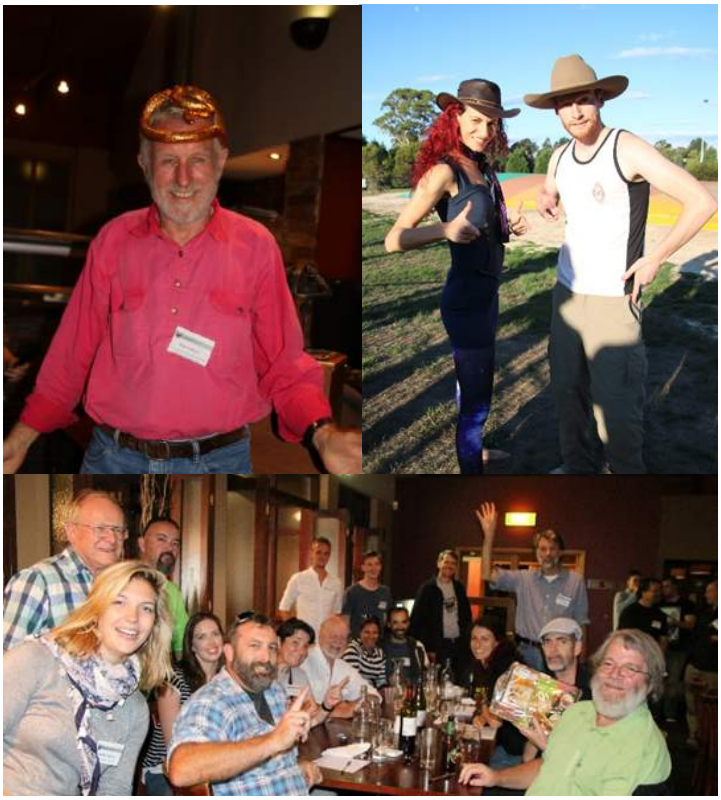
ginesi Rivero, 1968 and S. satelles. Señaris, Ayarzagüena and Gorzula, 1997. Amphibian Research Conservation, In press.

Aubret F. 2016. Effect of sudden loss of vision on foraging behavior in captive born Tiger snakes *Notechis scutatus* (Serpentes: Elapidae). Phyllomedusa, in press.

Michaelides SN, While GM, Zajac N, Aubret F, Calsbeek B, Sacchi R, Zuffi MAF, Uller T 2016. Loss of genetic diversity and increased embryonic mortality in non-native lizard populations. Molecular Ecology, In press.

Book Chapter:

Aubret F. 2016. Pleasure and Pain: Island Tiger Snakes and Sea-birds in Australia; In "Islands and Snakes". Oxford University Press. In press.



The Australian Wildlife Conservancy

The Australian Wildlife Conservancy is slowly increasing the number of herpetologists in its ranks, with ASH members Melissa Bruton joining the team in the north-west (Kimberley) region, and Gina Barnett, Anders Zimny currently working in the Gulf of Carpentaria with Eridani Mulder, while Mike Smith and Chantelle Jackson continue to represent the rights of reptiles and amphibians in the south-west of Australia. Eventually we are sure to outnumber the mammologists and birdos and achieve world domination.

Interesting records and range extensions as a result of intensive survey effort are the norm across AWC, as outlined below.

North-east
Latter half of last year in the Gulf, we got a name for the fantastic velvet geckoes, with several specimens of *Oedura bella* turning up at Pungalina-Seven Emu, and confirmation of *Rhynchoedura ornata* (thanks Mitzy!), from the southern, more arid, parts of the sanctuary.

North-west
The northwest ecology team have had a plethora of exciting reptile finds (including range extensions) in the Kimberley in the last 12 months. These include:

1) Four rarely-seen giant slender blue-tongues *Cyclodomorphus maximus* detected in Artesian Range in February
2) Ten slim velvet geckos *Amalosia obscura* found on Marion Downs in June, which is a southeastern range extension
3) Confirmation of the northern beaked gecko *Rhynchoedura sexapora* on Mornington in June, which fills a small gap in the known range of this species.
4) The exciting discovery of a population of gravel, or hidden, dragons *Cryptagama aurita* in the central Kimberley last month, which is a northwestern range extension. Five of the gravel dragons were tail-tipped, which is the first genetic sampling for this elusive species.

Twelve rare Kimberley crevice skinks *Egernia douglasi* were captured and marked for a preliminary look at habitat use using a camera trap array. The results are currently being analysed.

Researchers Nancy Fitzsimmons from the Australian Rivers Institute at Griffith University, and Tony Tucker from DPaW returned to Annie Creek on Mornington this month, for the annual freshwater turtle catch and assessment. The Annie Creek population continues to be the healthiest of the four populations surveyed in the central and western Kimberley. This annual survey is part of a long-term Kimberley-wide freshwater turtle monitoring project, which Nancy and Tony have been running for 10 years.

The AWC Mornington ecology team have been monitoring the location of the toad front as it passes through the central Kimberley. The front currently occurs from approximately the confluence of the Hann and Fitzroy Rivers, directly north through central Marion Downs, to Snake Creek on the Gibb River Road (between the Mt Elizabeth turnoff and Barnett Gorge). This is about halfway across our AWC sanctuaries, and halfway along the Gibb River Roads. Toads have also been reported on the Kalumbaru Road within the last fortnight, at the Gibb River Crossing. Toads were found active on roads and dry creekbeds in a rocky section of Marion Downs in late June, possibly due to the late rain we had in early May and warmer than average winter temperatures.
Otherwise, general fauna surveys continue to throw up various interesting records, and contribute to AWC's long term datasets.

Minutes of the 41st ASH AGM Thursday 18 February 2016 at Grindelwald Village, Tasmania.

Meeting Opened by Erik Wapstra at 1714

Members present: Erik Wapstra, Eridani Mulder, Scott Keogh, Glenn Shea, Melissa Bruton, Rebecca Bray, Deb Bower, Jean-Marc Hero, Simon Blomberg, Anna Pintor, Bec Webb, Mariel Familiar Lopez, Dave Chapple, Richard Peters, Memento Hudson, Simon Hudson, Arthur Georges, Ryan Ellis, Simon Clulow, Stewart MacDonald, Aimee Silla, Dale Roberts, Mitzy Pepper, Ross Alford, Matt Greenless, Rick Shine, Katie Howard, Gerry Marantelli, Mike Thompson, Martin Whiting, Andrew Amey, Frank Lemckert, Steve McAlpin, Eric Noroberg, Daniel Noble, Lynette Plenderleith, Luka Reynolds.

Apologies: Murray Littlejohn, Conrad Hoskin, Stephen Sarre, Leonie Valentine, Lin Schwarzkopf, Ric Longmore, Jo Sumner.

All motions moved and seconded are asked for support via show of hands for and against. If no against votes are recorded the motion is passed as all in favour.

Previous minutes

Minutes of the 2015 meeting were circulated via the ASH email list, and it was moved by Rick Shine that the minutes be accepted as an accurate record of the previous meeting. Seconded by Arthur Georges, all in favour, motion carried.
A discussion ensued about the need to include the conference funds and monies in the conference financial statement prior to getting the 2014-2015 audit done.
Eridani presented a short report from treasurer Conrad Hoskin on the state of ASH finances, contained below.

Financial Year	2009-10	2010-11	2011-12	2012-13	2013-14		2014-15	
Income								
Income (memberships)	1780.00	3879.98	8060.97	7235.01	4670.10		1732.93	**ASH dues email soon**
Income (conference)		3130.00			13619.31	Canberra conf		
Income (interest)	0.00	12.03	89.98	13.98	8.30		3.68	interest
Total Income	**1780.00**	**7022.01**	**8150.95**	**7248.99**	**18297.71**		**1736.61**	**IN**
Expenses								
Auditor's fees	0.00	0.00	1150.00	0.00	880.00			
Awards	0.00	300.00	250.00	550.00		both covered by	3500.00	grants
Travel grants	0.00	2000.00	2750.00			Canb. conf.		
ASH research grants					3750.00			
Bank costs	304.52	282.05	196.94	0.60	2.50			
Newsletter	118.80	272.05	0.00					
conference seed/"Bus Hire"/conference costs	1650.00	1500.00	400.00	4008.90	(Paluma)	1000	deposit Melb venue	9000.00	**deposit Tassie venue**
conference refunds						525			
Running costs (internet, postage)	0.00	0.00	60.00	106.80		117.80		106.80	internet site
Fine for overdue audits (2010-2013)						250.00			
Total Expenses	**2073.32**	**4354.10**	**4806.94**	**4666.30**	**6275.30**		**12606.80**	**OUT**
Total surplus/deficit	**-293.32**	**2667.91**	**3344.01**	**2582.69**	**12022.41**		**-10870.19**	
Opening account balances	20794.43	20501.11	23169.02	27406.70	29989.39		41761.80	
Closing Balance	**20501.11**	**23169.02**	**27406.70**	**29989.39**	**41761.80**		**30891.61**	current balance = 31532.15
AUDIT	DONE	DONE	DONE	DONE	URGENT		ASAP	

We ran at a loss in 2015 because the deposit for the Tasmanian conference venue was $9 000 and we didn't earn much in membership ($1732.93). I am about to send out an email to all re. membership dues.

Dale Roberts moved and Glenn Shea seconded to accept financial statement with conference addendum.
A short discussion was held about the need to have greater connect between conference organisers and the treasury to facilitate the financial reporting and auditing.
Eridani made a short secretary's report on the state of ASH membership, with the membership generally being in good shape with only four members being more than 10 years in arrears. Most email addresses are up to date, which is great. The website continues to ably managed by Stewart Macdonald.
Deb Bower moved to accept the secretary report, seconded Matt Greenlees, all in favour, motion carried.

Research Grants Committee report.
Presented by Scott Keogh: a grant round was run, $4500 worth of grants were awarded in 2015. Another round will be run soon for the 2016 year.

ASH Species list update
At the last couple of AGMs, the ASH species list has been discussed, and there has been progress in a long process. A committee has been formed of around 12 people and the draft list is in the process of being compiled. Scott Keogh commented that most peoples are users of taxonomy rather than generators. There have been meetings with representatives from the federal government to ensure that there everyone is in agreeance to use the list. Once the list is complete, it will be used by ALA, Aust faunal directory, ABRS, Reptile database and IUCN.
Erik Wapstra asked if State agencies will also use the ASH List? Erik asked if the committee was only open to ASH members. Scott responded that it might be worth considering. Important to keep in mind that it is not a taxonomic list, it is a list based on consensus view from an expert panel.

Melissa Bruton asked if the list would include standardised common names. Scott said it was a tricky one, and stated that the first iteration would not have common names so that issue needs more work.
Eridani asked if we could make the list referencable and to attain a DOI, which Scott will follow up on.

A summary of Scott's points is given below:
1. The ***ASH Taxonomic Committee*** was established after the last AGM, with representation from professional taxonomic experts from across the Society.

2. The ASH Taxonomic Committee has developed a detailed ***ASH Taxonomic Committee Position Statement***, which explains the rational and motivation, and a set of ***ASH Taxonomic Committee Guidelines*** under which the committee operates.

3. The committee has been working this year to put together a draft list of Australian species names and the committee is currently vetting the list.

4. The membership of the committee, the Position Statement and the Guidelines will be uploaded to the ASH web site after this AGM and the full species list will be published on the ASH web site as soon as it is done.

Erik moved that we thank Scott for his work, seconded Rick Shine.

Erik Wapstra discussed the 12/18 month conference cycle. This is particularly relevant as 2016 has the World Congress of Herpetology occurring in August. There is a case to be made in to revert to 18 month cycle in this instance. The broader issue is that we aimed to try a 3 to 4 year trial for 12 month conferences. We then opened the floor for comment on whether we want 12 or 18 month conference cycle.

Glenn Shea commented that one of the issues we face is that we are required to hold the AGM every 12 months. In the past we have fallen behind in the AGM cycle, but have got around it by having the AGM outside of the scientific meeting.
Dave Chapple preferred the 12 month cycle. Eridani commented that maybe if 18 months is too long, we could cut back to 15 months. Erik commented that there are few common weeks available to us and we may be excluding some groups because of field work.

Richard Peters commented that PhD students can present 3 times within the course of their PhD if the conference is held annually.

Rebecca Bray suggested that we change the schedule to change to irregularity because of WCH.

Erik stated that we move to change to incorporate WCH in years when it is held, so that the next conference be held mid-year 2017, then at the start of 2019.
Seconded by Deb Bower. All in favour, motion carried.

Future proposed conference timing:
2016: February
2016: August WCH
2017: mid-year
2018: no conference
2019: Jan/Feb
2020: Jan/Feb
2020: August WCH
2021: mid year

Location of next ASH conference.
One tentative suggestion is that it be held in Perth area broadly. Erik called for other suggestions from the floor. Nicki Mitchell nominated to hold the meeting in WA.
Glenn raised the joint conference with SRARNZ. Scott Keogh said that SRARNZ will only come if it is east coast Australian venue.
Nicki explained that we could go to Perth, some people have suggested Broome also. Nicki has investigated two venues; Rottnest Is and Fairbanks.
Deb Bower moved that we accept Nicki's nomination to host the conference. Simon Clulow seconded, all in favour, motion carried.

GENERAL BUSINESS
Glenn Shea acting on behalf of Patrick Couper and Conrad Hoskin presented two motions to the meeting.

1. We seek an amendment to the ASH constitution which permanently excludes anyone convicted of a fauna offence from ASH membership.

2. Also, we are concerned by the practice of directions to sensitive reptile localities being shared through social media. We are aware that at least one narrowly restricted reptile has been recently smuggled out of Australia and is now available in the US and German pet trades. It is documented that this individual obtained detailed information regarding locating the species from herping trip reports, locality information and discussions posted on social media. We ask ASH members, particularly those who use herpetological chat lines, to be highly circumspect regarding the wide dissemination of sensitive information.

We would like to see statements of this nature appear on the ASH website to ensure that they are seen by all members.

These issues were discussed by the members present. Erik Wapstra said that once time is served or fines imposed why should we exclude a person. Memento Hudson mentioned that there is precedence under EPBC act for this action to be taken. Erik thought that the question was reasonable to be included in our membership application forms as once a person is a member they then may end up speaking on behalf the society. Gerry Marantelli said there are lots of young and stupid herpetologists who then become very good herpetologists in the future and we shouldn't exclude them from membership.

Erik suggested we ask the question on the membership form and if answered as a 'yes', we should then send the application to review by the executive.
Glenn moved that we hold this issue over to be discussed by the new executive committee and a proposal then be formed. Seconded Eridani Mulder. All in favour, motion carried.

We need more info on social media issues from Glenn to incorporate into the discussion, and maybe include in the next newsletter. Moved by Glenn that ASH write a position statement on use of social media by ASH members, which will then go on the ASH website, seconded by Matt Greenlees. All in favour, motion carried.

Arthur Georges moved that Murray Littlejohn be ejected in absentia for disruptive behaviour, and Dale Roberts be ejected for not bringing Murray's behaviour in check. Seconded by Rick Shine. All in favour, motion carried.
Dale was then ejected from the meeting.

ELECTION OF NEW OFFICE BEARERS
The committee was stood down. Erik Wapstra thanked all office bearers for their service and continued to run the meeting.
Nominations were received by the President 21 days before the AGM as listed below.

President: Nicki Mitchell
Vice President: no nomination (position is taken by former President)
Treasurer: Jo Sumner
As there were no other nominations, the nominees were elected unopposed, with the full executive listed below.
President: Nicki Mitchell
Vice-President: Erik Wapstra
Treasurer: Joanna Sumner
Secretary: Eridani Mulder
Ordinary Members: Kate Umbers
Ordinary Members: Lynette Plenderleith
Newsletter Editor: Deb Bower
Public Officer: Mitzy Pepper

Nicki thanked the previous committee for their service and Deb Bower thanked Erik for all his efforts on the conference as it was fantastic.

ADDENDUM

The Student Prize winners at the 2016 conference were as follows:

The **Peter Rawlinson Prize for PhD** presentation
Nicky Rollings
"Colour-coded telomere dynamics in a polymorphic lizard"
Runner-up
JP Lawrence
"Aposematic signal optimisation in polytypic species"
Honourable mentions: Julia Riley, Sozos Michaelides

The **Murray Littlejohn Prize** for best Honours presentation was awarded to:
Callum McDiarmid
"Pre-copulatory sexual selection in the Australian Painted Dragon"
Runners-up: Hannah Cliff and Kaely Kruger
"Divergence and dispersal in two cool-climate reptiles: the phylogeography of *Niveoscincus ocellatus* and *N. metallicus* in Tasmania (and a tiny bit of the mainland).
Honourable mention: Genevieve Matthews

The Ric Longmore Prize for best Poster was awarded to:
Ashleigh Wolfe
"Ontogenetic diet shifts in dugites (*Pseudonaja affinis*) across time and space
Honourable mentions: Julia Riley, Sozos Michaelides