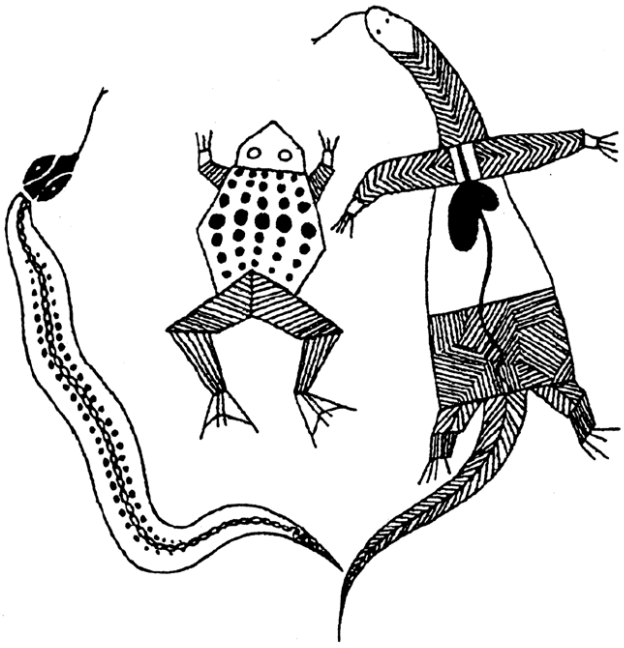
THE AUSTRALIAN SOCIETY OF

HERPETOLOGISTS

INCORPORATED



NEWSLETTER 46

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).

First AGM (23 August 1965):- President MJ Littlejohn, Vice-President NG Stephenson, Secretary-Treasurer AA Martin, Asst Secretary-Treasurer KJ Wilson, Ordinary Members FJ Mitchell and IR Straughan, Editor AK Lee.

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DS Bower (2007-)

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President's Report

It is with great pleasure that I took on the role of President of the Australian Society of Herpetologists at the meeting at Barmera in September. I am very grateful for the opportunity, and for the recognition from my peers that the position implies. This year, 2011, marks the 24th anniversary of my first ASH meeting, which was held in 1987 at Eden in NSW, about a month after my arrival in Australia from Canada. Apparently I am the 5th female president of ASH, making about 18% of ASH presidents female, so far.

I am also very grateful to be able to serve ASH with the help of Ben Phillips (Treasurer) and Eridani Mulder (Secretary), who were also elected at the Barmera meeting. The three of us have emailed back and forth frantically since November, as we come to grips with the management of the Society. As recommended by Mike Thompson, a previous president, we have continued working hard to fulfil our legal requirements to maintain our status as an incorporated society. This has entailed some changes to some details of the operation of the Society. In addition, we (especially Ben and Eridani) have been working to modernize the banking and accounts, bringing them into the computer age, so maybe we can pay our memberships by credit card. We are also streamlining the list server and newsletter distribution, to ensure these important items are distributed to all our financial members.

Deb Bower, now of Newcastle Uni, is continuing in the role of Newsletter Editor. It is critical that every member provides Deb with as much information as possible, so that we can maintain a vibrant and up-to-date Newsletter full of all the relevant gossip. We will provide the Newsletter electronically to financial members.

Congratulations and thanks are due to Mark Hutchinson and his team for the success of the Barmera meeting. There was an excellent turnout of members and friends, with some concurrent sessions needed to fit everyone in. There was an even more stupendous turnout of insects. I note that, if the present crop of young herpetologists is anything to go by, the percentage of females as president of ASH should definitely increase in the future.

The dates of the next meeting have now been set at 8-11th November, 2011 in Paluma, North Queensland. More details will be forthcoming once we figure them out. I hope that this Newsletter is a welcome (re)addition to your inbox, and please send comments and additions to Deb.

Lin Schwarzkopf

Editor's Report

Many of us had the enjoyable occasion to catch up on the shores of Lake Bonney, Barmera last September, 2010. This particular ASH conference saw herpetologists from all states convene during a classically South Australian 'cold snap", which coincided with an apparently rare hatching event of midges, which emerged from the lake in amazing densities. Needless to say, it made small talk all the easier, and beer all the more necessary.

I travelled to the conference with a team of colleagues after meeting in Sydney. We hired a minibus to traverse the planes of New South Wales and it was a most incredible experience to see the arid zone in flood. Whilst the sub zero temperatures drastically reduced our reptilian findings, in the excitement and madness that are hereptological road trips, we managed to evolve into the Wagga Tigers Travelling Singinging Christian Group; cook a lamb roast, spit style, using a stolen road sign pole; and, squeeze some rather fat and kissable *Neobatrachus* along the way!

The conference was kicked off with a notably casual welcome speech, in which I (less than empirically) busted some myths in the society. On a more serious note, we saw insightful plenary lectures from Devi Stuart-Fox, Mike Kearney and Mark Hero. Extraordinary presentations were delivered by Ashley Olson, Katie Smith and Tegan Box, who took home the student prizes. Murray Littlejohn awarded honorary life time memberships to Mike Tyler, Marg Davies, Angus Martin and Graeme Watson.

The last night of the conference involved all the usual shenanigans and we danced our hearts out til the wee hours. Of note was the Glenn Shea dance manoeuvre, when on a cue given by the DJ ("Anorak!"), all present females turned and pointed to Glenn, danced up to him, dragged him to the middle of the dance floor and boogied Beyonce style, for the duration of the song — 'All the single ladies'. Glenn hated it of course.

We look forward to the next conference in the magnificent Paluma Rainforest village, hosted by James Cook University. Expect to be kept awake by the mating calls of the ornate nursery frog, whilst sleeping metres from giant leaf tail geckoes. If you're lucky you might encounter the odd taipan, Boyd's forest dragon or scrub python, which certainly inhabit the range. If rainforest doesn't do it for you, the wet sclerophyll is a 20 minute ride down the road, where velvet geckoes are plentiful. It's all rather apt for a herp conference and I dare say no one will be complaining about a cold snap!

Deb Bower

Treasurer's Report

OK. First, thanks to Glenn Shea for handing over a nicely organized treasury. I know it was a tough job and it took him a while to get there, but the books are in exemplary order for his efforts. Bravo, Sir!

Now, following many requests for credit card facilities to take membership payments, I have looked into it. Upshot is that we can do it through PayPal with only nominal additional cost (which, by way of punishment, will be passed directly on to those paying by credit card). Eridani and myself are in the process of implementing this service on the website. With luck, we will be open for business before the end of May. At which time, all current members will be sent an email from me (ashtreasury@gmail.com: put it in your address books if you don't want it filtered) telling them when they are financial till and what they can do should they choose to rectify arrears. This will be mail merged, so everyone's privacy remains intact, and we don't all have to see that, for example, the treasurer is about four years behind. (Let it be said in my defence that I am waiting to test the new system.)

This brings me to issues of management. We have a few, but I will harp on only one. We have many people in arrears on membership payments. The auditors had stern words with us about this last time and our constitution clearly states that members must be continuously financial. So if you haven't paid membership for a few years you will either need to pay the arrears or ask to be removed as a member. I recognise that this is not necessarily consistent with the happy-go-lucky spirit of the society, but neither is financial ruin, un-incorporation (if that is a word), and endless penury. So please, when the email comes around, and if you are in arrears (as most of us are), do what you can to bring yourself back into the black.

And finally, a ray of light. After wrestling control of the accounts back from the bank, I took advantage of a wonderful little non-additive effect. I closed our conference account (which hasn't been used for a few years) saving us, not only the $120 per year that was being hoovered up in fees there, but also the $180 in fees being hoovered up by our main account: fees there are waived if the account balance exceeds $10,000. I would like to guarantee that this saving will be passed on to all members at the conference bar, but that would probably be both untrue and irresponsible, so I won't.

Yours from the vault

Ben Phillips

THE AUSTRALIAN SOCIETY OF HERPETOLOGISTS INCORPORATED

NEW MEMEBERSHIP FORM

The Australian Society of Herpetologists Inc. is a society for professional herpetologists and publishing amateurs. The Society is incorporated in the Australian Capital Territory and is administered by a council of seven members. The Society meets at intervals of between 12 and 18 months, usually in a residential situation away from a major city. Meetings take the form of sessions of scientific papers and a business meeting.

Membership is by nomination by two financial members of the Society who will vouch for the acceptability of the prospective applicant

Subscription fees are currently AUS$35.00 per annum for non-students and $15.00 for full time students. All fees must be tendered in Australian Currency and cheques made payable to: Australian Society of Herpetology Inc. Fees are due in June every year. Alternatively please deposit your subscription fee into the account below. If you choose this payment option, please be sure to include your name on the payee transaction details to allow us to keep a record of who has paid, and also send this form separately in hard copy.

Banking Institution:	Commonwealth Bank, Australian National University Branch
Account Name:	The Australian Society of Herpetologists Incorporated.
Account number:	06 2903 10236527
BSB:	06 2903

This form, accompanied by dues/print out of transaction details should be sent to:

Dr. Ben Philips
Centre for Tropical Biodiversity and Climate Change,
School of Marine and Tropical Biology
James Cook University,
ashtreasury@gmail.com

NEW MEMEBERSHIP FORM

Name	
Student or non-student?	
Email	
Organisation	
Address for Mail	
Phone/FAX Num-	
Do you wish to be placed on the ASH list	

NOMINATION FORM

I hereby nominate…… …….. of (postal address) ……

Email (of new member): ……for membership of the Australian Society of Herpetologists Incorporated, being satisfied that he/she fills the criteria for membership.

Signed (nominator) ……

A massive thank you to our regional reporters...

North Queensland	Rebecca Webb
South Queensland	Harry Hines
Northern Territory	Dane Trembath
Western Australia	Dale Roberts
New South Wales	Frank Lemckert
Australian Capital Territory	-
South Australia	Aaron Fenner
Victoria	-
Tasmania	Joanne McEvoy and Mandy Caldwell

ASH Website: http://australiansocietyofherpetologists.org/index.html

Please direct all membership enquiries to the Treasurer, Ben Phillips. Membership forms can be downloaded from the ASH web site. Newsletter feedback can be given to Deb Bower. All other enquiries should be directed to the Secretary, Eridani Mulder.

The Peter Rankin Trust Fund for Herpetology

Peter Rankin Trust Fund for Herpetology

The annual round of applications for the Peter Rankin Trust Fund have been suspended pending a review of options for future awards. Please check the Australian Museum website regularly for further announcements.

Ross Sadlier – Committee Chair

ASH CONFERENCE 2011

36th Annual General Meeting of Australian Society of Herpetologists

November 8 -11, 2011, Paluma, North Queensland

Travel: The meeting will be held at **Paluma Village**, which is 92 km north of Townsville, up in the Paluma Range (880 m asl). The easiest point of access is to fly into Townsville. Buses will be organized from Townsville airport to Paluma and back, please book your bus with your registration. Another option is to rent a car and make the 1.5 hour drive to Paluma on your own.

Environment: The area surrounding Paluma Village is mostly rainforest, however it is easy and a short distance to drive to Hidden Valley, west of the village and quickly move from rainforest, to wet sclerophyll and finally dry sclerophyll forest. This mosaic of environment makes sustains a significant diversity of species. Heaps of cool frogs, reptiles, birds, and mammals have been recorded in Paluma and surrounding areas. Many are north Queensland endemics. Local attractions include lookouts, rainforest walks, swimming, bird watching, and picnic facilities. Bring your binoculars.

Accommodation: There are various styles of accommodation available at Paluma. There is a JCU field station with a large yard. (1) We can accommodate a few people camping around the house, but they *must* use the public toilets and showers across the street from the house, as the septic system will not handle extra users (and it could get ugly). We expect most conference attendees will stay at Gumburu (the Catholic Environmental Education Centre), or at the Paluma Queensland Education Centre in 'school camp' style accommodation of bunk rooms (2 or 4 to a room). People staying at Gumburu or the Paluma Education Centre will have meals included in the registration. **Please note that we have limited ability to cater meals, so people arranging their own accommodation will not be included in the meal plan, and must self-cater.** If you wish to arrange your own accommodation, you can call the Rainforest Inn Paluma, 1 Mt Spec Road, Paluma, QLD 4816 (07) 4770 8688, http://www.rainforestinnpaluma.com/. There are also various self-contained cottages at Paluma see for example http://www.palumarainforest.com.au/stay_selfcontained.htm. At the present time, camping areas run by National and State Parks are closed due to cyclone damage, but may be open later in the year. Contacts are available at http://www.palumarainforest.com.au/stay_camping.htm.

Meals: For folks staying at Gumburu or the Paluma Education centre, breakfast, lunch, dinner and morning and afternoon tea are included in your registration. For others, you will need to shop in Townsville before coming to Paluma, there is *no* shopping in Paluma. It is possible to buy meals (really nice food) at the Inn. The conference dinner is included in everyone's registration, and we will feed everyone for that meal.

What to Bring: For people camping, you'll need all the usual camping stuff. Others need a fitted sheet (for the mattress), a pillow and pillow slip, and bedding (recommend a light-to medium-weight sleeping bag). It can be hot at Paluma, and it can be really, really, really rainy and muddy (and rather cool). We recommend a raincoat, a light jumper, a large bottle of insect repellent, and a tube of sun screen. Gumboots might be good. That should cover most eventualities.

Queensland

Alford and Schwarzkopf Labs

Ignacio de la Riva has joined us for a year for a sabbatical from the Museum of Natural Sciences in Spain. He will be studying thermal biology of frogs and lizards if he ever finds a house and car! Having moved on from death adders as a study animal, **Anna Pintor** has started her PhD on the evolutionary physiology of thermal tolerance in skinks. **Carryn Manicom** graduated in April with a PhD on complex trophic cascades and a baby! We all welcome a new herpetologist **Isla Zindzi Evans**. She already has a toy lizard – or maybe it is a dragon... Or a dinosaur...?

John Llewelyn, official cuckoo in the nest from Sydney Uni, has recently fledged, having handed in his PhD on the effects of toads on various predators, especially keelbacks. **Robert Puschendorf** is back with an APD (Australian Postdoctoral Fellowship) from the ARC (Australian Research Council), to study the origin of recovering and recolonising populations of frogs up at higher elevations after they declined due to Bd. **Mattias Hagman** also has an APD but maintains a wraith-like non-presence – we think he might be doing something on frogs, somewhere... **Betsy Roznik** is powering ahead with data collection, radiotracking every frog in NQ (if possible) to determine the link between individual behaviour and disease. **Sara Bell** is running final experiments and writing up her PhD on cutaneous bacterial resistance to the amphibian chytrid fungus "Bd". She has found resistant *Pseudomonas fluorescens* strains across all species and sites surveyed and these may be good candidates for bioaugmentation trials.

Ian Bell is taking three months to really get stuck into finishing that PhD on sea turtles! He had so many data points he didn't know what to do… **Mat Vickers** has finally enrolled in a PhD project, studying behavioural thermoregulation in lizards. He is building a model that will simulate lizard behavioural thermoregulation in realistic landscapes. We already have a paper in Am Nat and we are chuffed! **David Pike** recently finished his PhD on reptile ecology at the University of Sydney, and is currently a visiting researcher at JCU. He is continually working on a series of projects investigating the evolution of parental care, how the rigid egg shell has influenced gecko body size evolution, and various other facets of reptile ecology, conservation, and management. **Rickard Abom** is pondering the mysteries of MARK, AIC criteria and CANOCO to make sense of his massive data set on the effect of weeds on everything (but ESPECIALLY reptiles and amphibians). **Sarah Sapsford** has joined us from the frozen north conducting a master's that consists of trekking up and down mountains and markinf all the frogs in North Queensland that Betsy tracks! Sarah is examining the effect of disease on demography in lowland and highland populations of frogs.

Angus McNab stays in the lowlands, sweating out his masters on disease in frogs that don't go extinct – is it just the heat that protects them from disease? **Arnaud Gourret** is kite sailing, and taking brief breaks to collect data for his masters on thermoregulation in really cool rainforest lizards, like leaf tails and forest dragons.

Will Taylor has just completed his masters comparing the biodiversity (especially frogs and reptiles) on his family's grazing property to that of a nearby fauna reserve. **Daryl Trumbo** is here from Washington State, and Andrew Storfer's lab and is catching toads. He wants to examine gene flow at range edges in stable and expanding populations. He has seen more of northern Australia than any of us – along with **Joost Kunst**, visiting us from Holland and official toad wrangler, 2IC. We are delighted to report that **Kiyomi Yasumiba** and her family and friends survived living and working in Japan during and after the earthquakes, and she has returned to start a PhD on Bd inhibition by frog skin biota.
Leila Brook is doing her PhD on dingos, and their effects on cats, which eat reptiles… **Justin Perry** is doing his PhD with CSIRO on birds and climate change Birds are actually reptiles, so we think it is okay. **Paul Ferraro** works on mahogany gliders. That is just strange.

Phillips Lab

Ben Phillips has relocated from the Kimberley to Townsville to take up a QEII fellowship and lectureship at JCU. He notes that there are more people in Townsville than Derby. Between writing ASH receipts, he ponders evolution on range edges, climate change and local adaptation. He has diversified from chasing toads, to toad food (i.e., dung beetles), lizards, and even simulated animals in this pursuit. **Stewart MacDonald** is moving north to chase up a PhD with Ben on dispersal versus persistence in rainforest fragments of the Wet Tropics. His trip from Brisbane to Townsville has involved a small side trip to the Pilbara and Kimberley, but he swears he will get to Townsville eventually.

Bruce Copeman Parasitology lab

Stephanie Shaw has moved to Townsville for a year to complete her PhD on wild and captive diseases in NZ frogs - *Leiopelma* species. One of her findings has shown that diet of captive frogs has not matched their native diet and this is causing poor health such as metabolic bone disease. She is also collating results and mapping the distribution of *Batrachochytrium dendrobatidis.* **Stephen Garland** is conducting diagnostic assays for chytridiomycosis and researching to improve these assays. **Scott Cashins** is now a JCU post doc and is working on a project in collaboration with Peter Harlow and Michael McFadden at Taronga zoo and Dave Hunter at NSW DECCW. He is researching the role of innate and acquired immunity in frog defenses against Bd and aims to incorporate these results into the captive breeding and release program for the booroolong frogs (*Litoria booroolongensis*) and corroboree frogs (*Pseudophryne corroboree*). **Laura Grogan** is working closely with Scott for her PhD by doing molecular analyses on experimental samples to understand mechanisms of any innate and adaptive immunity to chytridiomycosis. She is also analysing mark/recapture data to determine the impact of chytridiomycosis on rainforest frogs.

Rick Speare remains focused on the management of wildlife disease in Australia.
Rebecca Webb is still trying to find ways to kill Bd. She has found that phytoclean, a disinfectant used to control the plant pathogen *Phytophthora,* will also kill Bd and *Mucor amphibiorum* (a fungal pathogen of amphibians and also platypus). **Kris Murray** is based in Brisbane but working for JCU on a project to collate hygiene recommendations for amphibians. **Lee Berger** has begun a part time Future Fellowship to continue working on chytridiomycosis, looking aspects of virulence and immunity. **Lee Skerratt** is supervising work on the control, management and host/pathogen relationship of chytridiomycosis. He has new projects on treatment and modeling disease dynamics.

NQ Random news

Herpetologist **Dr Patricia Burrowes from the** Department of Biology, University of Puerto Rico will be visiting JCU in May to discuss the ecology of chytridiomycosis and get ideas for her studies in Puerto Rican frogs.

NQ recent publications

Murray, K.A., Retallick, R.W.R., Puschendorf, R., Skerratt, L.F., Rosauer, D., McCallum, H.I., Berger, L., Speare, R., VanDerWal, J. (2010) Issues with modeling the current and future distribution of invasive pathogens. **Journal of Applied Ecology 48**:177-180.

Skerratt, L.F., McDonald, K.R., Mendez, D., Berger, L., Hines, H.B., Phillott, A.D., Cashins, S.C., Murray, K., Speare, R. (2010) Application of the survey protocol for chytridiomycosis to Queensland, Australia. **Diseases of Aquatic Organisms**. **Special. Chytridiomycosis: an emerging disease 92**:117-129.

Murray K.A., Rosauer, D., McCallum, H, Skerratt, L.F (2010) Integrating species traits with extrinsic threats: closing the gap between predicting and preventing species declines. **Proceedings of the Royal Society B** doi:10.1098/rspb.2010.1872.

Murray, K.A., Retallick, R.W.R., Puschendorf, R., Skerratt, L.F., Rosauer, D., McCallum, H.I., Berger, L., Speare, R., VanDerWal, J. (2010) Assessing spatial patterns of disease risk to biodiversity: implications for the management of the amphibian pathogen, *Batrachochytrium dendrobatidis*. **Journal of Applied Ecology 92**: 117-129.

School of Biological Sciences, The University of Queensland: **Booth lab**

Liz Sim started her PhD in August 2010, and is examining the effects of nest temperature, maternity, and scute pattern on morphology and locomotor performance of hatchling sea turtles at the Mon Repos sea turtle rookery. **Alecia Waters** started her Honours project examining the influence of hydric environment on the development and hatching of Asian house gecko embryos in July 2010 and is busy writing this project up. **Ugo Capozzoli** started Honours in 2011 and is investigating the effects of larval density and pond drying on larval growth and metamorphosis in the brown-striped marsh frog.

Carla Pereira continues her PhD project examining aspects of the swimming frenzy of hatchling loggerhead and flatback turtles. In the 2009-2010 season she focused on swimming effort and oxygen consumption. In the 2010-2011 season she collected blood samples to examine the role that anaerobic metabolism and stress hormones play during the swimming frenzy. **Riezma Maulany** is now in the data analysis and write-up phase of her PhD examining the nesting and incubation biology of the Olive Ridley population nesting in Alas Purwo National park, south east Java. She has discovered that nests left to incubate naturally suffer 100% predation, and that low hatching success and in relocated clutches can be attributed to very high nest temperatures.

Kara Brose completed her Honours project examining the influence of rearing temperature on the growth and energetic of development in brown-striped marsh frog larvae. She found that larvae reared at higher temperatures had a shorter larval period and a lower energetic cost of development.

Queensland Museum

In early 2010, **Patrick Couper** and **Andrew Amey,** working collaboratively with staff from Queensland's Department of Environment and Resource Management, were able to confirm the continued existence of the Retro Slider, *Lerista allanae*. This small, fossorial lizard was last seen in the 1960s and feared extinct until a dead specimen was found by a farmer and forwarded to the Queensland Museum. *Lerista allanae* is restricted to a highly localised and vulnerable habitat type in central Queensland and further fieldwork is required to assess the population size and the full extent of its occurrence.

Patrick and Andrew are committed to the Bush Blitz surveys but their most recent trip, scheduled for the Carnarvons in October 2010, was cancelled at the last minute due to unseasonal weather. Exceptionally wet conditions continued through Christmas and the Queensland Museum started 2011 with wet feet. Damage from the inundation was sufficient to close the building and prevent staff from returning to work until early February, a month later. Fortunately, the flood caused no damage to displays or collections.

Field work that was able to be carried out this season included collaborative survey work with DERM on the Mackay coast and in the Inglewood area where the known range of the Granite Belt Thick-tailed Gecko, *Nephrurus sphyrurus*, was extended.

Taxonomic research also continued regardless of the weather with publication of a new species of pygopodid, *Pygopus robertsi* from north-eastern Queensland and ongoing collaborative work with Jane Melville (Museum Victoria) on a new species of dragon from central Queensland.

Queensland Department of Environment & Resource Management (DERM), Biodiversity & Ecosystems Sciences Unit
Group leader: Adrian Borsboom, Principal Ecologist

In the first half of 2011 **Adrian Borsboom** and **Melanie Venz** anticipate completion of the last of their assigned conservation status assessment documents for a number of 'near threatened' Queensland reptiles. Their conservation status recommendations will go before a Department of Environment and Resource Management (DERM) Species Technical Committee (STC) for its consideration and subsequent advice to the appropriate Government Minister. The STC assesses nominations against the latest IUCN Red List conservation status categories and associated criteria. These conservation status assessments are the final batch of a program commenced in 2005 to assess all of the 'rare' listed reptiles (and all other 'rare' listed fauna and flora in Queensland) prior to the abolition of the 'rare' category in the Queensland Nature Conservation Act. Not all species were assessed prior to the abolition of the 'rare' category and were defaulted to the 'near-threatened' category until assessed.

In late 2009 a dead specimen of the Retro Slider (*Lerista allanae*) was lodged at the Queensland Museum. It resulted in a collaborative field team from the Museum (QM) and the Queensland Department of Environment and Resource Management (DERM) surveying and finding six Retro Sliders in March 2010 in the Clermont region of central Queensland. The team headed by **Adrian Borsboom** (DERM) and **Patrick Couper** (QM) included **Andrew Amey** (QM), **Rod Hobson** (DERM) and **Steve Wilson** (QM). The last Retro Slider to be collected prior to 2009 was back around 1960, in spite of significant survey effort. Prior to its re-discovery it was seriously considered by some reptile experts to be extinct. Further survey work is planned. A research report of the survey work was completed in September 2010, and in April 2011 was in the process of being published on the DERM internet site.
A survey team headed by **Adrian Borsboom** (DERM) and including **Harry Hines** (DERM), **Rod Hobson** (DERM), **Andrew Amey** (QM) and two keen volunteers (**Ben Nottidge** and **Jesse Rowland**), successfully extended the range of the border thick-tailed gecko (*Nephrurus* [*Underwoodisaurus*] *sphyrurus*) in south-east Queensland. The data from this February 2011 survey has been fed into an assessment by **Adrian Borsboom** of the gecko's conservation status in Queensland, this assessment expected to be completed for review in May 2011.
10 years of survey work for the Nangur spiny skink (*Nangura spinosa*), which was headed by **Adrian Borsboom**, was collated in 2010 and the results included in a publication on the skink in Australian Journal of Zoology.

South Queensland Publications

Amey, A. (2009). An instance of senescence in a field population of the Eastern Bearded Dragon, *Pogona barbata* (Lacertilia, Agamidae). Herpetofauna, *39 (2)*:69–73.

Booth, D. T. (2009). Swimming for your life: locomotor effort and oxygen consumption during the green turtle (*Chelonia mydas*) hatchling frenzy. Journal of Experimental Biology. 212:50-55.

Booth, D. T. (2010). The natural history of nesting in two Australian freshwater turtles. Australian Zoologist 35: 198-203.

Booth, D.T. and Chung Yan Yu (2009). Influence of the hydric environment on water exchange and hatchlings of rigid-shelled turtle eggs. Physiological and Biochemical Zoology. 82:382-387.

Borsboom A.C., Couper P.J., Amey A., Hobson R. & Wilson S.K. (2010) Rediscovery of the endangered Retro Slider (*Lerista allanae*) in the Clermont region of central Queensland. Department of Environment and Resource Management (DERM), Biodiversity and Ecosystem Sciences, Brisbane and the Queensland Museum, Herpetology, Brisbane. Report available via: http://www.derm.qld.gov.au/services_resources/category.php?class_id=9

Borsboom, A.C., Couper, P.J., Amey, A. & Hoskin, C.J. (2010). Distribution and population genetic structure of the critically endangered skink *Nangura spinosa*, and the implications for management. Aust. J. Zool., 58:369-375.

Ischer, T., K. Ireland and D.T. Booth (2009). Locomotion performance of green turtle hatchlings from the Heron Island rookery, Great Barrier Reef. Marine Biology 156:1399-1409.

Lyon, B.J., Couper, P.J., Amey, A., Roberts, L.J. & Covacevich, J.A. (2010). Frogs and reptiles of the Steve Irwin Wildlife Reserve, Cape York. Queensland Naturalist, 48:13–21.

Murray, K., Retallick, R., McDonald, K.R., Mendez, D., Aplin, K., Kirkpatrick, P., Berger, L., Hunter, D., Hines, H.B., Campbell, R., Pauza, M., Driessen, M., Speare, R., Richards, S.J., Mahony, M., Freeman, A., Phillott, A.D., Hero, J.-M., Kriger, K., Driscoll, D., Felton, A., Puschendorf, R. and Skerratt, L.F. (2010). The distribution and host range of the pandemic disease chytridiomycosis in Australia, spanning surveys from 1956-2007. *Ecology* 91: 1557-1558.

Oliver, P.M., Couper, P & Amey, A. (2010). A new species of *Pygopus* (Pygopodidae; Gekkota; Squamata) from north-eastern Queensland. Zootaxa, 2578:47–61.

Phillott, A.D., Speare, R., Hines, H.B., Skerratt, L.F., Meyer, E., McDonald, K.R., Cashins, S.D., Mendez, D. and Berger, L. (2010). Minimising exposure of amphibians to pathogens during field studies. *Diseases of Aquatic Organisms* 92: 175-185.

Skerratt, L.F., McDonald, K.R., Hines, H.B., Berger, L., Mendez, D., Phillott, A.D., Cashins, S.D., Murray, K. and Speare, R. (2010). Application of the survey protocol for chytridiomycosis to Queensland, Australia. *Diseases of Aquatic Organisms* 92: 117-129.

Stratford, D.S., Grigg, G.C., McCallum, H.I. and Hines, H.B. (2010). Breeding ecology and phenology of two stream breeding myobatrachid frogs (*Mixophyes fleayi* and *M. fasciolatus*) in south-east Queensland. *Australian Zoologist* 35: 189-197.

Northern Territory

Museum and Art Gallery of the Northern Territory

During the past year, the museum instigated a curatorial review in order to determine which positions should be highlighted for immediate recruitment. Thanks to the hard work of Senior Management and Research Associate **Dane Trembath,** the Curator of Terrestrial Vertebrates position was re-advertised with recruitment currently under way. **Dane Trembath** continues to make revisions to his thesis and is also involved in a new research project on the conservation biology of Pig-nosed Turtles with the **Northern Territory Field Naturalist Club** and long time friend **Sean Doody** of Monash University. Unfortunately **Tom Parkin** was lured away from the Northern Territory to undertake a six month contract as Herpetology Collection Manager at the Western Australian Museum. On behalf of all staff at MAGNT we would like top take the opportunity to thank **Tom Parkin** for all his hard work and wish him the best of luck with this unique opportunity. Lastly **Paul Horner** has reached his retirement destination of Airlie Beach where he will be sorely missed.

Northern Territory Publications

Fearn, S. & Trembath, D.F. (2011). Natural history of the common tree snake *Dendrelaphis punctulatus* (Serpentes: Colubridae) in the wet-dry tropics of north Queensland. *Australian Journal of Zoology*. 58(6):384-389.

Lloyd, R. & Trembath, D.F. (2010). Male combat in mulga snakes *Pseudechis australis* (Serpentes: Elapidae): A series of observations from Northern Australia. *Herpetofauna*: In press.

Western Australia

Roberts Lab, UWA

Dale Roberts is tripping around Europe on enforced long service leave: saw a frog in Spain, a squashed – might have been a toad in Italy and saw a beautiful snake go into free fall for about 40 m off a wall in Spoleto – that is also in Italy. Just had the proofs of a review on polyandry in frogs focused on simultaneous polyandry and my labs work on *Crinia geor*giana – due out in July (see publications below), co-written with **Phil Byrne**. The reviewers did not like our first draft so we split off part of that and have a second review paper submitted to Biological Reviews on sequential polyandry! Two for the price of one!! JDR is also working with a student, **Jane Reniers**, from Laboratory of Aquatic Ecology and Evolutionary Biology Katholic Univerity of Leuven, Belgium who will be working on variation in life history features in *Crinia pseudinsignifera* on granite outcrops in the WA wheatbelt this winter. In between espressos and vino rossi's I am praying for rain!!

Sharron Perks submitted her PhD in February and is in Germany and on the way to submitting several papers – on the occurrence and function of sperm storage organs in anurans. Like other animals they are bigger or more sophisticated in polyandrous species and almost certainly affect sperm performance. **Aimee Silla** is writing – two papers out and a third in press on hormonal control of sperm and egg release in frogs. **Jen Francis** has completed her field work, took some time off after three killer summers in the Kimberley and is also writing. No new students – well not working on herps at least!

Western Australia Publications

Roberts JD 2010. A natural hybrid between the frogs *Crinia pseudinsignifera* and *C. subinsignifera* (Myobatrachidae) from southwestern Australia defined by allozyme phenotype and call. *Journal of Herpetology* 44, 654–657.

Byrne PG & Silla AJ 2010. Hormonal induction of gamete release, and in-vitro fertilisation, in the critically endangered Southern Corroboree Frog, *Pseudophryne corroboree*. REPRODUCTIVE BIOLOGY AND ENDOCRINOLOGY 8, Article # 144

Silla AJ 2010. Effects of luteinizing hormone-releasing hormone and arginine-vasotocin on the sperm-release response of Gunther's Toadlet, *Pseudophryne guentheri*. REPRODUCTIVE BIOLOGY AND ENDOCRINOLOGY 8, Article # 139

In press:

Gillespie G, McDonald K, Roberts JD, Mahony MJ, Cogger HG & Scroggie M 2011. The influence of uncertainty on conservation assessments: Australian frogs as a case study. *Biological Conservation* – available online, February, 2011, doi:10.1016/j.biocon.2010.10.031

Roberts JD & Byrne PG 2011. Polyandry, sperm competition and the evolution of anuran amphibians. *Advances in the Study of Behavior* 43, 1-53 Scheduled for publication, July, 2011. doi: 10.1016/B978-0-12-380896-7.00001-0

Catullo, RA, Doughty P, Roberts, JD & Keogh JS Multi-locus phylogeny and taxonomic revision of *Uperoleia* toadlets (Anura: Myobatrachidae) from the western arid zone of Australia, with a description of a new species. *Zootaxa* doi:

Davis RA & Roberts JD 2011. Survival and population size of the frog *Heleioporus albopunctatus* in a highly modified agricultural landscape. *Copeia* doi:

Submitted/revised:

Byrne, PG & Roberts, JD Evolutionary causes and consequences of sequential polyandry in anuran amphibians. Accepted subject to minor revision, *Biological Reviews*, April, 2011**.**

Tasmania

University of Tasmania
Behavioural and Evolutionary Ecology Research Group

Although things are quieting down for Herp research in Tassie as the lizards (and people!) prepare for winter, some changes have taken place over the last couple weeks in the Behavioural and Evolutionary Ecology Research (BEER) group. Geoff and Keisuke have both left, and Erik is about to, all for the northern hemisphere… coincidence at this time of year? We think not!

Erik Wapstra is continuing his work on the snow skink (*Niveoscincus ocellatus)* system, having just completed his 11th field season on this system, with recent publications including a Nature paper with Ido Pen, Tobias Uller, Barbara Feldmeyer, Geoff While and Anna Harts on climate-driven population divergence in sex-determining systems. Erik is currently acting as Head of School for Zoology until June (while **Sue Jones** fulfills commitments as an ALTC Discipline Scholar for Science) when he takes off for the field season in Sweden working on sand lizards. The Swedish sand lizard project is a long-running collaboration between Erik and Professor **Mats Olsson** from the University of Sydney, and this collaboration has extended to include work on the influence of metabolic processes on life history evolution in snow skinks and agamids.

Geoff While has left us for the University of Oxford working with **Tobias Uller** on a Marie-Curie post-doc examining context dependent sexual selection and colonization dynamics in the invasive wall lizard. Geoff will be back over the summer to continue work with Erik on the snow skink and *Egernia whitii* projects examining the interplay of environmental heterogeneity and behaviour in shaping social and population dynamics. Geoff plans to continue to work on the *Egernia* system following on from his PhD work in the coming years.

Chloe Cadby is finishing up her thesis on climate change and maternal effects in *Niveoscincus ocellatus*. Chloe has worked in collaboration with Erik, Geoff, Tobias and **Alistair Hobday** to examine how mothers may buffer the impacts of environmental change to their offspring and specifically how climate at multiple scales influences key phenotypic and phenological traits. Chloe also had a beautiful baby girl, Elanora, born in July last year. **Jo McEvoy** is continuing her PhD work on the *Egernia* system. Jo has been examining behavioural phenotypes (personality) within a natural population of *Egernia whitii*, and considering the role that hormones play in shaping individual behavioural differences, as well as the outcomes of those differences at the population level. Jo has finished the majority of her field and laboratory work and is now concentrating on putting it all together. **Mandy Caldwell** has recently completed her first field season looking at the potential for behavioural plasticity to buffer changes in the thermal environment in alpine and lowland snow skinks. Mandy's PhD project will examine the potential for behavioural, physiological, and ecological traits to buffer climate impacts in snow skinks. She will use data generated by these studies to parametise a mechanistic model in order to determine the implications of climate change for snow skink population dynamics and persistence. Mandy was recently awarded a Holsworth Wildlife research grant to aid in this work.

Mat Russel is starting to wrap up his masters project in which he has examined sperm storage in *N. ocellatus*. Mat aims to elucidate the mechanisms underlying sperm storage and their consequences for mating tactics. Mat has spent the last few months hard at work in the laboratory concentrating on his histological methods, which will complement his observations of patterns of mating phenology in the wild. Unfortunately Mat will soon be leaving us to return to his Canadian homeland, where he is looking forward to attending ice hockey matches again.

Carryn Manicom has joined the BEER group as a research fellow after completing her PhD at James Cook University. Carryn conducted a detailed study of how predators affect prey abundance and reproduction, and the follow-on effects for ecological processes. Carryn is currently occupied with more important things, have just welcomed a little baby girl, Isla, in March.

The other area of herpetological research at the University of Tasmania is the **Comparative Endocrinology and Ecophysiology Group. Sue Jones** is currently an Australian Learning and Teaching Council Discipline Scholar for Science (until June 2011). This role has an overall aim to identify and document a set of Threshold (or core/minimum) Learning Outcome (TLO) statements for undergraduate degrees in the Science discipline and involves working in consultation with stakeholders within the discipline communities, including the Australian Council of Deans of Science, the academies, peak bodies, employers and students. Sue returns to Head of School from May, yet despite her busy workload she still finds time to continue her work examining the evolution of viviparity in vertebrates and how environmental stressors affect the endocrine (hormone) system. In addition Sue works with members of the BEER (Jo McEvoy, Mat Russel) on their projects providing expert advice and support on the physiological basis of key behavioural traits.

Keisuke Itonga has handed in his PhD thesis and is eagerly awaiting reviewer's comments. Keisuke's work focused on examining maternal effects in a species of grass skink with high placental complexity. Keisuke has considered the extent to which food and temperature conditions during gestation influence offspring fitness, and examined the influence of both hormones and carotenoids on offspring phenotype. Keisuke returned to Japan just prior to the earthquake earlier this year (he and his family are fine), and despite the upheaval has continued to work on papers stemming from his PhD.

Yuni Eswaryanti has been hard at work on her project with Sue, Erik and **Peter Frappell** examining the physiological flexibility of an endemic Tasmanian species, spotted skink *Niveoscincus ocellatus* inhabiting different climatic regions. Her project is focusing on body temperature, metabolic rate, performance traits and the field energy expenditure. She is pleased to be staying until June 2012.

Laura Parsley continues her PhD work with Sue and Erik on the endocrinology of reptilian gestation and specifically how embryonic hormone exposure may be modulated and the potential for endocrine disruption in *Niveoscincus metallicus*. Laura has finished field and experimental work for this project and is now concentrating on her histology, hormone and chemical analyses.

Ashley Edwards is continuing her long term project examining key components of the reproductive physiology of the blue tongue lizard (*Tiliqua nigrolutea*). Ashley's work includes a number of key areas including characterisation of the hypothalamic-pituitarygonadal (HPG) axis and examining the key physiological steps by which ectothermic vertebrates living in cold climates assess their capacity to breed.

Tasmania publications

Itonaga, K., Jones, S.M., Wapstra, E. (2011). Effects of variation in maternal carotenoid intake during gestation on offspring innate immune response in a matrotrophic viviparous reptile. *Functional Ecology*, in press.

Itonaga, K., Wapstra, E and Jones, S.M. (2011). Evidence for placental transfer of maternal corticosterone in a viviparous lizard. *Comparative Biochemistry and Physiology Part A*, in press

Itonaga, K., Wapstra, E and Jones, S.M. (2011). A novel pattern of placental leucine transfer during late pregnancy in a highly placentotrophic viviparous lizard. *J Exp Zool Part B: Molecular and Developmental Evolution,* in press.

Uller, T., While, G.M., Cadby, C.D., Harts, A., O'Connor, K., Pen, I., and Wapstra, E. (2011). Thermal Opportunity, Maternal Effects, and Offspring Survival at Different Climatic Extremes in a Viviparous Lizard. *Evolution*, in press.

Olsson, M., Pauliny, A., Wapstra, E., Uller, T., Schwartz, T., and Blomqvist, D. (2011). Sex differences in sand lizard telomere inheritance: paternal epigenetic effects increases telomere heritability and offspring survival. *PlosOne,* in press.

Isaksson, C., While, G.M., Olsson, M., Komdeur, J., and Wapstra, E. (2011). Oxidative stress physiology in relation to life-history traits of a free-living vertebrate: the spotted snow skink, *Niveoscincus ocellatus Integrative Zoology*, in press

Olsson, M., Andersson, S., Wapstra, E. (2011). UV-Deprived Coloration Reduces Success in Mate Acquisition in Male Sand Lizards (*Lacerta agilis). PlosOne*, in press

Olsson, M., Pauliny, A., Wapstra, E., Uller, T., Schwartz, T., Miller, E., Blomqvist, D. (2011). Sexual differences in telomere selection in the wild*, Molecular Ecology*, in press

Isaksson, C., While, G.M., McEvoy, J., van de Commenacker, J., Olsson, M., Groothuis, T.G.G., Komdeur, J. and Wapstra, E. (2011). Aggressive phenotype, but not testosterone influences the oxidative status of a free-living lizard species. *Behaviour*, in press.

Worth, J., Burridge, C., While, G., Wapstra, E. Development of 13 microsatellite loci in the spotted snow skink *Niveoscincus ocellatus* (Squamata: Scincidae). *Conservation Genetics Resource.* 3:287–290.

While, GM., Uller, T., Wapstra, E (2011) Variation in social organization influences the opportunity for sexual selection in a social lizard. *Molecular Ecology*, 20 (4): 844-852

Olsson, M., Wapstra, E., Schwartz, T., Madsen, T., Ujvari, B., Uller, T. (2011). In Hot Pursuit: Fluctuating mating system and sexual selection in sand lizards. *Evolution*, 65 (2): 574-583

Pen, I, Uller, T, Feldmeyer, B, Harts, A, While, GM (While, Geoffrey M.); Wapstra, E (2010). Climate-driven population divergence in sex-determining systems. *Nature, 468 (7322): 436-438*

South Australia

Mike Bull's Lab, Flinders University

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Mike Bull has been leading the team focusing on sleepy lizards and pygmy bluetongue lizards and also started a new project on Slaters skinks in the Alice Springs, NT in collaboration with **Chris Pavey** and **Mark Hutchinson**. The sleepy lizard project is concentrating on behaviour syndromes and social networks among the lizards living in an area, and how that influences the transmission of parasites. The pygmy bluetongue project continues with new insights into social interactions and the impact of grazing (by sheep) on lizard behaviour and conservation strategies including photographic identification of individuals, movement of individuals through the population and the feasibility of translocation and relocation of this species. The slaters skink project will focus on the conservation of this species and the development of artificial refuges, with an aim to use this information in restoration and potential relocation projects in the future.

Stephan Leu has successfully completed his PhD on the causes and consequences of sleepy lizard, *Tiliqua rugosa*, social networks. He had his PhD conferred this April. **Stephan's** findings have been published in Animal Behaviour and Behavioral Ecology Sociobiology (2x), with hopefully more coming soon. **Stephan** has started a postdoctoral position at the University of Newcastle and is complementing his experience in lizard behaviour with research on the population dynamics of frogs.

Steph Godfrey has been continuing her work on social networks and parasite transmission in sleepy lizards, and will be switching over to pygmy bluetongue lizards in the upcoming field season. **Aaron Fenner** has been continuing to work on pygmy bluetongue lizards, in particular how the social organisation of lizards can influence parasite transmission through the population. **Aaron** has also been working on Slaters skink in Alice springs obtaining background information on the lizards use of burrow systems and behaviour as well as detailed information on the burrow structure itself, as part of a new project on these endangered arid zone skinks. **Julie Schofield** is in the final year of her PhD and is using microsatellites and mitochondrial sequences to investigate the level of movement within and between populations and to investigate mating and parentage of the Pygmy Bluetongue lizard (*Tiliqua adelaidensis*). **Melissa Pettigrew** has submitted her PhD investigating the effects of grazing on pygmy bluetongue lizards, and is off to China for 9 months to work with the tiger conservation group. Congratulations **Mel**. **Jana Bradley** has completed her Masters degree investigating behavioural syndromes in sleepy lizards. **Jana** has now started her PhD and will continue to work on sleepy lizards and build on her Masters work investigating behavioural syndromes.

Eli Staugas has just started his honours degree looking at captive population studies in the pygmy bluetongue lizards. **Claire Treilibs** has also joined the lab and will be starting her PhD project on the conservation of Slaters skinks in the next couple of months. **Leili Shamimi** is continuing her PhD on photographic identification of pygmy bluetongue lizards. **Caroline Wohlfeil** is continuing her PhD on social networks and parasite transmission. **Mehregan Ebrihimi** continues his PhD work on the best way to perform translocations of pygmy bluetongue lizards**. Julie Hagen** has submitted her PhD thesis investigating *Corucia*. **Pradip Gyawali** is in the final stages of his Masters degree investigating the endoparasites of sleepy lizards and **Dale Burzacott** continues as Mike Bull's research assistant and lab coordinator.

Bull Publications

Godfrey SS**,** Nelson NJ and CM Bull (2011) Microhabitat choice and host-seeking behaviour of the tuatara tick, *Amblyomma sphenodonti* (Acari: Ixodidae). **New Zealand Journal of Ecology**. 35: 52 – 60.

Godfrey SS**,** Nelson NJ and CM Bull (2011) Ecology and dynamics of the blood parasite, *Hepatozoon tuatarae* (Apicomplexa), in tuatara (*Sphenodon punctatus*) on Stephens Island. **Journal of Wildlife Diseases**. 47: 126 – 139.

Godfrey SS and Hutchinson MN (2010) Notes on diet and reproductive condition of *Ctenotus* (Scincidae) of the mallee of South Australia. **Herpetofauna**. 40(1): 2 – 8.

Godfrey SS, Moore JA, Nelson NJ and CM Bull (2010) Social network structure and parasite infection patterns in a territorial reptile, the tuatara (*Sphenodon punctatus*). **International Journal for Parasitology**. 40: 1575 – 1585.

Herbert JD, Godfrey SS, Bull CM and RI Menz (2010) Developmental stages and molecular phylogeny of *Hepatozoon tuatarae*, a parasite infecting the New Zealand tuatara, *Sphenodon punctatus* and the tick, *Amblyomma sphenodonti*. **International Journal for Parasitology**. 40: 1311 – 1315.

Godfrey, S.S., Moore, J.A., Nelson, N.J., Bull, C.M. (2010) Unravelling causality from correlations: the impacts of endemic ectoparasites on a protected reptile (tuatara). **Parasitology 137:** 275 – 286.

Sharp, A., Schofield, J. and Fenner, A. (2010) The effects of cell grazing on the longevity of spider burrows, and the potential consequences for the endangered Pygmy Bluetongue Lizard. **Ecological Restoration and Management 11**(1) 69-72.

Fenner, A L. and Bull, C M. (2010) The use of scats as social signals in a solitary, endangered scincid lizard, *Tiliqua adelaidensis.* **Wildlife Research** 37 (7) 582-587

Fenner, A L. And Bull, C M. (2011) Responses of the endangered pygmy bluetongue lizard to conspecific scats. **Journal of Ethology**. 29 (2011) 69-77

Fenner, A L. and Bull, C M. (2011) Central-place territorial defence in a burrow dwelling lizard: aggressive responses to conspecific models in *Tiliqua adelaidensis***. Journal of Zoology** 283 (2011) 45-51.

Fenner, A L., Godfrey, S S. and Bull, C M. (2011) Using social networks to deduce whether residents or dispersers spread parasites in a lizard population. **Journal of Animal Ecology**. Online early**.** DOI: 10.1111/j.1365-2656.2011.01825.x**. Mass Spectron**.

Leu, S. T., J. Bashford, P. M. Kappeler, and C. M. Bull. 2010a. Association networks reveal social organization in the sleepy lizard. **Anim. Behav**. 79:217-225.
Leu, S. T., P. M. Kappeler, and C. M. Bull. 2010b. Refuge sharing network predicts ectoparasite load in a lizard. **Behav. Ecol. Sociobiol**. 64:1495–1503.
Leu, S. T., P. M. Kappeler, and C. M. Bull. 2011. The influence of refuge sharing on social behaviour in the lizard *Tiliqua rugosa*. **Behav. Ecol. Sociobiol**. 65:837-847.

University of Adelaide and South Australian Museum

Paul Oliver has finished his PhD on the systematics and evolution of Australian geckos in 2010. Since then **Paul** has been continuing his work on the systematics and evolution of Australasian geckos and frogs, based out of the South Australian Museum and the University of Adelaide. Recent or upcoming publications include several new species descriptions (*Pygopus*, *Cophixalus*, *Nephrurus*, *Cyrtodactylus*), rediscovery of poorly known *Gehyra*, and generic revisions and assessments of species diversity in the gecko genera *Crenadactylus*, *Oedura* and *Nephrurus*. Current foci of research include phylogenies for New Guinea *Cyrtodactylus* (with **Mark Sistrom**), investigation of miniaturisation and diversity in the microhylid frog genus *Choreophyme* (with honours student **Amy White**), and descriptions of numerous additional new species of frog and gecko. In June 2011 **Paul** will move to Melbourne University to commence a McKenzie postodoctoral fellowship, to continue his work on the evolution and systematics of the Australasian herpetofauna.

Oliver Publications

Oliver, P.M. and Richards, S. A new species of small bent-toed gecko (*Cyrtodactylus*, Gekkonidae) from the Huon Peninsula, Papua New Guinea. **Journal of Herpetology**. *Submitted*.
Oliver, P.M. (2011) Further evidence for old radiations originating at the northern edge of the Australian plate. **Proceedings of the National Academy of Sciences of the United States**. Online letter.
Doughty, P. and **Oliver, P.M.** (2011) A new species of *Nephrurus* (Squamata: Gekkota: Carphodactylidae) from the Pilbara region of Western Australia. **Zootaxa**. *In press*.
Oliver, P.M., Tjaturadi, B., Mumpuni, Krey, K. and Richards, S. (2011) A new species of *Cyrtodactylus* (Squamata: Gekkonidae) from the North Papuan Mountains, New Guinea. **Zootaxa**. *In press.*
Oliver, P.M. Bauer, A.M. (2011) Molecular systematics of the Australian gecko genus *Nephrurus*: plesiomorphic grades and progressive biome shifts through the Miocene. **Molecular Phylogenetics and Evolution.** *In press*.
Oliver, P.M, Adams, M. and Doughty, P. (2010) Extreme underestimation of evolutionary diversity within a nominal Australian gecko species (*Crenadactylus ocellatus*). **BMC Evolutionary Biology.** 10, 386.
Richards, S. C. & **Oliver, P**. (2010) A new species of scansorial *Cophixalus* from the Kikori Integrated Conservation and Development Area, Papua New Guinea. **Journal of Herpetology**. 44, 555-562.

Oliver, P.M, Couper, P., Amey, A. (2010) A new species of *Pygopus* from north-east Queensland. **Zootaxa**. 2578, 47-61.

Oliver, P.M and Lee, M.S.Y. (2010) The botanical and zoological codes impede biodiversity research by discouraging publication of unnamed new species. **Taxon**. 59, 1201-1205

Oliver, P.M, Sistrom, M.J., Tjaturadi, B., Krey, K. & Richards, S.J. (2010) On the status and relationships of the gecko *Gehyra barea* Kopstein, 1926, with description of new specimens and a range extension. **Zootaxa**. 2354, 47-57.

Mike Tyler's Group, University of Adelaide

The 2009 Field Guide to Australian Frogs written by **Mike Tyler** and illustrated by **Frank Knight** sold out very quickly. A new edition is underway and will include the five new species described in the interim. **Steve Walker** has joined **Mike** in writing a new edition of 'Frogs of South Australia' as this has not been produced since 1978.

Mike has acted as a consultant for AQIS to identify exotic species introduced from many countries, and is examining their potential impact on Australian environments. **Mike** and **Gavin Prideaux** of Flinders University are collaborating on a series of frog fossils from a cave on the Nullarbor Plain. **Kaya Klop-Toker** has joined the group. She is an Honours student working on a member of the *Litoria rubella* group from the northern Flinders Ranges. The recent flooding has delayed access to the study area. **James Menzies** will be in New Guinea until May.

Tyler Publications

Anstis, M., Tyler, M.J., Roberts, J.D., Price, L.C. and Doughty, P. (2010). A new species of *Litoria* (Anura: Hylidae) with a distinctive tadpole from the north-western Kimberley region of Western Australia. **Zootaxa**.2550:39 – 57.

Graham, L.D., Danon, S.J., Johnson, G., Braybrook, C., Hart, N.K., Varley, R.J., Evans, M.D.M., McFarland, G.A., Tyler, M.J., Werkmeister, J.A. and Ramshaw, J.A.M. (2010). Biocompatibility and modification of the protein-based adhesive secreted by the Australian frog *Notaden bennetti*. **J. Biomed. Mater. Res. 93**:429-441.

Specht, R.L. and Tyler, M.J. (2010). The species richness of vascular plants and Amphibia in major plant communities in temperate to tropical Australia: relationship with annual biomass production. **Int. J. Ecol.**2010: 1 – 17.

Tyler, M.J. (2010) Yes, It's True Frogs are Cannibals (Chinese Language Edition).

Tyler, M.J. (2010) Adhesive dermal secretions of the Amphibia, with particular reference to the Australian limnodynastid genus *Notaden*. In J. Byern and I. Grunwald (Eds.) 'Adhesion Phenomena in Nature. From Structure to Application'. Chapter 11, pp.181-186.Springer, Berlin.

Tyler, M.J. (2010) A new fossil species of frog of the Australian limnodynastid genus *Limnodynastes* Fitzinger from the Oligocene Kangaroo Well Local Fauna of the Northern Territory and tabulation of ilial features of all extant and extinct species. **The Beagle** 26: 115 – 117.

Faivovich, J., Baêta, D., Candioti, F.V., Haddad, C.F.B. and Tyler, M.J. (2011) The submandibular musculature of Phyllomedusinae (Anura: Hylidae): A reappraisal. **J. Morphol**. 272: 354 – 362.

Jackway, R.J., Pukala, T.L., Donnellan, S.C., Sherman, P.J., Tyler, MJ. and Bowie, J.H. (2011). Skin peptide and cDNA profiling of Australian anurans: genus and species identification and evolutionary trends. **Peptides** 32: 161 – 172.

Steinbomer-Ellis, S.T., Scanlon, D., Musgrave, I.F., Tran, T.T.N., Hack, S., Wang, T., Abell, A.D., Tyler, M.J., and Bowie, J.H. (in press). An unusual Kynurenine containing opioid peptide from the skin gland secretion of the Australian Red Tree Frog *Litoria rubella*. Sequence determination by electrospray mass spectrometry. **Rapid Commun. Mass Spectron**.

Australian Capital Territory

Keogh Lab (ANU).

Conrad Hoskin (Postdoc). Conrad completed his ARC fellowship on *Litoria serrata* hybrid zones and has been working as a postdoctoral research associate in the Keogh lab. He recently scored a lectureship at JCU and will be moving to Townsville mid year. He also won a Bush Blitz Postdoctoral Fellowship and will be on that for the first 3 years at JCU. The fellowship is to resolve the diversity and taxonomy of *Oedura* geckos, *Lampropholis* skinks, microhylid frogs and some other eastern and northern herp groups.

Megan Higgie (Postdoc). Megan has been working on her ARC fellowship looking at natural and sexual selection and the role of species interactions in generating diversity. This has involved work in the *Litoria serrata* hybrid zones and on *Drosophila*. Megan will be moving to JCU Townsville mid year to begin a lectureship.

Mitzy Pepper (just handed in PhD). Mitzy is riding on a high after handing in her PhD thesis at the end of March (the Dr. Pepper jokes are well and truly old now). The last year has been spent mainly on that task, but a trip to Central Australia saw me galavanting around with Matt Fujita and Craig Moritz again catching *Heteronotia* in garbage tips with amazing backdrops, and also 6 weeks in northern Japan where I contemplated herps whilst snowboarding. This year I am taking a well overdue "study break" doing lots more travel, and in between all that getting the last of the thesis chapters published. I'm still obsessed with the arid zone, and feel like my work in this area isn't quite done.

Renee Catullo (PhD student). Renee has continued to attempt to sort out how many species of *Uperoleia* plague the planet. A revision of arid zone *Uperoleia* (with description of a new species in WA) will be published in *Zootaxa* any day now. Yes, it has a key to the species of the arid zone. She is currently focusing on species distributions and species numbers in the monsoonal tropics, and promises to one day write a key to that region as well.

Daniel Hoops (PhD student). Dan has just started his PhD this year. He is interested in the neural basis of behaviour and the evolution of neurophysiology. We will be using reptiles as a model to study the underlying changes in neuroanatomy and neurophysiology that accompany the evolution of sexually selected traits. Using state-of-the-art imaging techniques we will be able to study gross neuroanatomy as well as fine-scale cellular structure and the connectivity between brain

regions. Ultimately, we hope to be able to understand a little better how sexual selection acts on the structure and function of the nervous system.

Marta Vidal García (MSc student from Spain). Marta has been hosted at the Keogh lab, where she recently started her Master's thesis. Her project consists of examining the evolution of body shape in myobatrachid frogs in the context of the evolution of Australian environments. By using a robust molecular phylogeny generated by Prof. Keogh et al., she will try to test how habitat use affects morphological diversification in myobatrachid frogs in Australia.

Peri Bolton (Honours student). I am building a multi-gene molecular phylogeny of Australian burrowing elapids, which are primarily distributed over the Australian arid -zone (Genera: *Simoselaps, "Neelaps",* and *Vermicella*). I will use this to examine the contentious relationships between these species and biogeographic questions concerning the diversification of arid biota. I will use molecular dating and tree topology to infer the age and origin of this group and the influence of climatic and geomorphological changes associated with aridification in the evolution of this group and their burrowing behaviour.

University of Canberra

Kate Hodges is maintaining enthusiasm managing full time work at the Murray darling Baisin Authority with a demanding thesis and whole lota waking hours". **Carla Eisemberg** has finished her PhD on pig-nose turtle ecology in PNG and migrated home to Brazil where she has been lecturing.

New South Wales

Mahony/Clulow lab

The Newcastle team have been busy camping at seal rocks (just for fun), drinking red wine with Ken Pollock and Lyndon Brooks after a week long course on the program MARK and planning their next lab bake-off. **Deb Bower** , in her feminism and progression towards life as a crazy cat lady, has managed to reduce the number of penises/study organism in her latest shift to a new taxa - it began with squmates, then turtles, now... finally... frogs! Perhaps a lesbian population of albatross will be on the cards next but in the meantime she's immersing herself with productivity and chytrid processes in the anuran system at Sydney Olympic Park. **Michelle Stockwell,** having handed the Sydney Olympic Park project over, has started studying yet another bell frog project - this time on Kooragang Island. She enjoys reporting on reports in between hosting extremely suave masquerade balls. **Stephan Leu** has joined the amphibian team from the Flinders University to broaden his research program in behavioural ecology to include population ecology and life history theory. He is catching green and golden bell frogs on Kooragang Island whilst initiating behavioural studies on the side.

In PhD land, **Evan Pickett** has been running around catching bell frogs with chytrid to assess the population response of increasing overwinter survival. **James Garnham** is in the processes of gearing up bell frogs with tracking devices to assess winter behaviour and **Carla Pollard** has been busy filling and emptying tubs and then filling them again to asses the role of emphermerality on bell frog breeding. **Simon Clulow** (much to the disgust of everyone) is heading up to the Kimberleys for three weeks on an Aust Geo grant to bother splendida, goannas and crocodiles. Meanwhile back in Newcastle he leaves a highly elite team of volunteers to cover his fingers, which have wandered into pretty much every frog pie that's going on. **Paul Taylor** continues his masters on chytrid growth and heavy metals. **Dan Mc Kenzie** is pursuing his honours on the conservation of the green and golden bell frog on the island and is keeping the frog capture rates pretty high. **Matt McCurry** wowed us all with sexy models for his honours project supervised additionally by **Colin McHenry** on bio mechanics of goannas to infer niche separation, of course nobody talks to him since he can't communicate in "waaaaahhs". **Daniel O'Brien** won the honours award at Newcastle University for a project on phenotypic plasticity and bet-hedging in *Psuedophyre bibroni* and has recently been appointed a position in a consultancy despite displaying his affections for *Juncus acutus* far too passionately. **Veronica McPherson** continues her stella role as the lab manager and will shortly be taking some maternity leave! **Mike Mahony** appears intermittently around the lab, usually followed by an alarm call and retreat whilst bellowing something about the latest meeting he was supposed to be in 10 minutes ago. He recently chaired a successful NSW declining frog working group meeting with the feds in Canberra. **John Clulow** on the other hand, has a cat called Mr Mittens that appears in his garden at regular intervals. He's also been busy working on grants and continuing his work on reproductive biology of... no.. could it be... frogs!!!

Francis Lemckert, Forest Science Centre, NSW Department of Primary Industries – part of the super-department DeTRiTuS (I think that is something like what we are going to be called with the latest NSW Government name changes).

New People to the Lab team: See previous Newsletter in regards to absurdity of this notion. Instead, we have lost Trent Penman to the University of Wollongong, although the hope is that Trent will still be able to sneak in the odd collaboration.

Frank continues to run herp related programs for the NSW government. The main element at the moment is trying to come up with a cost-effective monitoring program for fauna in NSW. Talks with counterparts in NPWS, who are looking at undertaking a similar program in the NSW reserve system, have been fruitful and there is hope that a program can be developed around automated cameras and recorders. Trials will determine if this will successfully monitor at least larger reptiles. Frogs need some further thought as the location of monitoring sites is based on grid points and these generally don't relate at all to water bodies. In the meantime, he continues to monitor sites near Gosford and in the Dorrigo area and, along with assistant Traecey, is further analysing habitat relationships in frogs.

Frank has been up dabbling a bit in western NSW work, undertaking some radio-tracking of green tree frogs and scarlet sided pobblebonks in the Pilliga area as well as continuing some surveys of frogs and reptiles in western NSW reserves. He has also been looking at the taxonomy of the NSW *Cyclorana* spp., trying to determine what does and does not occur in the state and whether there are some undescribed species present. At a more general level, Frank has been drawn into the shadowy world of cane toads, being invited onto the Taren Point Working Group and the national Cane Toad Advisory Group. This fits with his ongoing role as secretary of the NSW Declining Frog Working Group, which continues to meet every six months to discuss all things of froggy importance in NSW. Finally, his research group continues to run the frog, bat and reptile survey, identification and management training courses (Wildlife Schools), entertaining anyone who wants to attend them. Frank Lemckert travelled to the Barmera meeting of ASH and provided a presentation on the representation of reptiles in the National Reserve System. He also provided a talk at the annual Royal Zoological Society of NSW Scientific Forum, co-authoring a presentation on the potential impacts of climate change on Australia's frogs.

NSW DPI Recent Publications

Hamer, R., **Lemckert, F.L.** & Banks, P.B. (2011) Adult frogs are sensitive to the predation risks of olfactory communication. *Biology Letters* In Press – available online.

Lemckert, F & Mahony, M.J. (2010). The relationship among multiple-scale habitat variables and pond use by anurans in northern New South Wales, Australia. *Herpetological Conservation and Biology* **5**: 537–547.

Lemckert, F.L. (2010). The rich early history of frog research in Sydney. *Australian Zoologist* **36:** 102-106.

Lemckert, F. & Grigg, G. (2010). Living in the 80s – seasonality and phenology of frog calling activity at Darkes Forest from 1987-1989. *Australian Zoologist* **35**: 245-250.

Hamer, R., Lemckert, F.L. & Banks, P.B. (2011) Adult frogs are sensitive to the predation risks of olfactory communication. *Biology Letters* **7:**361-363.

CSU frog lab Charles Sturt University

Student news:

Amelia Walcott has just completed her honours project on frog communities in rain fed wetlands systems in the South west slopes and Riverina with a paper outlining the results due to be submitted to the Journal -Hydrobiologia later this month.

Vanessa Griese is writing up her honours work on frog responses to in-stream flood pulses in the Wakool River system, this projects aims improve the delivery of in stream environmental flow pulses to improve breeding outcomes for resident frog species.

Carmen Amos is halfway through her honours project assessing the resilience of frog communities in ox-bow lagoon systems along the Murrumbidgee River. This projects is looking at pre and post drought communities and quantifying the response to the 2010-2011 flood event

Rachel Croft is commencing a honours project on the impact of tadpoles on wetland biofilm communities and detritus breakdown. **Steven Sass** has commenced his PhD research on frog communities in agricultural landscapes in the far-south coast with a focus on refuge habitat and climate change

Research projects:
The 4 year frog, fish and waterbird responses to flooding project conducted in association with Dr Jennifer Spencer NSW Office of Environment & Heritage is wrapping up and we were lucky to get some excellent pre and post flooding response data, as well as information on differing recruitment outcomes resulting from winter and spring flooding. We are now madly analysing the massive dataset and hope to have papers out later this year.

A new project focusing on the Gwydir and Barmah-Milawa wetland systems is due to commence in spring 2011

Andrew Hall is has completed an assessment of the detection probabilities for frogs and tadpoles using a range of differing survey methods (Transects, sweeping, small and large fyke nets, bait traps and seining), and over differing time periods and in differing habitat types. The results so far are extremely interesting, stay tuned for the publication which should be submitted next month.

CSU publications

Smallbone L.T., Luck G.W., Wassens S. (2011) Anuran species in urban landscapes: Relationships with biophysical, built environment and socio-economic factors. Landscape and Urban Planning 101:43-51.

Wassens S. (2010a) Flooding regimes for frogs in lowland rivers of the Murray-Darling Basin in: N. Saintilann and I. C. Overton (Eds.), Ecosystem Response Modelling in the Murray-Darling Basin, CSIRO Publishing Canberra. pp. 213-228.

Wassens S. (2010b) Frogs, in: K. Rogers and T. J. Ralph (Eds.), Floodplain wetland biota in the Murray-Darling Basin: Water and habitat requirements. , CSIRO Publishing, Canberra. pp. 253-274.

Wassens S., Maher M. (2011) River regulation influences the composition and distribution of inland frog communities. River Research and Applications 27:238-246. DOI: 10.1002/rra.1347.

Wassens S., Hall A., Osborne W., Watts R.J. (2010) Habitat characteristics predict occupancy patterns of the endangered amphibian *Litoria raniformis* in flow-regulated flood plain wetlands. Austral Ecology 35:944-955. DOI: 10.1111/j.1442-9993.2010.02106.x.

Southern Cross University at Lismore.

David Newell has been working on cane toads in high elevation closed forests of northern NSW looking at habitat use, thermal tolerances and diets. Based on the dietary results (of the 180 species of invertebrate prey items - snails are common) I am also examining toad diets from sites that are known habitat of the endangered Mitchells rainforest snail.

He has been continuing long-term monitoring of *Mixophyes fleayi* screening for chytrid in conjunction with mark recapture experiments and establishing a monitoring program for high elevation endemic rainforest frogs from the Gondwana rainforest properties (*Assa* and *Philoria*) in conjunction with Mike Mahony and Jean Marc Hero. He has also been conducting a project on Southern Bell Frogs in Melbourne to evaluate the merits of a translocation project using capture mark recapture data.

Newell Recent publications

Newell, D.A. (2011) Recent Invasions of World Heritage Rainforests in north-east NSW by the cane toad *Bufo marinus*. *Australian Zoologis*t 35 (3): 876-883

Ocock Lab, UNSW

Jo Ocock (UNSW, PhD student, supervisors: Prof Richard Kingsford, Dr Trent Penman, Dr Jodi Rowley and Dr Tom Rayner) spent the season September to March living in the Macquarie Marshes, recording the best frogging conditions in over a decade as the Marshes experienced their biggest flood since 2000. She conducted monthly surveys of 30 sites getting up to 12 species calling as the height of the flood coincided with summer rains - that's pretty good for a semi-arid zone wetland! In between surveys, she radio-tracked green tree frogs and barking marsh frogs around the house. Highlights included watching *Uperoleia* males fighting, the giant python in the rubbish tip, watching crucifix frogs initiate amplexus, a visit from the inimitable Marion Anstis to collect and describe crucifix frog eggs, visits to the local primary schools to explain how awesome marshes frogs are, being on ABC news and finding the ornate burrowing frog (and metamorphs!) where no one has seen it before. Now to the analysis. Wish her luck.

Ocock publications

Ocock JF. (in press) Book review: "Floodplain Wetland Biota in the Murray-Darling Basin: Water and Habitat Requirements". Austral Ecology.

Shine Lab, University of Sydney

Rick Shine has finished his ARC Federation Fellowship, but has decided to stay on at Sydney Uni as a Professor rather than go straight to the nursing home. His research continues in the same general directions as has been the case for the last few years, with a few extra twists and turns thrown in as new people arrive with new interests, abilities and obsessions. The tropical fieldwork at Fogg Dam is still a hotspot of activity for the group, but with lots of people making trips away from Middle Point Village to Kununurra to look at the cane toad invasion front as it arrives in WA. Likewise, we still spend a lot of time looking under sandstone rocks (and our brand new artificial mimics of those rocks) along costal NSW in the hope of finding a few elusive broad-headed snakes. Early summer sees our annual pilgrimage to the Brindabella Range to ask even more detailed questions about phenotypic plasticity in reptile embryos; and midsummer sees Rick and his wife Terri take off to New Caledonia to renew their acquaintance with his population of marked seasnakes. Depending on the outcome of our current funding applications, we hope to extend

the cane toad work from the tropics to the south – especially since the toads have so conveniently established a population in the Sydney suburbs, a few kilometers from Matt Greenlees' house.

The research highlight for Rick is the fact that he, Greg Brown and Ben Phillips have had the temerity to suggest that the cane toad invasion reveals a novel evolutionary process –the first plausible one since natural selection was suggested 150 years ago (see http://www.pnas.org/content/108/14/5708.full.pdf+html?sid=fe26a89f-3a26-4dec-abd0-ffc76813d75a).

The most exciting news on the University front since last year is that we managed to lure **Mats Olsson** to a Professorship here at Sydney – substantially increasing the number of human beings in the School who spend their time delving into the private lives of small scaly creatures.

Postdoctoral Fellows

Francois Brischoux obtained a Marie-Curie Fellowship to continue his seasnake collaboration with Rick, but seems likely to be offered a permanent position with the CNRS (the French research agency) and so join an increasingly long list of former and present French collaborators (Xavier Bonnet, Olivier Lourdais, Fabien Aubret) who have obtained CNRS positions after working with us. We suspect that like the others, Francois will continue to come over on a regular basis to criticize Australian cheeses and continue our collaborative research.

Greg Brown spends much of his time practicing the guitar and gazing at photographs of Cate Blanchett. He still ambles down to Fogg Dam to walk along the dam wall each evening, and catches any snakes that are too slow and feeble to escape his clumsy attempts. However, his primary academic focus these days centres on radio-tracking toads, and developing and testing methods of measuring their immunocompetence (especially, as a function of the invasion process). He and Rick are close to completing their final analyses on cane toad impact on the fauna of Fogg Dam, based on several years of survey data before and after toad arrival.

Michael Crossland is also based up at beautiful Middle Point, and has been working with chemists at The University of Queensland on the chemical ecology of cane toad eggs and tadpoles. Specifically, they are in the process of identifying (1) the alarm chemical(s) released by injured cane toad tadpoles that cause reduced growth and survival of conspecifics, and (2) the attractant chemical(s) released by cane toad eggs that are used by cannibalistic cane toad tadpoles to locate and consume eggs.

Weiguo Du is now firmly back in China after three years as a postdoc with us (his second postdoc with us, no less!). Weiguo has taken up a prestigious research position with the Chinese Academy of Sciences, and continues his work on life-history evolution, and on developmental plasticity in reptile embryos.

Sylvain Dubey is planning to return to Switzerland later this year, after having spent a few years here as the lab's molecular genetics expert. Sylvain has worked on a diverse array of projects, from sexual selection in tropical snakes through to

parasite transfer in cane toads, and landscape genetics of snakes and lizards in southern Australia. Most recently, he has worked on (i) geographic variation in the age of temperate-zone reptile and amphibian species, (ii) predicting the effects of climate change on an endangered montane lizard, *Eulamprus leuraensis* (Scincidae), (iii) European tree frog cryptozoology and systematics, (iv) nuclear DNA giving new insights into the relationship of European shrews; and (v) using molecular data to identify the fish species whose eggs are being eaten by Rick's seasnakes in New Caledonia.

Matt Greenlees has had an eventful year that has included award of his Ph D, his wedding, and his rise to media stardom as the expert toad-tracker who followed the feral toads of Sydney to their hidden lair (or at least, that's the way it was described in the newspapers). He is spearheading the new project on ecology, impact and control of cane toads on the southern (NSW) front.

Takashi Haramura will be joining us later in 2011, for a two-year postdoc funded from Japan. Takashi likely will be based at the Middle Point research station, exploring the cues that tell cane toads whether or not a pond is suitable for spawning.

Tom Lindstrom is a mathematically-inclined Swede who has just arrived, with a couple of years funding from Sweden, to (1) Assess autocorrelation and synchrony in movement of radio tracked snakes by combing spectral analysis with Bayesian inference; and (2) carry out hierarchical Bayesian modeling of cane toad movement, currently focusing on individual differences in movement behavior, with the aim of understanding how the toads have changed their movement patterns since reaching Middle Point. Tom's greatest challenge (apart from overcoming Swedish stereotypes which are rife in our group) will be to explain what he does to the rest of us. The science itself should be straightforward, but explaining mathematical models to Rick (especially without Ben Phillips there as an interpreter) likely will be an enormous challenge.

Ligia Pizzatto is concluding her 3-year ARC fellowship project on host-parasite interactions between lungworms, cane toads and native frogs. She is analyzing habitat overlap between Green Tree frogs, Magnificent Tree frogs, and cane toads in the east Kimberley region, by visual sampling and radio-tracking. In laboratory-based experiments she showed these two frog species can successfully host the nematode lungworm that was brought to Australia by the cane toad. The results of her field studies will clarify the probabilities of these native frogs being infected by toad-carried lungworms in the wild.

Jonno Webb has a joint research and teaching position within Biological Sciences. His research portfolio is diverse, ranging from broadheaded snakes in southeastern NSW to quolls in Kakadu. Jonno is also working on other small mammal projects in both areas. The only common feature seems to be proximity of his study sites to good fishing areas, doubtless just a coincidence. Jonno's mark-recapture work in Kakadu is showing that not only does aversion training enable northern quolls to survive long-term in toad-infested sites, but also that the animals breed successfully. The history of science's attempts to do anything to minimize cane toad impact is pretty dismal to date, and the quoll's ability to learn toad-avoidance is one of the first really encouraging results.

PhD students

Joshua Amiel is part of the Great Canadian Invasion. He has been working with Rick for a year, looking at inter as well as intraspecific variation in learning behaviour and brain morphology in amphibians and reptiles. The first chapter of Joshua's thesis, "Smart moves: Effects of relative brain size on establishment success of invasive amphibians and reptiles," suggests that translocated amphibians and reptiles with relatively large brains are more likely to establish successful populations in novel environments. While this trend in amphibians and reptiles agrees with those seen in birds and mammals, it fails to explain how Canadian graduate students, presumably with relatively small brains, have been so successful at invading the Shine Lab. Future modelling including more environmental variables is needed.

Cissy Ballen is a year into her Ph D. Her primary supervisor is Mats Olsson, but Rick cheers a bit from the sidelines. Cissy has worked on the intersection between sexual selection and physiology (endocrinology, reactive oxygen species and the like) on painted dragons. She is also working with the colony of veiled chameleons in our lab.

Christa Beckmann concluded her Ph D on interactions between invasive cane toads and Australian birds, and has been finishing off various ancillary papers before taking up a postdoctoral position. Christa will co-supervise an Honours student on follow-up work looking at toad impacts on native faunal use of bee-eater burrows (and artificial mimics thereof) in the Fogg Dam area.

Camila Both is a Ph D student from Brazil who has been helping us as a volunteer this year, including a long period with Ligia Pizzatto radio-tracking toads and frogs in the Kununurra region.

Kris Bell is currently working as a Research Assistant, but will hopefully shortly be commencing a PhD with Rick, investigating the invasion dynamics of cane toads at the southern extent of their range in Australia. His previous research at JCU focused on the spatial ecology and susceptibility to climate change of tropical reptiles.

Wiebke Kaemper is an exchange student from Germany, and is spending a few months on a project based in northeastern New South Wales, with Jonno Webb and Matt Greenlees. Wiebke is looking at responses of native marsupial predators (*Antechinus*) to invasive cane toads, following up some of the planigale studies that we've done in tropical Australia.

Ben Croak has recently entered into his third year as a PhD student during which he has investigated the feasibility of restoring rock outcrop systems around the Sydney basin for the endangered broad-headed snake. Recently Ben has been investigating movement patterns for this species in the extreme north of their range via radio-telemetry

Elisa Cabrera-Guzman has traveled from sunny Mexico to even sunnier Middle Point to do her PhD on interactions between cane toads and various native animal species in the Northern Territory. In one part of her research she is investigating competitive interactions between tadpoles of cane toads and tadpoles of native

frogs in the lab and in the field. She is studying coexistence and microhabitat use in natural ponds and the effects of interspecific competition on larvae and metamorphs. In particular, she wants to know if native tadpoles affect the success of cane toad tadpoles. The other main focus of her research investigates predation on cane toads (tadpoles and metamorphs) by terrestrial and aquatic native species. She would like to know if this invasive species represents an important food resource for some predators, and whether we might be able to use this information to find native species for biological control of this troublesome anuran.

Edna Gonzalez-Bernal is the other half of our Mexican toad-busting team. Edna spent the second year of her Ph D collecting buckets of cow poo (and making the lab stinky) to understand if cowpats act as significant sources of food, water and warmer temperatures for toads. Some field trials and the wish to evaluate in a parallel way the effects of toads on rates of decomposition of cow poo have kept her near the paddocks of Beatrice Hill Farm in the Northern Territory.

Crystal Kelehear is into her final year of her Ph D research investigating host-parasite interactions between cane toads and their lung parasites. Crystal presented her research on rapid evolution of parasite life history traits in blood-feeding nematodes undergoing range advance at the 2010 International Congress for Parasitology (Melbourne); and her findings of a new parasite in Northern Territory cane toads at the Emerging Amphibian Disease conference (Townsville). Crystal was the recipient of a Research Exchange Award from the ARC/NHMRC Research Network for Parasitology, a travel grant from the Invasive Animals CRC, and the G.H.S. & I.R. Lightoller Scholarship, awarded to her to spend six weeks in two labs in Alabama and Florida (headed by Mary Mendonca and Marty Martin, respectively) and learn new techniques in ecoimmunology. During her time overseas she managed a couple of weeks volunteer work with a great program in a great location: the Blue Iguana Recovery Program, in the Cayman Islands, tough times.

John Llewelyn recently submitted his PhD thesis on cane toads and their interactions with native anurophagous predators. He is currently studying the responses of wild goannas to both cane toads and edible native frogs in the Townsville region, and hopes to replicate the study in toad-naïve populations. In mid-2011, John will begin a post-doc with JCU/CSIRO (Townsville) studying climate-relevant adaptive diversity within and between populations of several wet tropics endemics.

Daniel Moen will be joining the Middle Point crew in the coming wet-season for a project on frog ecomorphology; Daniel is doing his PhD with John Wiens in the USA, and will be coming her as part of his Fulbright Fellowship.

Samantha Price-Rees is completing her fieldwork on bluetongue skinks in the Kununurra region, focusing on whether trained aversion to cane toads can assist lizards to survive the toad onslaught. She is tracking her lizards with new-fangled GPS systems that generate so much data it will likely cause nervous breakdowns to her and both of her supervisors (Jonno and Rick) when it comes time to analyse it all.

Ruchira Somaweera is finding out everything you ever wanted to know about the ecology of freshwater crocodiles in Lake Argyle, and quite a few things you

probably didn't want to know. The impacts of invasive cane toads on this system appear likely to be less severe than was widely anticipated, probably because the young crocodiles turn out to be very quick learners (a trait also reflected in Ruchira's swift uptake of all kinds of bizarre Australian personality traits). Ruchira has been working closely with local management agencies (WA Dept of Environment and Conservation) and community groups (Stop The Toad). Remarkably, he managed to somehow take enough time off a frantic schedule of data collection and snake-catching to become a father. We suspect that he will eventually start gathering data on his son, when his wife Nilu isn't watching.

Reid Tingley has recently started his third and final year of research into biases involved in amphibian introductions across the globe. Amidst modelling other people's hard-earned data and writing up his thesis, Reid has managed to become involved in a variety of tangential projects ranging from the evolution of herp brains to sea snakes. He hopes to one day regain his focus and ultimately obtain a PhD...

Honours students

Iris Bleach will start Honours mid-year, following up Christa Beckmann's work on the interactions between cane toads and native frogs in artificial burrows. If we get organized, she may also look at acoustic interactions between invasive toads and native frogs.

Research Assistants

Melanie Elphick is still holding the Shine Lab together, an increasingly challenging task since **Adele Haythornthwaite** left us at the end of 2010. Mel basically does everything, mostly keeping Rick out of trouble and formatting and proof-reading more manuscripts on cane toad biology than any human being should ever have to confront in the course of a lifetime. Remarkably, Mel seems to actually enjoy it. She is also continuing field studies on the three-lined alpine skink *Bassiana duperreyi* in the Brindabellas, gathering a long-term dataset on the thermal properties of lizard nests. Forget Mother Teresa: Mel is the one who deserves sainthood.

Michelle Franklin is based at Middle Point, helping Michael Crossland and the others in a range of laboratory and admin tasks that keep the place running smoothly. She has been performing Michael's pheromone trials, testing the reactions of toad tadpoles when they encounter pheromones derived from the tadpole alarm pheromone. She also turned the lab into a sweatshop, sewing 50 large tadpole enclosures for Elisa to use in field environments testing interactions between toad and caerulea tadpoles. **Nilu Somaweera** has taken a break from tadpole and toad husbandry to produce a child, but plans to come back to work eventually to escape from hearing her husband Ruchira's interminable and horrifyingly boring stories about giant crocodiles and snakes.

Jai Thomas has just about finished his undergrad degree at Macquarie Uni, and has spent a few months enjoying the comfortable wet-season weather at Kununurra working on easy-to-catch, easy-to-handle, easy-to-radiolocate Yellow-spotted monitors. He recommends that if anyone needs a restful break, they should head up to the Kimberley and work on 2-metre long goannas in dense vegetation. Jai's main

focus has been on evaluating the feasibility of taste-aversion training to reduce the impact of invasive cane toads on these iconic lizards.

Shine Lab Publications

Amiel, J. J., R. Tingley, and R. Shine. 2011. Effects of relative brain size on establishment success of invasive amphibians and reptiles. **PLoS ONE 6:e18277**.

Aubret, F., and R. Shine. 2010. Fitness costs may explain the post-colonisation erosion of phenotypic plasticity. **Journal of Experimental Biology 213:**735-739.

Aubret, F., R. J. Michniewicz, and R. Shine. 2011. Correlated geographic variation in predation risk and antipredator behaviour within a wide-ranging snake species (*Notechis scutatus*, Elapidae). **Austral Ecology**, in press.

Beckmann, C., and R. Shine. 2010. The power of myth: the (non) impact of invasive cane toads (*Bufo marinus*) on domestic chickens (*Gallus gallus*). **Animal Production Science 50:**847-851.

Beckmann, C., and R. Shine. 2011. Toad's tongue for breakfast: exploitation of a novel prey type, the invasive cane toad, by scavenging raptors in tropical Australia. **Biological Invasions**, in press.

Beckmann, C., M. R. Crossland, and R. Shine. 2011. Responses of Australian wading birds to a novel toxic prey type, the invasive cane toad *Rhinella marina*. **Biological Invasions**, in press.

Brischoux, F., A. Kato, Y. Ropert-Coudert, and R. Shine. 2010. Swimming speed variation in amphibious sea snakes (Laticaudinae): a search for underlying mechanisms. **Journal of Experimental Marine Biology and Ecology 394:**116-122.

Brischoux, F., and R. Shine. 2011. Morphological adaptations to marine life in snakes. **Journal of Morphology**, in press.

Brischoux, F., X. Bonnet, and R. Shine. 2011. Conflicts between feeding and reproduction in amphibious snakes (sea kraits, *Laticauda* spp.). **Austral Ecology 36:**46-52.

Brischoux, F., L. Pizzatto, and R. Shine. 2010. Insights into the adaptive significance of vertical pupil shape in snakes. **Journal of Evolutionary Biology 23:**1878-1885.

Brischoux, F., X. Bonnet, Y. Cherel, and R. Shine. 2011. Isotopic signatures, foraging habitats and trophic relationships between fish and seasnakes on the coral reefs of New Caledonia. **Coral Reefs 30:**155-165.

Brown, G. P., B. L. Phillips, and R. Shine. 2011. The ecological impact of invasive cane toads on tropical snakes: field data do not support predictions from laboratory studies. **Ecology**, in press.

Brown, G. P., C. Shilton, and R. Shine. 2011. Measuring amphibian immunocompetence: validation of the phytohemagglutinin skin-swelling assay in the cane toad, *Bufo marinus*. **Methods in Ecology and Evolution**, in press.

Cabrera-Guzmán, E., M. R. Crossland, and R. Shine. 2011. Can we use the tadpoles of Australian frogs to reduce recruitment of invasive cane toads? **Journal of Applied Ecology**, in press.

Cotner, S., Ballen, C., Brooks, C. D., Moore, R. 2011. Instructor gender and student confidence in the sciences: A need for more role models? **The Journal of College Science Teaching**, in press.

Crossland, M. R., and R. Shine. 2011. Cues for cannibalism: cane toad tadpoles use chemical signals to locate and consume conspecific eggs. **Oikos 120:**327-332.

Crossland, M. R., M. N. Hearnden, L. Pizzatto, R. A. Alford, and R. Shine. 2011. Why be a cannibal? The benefits to cane toad (*Rhinella marina*) tadpoles of consuming conspecific eggs. **Animal Behaviour**, in press subject to revision.

Du, W-G., B. Zhao, Y. Chen and R. Shine. 2011. Behavioural thermoregulation by turtle embryos. **Proceedings of the National Academy of Sciences (USA)**, in press.

Du, W-G., and R. Shine. 2010. Why do the eggs of lizards (*Bassiana duperreyi*, Scincidae) hatch sooner if incubated at fluctuating rather than constant temperatures? **Biological Journal of the Linnean Society 101:**642-650.

Du, W-G., M. B. Thompson, and R. Shine. 2010. Facultative cardiac responses to regional hypoxia in lizard embryos. **Comparative Biochemistry and Physiology 156:**491-494.

Du, W-G., D. A. Warner, T. Langkilde, T. Robbins, and R. Shine. 2010. The physiological basis of geographic variation in rates of embryonic development within a widespread lizard species. **American Naturalist 176:**522-528.

Du, W-G., H. Ye, B. Zhao, D. A. Warner, and R. Shine. 2010. Thermal acclimation of heart rates in reptilian embryos. **PLoS ONE 5:**e15308.

Dubey, S., and R. Shine. 2010. Plio-Pleistocene diversification and genetic population structure of an endangered lizard (the Blue Mountains water skink, *Eulamprus leuraensis*) in southeastern Australia. **Journal of Biogeography 37:**902-914.

Dubey, S., and R. Shine. 2010. Restricted dispersal and genetic diversity in populations of an endangered montane lizard (*Eulamprus leuraensis*, Scincidae). **Molecular Ecology 19:**886-897.

Dubey, S., and R. Shine. 2010. Evolutionary diversification of the lizard genus *Bassiana* (Scincidae) across southern Australia. **PLoS ONE 5 (9):**e12982.

Dubey, S., and R. Shine. 2011. Geographic variation in the age of temperate-zone reptile and amphibian species: southern Hemisphere species are older. **Biology Letters 7:**96-97.

Dubey, S., and R. Shine. 2011. Predicting the effects of climate change on an endangered montane lizard, *Eulamprus leuraensis* (Scincidae). **Climatic Change**, in press.

Dubey, S., J. S. Keogh, and R. Shine. 2010. Plio-pleistocene diversification and connectivity between mainland and Tasmanian populations of Australian snakes (*Drysdalia*, Elapidae, Serpentes). **Molecular Phylogenetics and Evolution 56:**1119-1125.

Dubey, S., M. Chevalley, and R. Shine. 2011. Sexual dimorphism and sexual selection in a montane scincid lizard (*Eulamprus leuraensis*). **Austral Ecology 36:**68-75.

González-Bernal, E., G. P. Brown, E. Cabrera-Guzmán, and R. Shine. 2011. Foraging tactics of an ambush predator: the effects of substrate attributes on prey availability and predator feeding success. **Behavioral Ecology and Sociobiology**, in press.

Greenlees, M. J., and R. Shine. 2011. Impacts of eggs and tadpoles of the invasive cane toad (*Bufo marinus*) on aquatic predators in tropical Australia. **Austral Ecology 36:**53-58.

Greenlees, M. J., B. L. Phillips, and R. Shine. 2010. An invasive species imposes selection on life-history traits of a native frog. **Biological Journal of the Linnean Society 100:**329-336.

Greenlees, M., B. L. Phillips, and R. Shine. 2010. Adjusting to a toxic invader: native Australian frog learns not to prey on cane toads. **Behavioral Ecology 21:**966-971.

Huang, W-S., H. W. Greene, T-J. Chang, and R. Shine. 2011. Territorial behaviour in snakes. **Proceedings of the National Academy of Sciences (USA)**, in press.

Kelehear, C. and H. I. Jones. 2010. Nematode larvae (Order Spirurida) in gastric tissues of Australian anurans: a comparison between the introduced cane toad and sympatric native frogs. **Journal of Wildlife Diseases 46:** 1126-1140

Kelehear, C., G. P. Brown, and R. Shine. 2011. Influence of lung parasites on growth rates of free-ranging and captive adult cane toads. **Oecologia 165:**585-592.

Kolbe, J. J., M. Kearney, and R. Shine. 2010. Modeling the consequences of thermal trait variation for the cane toad invasion of Australia. **Ecological Applications 20:**2273-2285.

Lane, A., and R. Shine. 2011. When seasnake meets seabird: ecosystem engineering, facilitation and competition. **Austral Ecology**, in press.

Lane, A., and R. Shine. 2011. Intraspecific variation in the direction and degree of sex-biased dispersal among sea-snake populations. **Molecular Ecology**, in press.

Lane, A., and R. Shine. 2011. Phylogenetic relationships within laticaudine sea kraits (Elapidae). **Molecular Phylogenetics and Evolution**, in press.

Llewellyn, D., G. P. Brown, M. B. Thompson, and R. Shine. 2011. Behavioral responses to immune system activation in an anuran (the cane toad, *Bufo marinus*): field and laboratory studies. **Physiological and Biochemical Zoology 84:**77-86.

Llewelyn, J., B. L. Phillips, G. P. Brown, L. Schwarzkopf, R. A. Alford, and R. Shine. 2011. Adaptation or preadaptation: why are keelback snakes (*Tropidonophis mairii*) less vulnerable to invasive cane toads (*Bufo marinus*) than are other Australian snakes? **Evolutionary Ecology 25:**13-24.

Löwenborg, K., R. Shine, S. Kärvemo, and M. Hagman. 2010. Grass snakes exploit anthropogenic heat sources to overcome distributional limits imposed by oviparity. **Functional Ecology 24:**1095-1102.

Löwenborg, K., R. Shine, and M. Hagman. 2011. Fitness disadvantages to disrupted embryogenesis impose selection against suboptimal nest-site choice by female grass snakes, *Natrix natrix* (Colubridae). **Journal of Evolutionary Biology 24:**177-183.

Nelson, D., M. R. Crossland, and R. Shine. 2010. Indirect ecological impacts of an invasive toad on predator-prey interactions among native species. **Biological Invasions 12:**3363-3369.

Nelson, D., M. R. Crossland, and R. Shine. 2011. Behavioural responses of native predators to an invasive toxic prey species. **Austral Ecology**, in press.

Nelson, D. W. M., M. R. Crossland, and R. Shine. 2011. Foraging responses of predators to novel toxic prey: effects of predator learning and relative prey abundance. **Oikos 120:**152-158.

O'Donnell, S., J. K. Webb, and R. Shine. 2010. Conditioned taste aversion enhances the survival of an endangered predator imperiled by a toxic invader. **Journal of Applied Ecology 47:**558-565.

Olsson, M., T. Schwartz, E. Wapstra, T. Uller, B. Ujvari, T. Madsen and R. Shine. 2011. Climate change, multiple paternity and offspring survival in lizards. **Evolution**, in press subject to revision.

Orofino, R.P., Pizzatto, L., Marques, O.A.V., 2010. Reproductive biology and food habits of *Pseudoboa nigra* (Serpentes: Dipsadidae) from the Brazilian cerrado. **Phyllomedusa 9:** 53-61.

Pike, D. A., B. M. Croak, J. K. Webb, and R. Shine. 2010. Subtle - but easily reversible - anthropogenic disturbance seriously degrades habitat quality for rock-dwelling reptiles. **Animal Conservation 13:**411-418.

Pike, D. A., J. K. Webb, and R. Shine. 2011. Removing forest canopy cover restores a reptile assemblage. **Ecological Applications**, in press.

Pike, D. A., J. K. Webb, and R. Shine. 2011. Chainsawing for conservation: ecologically informed tree removal for habitat management. **Ecological Managementand Restoration**, in press.

Pizzatto, L., and R. Shine. 2011. You are what you eat: parasite transfer in cannibalistic cane toads. **Herpetologica**, in press.

Pizzatto, L., and R. Shine. 2011. The effects of experimentally infecting Australian tree frogs with lungworms from invasive cane toads. **International Journal of Parasitology**, in press.

Pizzatto, L., and R. Shine. 2012. Ecological impacts of invading species: do parasites of the cane toad imperil Australian frogs? **Austral Ecology**, in press.

Pizzatto, L., C. M. Shilton, and R Shine. 2010. Infection dynamics of the lungworm *Rhabdias pseudosphaerocephala* in its natural host, the cane toad *Bufo marinus*, and in novel hosts (Australian frogs). **Journal of Wildlife Diseases 46:**1152-1164.

Price-Rees, S. J., and R. Shine. 2011. A backpack method for attaching GPS transmitters to bluetongue lizards (*Tiliqua*, Scincidae). **Herpetological Conservation and Biology**, in press.

Price-Rees, S. J., G. P. Brown, and R. Shine. 2010. Predation on toxic cane toads (*Bufo marinus*) may imperil bluetongue lizards (*Tiliqua scincoides intermedia*, Scincidae) in tropical Australia. **Wildlife Research 37:**166-173.

Shine, R. 2010. The ecological impact of invasive cane toads (*Bufo marinus*) in Australia. **Quarterly Review of Biology 85:**253-291.

Shine, R. 2011. How can we ensure that conservation policies are based on science, not emotion? **Pacific Conservation Biology**, in press.

Shine, R. 2011. Rapid evolution of introduced cane toads and native snakes. Guest box in F. Allendorf, G. Luikart and S. Aitken, ***Conservation and Genetics of Populations***, Second Edition, Wiley-Blackwell, New Jersey, USA.

Shine, R. 2011. It's evolution, but not as we know it. **Australasian Science** June 2011: 16-19.

Shine, R., and J. S. Doody. 2011. Invasive-species control: understanding conflicts between researchers and the general community. **Frontiers in Ecology and the Environment**, in press.

Shine, R., F. Brischoux, and A. Pile. 2010. A seasnake's colour affects its susceptibility to algal fouling. **Proceedings of the Royal Society B 277:**2459-2464. (Selected by 'Faculty of 1000').

Shine, R., G. P. Brown, and B. L. Phillips. 2011. An evolutionary process that assembles phenotypes through space rather than time. **Proceedings of the National Academy of Sciences (USA)**, in press.

Somaweera, R., N. Somaweera, and R. Shine. 2010. Frogs under friendly fire: how accurately can the general public recognize invasive species? **Biological Conservation 143:**1477-1484.

Somaweera, R., J. K. Webb, G. P. Brown, and R. Shine. 2011. Hatchling Australian freshwater crocodiles rapidly learn to avoid toxic invasive cane toads. **Behaviour**, in press.

Telemeco, R. S., T. A. Baird, and R. Shine. 2011. Tail waving in an Australian scincid lizard (*Bassiana duperreyi*) functions to deflect attacks rather than as a pursuit-deterrent signal. **Animal Behaviour**, in press subject to revision.

Telemeco, R., R. S. Radder, T. A. Baird, and R. Shine. 2010. Thermal effects on reptile reproduction: adaptation and phenotypic plasticity in a montane lizard. **Biological Journal of the Linnean Society 100:**642-655.

Tingley, R., B. L. Phillips, and R. Shine. 2011. Establishment success of introduced amphibians increases in the presence of congeneric species. **American Naturalist 177:**382-388.

Ujvari, B., R. Shine, and T. Madsen. 2011. Detecting the impact of invasive species on native fauna: cane toads (*Bufo marinus*), frillneck lizards (*Chlamydosaurus kingii*), and the importance of spatial replication. **Austral Ecology**, in press.

Ujvari, B., R. Shine, and T. Madsen. 2011. How well do predators adjust to climate-mediated shifts in prey spatial distribution? A field study on Australian water pythons (*Liasis fuscus*). **Ecology**, in press.

Ujvari, B., R. Shine, L. Luiselli, and T. Madsen. 2011. Climate-induced reaction norms for life-history traits in pythons. **Ecology**, in press subject to revision.

Warner, D. A., and R. Shine. 2011. Interactions among thermal parameters determine offspring sex under temperature-dependent sex determination. **Proceedings of the Royal Society B 278:**256-265.

Webb, J. K., W-G. Du, D. A. Pike, and R. Shine. 2010. Generalization of predator recognition: Velvet geckos display anti-predator behaviours in response to chemicals from non-dangerous elapid snakes. **Current Zoology 56:**337-342.

Michael B. Thompson's Lab
School of Biological Sciences, University of Sydney

Matt Brandley joined the lab in June on a University of Sydney Postdoctoral Fellowship. Matt was previously at Yale where he worked on the evolution of viviparity in lizards. He was in Australia in time for the ASH meeting at Barmera. He has been working on the first ever mRNA transcriptome of lizard uterus, from a species of North African *Chalcides.* We are now awaiting transcriptome sequences for viviparous and oviparous populations of *Saiphos equalis* from NSW. After spending time working on rat livers in the Electron Microscope Unit, **Joanna Biazik** has returned to the lab as a post doc to continue the work on uterine angiogenesis that **Scott Parker** began. Unfortunately, she won't be with us for long before heading off to the USA and Europe in search of her next post doc. Jo has identified, for the first time, the distribution of progesterone receptors in the uterus of pregnant lizards. **De-Anne Attard** conducted and has just submitted her honours thesis on the ecophysiology of *Saiphos equalis*. Nothing that she discovered sways our view that this is a weird lizard species. **Oliver Griffith** worked as a research assistant during the last half of 2010 and then began an honours project on molecular aspects of the evolution of complex placentae in lizards.

Martha Ramírez-Pinilla from the Universidad Industrial de Santander, Colombia, completed her sabbatical study of the uterus of *Niveoscincus coventryi* before returning to Colombia. The project was very successful and her electron microscopy showed structural features of placental development that have not observed previously using the light microscope. **Bridget Murphy** continues to make great discoveries, showing convincingly that *Eulamprus quoyii*, the species upon which a simple type I placenta is based, actually has a morphologically distinct and complex region of the placenta. **Scott van Barneveld** has submitted his PhD on the biology of seven species of the genus *Lampropholis*, aimed generally at understanding why *L. delicata* is such a good invasive species. One of his results shows that *L. delicata* is the only species of the seven to show thermal acclimation. **Shervin Aslanzadeh** and **Nadav Pezaro** are both in the final stages of writing their PhD theses. Shervin studied the interaction between central netted dragons, *Ctenophorus nuchalis*, and plague locusts, while Nadav worked on sex determination in water dragons, *Physignathus lesueurii*, along a thermal range from Cairns to Brisbane, Sydney, ACT and the Snowy Mountains. Nadav is co-supervised by **Sean Doody**. **Qiong (Jasper) Wu** extended the work on cadherin molecules in the uterus of *Niveoscincus* species from her masters to *Lerista bougainvillii* in the summer "holidays" and now has the work accepted for publication. Just so that she has no spare time, she is now preparing for publication **Cameron Fong's** honours work on structural changes in the uterus of two species of

Niveoscincus. **Jacquie Herbert** has reduced her hours and now works just one day a week in the lab. However, she continues to be at the centre of managing everything. **Bec (Rebecca) Bray**, who is doing a PhD at Monash with **David Chapple**, is cosupervised by Mike. Her work on lizards on Lord Howe Island is going from strength to strength. A significant result is showing that the endemic Lord Howe Island skink is not as rare on the main island as initially thought. Bec manages to make it to Sydney occasionally for discussions about her work. Other (non-herp) students in the lab, **Phoebe Hill** and **Sam Clayman**, who worked on viviparity in sharks and physiology of marine molluscs, have now submitted their PhD theses, and **Fran van den Berg**, is now right into her PhD project on flat rock spiders.

Bridget Murphy continues to win awards for her sciences and her communication of science, including Fresh Science and the Faculty of Science postgraduate excellence award.

Mike Thompson presented papers on the evolution of viviparity at the Ninth International Congress of Vertebrate Morphology. Punta del Este, Uruguay in July 2010, the Society for Reproductive Biology (SRB) Conference, in Sydney in Sept, 2010, and at ASH at Barmera. The lab was well represented at the Barmera meeting of ASH, with presentations by **Bec Bray, Shervin Aslanzadeh, Bridget Murphy, Nadav Pezaro, Scott van Barneveld**, and **Matt Brandley**. It was also a bit of a nostalgia tour for Mike, as Lake Bonney was the main study site for his PhD, 30 years ago. Mike also co-authored two papers with Jim Stewart and Tom Ecay and others on calcium provision in Viviparous lizards at the Society for Integrative and Comparative Biology, in Salt Lake City, Utah. **Qiong Wu** and **Mike Thompson** both presented papers at the Australian and New Zealand Society for Comparative Physiology and Biochemistry, **Deakin University** in November 2010.

Thompson Publications.

Wu, Q., M.B. Thompson & C.R. Murphy. 2011 Changing distribution of cadherins during gestation in the uterine epithelium of lizards. Journal of Experimental Zoology (accepted 14 April, 2011).

Chapple, D.G., S.N.J. Chapple & **M.B. Thompson**. 2011. Biological barriers in south-eastern Australia drive phylogeographic divergence in the garden skink, *Lampropholis guichenoti*. Journal of Biogeography (accepted 28th March, 2011).

Murphy, B.F., S.L. Parker, C.R. Murphy & **M.B. Thompson**. 2011. Placentation in the eastern water skink (*Eulamprus quoyii*): a placentome-like structure in a lecithotrophic lizard. Journal of Anatomy (published on-line 29th March, 2011; http://onlinelibrary.wiley.com/doi/10.1111/j.1469-7580.2011.01368.x/pdf).

Murphy, B.F., S.L. Parker, C.R. Murphy & **M.B. Thompson**. 2010. Angiogenesis of the uterus and the chorioallantois in the eastern water skink *Eulamprus quoyii*. Journal of Experimental Biology 213, 3340-3347.

Parker, S.L., C.R. Murphy & **M.B. Thompson**. 2010. Uterine angiogenesis in squamate reptiles: implications for the evolution of viviparity. Herpetological Conservation and Biology 5(2): 330-334.

Herbert, J.F. C.R.Murphy & **M. B. Thompson**. 2010. Calcium ATPase localization in the uterus of two species of *Pseudemoia* (Lacertilia: Scincidae) with complex placentae. Herpetological Conservation and Biology 5(2): 290-296.

Biazik, J.M., **M.B. Thompson** & C.R. Murphy. 2010. Paracellular and transcellular transport across the squamate uterine epithelium. Herpetological Conservation and Biology 5(2): 257-262.

Thompson, M.B., D.G. Blackburn & S.L. Parker. 2010. Reproduction in reptiles from genes to ecology: a retrospective and prospective vision. Herpetological Conservation and Biology 5(2): 252-256.

Stewart, J.R., A.N. Mathieson, T.W. Ecay, J.F. Herbert, S.L. Parker & **M.B. Thompson**. 2010. Uterine and eggshell structure and histochemistry in a lizard with prolonged uterine egg retention (Lacertilia, Scincidae, *Saiphos*). Journal of Morphology 271(11): 1342-1351.

Pelster, B., A.C. Gittenberger-de Groot, R.E. Poelmann, P. Rombough, T. Schwerte, **M.B. Thompson**. 2010. Functional plasticity of the developing cardiovascular system: examples from different vertebrates. Physiological and Biochemical Zoology 83(5): 775-791.

Grigg, G.C., **M.B. Thompson**, L.A. Beard & P. Harlow. 2010. Oxygen levels in mound nests of *Crocodylus porosus* and *Alligator mississippiensis* are high, and gas exchange occurs primarily by diffusion, not convection. Australian Zoologist 35: 235-244.

Du, W., **M.B. Thompson** & R. Shine. 2010. Facultative cardiac responses to regional hypoxia in lizard embryos. Comparative Biochemistry and Physiology 156A: 491-494.

MINUTES FOR 34TH AGM OF THE AUSTRALIAN SOCIETY OF HERPETOLOGISTS – BARMERA, SOUTH AUSTRALIA (21/9/2010)

Meeting opened and welcome by Mark Hutchinson at 5:57 pm.

Apologies: Graeme Gillespie, Mike Mahony, Dale Roberts, Michelle Stockwell, Jane Melville, Trent Penman, John Clulow.

Secretary's Report: Frank Lemckert noted that for 2008/2009 the society had 99 paid members and five honorary life members. The society had 20 new members register for 2009/2010.

Treasurers Report: Glenn Shea noted that he was sorting out some anomalies with bank statements, but the cents added up. More would be reported on at the next AGM.

The reports were moved to be accepted by Murray Littlejohn and seconded by Eridani Mulder. They were accepted unanimously.

Committee: It was proposed that the committee be recognised as standing for the 2009/2010 financial year. This was nominated by Simon Hudson and seconded by Lin Schwarzkopf and was unanimously endorsed.

The meeting closed at 6:00PM.

MINUTES FOR 35TH AGM OF THE AUSTRALIAN SOCIETY OF HERPETOLOGISTS – BARMERA, SOUTH AUSTRALIA (21/9/2010)

The meeting was opened by Mark Hutchinson at 6:01PM.

Apologies: Graeme Gillespie, Mike Mahony, Dale Roberts, Michelle Stockwell, Jane Melville, Trent Penman, John Clulow.

Secretary's Report: Frank Lemckert noted there were 74 members paid up for the 2010/2011 financial year as well as the five life members and that there were 35 new members in that list. Frank noted that a number of people were not paid up members even though they thought they were as any dues received recently were put towards the previous year's membership if they were not paid up for that year (2009/2010). Frank will inform all people who are not paid up what they owe to be fully financial members. Marc Hero believed that people should be considered paid up for the following year after payment even if they were not financial the previous year. Mike Thompson noted that this was not constitutional and missed years needed to be filled in. This was also a problem that the auditors had noted to Glenn Shea and payments need to avoid skipping years wherever possible. Memento (Hermes) Hudson noted that this should not be a problem as the fee was very low. Frank noted that people, including Rick Shine, wanted a credit card facility for fee payment. This is something that the incoming treasurer can investigate, but Glenn Shea noted that this is not as simple to implement as it seems.

Treasurer's Report: Glenn noted that the books still need work to reconcile payments from various areas. Money from the WA conference had still not been transferred to the ASH books because of missing paperwork and the need to transfer signatories, which is not easy to do. This is hopefully to be rectified by the new ASH Committee. Glenn noted that the ASH membership and membership renewal forms on the web had contained the old ASH prices until only very recently and that this had resulted in a significant reduction in fees that could have been collected. Frank noted that this had been changed only with some delay after several requests to do so, but should not be a problem any longer, although new forms would need to be posted to reflect changes in the ASH Committee. Glenn did note that the direct deposit system had provided some benefits, but there were problems with people not having provided notification to Glenn of their payments to the bank and so it was not clear who had always paid money and when, especially as it took some time for bank statements to arrive and some were missing. Four people were noted to have said that they had paid into the account, but no money had been received in the account and it was not clear where the money had gone. One member had sent two cheques without signing them and another had sent multiple cheques to pay for the same fees.

Simon Hudson moved that both reports be accepted and this was seconded by Lin Schwarzkopf. They were accepted by the members.

Glenn noted that all people who had paid will have receipts sent to them very shortly.

Business arising (and deferred from previous meeting).
Marc Hero provided an update on the bid for the 2016 World Congress. He asks that all people save and attend the 2012 Congress in Canada to provide representation for Australia. Proposals for the 2016 Congress will open shortly. Scott Keogh is working on the 2016 bid, noting that Australia last held the Congress in Adelaide in 1993. Deb Bower asked where it would be held. Scott and Marc Hero indicated in August 2016 in Cairns. Mike Thompson had noted that calls had been made for symposia for the 2012 Congress. ASH should aim to host at least one. He also noted that, at the last World Congress (Manaus), China had indicated an interest in holding a World Congress and would support Australia's bid for 2016 if we supported their bid for 2020. There are concerns that Australia may lose the bid because we have already held one World Congress and so other Asian nations would have priority. ASH should consider further its options.

Mike Thompson noted that he was charged with putting information on the ASH website in regards to bequests. He had researched this and it would be available soon.

Mark Hutchinson and Mike Thompson noted that the constitution was now rather old and could do with some refreshing to bring it up to more modern standards (eg including women as entities).

Mike Thompson spoke to the issue of maintaining a significant proportion of the ASH executive within one city or at least in close proximity. The current executive had needed to spend some considerable time organising accounts and membership which had not been maintained in a standard/continuous order through previous years and the fact that the executive had all been based in Sydney had greatly facilitated working through the problems that had arisen through time. These had been significant and threatened to led to a loss of incorporation for the Society. Mike proposed that three core office bearers at least should be elected from the one city for a period of three years to ensure a better long-term management of ASH. This should rotate through Australia over time. The Presidency and the organiser of the next conference need not be the same as had occurred through more recent years. This was all acceptable under the constitution as the President, Vice-President and Ordinary Members can currently hold office for a maximum of three years. Ross Alford thought this may make things difficult for more regional areas and suggested that only the secretary and treasurer need be in the one place. Ben Phillips noted that it would be better for the office bearers to be in the same place as the conference. Apart from the President these are often separated. Deb Bower asked if three signatories are required within the executive and Mike Thompson said yes. Lin Schwarzkopf was concerned that rules might get in the way of effective organisation. The system had worked perfectly alright until recently. Mike Thompson noted that we had to run ASH according to the rules of our constitution. The regular changes and spatial separation of office bearers had led to a breakdown in communications over time and a failure to follow these rules in some instances. This had almost resulted in the dis-incorporation of the society.

Mike Thompson suggested that, whatever happens, there needs to be a review of the constitution and a review of wording. Mark Hutchinson suggested that the signatories, whoever that is, have to be in the same town at the same time in order to undertake some financial transactions of ASH. This includes all three having to go to the bank to change the current set of signatories to the new ones and change addresses for bank statements. Running ASH for three years at a time would be most efficient.

Glenn Shea noted that three main committee members need to be together to hold the AGM wherever and whenever it is held.

Glenn Shea next noted that there had been some threat of the Peter Rankin Trust Fund being closed down. It is the only discipline-based grant in Herpetology in Australia and pays out sums of up to $1000 per annum. It was initiated to commemorate Peter Rankin and the other Rankin family members were now deceased. The Australian Museum currently runs it and they now have no Research Manager in Herpetology, only a collections manager and there was consideration of winding the bequest down. The proposal has been put forward that ASH may wish to take over the running of the fund. This was a decision that the incoming committee should make and should talk with the AM about this.

Mike Thompson noted that, under the Constitution, endorsed nominations for each committee position need to be provided three weeks before the AGM and this had not taken place in the last two years. This needed to be rectified in the future.

Mark Hutchinson opened the floor for nominations for the new ASH committee.

Memento (Hermes) Hudson noted that there was still a need to determine if the Constitution should be changed and if there was a need to set the ASH committee structure.

Mike Thompson put forward a motion proposing that the President, Secretary and Treasurer take the respective role for three years and be from the same location. Simon Hudson suggested that this be amended so that only the Secretary and Treasurer be set this way. Mike Thompson noted that the President is a major contact point for the Society. Mark Hutchinson said that it worked okay still with an absentee president. Glenn Shea indicated that it worked well with the Secretary and Treasurer working together. Rick Shine suggested that these two positions should be in place for three years.

The motion was put forward then that the Treasurer, Secretary and one other ASH committee position be held for three years at a time (proposed Rick Shine and seconded by Frank Lemckert). This agreed to by majority vote.

Paul Doughty proposed that Lin Schwarzkopf be elected president. Seconded by Rick Shine and accepted unanimously.

Lin accepted, but noted her concerns that the "fixing" of positions was not a good idea and could cause problems. Mark Hutchinson noted that Mike Thompson had raised this because of problems that had occurred and this was a means to avoid them.

Simon Hudson proposed that Mark Hutchinson be elected vice-president. Seconded by Lin Schwarzkopf and accepted unanimously.

Nick Clemann proposed that Ben Phillips be elected treasurer. Seconded by Mark Hutchinson and accepted unanimously.

Frank Lemckert proposed that Deb Bower be elected editor. Seconded by Mike Thompson and accepted unanimously.

Marc Hero proposed that Eridani Mulder be elected secretary. Seconded by Marion Anstis and accepted unanimously.

Mike Thompson proposed that Matt Greenlees be elected an ordinary member. Seconded by Frank Lemckert and accepted unanimously.

Nick Clemann proposed that Leonie Valentine be elected an ordinary member. Seconded by Lin Schwarzkopf and accepted unanimously.

At this point in time it was proposed in absentia by Mike Tyler (through Mark Hutchinson) that Murray Littlejohn be ejected from the meeting. This was seconded by Simon Hudson and agreed to by majority vote. Murray almost left.

Scott Keogh was retained as the appointed Public Officer for ASH.

It was proposed that the next ASH Conference be held somewhere near Townsville in Queensland and be organised by Lin Schwarzkopf. Lin suggested winter 2012, but it was noted that this would clash with the World Congress year. Simon Hudson noted that ASH traditionally does not hold a meeting in World Congress years. It was suggested around Christmas, but Lin noted that this would be hot and cyclone season. Mike Bull suggested holding it in 2011. Rick Shine suggested that ASH could reasonably now be held every 12 months as was the case for most other Australian societies. Lin said that she would consider this and send out ideas. Marc Hero suggested that World Congress years be ASH conference “leap” years.

Memento noted that she did not like concurrent sessions and could their continued use be discussed by the new committee. Lin noted that it works out better with so many talks. Simon Hudson suggested adding a day. Mark Hutchinson pointed out that extending conference length added to the expense, a significant factor for students, and so concurrent sessions allowed a maximum number of presentations without making the conference unduly long. Eridani Mulder and Deb Bower suggested, speed talks (only five minutes). Ross Alford said that this worked okay for the Amphibian Disease Conference. It will be considered.

Lin thanked the outgoing committee for their efforts.

The meeting was closed at 7:00 pm local time.