

THE AUSTRALIAN SOCIETY OF
HERPETOLOGISTS

INCORPORATED



NEWSLETTER 45

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Please direct all membership enquiries to the Treasurer, Glenn Shea. 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, Frank Lemckert.

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A. S. H.



35th Meeting
Barmera, South Australia
20-23 September, 2010

The **venue** is **Lakeshed Camp**, on the shores of Lake Bonney, one of the larger permanently flooded billabongs along the Murray River. The town of Barmera, South Australia is a few minutes drive away.

Travel. Barmera is about 2½ hours drive from Adelaide. Those not driving to the conference can fly to Adelaide, where we are planning to arrange a 40-seat bus to leave from Adelaide airport on the afternoon of Sunday the 19th, with a return charter organised for the afternoon of Wednesday the 22nd.

Two commercial bus services also stop at Barmera:

Greyhound (<http://www.greyhound.com.au/ServiceInformation/timetables.aspx>)

Premier Stateliner (<http://www.premierstateliner.com.au/timetables.html>)

The **region** is a meeting place for two major habitat types, the south-eastern mallee habitat and the Murray River corridor, each with their own distinctive mix of species.



Editor's Report



The organising committee are gearing up for the 35th ASH conference to be held on the shores of Lake Bonney, in Barmera 2010. Aside from the usual interesting presentations on all things reptile and frog, there will also be symposia on phenotypic plasticity and biogeography of arid zone reptiles. The conference will be held at a perfect time of year as the scaleys will be waking from winter slumber and preoccupied chasing their lovers.

Some of the east-coast herpos are planning a road-trip from Sydney through to Barmera over four days of herp packed fun, through western NSW. Everyone is welcome, so if you are interested in joining us email Deb at <Deborah.Bower@gmail.com>. The trip has a lot to live up to after the Nullarbor leg, complete with Dugite and shenanigans. The theme of this years ASH is yet to be confirmed but if the Latin dance party goes ahead after the final dinner, it may prove good motivation to bust out our finest frills and feathers as we venture through New South Wales.

There have not been any ASH conferences since the last newsletter but herpetologists have been convening at other related events such as the 'Emerging Amphibian Disease' conference hosted at James Cook University in Townsville, the 10th International Congress of Ecology in Brisbane and the Genetic Society Australia, in Canberra.

A big thanks to the regional reporters who have been nagging people, chasing, collecting and organising reports for their various states. Nearly all the current regional reporters have done this for the past four newsletters, they are a fantastic team so appreciate them and buy your state's reporter a beer at the next ASH conference.

I trust you are all knee deep in your research and management in various corners of Australia and I look forward to catching up with everyone shortly in Barmera. There will be bright sunny days with potentially a rather chilly breeze and extremely cool nights, so bring clothes for all weather to fully enjoy the desert and mallee!



Congratulations!

Two of our members — Simon Hudson and Memento Hermes — married on 12 June on the Gabba Cricket Ground in Brisbane. We wish them all the fitness in the world...



Photo supplied by Mike Thompson



**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.

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NEW MEMEBERSHIP FORM

Name	
Student or non-student?	
Email	
Organisation	
Address for Mail	
Phone/FAX Numbers	
Do you wish to be placed	

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)

Signed (seconder)

Herpetological interests of new member.....

A massive thank you to our regional reporters...

North Queensland
South Queensland
Northern Territory
Western Australia
New South Wales
Australian Capital Territory
South Australia
Victoria
Tasmania

Rebecca Webb
Harry Hines
Dane Trembath
Dale Roberts
Frank Lemckert
David Wong
Aaron Fenner
David Chapple and Rebecca Bray
Geoff While



A sweet little nose: *Brachyuophis morrisoni* (Horner 1998) from Djinkarr, north central Arnhem Land.

The Peter Rankin Trust Fund for Herpetology

The Peter Rankin Trust Fund for Herpetology is an Australia-wide fund which seeks to provide small grants-in-aid to Australian residents interested in herpetology. Each year, a call for applications is made for these grants-in-aid to be awarded. Find out more about the application criteria and how to apply.

Applications are now being called for the latest round of grants-in-aid to be awarded by the Peter Rankin Trust Fund for Herpetology – the deadline for applications has been extended to 30th July 2010. It is expected that awards will be announced by late-August 2010.

Applications will be considered in any of the following three categories:

- any private individual with a general interest in herpetology
- honours student
- postgraduate student

Individual grants will range to a maximum of \$1,000.

Applicants must be a resident in Australia and must not already hold a professional appointment. We particularly seek applications from young, relatively inexperienced people with a beginning interest in reptiles and amphibians.

Please access the application form through: <http://australianmuseum.net.au/Peter-Rankin-Trust-Fund-for-Herpetology>

Application should be sent to:

The Peter Rankin Trust Fund for Herpetology
The Australian Museum
6 College Street
SYDNEY NSW 2010

Any questions should be directed to:

Dr Ross Sadlier
Herpetology Section
The Australian Museum
6 College Street
SYDNEY NSW 2010
Ph: (+612) 9320 6259

Northern Territory

Museum and Art Gallery of the Northern Territory

This year marked the retirement of **Dr. Paul Horner** who has worked at the museum for over 25 years http://www.ntnews.com.au/article/2009/12/21/110951_ntnews.html. Due to his exceptional work at the museum, Paul was recently given the appointment of Emeritus Curator of Terrestrial Vertebrates. During his career with the museum, Paul succeeded in his goal of naming an Australian reptile after each letter of the alphabet and his life long obsession to revise the *Cryptoblepharus* genus. On behalf of the Museum and Art Gallery of the Northern Territory, Research Associate **Dane Trembath** and Technical Officer **Tom Parkin** thank **Paul Horner** for all he has taught them and we will attempt to continue his taxonomic studies of the herpetofauna of Northern Australia. **Dane Trembath** continues his studies on the ecology and taxonomy of tropical snakes and even keeps a few lizards and frogs on his office shelf to eventually work on. **Tom Parkin** has excelled in his museum duties and has started his own ecological study on the Mangrove snakes of Darwin Harbour with local herpetologist **Brendan Schembri**. We look forward to seeing an ASH presentation on this topic in the future. In ending, **Dane Trembath** and **Tom Parkin** have also become (to the best of their knowledge) the only Australian herpetologists to ever collect a Pygmy Hippopotamus in the Northern Territory http://www.ntnews.com.au/article/2009/11/17/101801_ntnews.html. We hope this event will one day become a Glenn Shea ASH Trivia Night Question in the future.

Keith Christian lab. Charles Darwin University

Keith and postdoc, **Chris Tracy** (now generally considered a Darwin local after eight years in the Territory) are continuing to investigate hydoregulation in amphibians, involving plenty of weighing in the field, reweighing and bladder emptying (frog bladders, that is). Two Masters students from France (**Camille LeNoëne** and **Thomas Tixier**) are helping to observe behaviour associated with periods of water uptake using cameras. CT has also put together an interesting study showing that transmitters and beads in the body cavity of frogs end up in the bladder, and then can be expelled from the body - strange but true. A relatively recent arrival from the US, **Chris Gienger** (postdoc Chris II) who previously worked on Gila monsters and rattlesnakes is now working on something much safer - Saltwater Crocodiles. He is investigating the digestive and metabolic physiology of the crocs, and has put considerable effort into design of a respirometry setup for a five-and-a-half meter croc.

Sebastian Iglesias graduated back in May 2009 after finishing his PhD on seasonal physiology of *Lophognathus*.

Steve Reynolds is at the terminal end of his PhD on osmolality and hydric relations of frogs in the Top End - the response to frequent questioning - 'almost finished' can be heard resounding in the corridors of Building Yellow 2. Steve has significantly curtailed the field work but last wet season was involved in the Darwin amphibian monitoring project (DAMP) with Biodiversity (NRETAS) personnel **Peter Dostine**, **Tony Griffiths**, **Alistair Stewart** and **Stuart Young**.

Mick Guinea continues to visit Bare Sand Island each year in the dry season to accumulate data on nesting Flatback Turtles. PhD student **Emma Francis** is working on mangrove snakes in Darwin harbour and hoping to find excuses to visit exotic locations (PNG, Indonesia, etc.) to do a genetic study.

Visitors **Renee Catullo** and photographer Mike visited in Jan-Feb in the search for *Uperoleia*, involving several boggings, plenty of mozzies, a series of very late nights (but with certain advantages such as a frog-stalking Black Bittern at two in the morning), and a visit to the Bulwaddy swamps. Renee has material from the Kimberley also and as a result the *Uperoleia* picture is now more confusing than ever.

Queensland

ADEG-amphibian disease ecology group.

James Cook University was invaded by a strange breed of scientist recently: the frog lover. ADEG hosted a 5 day conference on Emerging Amphibian Diseases. As many of you will know, this topic is important as emerging diseases, particularly chytridiomycosis, are causing an unprecedented loss of amphibian biodiversity. The conference aimed to highlight international research and management in the fields of diagnosis, epidemiology, microbiology, pathogenesis, virulence, immunity, bioaugmentation and treatment relating to chytridiomycosis. Although the majority of time was focused on chytridiomycosis, there was a whole day dedicated to other amphibian diseases. It was attended by approximately 60 research scientists and wildlife managers from 10 countries: Australia, NZ, PNG, South Korea, Japan, India, USA, Ecuador, Colombia and Switzerland

It was organised by researchers at JCU, **Dr Andrea Phillott**, **Dr Lee Slerratt**, **Dr Lee Berger** and **Prof Rick Speare** who are leading international researchers in the field. It follows on from a very successful similar conference organised by Rick Speare and Lee Berger in Cairns in 2000, *Getting the Jump! on Amphibian Disease* that led to chytridiomycosis being listed as a key threatening process to amphibians in Australia. The organisers recognized the need for another conference on amphibian diseases to further foster international collaboration and sharing of ideas to solve this complex conservation problem which continues to threaten amphibian biodiversity. It is hoped that this conference will similarly lead to an obvious solution to the current problems such as mitigating the impact of chytridiomycosis and other emerging diseases in the wild.

Some of the lead presenters were: Prof. Rick Speare JCU, 40 years experience in infectious disease control and first proposed disease was causing amphibian extinction, Dr Lee Berger JCU, lead international discovery of chytridiomycosis and its impact on amphibians, Dr Louise Rollins-Smith USA, lead research on immunity to chytridiomycosis over last 10 years, Dr Reid Harris USA, lead research into use of probiotics to control chytridiomycosis, Mr Gerry Marantelli, lead management of recovery of frog populations due to disease and other factors, Dr Phil Bishop, lead NZ response to threat of chytridiomycosis.

After only one day break, many of the attendees were back at work, attending the emerging amphibian disease workshop. This was an action packed, hands on workshop designed for early-career researchers, wildlife managers, amphibian keepers and students new to the field of amphibian diseases. It involved developing skills in diagnosis, treatment, microbial studies and culture, collection of anti-microbial peptides, field methods, husbandry, necropsy, hygiene, study design and epidemiological analyses. With classes starting at 8.30am and not finishing until 9pm, it was hard work, but very worthwhile.

ADEG has also gained two more postgraduate students: **Laura Grogan**, who hopes to understand any innate and adaptive immunity to chytridiomycosis in order to improve re-introduction success of captive frogs. And **Joshua Daskin** who is focusing on ecologically- and environmentally-induced variation in the behaviour of symbiotic bacteria from chytridiomycosis-threatened tree frogs. Josh is in **Ross Alford's** lab at JCU for the year on a Fulbright Scholarship from the U.S.A.



Emerging amphibian disease conference dinner at Billabong sanctuary, Townsville

Queensland Museum

Patrick Couper and **Andrew Amey** have had a busy year with field commitments. With DERM staff, they surveyed localities in the Gympie area in an attempt to locate new populations of the critically endangered Nangur Skink, *Nangura spinosa*. Whilst a number of sites offered suitable habitat, no new populations were found. The two known populations are in protected areas approximately 40 km apart. They participated, along with former museum curator and honorary, **Jeanette Covacevich**, in a survey of the Steve Irwin Wildlife Reserve, aiming to catalogue the herpetofauna of this beautiful reserve along the Wenlock River on the western side of Cape York. Patrick and Andrew also participated in surveys of Bridge Creek, northwest of Cooktown, and the Hann Tableland, west of Cairns, in association with Bush Blitz, a federally funded project surveying the biodiversity of recent acquisitions to the national reserve system. This exercise provided valuable reference and genetic material for the QM collection and extended the range of *Ctenotus quinkan*. Andrew is investigating the seasonality of breeding in Brisbane *Hemidactylus frenatus* populations and embarking on monthly spotlighting trips to the suburbs to obtain a statistically robust sample. This task is proving rather more difficult as the weather cools. The Queensland Museum launched its new website in May which features significant herpetological content, supplied by Patrick and Andrew (<http://www.qm.qld.gov.au/>). This content will be updated and augmented as time allows.

New South Wales

Forest Science Centre, Industry and Investment

The research focus over the last 12 months has been on developing a monitoring program for reptiles and amphibians in the forests of western NSW and northern NSW. Not much monitoring has actually happened yet due to varying circumstances, but it is now well planned. The work over the coming year will be undertaken with the help of local Forests NSW staff and will trial use of remote recorders for frogs as well as ground searches and pitfalling for reptiles. Whether enough data can be collected to make meaningful monitoring results at an acceptable cost remains to be seen.

Frank Lemckert continues to monitor his special ponds in the Watagan Mountains and maintains a big list of micro-chipped *Litoria peronii* that will provide a lot of information on population dynamics, if he can ever get around to analysing it. He still keeps an eye on *Litoria littlejohni* to work out why they live only in such a small area of the forest.

Trent Penman continues to be mostly consumed by fire research, but has managed to be side-tracked occasionally onto frogs and has especially been looking at the climatic envelopes and potential effects of climate change on frogs, concentrating on the Sydney Basin. The results suggest ugly times are ahead for some species.

There have been some new collaborations through the University of New South Wales (see their report) that may lead to more extensive work in the semi-arid zone in the future. Frank continues to work with the University of Newcastle teams in various ways.

New People to the Lab team: Yeah right. This is the government and they don't believe in hiring new researchers.

Frank Lemckert has also maintained some contact with the Feds at the Department of the Environment, Water, Heritage and the Arts and has undertaken surveys of reserves in western NSW. Frank and trusty assistant **Tracey Brassil** tried very hard to notice only reptiles and frogs and had mixed results with catastrophic fire weather and then huge floods impeding the work (go figure). They'll try to get a bit more survey done in the coming year. Their involvement has led to a laborious assessment of the number of fauna and flora records found inside and outside of the National Reserve System, with frogs and reptiles featuring prominently. To have a look at this, visit the Bush Blitz website: <http://www.bushblitz.org.au/reports.php>.

Trent Penman continues his work in Eden working with Forests NSW and DECCW to establish population management zones for the Giant Burrowing Frog in the Eden management area.

Outstanding science or awards to the Lab: Somewhere along the line Frank received his PhD. Is that something like an award?

Macquarie University: Stow lab update

Earlier this year our lab space was completely refurbished which we are now settling into. Although for a few years I have been slightly distracted from research on herps we are starting to make a shift back. Of our herp research in arid Australia, **Paul Duckett** has now finished his field work on Tree Dtellas and Tree skinks while **Steve McAlpin** has had a very successful start with Tjakura from around Uluru. Both are now settling into some genetics in the lab. Back on the east coast **Vince Repaci** is making some nice inroads towards assays for functional bits of the genome in *Egernia* and **Siobhan Dennison** is completing her year long honours project on the population genetics of the Copper Tail skink.

The Whiting Lab

Martin Whiting moved from Johannesburg to the sedate suburbs of Macquarie Uni in October 2009. The lab is currently constructing large outdoor enclosures for experimental and mating system studies and generally getting set up for the upcoming field season. Since arriving at MQ Martin has taken on four new PhD students: **Dan Noble** is working on parasite mediated sexual selection in *Eulamprus quoyii*; **Alana Mailey** is working on *Egernia*, testing the social intelligence hypothesis for the evolution of brain size; **Marco Barquero** is working on signal evolution in *Amphibolurus* and **Dani Chandrosoma** is working on sexual selection and signalling in Eastern Water Dragons. Martin will be working on blue tongues and water dragons in his spare time.

University of Newcastle: Mike Mahony's lab

James Garnham, Evan Pickett and **Carla Pollard** have all commenced their PhDs after completing honours in our lab. All are working on different areas of Green and Golden Bell Frog conservation. A new research assistant, **Veronia Menz** has joined the lab having undertaken her PhD at James Cook University.

Michelle Stockwell has successfully released *Litoria aurea* at the Shortland Wetlands Centre as an experiment for controlling chytridiomycosis. These results suggest that the addition of NaCl to small, created waterbodies can provide a protective effect from the chytrid fungus, resulting in fewer infected individuals and higher survivorship in juveniles.

We have received a major grant to establish a breeding colony of green and golden bell frogs for eventual reintroduction into trial sites at Kooragang Island and Ash Island.

Simon Clulow received a grant to survey for the Booroolong Frog (*Litoria booroolongensis*) in the Central West catchment of NSW and also received further funding from Industry and Investment NSW to continue his project to study the effect of trout on two endangered frogs in the Styx River catchment.

Australian Museum

Jodi Rowley is now based in the AM Herpetology lab for a further 3 years continuing her work on south-east Asian amphibians courtesy of financial support through ADM Capital Foundation (Hong Kong). **Cecilie Beatson** was appointed permanently to the position of Technical officer in Herpetology in October 2009 and has effectively taken control.

Ross Sadlier was awarded a PhD. By Publication from Griffith University (Gold Coast) for work on the scincid lizard fauna of New Caledonia (supervisors **Marc Hero** and **Glenn Shea**). Ross continues work on the systematics of the islands lizard fauna with **Aaron Bauer, Sarah Smith** and **Glenn Shea**, doubling the number of species known in the past 10 years, and on ecological aspects of the lizard fauna with **Herve Jourdan** (IRD Noumea). Ross attended an IUCN/Conservation International workshop in January 2010 to assess the status of New Caledonian lizards, over half the islands lizard fauna is at some level of threat. **Jodi Rowley** has received a subaward from the John D. and Catherine T. Macarthur Foundation for a collaborative project entitled "Amphibian and Reptile Biodiversity in the Lower Mekong: Synthesizing Knowledge and Building Capacity". This should keep Jodi in the forests of Vietnam for a few more years.

The Herpetology Section moved into office and lab facilities in the recently completed Research and Collections building in late 2008. Lab facilities and access to the collection areas are excellent.

Taronga Conservation Society Australia: Herpetofauna Division

In early 2009 **Scott Cashins** arrived at Taronga Zoo as a self-funded Post-Doctoral Fellow from James Cook University, Qld. His research focus is on ecological aspects of acquired immunity to Chytrid fungus in declining frog species. Since arriving, Scott has located a field population of declining Booroolong Frogs in Abercrombie River National Park (in the southern highlands south of Oberon, NSW) and collected a founder population for holding and breeding at Taronga Zoo. So far six spawn have been produced, and the resulting frogs will be used for acquired immunity work later this year. Up to 1000 of these will be released in summer 2010 and survivorship in the field monitored. Scott's has almost completed a pilot study on susceptibility to, and techniques to cure, chytrid in the laboratory. Four treatments are currently being compared in their efficacy in curing chytrid infected Booroolong Frogs. The most successful treatment will be used during the Booroolong frog release in summer 2010 to immunize frogs against chytrid prior to release.

Research Outcomes: Captive breeding and experimental reintroduction of declining NSW frog species, and Fijian Crested Iguana conservation programs dominate our current research. This work is being coordinated by Michael McFadden and Peter Harlow at Taronga Zoo, with help from all 8 staff in the Herpetofauna Division.

Corroboree Frogs: Our captive breeding project for the southern corroboree frog started in 2006 with one and two year-old frogs. In 2009 a second off-exhibit refrigerated container was obtained to increase our holding and breeding capacity for this species. This species takes four to five years to mature, so this year we had our first successful breeding with over 300 fertile eggs laid. Some of these eggs will be returned to the high country of Kosciuszko and released into disease-free water tanks, while the remainder will be kept for breeding in the future. The field component of this pioneering work is being coordinated by our NSW DECCW partners, headed by Dr **Dave Hunter**.

Booroolong frogs: In 2007 we obtained founders of this declining species from the Tumbarumba area of NSW to provide stock for experimental reintroduction and to investigate captive husbandry and breeding. This species had not been kept or bred in captivity previously, and proved to be an ideal 'laboratory frog' due to its ease of keeping and breeding, and large spawn size (up to 1500 eggs). Eight spawn were obtained from 16 founder animals, and the tadpoles and young frogs were reared in biosecure rooms, housing only this species, under strict quarantine. 610 frogs were individually marked by toe clipping and released along a 1.5 kilometre transect of creek near Tumbarumba in February 2008 after pathology screening to ensure they did not contain any pathogens not present in the wild population. This frog population has been surveyed six times each summer since release by **Dave Hunter** of NSW DECCW and his team, and the frog's survival and eventual breeding closely monitored.

A new group of founder animals has also been collected from the Abercrombie River catchment on the central-western slopes of NSW. This new population will form the core of the zoo's captive breeding and reintroduction programs in future years

Yellow spotted Bell frogs: One of the first Australian frog species to disappear (due to chytrid fungus) and to seemingly go extinct was the yellow-spotted bell frog, *Litoria castaneae*. Once found in the high country along the western slopes of NSW in the Canberra - Orange area and on the New England tablelands, the last living frog was seen in 1977.

A population of about 100 frogs have recently been 're-discovered' along two km. of creek on the western slopes on NSW near Yass. NSW DECCW staff, with the assistance of Taronga Herpetofauna Division staff, have been collecting tadpoles to establish a founder population for a captive breeding program based at Taronga Zoo.

Taronga currently hold 14 recently metamorphosed yellow-spotted bell frogs, and we hope to increase the captive number to around 40 by the end of 2010. Once these frogs mature we hope to breed them for reintroduction experiments, as part of a joint TCSA-DECCW conservation project.

Fijian Crested Iguanas: The National Trust for Fiji has recently received international funding to implement the IUCN Species Recovery Plan for the Fijian Crested Iguana. **Peter Harlow**, as senior author of the Recovery Plan, is on the steering committee for the plan's implementation and regularly visits Fiji in this capacity. In February 2010 he, **Robert Fisher** (from U.S. Geological Survey) and National Trust staff completed rapid surveys for iguanas and introduced predators on nine inhabited and one uninhabited, isolated small islands in the far north-east of Fiji. Night surveys for iguanas and discussions with the locals gave new information on the distribution and abundance of the two species of Fijian iguanas found in this area, plus updated information on an expanding population of feral green iguanas (*Iguana iguana*: recently and illegally introduced). One new island having crested iguanas was located, several islands with historical records of banded iguanas have since had mongoose introduced and thus the iguanas (plus three species of ground birds and two large skink species) have been extirpated. Feral cats (and cane toads) exist on all inhabited islands, and both species of Fijian iguana on these island are either extirpated (6 islands) or extremely rare and continue to decline (3 islands). The single uninhabited and cat-free island surveyed had no previous records of any iguana species being present; we found a population estimated at over 700 banded iguanas.

Part of the Recovery Plan for the crested iguana involves translocation to new islands, captive breeding of iguanas from selected island populations and removal of goats from islands with declining crested iguana populations. Genetic work by **Scott Keogh** and his team has shown that every island population is genetically distinct, so captive breeding of island populations on the verge of extinction has begun. In April-May 2010 five iguanas from the island of Monuriki were captured as the first founders for a breeding group held at Kula Eco Park, a private Fiji wildlife education and conservation breeding centre in Fiji.

University of NSW: Richard Kingsford's group

Opening a new front in herpetological research in NSW, the Australian Wetlands and Rivers Centre, headed by **Prof. Richard Kingsford** has two students currently engaged in frog research. **Lauren Harrison** will hand in her honours thesis at the end of June. She has been investigating patterns of species richness in the Macquarie-Bogan catchment. Lauren has been supervised by Prof Kingsford, Kim Jenkins, Tom Rayner and Frank Lemckert. **Joanne Ocock** commenced PhD studies in August 2008, and is examining the response of inland frogs to flooding vs. rainfall. Her fieldwork is based in the Macquarie Marshes, where she has been reaping the benefit of good timing due to a spring environmental flow release, followed by heavy summer rains and subsequent flooding. Jo is being supervised by Prof. Kingsford, Trent Penman, Jodi Rowley and Tom Rayner.

Rowena Hamer completed her honours looking into the responses of *Mixophyes fasciolatus* and *Limnodynastes peronii* to the presence of conspecific, heterospecific and predator scents at shelter sites. The responses were intriguing and suggested that frogs have highly sophisticated abilities to detect scents and consider the trade-offs in what to do about them. **Rowena** received the University Medal for outstanding honours work.

A paper on the responses of *Mixophyes fasciolatus* to snake and other frog scents has been submitted to Ecological Letters, with supervisors Peter Banks and Frank Lemckert as co-authors.

University of Sydney: School of Biological Sciences, Michael B. Thompson

Martha Ramírez Pinilla, from the Universidad Industrial de Santander in Colombia, is doing her sabbatical leave in the lab and has taken up one part of the ARC-funded uterine angiogenesis project— she is studying angiogenesis during pregnancy in *Niveoscincus coventryi*. **Rebecca Bray** has started her PhD on Lord Howe Island lizards (see below) on a grant to Mike Thompson and Dave Chapple. Dave has also appointed **Kim Miller**, formerly of Victoria University of Wellington, to work on the project as a postdoctoral fellow. Both Rebecca and Kim are based at Monash with Dave. **Robin Andrews** from Virginia Tech spent the 2009-2010 summer in the lab working on the eggs of geckos as part of her sabbatical leave. She will be back next summer to continue the work. We are looking forward to **Matt Brandley** joining the lab in June. Matt received a prestigious University of Sydney Postdoctoral Fellowship and will be joining us from Yale to work on molecular aspects of the evolution of viviparity.

Mike Thompson presented papers on the evolution of viviparity at the 17th Conference of the International Federation of Anatomical Associations, Cape Town, **South Africa** in August 2009; the International Summit Forum on Biological Science and Technology, Hangzhou, **China** in November, 2009 and at the Southern Connection Congress, Bariloche, **Argentina**, in February, 2010. **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. **Mike Thompson** has been invited to present papers at the 9th International Congress of Vertebrate Morphology in **Uruguay** in July 2010 and at the Society for Reproductive Biology (SRB) Conference in **Sydney** in September.

Joanna Biazik is incorporating some lizards into her research on livers as a postdoctoral fellow in the Electron Microscope Unit. **Scott Parker**, the Postdoctoral Research Associate on an ARC grant with Mike and Chris Murphy from the School of Medical Sciences, made great progress in studying at the development of blood vessels (angiogenesis) in the uterus and embryos of lizards before he returned to the USA in December to take up a faculty position at Coastal Carolina University in North Carolina. **Bridget Murphy** is also working on the uterine angiogenesis and making great discoveries; she discovered a new factor that stimulates growth of blood vessels in *Saiphos equalis* and a functionally and morphologically distinct region of the placenta in *Eulamprus quoyii*. **Scott van Barneveld** has extended his work on the physiological ecology of the invasive lizard species, *Lampropholis delicata* by studying five other species of *Lampropholis* as well. He should finish that work this year. **Shervin Aslanzadeh** is more than half way through her PhD study on the interaction between central netted dragons, *Ctenophorus nuchalis*, and plague locusts. Netted dragons can eat a lot of locusts in one sitting and tracking 100 locusts at 15 frames per second on video is making her cross-eyed! **Nadav Pezaro**, who is conducting a PhD study on temperature-dependent sex determination in water dragons, *Physignathus lesueurii*, has now incubated eggs from water dragons along a thermal range from Cairns to Brisbane, Sydney, ACT and the Snowy Mountains. Nadav is being co-supervised by **Sean Doody**. After completing her Masters of Wildlife Studies project on the thermal biology of the fossorial skink, *Saiphos equalis* **Qiong (Jasper) Wu** did an MSc on the distribution of cadherin molecules in the uterus of two species of *Niveoscincus* during pregnancy. At the same time, **Cameron Fong** studied the structural changes in the uterus in the same two species of *Niveoscincus* for his honours degree in the School of Medical Sciences. After completing his honours project on the ecological and physiological consequences of nocturnal activity in the panther skink, *Ctenotus pantherinus*, **Chris Gordon** worked on monkeys in South America, but managed to publish two papers from his thesis at the same time. **Jacquie Herbert** continues to co-ordinate all the comings and goings in the lab and is involved in some way with all of the projects mentioned here. There are other students in the lab working on non-herp projects. **Phoebe Hill** and **Sam Clayman**, who are working on viviparity in sharks and physiology of marine molluscs, should finish their PhDs this year, and **Fran van den Berg**, who completed her honours project on flat rock spiders (they live under rocks with lizards!), has begun her PhD to extend the work further.

David Llewellyn did his honours project on behavioural and physiological responses of the immune system of cane toads, jointly in the lab and with Rick Shine. David did an excellent job and won a University medal and the NSW Rhodes Scholarship to take up a PhD project at Oxford in 2010 (unfortunately, it won't be in a herp-related field).

Mike Thompson and **David Chapple** received a Hermon Slade Foundation Grant to study the native (*Oligosoma lichenigera*, *Christinus guentheri*) and introduced (*Lampropholis delicata*) lizards on Lord Howe Island, Rebecca Bray and Kim Miller are working on that project.

Rick Shine's Lab

Rick Shine's group continues to focus on three main projects, oriented around invasive cane toads (what are they doing, how does it affect native fauna, and how might we reduce that effect?), broadheaded snakes (why are they endangered and how can we reverse that situation?) and montane scincid lizards (how does the incubation environment affect the kind of lizard that emerges from an egg?).

Rick continues to spread himself across those three projects, and an increasingly heavy schedule as a media tart. He still does the fieldwork for his seasnake ecology research himself, but just about everything else in the way of data-gathering has been farmed off to others. His greatest frustration is that the students and postdocs are just too damn efficient at gathering data, so there are too many manuscripts full of results for him to work on.

The biggest project is the cane toad one, with most of the people involved based up at our field station in Middle Point, near Humpty Doo (and only a few kilometres from the magical Fogg Dam, our long-term centre of tropical herp research). Rick has attracted a few awards recently, including a Lifetime Achievement Award at the recent Wildlife Expo in Sydney.

Joshua Amiel is one of Rick's new post-graduate students. His passion is reptiles and his interests include reptile thermal biology, brain development, behaviour and trying to prove to people that reptiles not only think but vary intraspecifically in intelligence. While Joshua's '*reptiles aren't as dumb as you think*' hypothesis has been met with resistance, he has convinced an overworked supervisor that this is a valid research question. Joshua will study whether varying incubation temperatures result in behavioural continua, such as in learning, which could be linked to differential brain development. And, when global warming creates cognitively superior reptiles, Joshua will be happy to have the data to prove that he believed in them all along.

Cissy Ballen is a first year PhD student co-supervised by Mats Olsson and Rick Shine. She is broadly interested in sexual selection, and is currently examining aspects of honesty and deceit in the social signalling system of veiled chameleons (*Chamaeleo calyptratus*). The system is one in which vibrant visual cues are used to transfer information rapidly. She intends to harness the aesthetically expressive nature of juvenile and adult chameleons to answer questions about sibling competition, mate choice, and the effects that variable endocrine profiles have on fitness. It was recently brought to her attention that before she can study young chameleons she must facilitate matings to produce them. Cissy is currently honing her skills at encouraging the awkward and comedic act that is chameleon copulation.

Postdoctoral researchers:

Fabien Aubret has allegedly returned to France to take up his CNRS position, but we often see someone who looks a lot like Fab wandering around the lab or (even more often) fishing unsuccessfully on the beaches. He and Rick are still collaborating.

Greg Brown has been continuing his mark-recapture studies on snakes, skinks and toads around Fogg Dam. In addition, he's been carrying out immune assays and radio-telemetry studies on toads.

Michael Crossland has been working with chemists at the University of Queensland to unravel the secrets of the chemical ecology of cane toad eggs and tadpoles.

Wei-Guo Du has returned to China after three years in Rick's lab; he's been offered a prestigious post at the Academy of Sciences in Beijing, and continues to collaborate with Rick.

Sylvain Dubey has worked on (i) Plio-pleistocene diversification and connectivity between mainland and Tasmanian populations of Australian snakes (*Drysdalia*, Elapidae, Serpentes), (ii) Restricted dispersal and genetic diversity in populations of an endangered montane lizard (*Eulamprus leuraensis*, Scincidae), as well as its Plio-Pleistocene diversification, and sexual selection, (iii) Evolutionary diversification of the lizard genus *Bassiana* (Scincidae) across southern Australia, and just to be different, (iv) Mites as biological tags of their bat hosts.

Ben Phillips left his long-time academic womb at Middle Point and took off to Mornington to work for the Australian Wildlife Conservancy – he'll be off to James Cook University soon. In writing this report, Rick presumed all the info about Ben's recent activities would turn up somewhere else in this newsletter: but in the parallel universe of Western Australia nothing is guaranteed. So until Ben is at JCU and Deb can walk to his office and nag him for updates... his privacy remains intact.

Lígia Pizzatto has found that toad lungworms can enter the bodies of native Australian frogs. Infective larvae penetrate the frogs' skin but seem to be lost inside the body of most of the tested species. Usually the parasite is killed by the frogs' immunological system, failing to reach the lungs where they might be able to develop into adults. However, some other frogs successfully host the adult parasite, and the infection has negative effects for the frogs' survivorship and hopping endurance. Parasite and host origins appear to affect the toads' susceptibility to the lungworms, with toads from Queensland more susceptible to parasites from the Northern Territory and vice-versa. Infective larvae of the lungworm can pass from one toad to another via cannibalism. Lígia is now investigating cardiological effects of the lungworm on toads and native frogs, and the effects of season on host-parasite interactions.

Jonno Webb continues a multi-faceted research program that sees him split between conservation ecology of broad-headed snakes, cane toad impacts on tropical mammals, and some new work on arid-zone cane toads and on effects of fire frequency on temperate-zone forest fauna. Add in two small children, and it is easy to see why Jonno frequently has a dazed look in his eyes.

Postgraduate researchers

Christa Beckmann is currently writing up her PhD, and wishing she was back in the field rather than stuck inside in front of a computer! Results of a literature review suggest that Australia's native birds have either learned to avoid eating toads, or are resistant to the toad's toxin. Other areas she is working up include responses of scavengers to road-killed toads and potential impacts of toads on ground nesting birds.

The main aim of **Elisa Cabrera Guzman's** PhD research is to test how members of the Northern Territory native fauna interact with cane toad tadpoles and metamorphs, and whether we could use those interactions to help in toad control. She is trying to find species with significant negative effects on the toads (as competitors or predators) which can offer biocontrol potential. She has conducted some experiments using native tadpoles and native aquatic insects and she is planning to run field experiments too.

Ben Croak continues his field-based project on responses of sandstone herpetofauna (especially broad-headed snakes) to habitat restoration using artificial rocks to replace those stolen by rock-thieves.

Edna Gonzalez-Bernal has spent her first year running field and laboratory experiments with cane toads. Trying to understand foraging tactics of toads, she moved around Middle Point NT providing “the Mexican restaurant” for toads. The menu was based on insects attracted to lights over different surfaces. Toads preferred foraging over rugose and light coloured surfaces, and of course preferred areas with lights. These characteristics are present in human inhabited sites, highlighting ways in which humans have helped toads to thrive in Australia. Other studied aspects involve toad site selection in relation to seasonality. Soon she'll be starting a smelly project with cow poo.

Matt Greenlees has submitted his PhD thesis titled ‘Interactions between invasive cane toads and native frogs in tropical Australia’. Several chapters have now been accepted for publication by various journals with a number of others ‘in prep’. Rick has now employed Matt short-term as a post-doc to continue research mostly on toads, in the Top End and now central Queensland, write up some of the data he collected in the Top End in addition to that collected for his PhD, and generally improve the aesthetic of the lab.

Crystal Kelehear is finishing up her second year of research into lung parasites (*Rhabdias pseudosphaerocephala* and *Raillietiella* spp.) of cane toads. She is busy writing up the results of a study comparing parasite life-history traits across an 800km transect of toad distribution and hopes to present these findings at the International Congress of Parasitology this year. Crystal was also the recipient of one of ten annual student grants presented by the Wildlife Preservation Society of Australia.

Amanda Lane finished her PhD on sea snake phylogeography and then proceeded to deliver a child (Dylan, also known as Sir Poopalot). She is writing up her thesis results for publication, and hopes to take on a part-time lecturing position later this year. Amanda Lane won the School's prize for the best PhD thesis last year.

John Llewelyn's PhD studies on the interactions between anurophagous predators and cane toads in northeastern Queensland are fast approaching their conclusion. Over the past year, John has been finishing up some experiments (prey-size selection by keel-backs and responses of common tree snakes to toad vs native frog chemical cues), as well as writing papers in the hope of avoiding a huge backlog of writing at the end of his PhD. If all goes well, he'll finish experiments in a couple of months and spend the second half of the year writing and tying up loose ends (and coming to the ASH conference of course!). He plans to hand in at the start of next year.

David Pike has just been awarded his PhD and has moved to Townsville to join the Schwarzkopf Lab. Pending funding, he will be looking at how vegetation and climate change influence the distribution and abundance of rock-dwelling reptiles. While awaiting funding outcomes, he will be thermoregulating in the tropical sun and recovering from his most recent writing bout. Recently, David won the Archie Carr Best Student Presentation Award for his talk on conservation of sea turtles under climate change at the 2009 International Sea Turtle Society Symposium.

Samantha Price-Rees is continuing her work on the impact of cane toads on bluetongue lizards for her PhD project. Her laboratory studies suggest that dramatic decline and virtual disappearance of bluetongues at our study site near Darwin is directly attributable to lethal toxic ingestion of toads by bluetongues. Samantha is currently assessing the potential of conditioned taste aversion (CTA) as a novel method that could be used to help mitigate toad impacts. Samantha is also investigating the ecology (habitat use, movement patterns, sociality) of the northern bluetongue (*Tiliqua scincoides intermedia*) using GPS tracking.

For the last one and half years, **Ruchira Somaweera** has been harassing freshwater crocodiles (*Crocodylus johnstoni*) at Lake Argyle in the Eastern Kimberley not only to study determinants of the cane toad impact, but also natural history aspects such as parental care, prey electivity, predation, nest-site selection, the relationship between jaw power and pain from a bite etc. In his spare time he has conducted surveys to investigate how good or bad the lay public is in correctly identifying a cane toad. Since he couldn't suppress his love for snakes, he also released a poster on Snakes of Darwin and is planning on niggling humble file snakes in the near future.

Reid Tingley has been radio-tracking cane toads in Longreach, Qld to gain a better understanding of how toads use semi-arid landscapes. Between bouts of field and laboratory work, Reid continues to fulfil his role as resident 'armchair biologist' of the Shine lab, examining biases in amphibian introductions from his computer in Sydney. In 2010, Reid hopes to finally (finally) complete a project on the potential impacts of climate change on the global distribution of cane toads.

Research assistants

Melanie Elphick is continuing field studies on *Bassiana duperreyi* in the Brindabella Range, adding to the long-term dataset on thermal properties of lizard nests. Interestingly, many *Bassiana* nests are communal, sometimes containing hundreds of eggs. Why do some females choose to lay their eggs with those of other females? This question has intrigued Mel for over a decade. In the 08/09 season she was lucky enough to pick up heavily gravid females, as well as recently-laid eggs. Taking advantage of this opportunity, Mel set up the gravid females in tubs, giving them a choice of 3 nesting sites in which to lay their eggs: (1) "no eggs" shelters contained a mound of moist vermiculite only, (2) "hatched eggs" shelters contained a mound of moist vermiculite plus 4 hatched eggshells from last year's hatchlings, and (3) "fresh eggs" shelters contained a mound of moist vermiculite plus 4 recently-laid eggs. Significantly more females laid under shelters containing fresh eggs than under the "eggshells" or "no eggs" shelters, however sample sizes were low, so the experiment was repeated this year (09/10 season). And again, significantly more females laid with fresh eggs. These results have been written up and submitted, and is currently "under review"....

Michelle Franklin is employed to keep everything moving along smoothly at Middle Point. That involves lots of admin work, as well as using her terrifyingly sophisticated skills at analysing toad-tadpole activity patterns using specialised software packages. Recently she's also been running trials to try and frighten toad tadpoles. The little bug-gers are hard to scare.

Adele Haythornthwaite continues to harass postdocs and postgrads alike as she pursues her quest against the tangled bureaucratic processes associated with the research world. One day she will finish thinking about that paper investigating the history of cane toad introductions, and actually write it.

Stephanie O'Donnell is continuing her work on toads and quolls, which were the focus of her Honours project. Now, however, she's being paid to do it. The major theme is taste aversion training, to convince quolls not to eat toads. She is fast becoming an expert on sausage construction and quoll education.

Nilu Somaweera runs the animal-husbandry side of the Middle Point operation, and attempts to restrain the boyish enthusiasms of her husband Ruchira; or at least, to disguise his worst excesses.

Australian Capital Territory

Australian National University: Fenner School of Environment and Society

In collaboration with many colleagues, **Don Driscoll** is aiding and abetting some exciting applied ecology herp projects. **Martin Westagate** is in the write-up phase of his PhD which examines the distribution and dispersal of frogs in relation to fire and habitat at Booderee National Park, Jervis Bay. **Annabel Smith** has retired from her Eyre Peninsula mallee field sites, and is now hitting the genetics lab at the Evolutionary Biology Unit SA. She will use microsatellites to examine dispersal of *Nephrurus stallatus*, *Amphibolurus norrisi* and *Ctenotus atlas* and aims to discover if dispersal is influenced by time since fire. **Juliana Lazzari** has set up a large scale fire experiment in collaboration with the Department for Environment, Port Lincoln, SA. Her experiment will examine the how habitat fragmentation and fire interact to influence reptile communities. **Katherine Selwood** is just beginning her PhD, and will examine reptile dispersal in fragmented mallee landscapes in NSW. She will examine the influence of corridors and remnant size on reptile dispersal, and will resample sites that DD sampled ten years previously to better understand population turnover. **Ben Scheele** is mid-way through his honours project in which he is examining environmental drivers of declines in the northern Corroboree Frog.

Damian Michael recently completed a PhD under **Prof. David Lindenmayer** looking at the ecology and conservation of reptiles in agricultural landscapes with implications for rock outcrop (inselberg) management in southern NSW.

Scott Keough's Lab

Scott Keough continues to spend his time answering emails and doing paperwork so that others may realize their dreams. In between, he works on a number of phylogenetic and behavioural ecology projects with students and collaborators.

Samantha Vertucci did a very detailed phylogeography project on the world's strangest frog, the turtle frog, *Myobatrachus gouldii*, from WA. She sequenced 5 genes and gathered an extensive morphological data set to test species boundaries during her honours.

Mitzy Pepper is still plodding along on with 3 months of funding left for her PhD. Hoping to hand in the thesis as the biggest Christmas present to myself, ever. The past year has included trips to the Kimberley and the Central Ranges, collecting genetic material and taking in the landscapes as part of a broader study on how the different, ancient mountain ranges in Australia are related in a biogeographic sense. I also presented work at the Idaho Evolution Society meeting, and have been writing a regular Science column for the Canberra Times".

Conrad Hoskin, an Australian Research Council Postdoctoral Fellow, has been working on hybrid zones in the rainforest of north-east Queensland, particularly those in the Green-eyed Treefrog (*Litoria serrata*). He is testing the processes that determine the degree of reproductive isolation between lineages where they come into contact, particularly regarding the process of reinforcement. He is also looking at phylogeography and a complex hybrid zone in the Ornate Nursery-frog (*Cophixalus ornatus*). Conrad has also been working on mating trait evolution more broadly, the importance of species interactions in population divergence and speciation, phylogenetics, phylogeography and taxonomy of *Lampropholis* skinks, phylogeny and taxonomy of microhylid frogs, the spread and impact of Asian House Geckos, conservation of the Armoured Mist Frog (*Litoria lorica*), and road impacts on frogs.

Megan Higgie, also an Australian Research Council Postdoctoral Fellow, is collaborating with Conrad Hoskin on hybrid zone projects in the Green-eyed Treefrog species (*Litoria serrata* and *Litoria myola*) and the Ornate Nursery-frog (*Cophixalus ornatus*) in the rainforests of north-east Queensland. She is investigating the evolution of premating isolation in hybrid zones, and has also been working on the importance of species interactions more broadly in population divergence and speciation. Megan is currently doing a selection experiment in *Drosophila* to tease apart the evolution of reproductive character displacement.



Conrad Hoskin won the Eureka Prize in Early Career Species Discovery! Picture shows Conrad with Megan Higgie (left) and Joanna Sumner (right).

University of Canberra: Institute for Applied Ecology

A number of students have recently completed or are nearing completion of their research. **Michael Jensen** has recently submitted his PhD thesis on conservation genetics and management of marine turtles in Australia. Congratulations Michael! **Stewart Pittard** is nearing completion of his honours on population genetics of the flatback sea turtle (*Natator depressus*) in Australia. **Deb Bower** and **Kate Hodges** and **Carla Eisemberg** are investigating turtles of the freshwater kind; **Deb** just spent four months avoiding her PhD in Arnhem Land and has now become a prisoner-of-thesis back in Townsville, with dance classes her only relief; **Kate** is examining the conservation genetics and phylogeography of freshwater turtles (*Chelodina*) in SE Australia, whilst **Carla** explores nesting biology and harvest dynamics of the pig-nosed turtle in the Kikori region, PNG. **Carla** and **Arthur Georges** have also recently been involved in an exhibition entitled *Connections – Brazil and Australia* that looks at the biological, **Wendy Dimond** is researching the conservation of the Grassland Earless Dragon (*Tympanocryptis pinguicolla*) in Canberra's Regional Grasslands and is part of a team also including **Stephen Sarre**, **Will Osborne** and **Sam Walker** working on an ARC linkage project on the effect of biomass removal on Grassland Earless Dragons. The team is also looking at the conservation genetics of the species with the help of **Marion Hoehn**. **David Wong** is looking at conservation of the Pink-tailed Worm Lizard in the ACT.

Matt Young has recently commenced his honours and is creating a physical map of the Australian dragon lizard *Pogona vitticeps* genome. He will undertake comparative mapping among vertebrates to understand genome evolution and organisation

Also on the dragon front, **Arthur Georges**, **Stephen Sarre** and **Tariq Ezaz** continue their work on Dragon sex determination.

ACT Herpetological Association (ACTHA)

This year the **ACT Herpetological Association** has again provided grants to projects aimed at furthering herpetofauna protection and recovery, education, training, and research projects. The Association raises funds through its annual Snakes Alive Exhibition at the Australian National Botanic Gardens (ANBG). Snakes Alive is a major event on the ACT calendar with over 4000 attendees each year, made possible by the many dedicated volunteers in the Association. Its benefits are twofold; Snakes Alive significantly raises the profile of herpetofauna in a positive way while simultaneously raising funds that are returned to the herpetological community. Half of the funds raised go to the ANBG to support its education program, which is developing a strong herpetofauna focus, while part of the balance is used to provide financial assistance to students or others who are researching or promoting herpetofauna.

Projects recently funded by ACTHA include:

Nadav Pazaro – PhD student, University of Sydney

Climate change responses in the Eastern Water Dragon

Nadav's study aims to understand how climate change may influence nest site selection and embryonic physiology in the Eastern Water Dragon (*Physignathus lesueurii*) and to determine how variation in these traits facilitates their adaptation to different environments. ACTHA's funding will assist with the purchase of 40 miniature thermal data loggers which record nest temperatures, and will be used at the Australian National Botanic Gardens (ANBG).

ACT Frogwatch - 2009

Creating a frog friendly habitat

Grant funds allocated to this project will be used to update and reprint a booklet developed by ACT Frogwatch in 2006 titled Creating a Frog Friendly Habitat in your backyard, school ground or rural property a resource for communities in the ACT and region. The direct outcome of the project is to educate the community about creating frog friendly habitat and thus provide new and/or enhanced habitat areas for frogs in the region. The engagement of the community would provide broader awareness and involvement in catchment health and biodiversity issues in the ACT region and hopefully lead to further participation in the ACT Frogwatch Census.

Olivier Baggiano - PhD student Griffith University

Long term persistence of the Murray Darling turtle populations

This project will investigate the genetic diversity, population structure and gene flow of *Chelodina expansa*, *Chelodina longicollis* and *Emydura macquarii* populations in three upper catchments of the Murray Darling Basin, QLD. Gene flow among permanent waterholes of a largely unregulated catchment will be examined in order to determine if this correlates with our expectations of dispersal ability for each species and compared against population structure in two regulated neighbouring catchments.

By determining the colonisation and re colonisation potential of each species under semi natural conditions, this project will provide informative data for conservation planning such as predicting the impact of future flow reduction in the Murray Darling Basin on the persistence of freshwater turtle populations. The significance of dams and weirs as barrier to dispersal will also be investigated, and the size and age structure of populations within one of the catchments will be estimated (mark recapture method), providing currently lacking information on population health for each species within an upper section of the Murray Darling Basin.

Sam Banks – ANU research fellow

The effects of geography, vegetation and habitat condition on the phenotypic and phylogenetic attributes of *Morethia boulengeri*

Boulenger's Skink (*Morethia boulengeri*) occurs in a wide range of habitats in south eastern Australia. It is among the most common reptile in farming landscapes in the region, recorded at densities exceeding 1500 individuals ha⁻¹. Its abundance makes it an ideal species for studying landscape level drivers of physiological and ecological processes.

The team proposes to test associations between morphology and population parameters in *M. boulengeri*, and vegetation type and habitat condition across a set of monitored sites in southern NSW. Mitochondrial DNA will be used to characterise the phylogenetic affinities of the sampled populations. **Damian Michael** is a co-investigator on the project.

Results from the study will be used to help guide future financial incentive schemes being delivered by Catchment Management Authorities in NSW, which aim at targeting improvements in vegetation condition and biodiversity conservation.

Renee Catullo – PhD Student, ANU

Continued work on the Molecular phylogeny and cryptic genetic species in the Myobatrachid frog Genus *Uperoleia*

Renee's project centres around understanding the tremendous diversity in Australia's largest genus of Myobatrachid frogs *Uperoleia*. The genus is currently divided into 26 described species, which range from Vic to QLD, and across northern Australia to Carnarvon in WA. The descriptions of species have been based on very subtle morphological and call differences, and locality, but many of the species are poorly known and have only a few specimens. Renee hopes to generate a substantial molecular data set for all species within *Uperoleia* in order to define species limits, identify cryptic lineages that may represent new species, and better describe the true distributions for each species.

One objective of this study is to model probable distributions under both current and future climate scenarios. This will focus specifically on species whose primary distribution is in reserve systems or other protected areas. The intent is to identify areas where the undisturbed habitat of the reserve currently appears essential to the persistence of the species, but that are at risk of being displaced under future climate models. This information can be used for the development of future reserve systems to ensure the preservation of species through an ability to migrate in response to climatic events.

Victoria

Museum Victoria

There is a new addition to the herpetology research groups (**Melville** and **Sumner**) at Museum Victoria. **Pete Smissen** has started a MSc investigating the population genetics and phylogeography of *Varanus varius* (Cosupervised by **Jane Melville** (Museum Victoria), **Jo Sumner** (Museum Victoria) and **Tim Jessop** (Melbourne Uni). **Sumitha Hunjan** has changed role within **Jane Melville's** group. She has finished up her work as a Research Assistant on the agamid limb development project and is now working as a Research Assistant looking at the response of frog populations in the Kinglake region to bushfire. In her new role she will be working with two of **Jane Melville's** PhD students **Josh Hale** and **Katie Smith**. The previous Research Assistant on this project **Rebecca Bray** has moved over to the Chapple Lab at Monash to start a PhD. **Fran Lyndon-Gee** (MSc. Student) was awarded the 1854 grant from Museum Victoria and the Peter Rankin Grant from the Australian Museum for her research on population genetics and ecological responses to logging in water skinks. **Fran** received a Holdsworth Grant last year and currently has a 100% success rate for grant applications.

University of Melbourne Kearney Lab

Kim Louwrens has started a Research Masters project looking at the energetics of tail-regrowth in the Bynoe's gecko as a system for testing metabolic theory. **Rocío Aguilar**, an Argentinean PhD student, is visiting the lab for three months over the winter to develop her skills in thermal biology. **Rocío** is characterizing the thermal dependence of food assimilation in the Bynoe's gecko.

Michael Kearney was recently awarded the Victorian Tall Poppy of the Year and the David Syme Research Award.

Stuart-Fox Lab

Devi's lab has both new and returning students. **Maggie Haines** has started a MPhil (Co-supervised by **Jane Melville**) on *Pseudomoia* spp. **Claire Mclean** has returned to the research group after finishing honours last year. **Claire** is starting a PhD on *Pseudomoia cryodroma*.

Devi was awarded an ARC funded Australian Research Fellowship to work on tawny dragons (*Ctenophorus decresii*). **Devi** just can't seem keep away from South Australia.

Monash University Byrne Lab

New students abound in the Byrne lab. **Stephen Heap** has commenced his PhD project that will focus on using *P. bibronii* as a model to investigate contest evolution. **Stephen** is co-supervised by **Devi Stuart-Fox** (Melbourne University). **Brian Kearney** has recently started his PhD project. Brian will be using a combination of lab and fieldwork to determine the physiological impacts of salinity on Victorian frogs. Brian is co-supervised by **Richard Reina** (Monash University). **Liam Baily** has just started his Honours year and will be studying impacts of heavy metal pollution on anuran behaviour in Victoria. **Elly Love** has just started her Honours year and will be investigating the impacts of synthetic hormones on gamete viability in Victorian frogs (co-supervised by **Aimee Silla**).

Aimee Silla has moved over from Perth and is writing up her PhD, which investigated the role of Assisted Reproductive Technologies (ART) for Australian frog conservation. **Aimee** has also been collaborating with **Phil** on projects with *Pseudophryne corroboree* and *P. bibronii*.

A number of students have finished their projects. **Kristy Ficken** finished her Hons project investigating the impact of heavy metals and water quality on anuran species richness in Victoria. **Kristy** is currently working as a Research Assistant in the lab. **Marion Shadbolt** recently finished her Honours project that was looking at the impacts of salinity on the ecophysiology of Victorian frog species (co-supervised with **Richard Reina**, Monash University). **Tim Blackburn** recently completed his Honours project investigating the foraging ecology of terrestrial toadlets.

Phil and **Aimee** have recently published paper on the breeding biology of *Pseudophryne bibronii* (see below), which revealed that this species has extreme levels of polyandry. In fact, this species now claims the world title for having the highest degree of female promiscuity of any vertebrate. This finding has received considerable international attention, with write-ups in *Science*, *Nature* and *New Scientist*. **Phil Byrne** and **Aimee Silla** received a small grant from the Foundation for National Parks and Wildlife, as well as a small grant from ABBOTT Australia, to conduct ART research with *P. corroboree*. **Phil Byrne** received a small grant from the Department of Sustainability and Environment (DSE) to investigate the impact of Heavy Metal Pollution on Victorian anurans.

Chapple Lab

David is continuing his research on the evolution, phylogenetics, phylogeography and systematics of the New Zealand skink fauna. Since he is now an academic that spends most of his time chained to his desk, a postdoc and several students have largely taken control of the research program investigating the invasion dynamics of the delicate skink (*Lampropholis delicata*) and the bleating tree frog (*Litoria dentata*), and the biology and ecology of the native Lord Howe Island skink (*Oligosoma lichenigerum*) and gecko (*Christinus guentheri*). However, Dave did find the time to contribute to an international study of the impact of climate change on worldwide lizard biodiversity that was published in *Science* in May. This research received extensive worldwide media attention.

At the beginning of this year **Kim Miller** started her Postdoc working on the invasion dynamics of the delicate skink (*Lampropholis delicata*) in the Pacific region. **Kim** did her PhD at Victoria University of Wellington in New Zealand (with **Dr Nicky Nelson, Dr Dave Towns, Dr Fred Allendorf, Dr Peter Ritchie**) on the maintenance of genetic diversity in re-introduced reptile populations.

Rebecca Bray and **Lynette Plenderleith** have recently started their PhDs. **Rebecca** is investigating the ecology, evolution and invasion dynamics of the lizard fauna (*Christinus guentheri*, *Oligosoma lichenigera* and *Lampropholis delicata*) on Lord Howe Island (Co-supervised by **Mike Thompson**). **Rebecca** joins us from Museum Victoria where she was looking at the impact of fire on frog populations in Victoria. **Lynette** is investigating the history and impact of the bleating tree frog (*Litoria dentata*) introduction on Lord Howe Island (Co-supervised by **Richard Reina**). **Lynette** completed her Masters on the Northern Dusky Salamander (*Desmognathus fuscus*) at Towson University in the US. **Kim, Bec** and **Lynette** are looking forward to jet-setting regularly to beautiful Lord Howe Island.

In July, **Gillian Cromie** will be starting an honours project looking at chemical communication and social behaviour in *Lampropholis guichenoti* in eastern Victoria.

Sarah Simmons is finishing up her honours project (Co-supervised by **Bob Wong**) on the behavioural ecology of the garden skink (*Lampropholis guichenoti*) and the invasive delicate skink (*Lampropholis delicata*).

Doody Lab

Sean Doody started in SBS at Monash in January 2010. In Sean's group **Rebecca Rose** (PhD student) has begun her project studying the processes threatening the survival of the helmeted honeyeater (including tiger snakes!). **Pippa Burfield** (honours student) will join the lab mid-year to study the impact of cane toads on native wildlife in the Kimberley, and **Phillip Paul** (honours student) will also join mid-year to study the communal nesting in delicate skinks.

Reina Lab

Marion Shadbolt (honours student) has recently finished her honours project studying the interaction between salinity and density on the development of tadpoles of *Litoria ewingii*, co-supervised **Phil Byrne**.

Anthony Rafferty and **Richard Reina** were awarded a Holsworth Wildlife Endowment grant for research in to the development and reproduction of marine and freshwater turtles. **Diego Amorocho** was awarded the Mollie Holman medal by Monash University for the best PhD thesis in the science faculty and he also received the Whitley Award for excellence in conservation, presented by the Whitley foundation in the UK. The award recognised **Diego's** ongoing work for biological conservation in Latin America, particularly of sea turtles.

La Trobe University

Various herp-based projects have been bubbling away in the **Malone lab** over the past year. **Brian** has managed to escape to the field on a couple of occasions, most notably chasing *Eulamprus t. marniae* on his annual jaunt with **Gary Peterson**. Gary continues his PhD work on the species, and is quickly amassing one of the most extensive data-sets on the population dynamics of an Australian scincid. Gary is also continuing his various other threatened herp projects in south-western Vic, including monitoring *Delma impar* (with **Ted Rohr**), habitat restoration for *Litoria raniformis*, and surveys for *Tympanocryptis pinguicolla*. **Geoff Heard** has now submitted his PhD thesis on the meta-population dynamics of *L. raniformis* in Melbourne's urbanising landscapes. He's just kicked off a Post-Doc at the University of Melbourne (with **Kirsten Parris, Mick McCarthy, Andrew Hamer** and **Jane Melville**), and has high hopes of developing a stochastic patch occupancy model for his beloved 'Growlers' (once he works out exactly what a stochastic patch occupancy model is). Geoff is also collaborating on several other projects, including the incidence of chytrid fungus amongst Melbourne's *L. raniformis* populations (with **Nick Clemann** and **Michael Scroggie** of the Arthur Rylah Institute), the population genetics of *L. raniformis* around Melbourne (with **Josh Hale** from Museum Victoria), and detection probabilities for several frogs across Melbourne's urban-fringe (with **Stefano Canessa** at the University of Melbourne). **Evelyn Nicholson** continues her PhD on the fire-response of herps in the heathy woodlands of south-western Vic. Evelyn has also recently taken up work with Gary Peterson, giving him a much needed hand on his cacophony of projects in the south-west. **Lisa Spence-Bailey** continues to grapple with her massive data-set on the fire-response of Mallee herps, and hopes to complete her PhD thesis later in the year. **David DeAngelis** and **Jose Ramos** both completed their Honours projects on Mallee herps in 2009. David examined aspects of the spatial ecology of *Liopholis inornata*, whilst Jose looked at thermal and microhabitat niche partitioning between *Ctenophorus fordi* and *C. pictus*. Brian's latest Honours student, **Yonie Tiljak**, has spent the past few weeks frantically looking for *Pseudophryne semimarmorata* across south-western Vic. Her project is concerned with the conservation biology of this cryptic but evidently declining species.

Other exciting news at La Trobe has been the appointment of **Richard Peters** to a lecturing position with the Department of Zoology. Richard plans to continue his work on motion vision and its importance for communication, predator avoidance and prey detection, whilst also pursuing aspects of animal signal evolution and visual ecology. Richard's move, we hear, was at least partly motivated by the fact that he's turned every Jacky Dragon on the east coast into a nervous wreck, and was desperately in need of lizards without a Valium dependency.

University of Ballarat

Cook lab

Katie Corbett, Erica Dalle-Nogare and **Ashley Olson** have all completed their honours research in the Cook lab. **Eleanor fox** has started honours and is studying avian predation of lizards in the semi-arid zone.

Department of Sustainability and Environment South West Region

Garry Peterson and his team have continued to manage threatened herpetofauna projects in south western Victoria. **Garry** together with **Ted Rohr** (Applied Ecological Research) and **Cath Grant** (DSE) have continued to monitor the threatened Striped Legless Lizard (*Delma impar*) across 330 sites in south western Victoria, with more survey sites to be established soon. **Michael Scroggie** (Arthur Rylah Institute for Environmental Research) has been analysing the mountains of data collected and **Michael** and **Garry** are currently writing a paper on detection and occupancy of *D. impar*.

Donna McMaster (DSE) for the third year has continued to search for the Grassland Earless Dragon (*Tympanocryptis pinguicolla*) in Victoria, using artificial arthropod burrows, burrow scoping and rock rolling. As yet, no Grassland Earless Dragons have been found during the surveys.

Yonie Tiljak (La Trobe University) has just begun an honours project on the conservation biology of the Southern Toadlet (*Pseudophryne semimarmorata*) in south western Victoria under the supervision of **Brian Malone**, **Garry** and **Michael Scroggie**.

Evelyn Nicholson (DSE) has recently joined the team in the south west and is assisting **Garry** in some of the threatened herpetofauna projects. **Evelyn** will predominantly be working on *D. impar* and Growling Grass Frogs (*Litoria raniformis*) and will assist **Garry** in his Corangamite Water Skink (*Eulamprus tympanum marnieae*) work. **Evelyn** will also continue the write-up of her PhD thesis (**Brian Malone's** lab La Trobe University) examining the impact of fire frequency and interval on herpetofauna.

The Growling Grass Frog 'Dams to Habitat' project has entered its third year and has expanded out of the south west and into south eastern South Australia. The project experimentally tests the potential to increase Growling Grass Frog habitat through the restoration of degraded farm dams. **David Bryant** (Arthur Rylah Institute for Environmental Research) and **Evelyn** will spend this winter implementing site enhancements.

A collaborative honours project between DSE and Museum Victoria on the phylogeography and conservation genetic of *D. impar* has been undertaken by **Susi Maldonado** (University of Melbourne / Museum Victoria), under the supervision of **Jane Melville** and **Jo Sumner** (Museum Victoria). Among other things **Susi** identified four Evolutionarily Significant Units for *D. impar* across its range and has just submitted a paper on her finding.

Arthur Rylah Institute for Environmental Research

Geoff Brown has been chasing hooded scalyfoots (*Pygopus schraderi*) in Northern Victoria and has located an additional population of this state-listed species. He has also drafted the National Recovery Plan and Victorian Action Statement for the pink-tailed worm-lizard *Aprasia parapulchella*. In the coming months he will be commencing a monitoring program at select sites for HSF later this year.

Michael Scroggie has spent field time chasing Green and Golden Bell Frogs in far eastern Vic, and helping **Nick Clemann** and **Katie Howard** with alpine lizard and frog surveys. Most of **Mike's** time is spent massaging the data of others - his herp modelling has included helping **Garry Peterson** refine detection probabilities and survey protocols

for Striped Legless Lizards, co-supervising **Geoff Heard's** PhD on Growling Grass Frogs, analysing chytrid data from alpine frog surveys, and looking at **Nick Clemann's** survey and monitoring data from alpine lizards.

Under the watchful eye of her new boss (**Clemann**), **Katie Howard** has been running surveys for threatened frogs in eastern Vic, alpine areas, and several places devastated by the Black Saturday fires. **Katie** has also been working with indigenous people while studying freshwater turtles on the Murray River. In her rare spare time she has continued to 'keep her eye in' with turtle work in Queensland.

Nick Clemann recently commenced a new role managing the Threatened Fauna Program at the ARI. Refusing to crumble under the prohibitive admin load, and despite some of his new staff preferring endothermic critters, **Nick** continues with his monitoring of threatened alpine lizards, surveys for chytrid fungus in alpine frogs (in conjunction with **Dave Hunter** in NSW), herp surveys in areas burnt on Black Saturday, and undertaking various advisory roles for DSE and in Recovery Teams and Working Groups for threatened herps.

Zoos Victoria

Threatened species recovery programs

Zoos Victoria is continuing its support of threatened amphibian recovery programs through captive breeding for re-introduction. Research continues on the Spotted Tree Frog; population monitoring and the evaluation of the effects of the Victorian bushfires on this species. **Matt West** has recently commenced a PhD on modelling the interactive effects of chytrid fungus, trout predation and competition on the Spotted Tree Frog *Litoria spenceri*. **Leesa Haynes** is completing a Masters investigating the relative merits of different drugs and doses on the treatment of chytridiomycosis in *Litoria nudigidigitus* and *L. spenceri*.

Biodiversity and ecological processes

Southeastern Australia

We have established a large landscape project in East Gippsland to assess the responses of native wildlife to multiple/overlapping disturbance processes and management activities; specifically timber harvesting, invasive predators, wildfire and fuel reduction burning. Specific studies have been conducted on tree monitors and forest herp communities. Ultimately, the project will increase our understanding of the long-term impacts of, and interactions between, ecological and management processes in this temperate forest system.

Southeast Asia

Research in the ecology of tropical herp communities in Southeast Asia also continues. **Graeme Gillespie** is currently wrapping up a study investigating the influence of forest structure and man-made disturbance on herpetofauna species richness and community composition in Sulawesi. **Graeme** is also co-supervising an Indonesian Masters student investigating the impacts of human hunting on the ecology and behaviour of giant stream frogs in Sulawesi. A study has also commenced investigating the lowland amphibian rainforest communities in Borneo and the influence of human disturbance.

Tasmania

University of Tasmania

Behavioural and Evolutionary Ecology Research Group

While herpetological research is usually quiet over the winter period, owing to a hibernating herpetofauna, the Behavioural and Evolutionary Ecology Research (BEER) group has, never-the-less, continued to grow. Firstly, we have been joined by a new PhD student from New Zealand, **Mandy Caldwell**. Mandy completed her honours in NZ on personality traits in a native New Zealand skink species with Kelly Hare and Shinichi Nakagawa and is now working on a project entitled 'Individual behaviour as a buffer to climate change? Linking maternal effects and environmental heterogeneity'. Another new addition is **Tanaz Jungalwalla**, who recently completed her honours in our group. Tanaz modelled the potential effects of climate change on the distribution of Tasmania's lizards, her results suggesting that the reports from the BEER group to ASH may be significantly reduced by 2085.

Erik continues to collect data from his two natural populations as well as develop key infrastructure components which will allow us to expand our research programs in upcoming years. This work based on an ARC funded project aimed at examining the evolution of maternal effects and sex allocation. The project itself is in collaboration with **Tobias Uller** from the University and **Ido Pen** from the University of Groningen. Erik also continues his now long-term collaboration with Professor **Mats Olsson** from the University of Wollongong primarily on Swedish sand lizards, but also new exciting projects on snow skinks and agamids looking at the influence of metabolic processes in constraining life history evolution. To show diversity and respect to the other half of the herpetological community, Erik has also recently completed his collaboration with **Craig Sherman** and **Mats Olsson** from the University of Wollongong on inbreeding/outbreeding and sperm competition in tree frogs.

Geoff While continues to work on the snow skink system for his postdoc. As part of this project Geoff spent last spring building 24 8 x 8m enclosures for carrying out semi-natural experimental work on both the snow skinks and *Egernia*. Geoff and Erik are currently combining this experimental work with detailed behavioural observations to combine the consequences of environmental heterogeneity with the behavioural mechanisms underpinning them. Geoff's PhD work on the causes and consequences of social organisation within *Egernia whitii* was recently recognised by the Royal Society of Tasmania who awarded him their Doctoral Award. Geoff is currently at the University of Oxford working with Tobias Uller on his project examining the dynamics of colonisation success in the invasive wall lizard (*Podarcis muralis*). As part of this project, Geoff and Tobias get to spend the summer collecting genetic and phenotypic data from the UKs 30 introduced wall lizard populations –situated in some of the most scenic areas on England's south coast. Tobias has recently built state-of-the-art laboratory facilities and outdoor enclosures in which he aims to manipulate key environmental and population parameters to determine how they influence colonization dynamics. Tobias was recently awarded a \$40,000 (£19,000) early career researcher grant to carry out the molecular component of this study.

Chloe Cabdy is currently putting the finishing touches to her thesis on climate change and maternal effects in *Niveoscincus ocellatus*. Her work has focused primarily on maternal effects and how they a) may buffer responses to environmental change b) may allow females to manipulate offspring phenotype (e.g. pre-program offspring to the environment it will experience after birth) in line with local climatic/environmental conditions. Specifically, she has integrated detailed laboratory and field studies with climatic modelling in collaboration with **Alistair Hobday** at the CSIRO to show how climate at multiple scales influences key phenotypic and phenologic traits.

Jo McEvoy continues her work on the *Egernia* system. In the past year Jo has used the *Egernia* system to explore the composition of behavioural phenotypes and specifically the extent to which behaviours are consistent across contexts. She will combine this work with field studies to examine the ecological and evolutionary consequences of this across context consistency. In addition, Jo has also examined the role hormones play in shaping behavioural consistencies and the consequences for social behaviour, specifically parental care. Jo has recently been awarded a Holsworth grant which will greatly assist her in achieving these research goals.

Mat Russel is continuing to work on his project examining sperm storage in *Niveoscincus ocellatus*. Mat is using a combination of patterns of mating phenology in the wild with detailed histological methods to examine the mechanisms underlying sperm storage and their consequences for mating tactics. Mat was recently awarded a Holsworth Wildlife Fund grant to carry out his research.

Comparative Endocrinology and Ecophysiology Group

The other side of herpetological research at the University of Tasmania is the Comparative Endocrinology and Ecophysiology group. Despite continuing on as head of School, **Sue Jones** 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 collaborates with members of the BEER group on other herpetological related projects providing expert advice and support on the physiological basis of key behavioural traits.

Keisuke Itonga is currently writing up his PhD work examining maternal effects in a species of grass skink with high placental complexity. Keisuke began his PhD by examining the extent to which food and temperature conditions during gestation influence offspring fitness. Following this he examined the influence of both hormones and carotenoids on offspring phenotype using both patterns derived from the wild and experimental manipulation.

Yuni Eswaryanti has recently begun her PhD with Sue and Erik examining whether populations inhabiting different ecological regions have different strategies to cope with changing temperature. The results gained will contribute to a better understanding of how ectothermic species will respond to climate change and as such will have important conservation implications.

Recently (re)joining the Comparative Endocrinology and Ecophysiology Group and is **Laura Paisley** who has begun a PhD project entitled 'the endocrinology of reptilian gestation and specifically the mechanisms of embryonic hormone exposure, modulation, production and potential for disruption'. Laura is a long-term member of herpetological research at UTAS having previously worked on Erik's snow skink project, developing some of the methodological aspects (blood resistance to oxidative stress, age and temperature dependent DNA degradation). Additionally, Laura has spent time in Malaysia where she has worked on endocrine disruption in sea turtles in collaboration with **Sue Jones**.

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-pituitary-gonadal (HPG) axis and examining the key physiological steps by which ectothermic vertebrates living in cold climates assess their capacity to breed. In addition, Ashley has been busy supervising a number of honours students. **Lara Collins**, **Rosemary Hohnen**, and **Claire Gardner** have recently completed their honours. Specifically, **Lara** examined steroid hormone regulation of maternal-embryonic interactions within *N. microlepidotus* and *N. metallicus* and recently submitted her first paper, **Rosemary** examined the mechanisms regulating dominance in male blue tongued lizards (*Tiliqua nigrolutea*), and **Claire** examined kin discrimination via chemical cues also in *Tiliqua nigrolutea*. Finally, new honours student, **Josianne Eve** has just started, investigating the role of thyroid hormones in energy metabolism in *N. metallicus*.

South Australia

Flinders University: Mike Bull's group.

Mike Bull has been leading the team focusing on sleepy lizards and pygmy bluetongue lizards. 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.

Steph Godfrey submitted her PhD thesis in March this year! In her thesis, **Steph** explored how social organisation influenced parasite transmission in two reptilian systems; the group-living gidgee skink (*Egernia stokesii*), and in the territorial tuatara (*Sphenodon punctatus*). **Steph** is now conducting research on the behavioural ecology and parasitology of the sleepy lizard (*Tiliqua rugosa*).

Aaron Fenner had his PhD conferred in April this year, examining the ecology and social structuring of pygmy bluetongue lizards for their long term conservation. **Aaron** is continuing to work on pygmy bluetongue lizards and is investigating parasite transmission through social networks based upon the findings of his PhD research.

Kelly Pelgrim has completed her B.Sc. Biod. & Consv. (Honours) project investigating the dynamics of a grassland reptile community to assess interspecific competition for food between the endangered pygmy bluetongue lizard and coexisting lizard species, Well done Kel.

Julie Schofield is currently undertaking research on the Pygmy Bluetongue lizards for her PhD, She is looking into the genetic structure and dispersal within and between populations. At present little is known about the mating systems employed by the lizards, or the dispersal of individuals. This study will address these gaps with the specific overall aim of identifying key individuals for translocation and management to prevent population decline. She has completed 2 field seasons recording the movements of lizards using pitfall trapping (with the assistance of **Kelly Pelgrim** and **Aaron Fenner**) and has now moved into the laboratory to start on the genetic component. In March she discovered a population near Kapunda, currently the southernmost known pygmy bluetongue lizard population.

Stephan Leu is in the final stages of his PhD on lizard social organisation. Using social network analysis, he has been investigating the causes and consequences of the social organisation in the sleepy lizard, *Tiliqua rugosa*. Some of **Stephan's** findings have recently been published in *Animal Behaviour* and in *Behavioral Ecology and Sociobiology*.

Melissa Pettigrew is in the final stages of her PhD investigating the effects of grazing on pygmy bluetongue lizards. **Jana Bradley** is in the final stages of her Masters degree investigating behavioural syndromes in sleepy lizards. **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** is in the final stages of her PhD 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.

University of Adelaide: Mike Tyler's group.

In 2008, **James Menzies**, **Stephen Richards** and **Mike Tyler** completed a study of species referred to *Litoria bicolor* in New Guinea, recognising a group of seven species, of which they named four new species. Currently **Menzies** and **Tyler** are examining the WA ' *L. bicolor*' questioning whether in fact there are two species involved..

James Menzies is examining the musculature of *Platymantis*, hoping to determine if it is two genera, and also has commenced a study of one of the groups of *Nyctimystes* species.

A highlight of **Mike Tyler's** year was the publication of a field guide to Australian frogs with the artist **Frank Knight**. In addition, he published a new edition of the field guide to the frogs of WA with **Paul Doughty**. This publication is a fourth revised edition reflecting the incredible increase and interest in the fauna of the Kimberley.

Mike Tyler's book for children, ' It's True. Frogs are Cannibals' was translated into Korean and also into Chinese.

Research continues in collaboration with chemists on skin secretions, principally the glue of *Notaden* exploring its use in surgery.

Western Australia

University of Western Australia: Dale Roberts

This lab is currently dominated by students working on frog food and food for frog food – biogeography, phylogeography and systematics of spiders, pseudoscorpions, millipedes and Banksias plus the odd rock wallaby, chironomid midges and honey possums! What went wrong? Not sure but there is still a hard core of true believers with slime in their blood!

Jen Francis has just finished her third field season at Kununurra, finished before the toads hit town, will be writing up her PhD this year on tadpole assemblage structure and trophic interactions in temporary ponds – very temporary last wet season!!! **Aimee Silla** has had a sabbatical at Monash with Phil Byrne, well telling Phil how to do stuff, working on captive breeding of *Pseudophryne corroboree* (that is a funky frog for you snake people out there) but is now also back writing up her PhD on captive breeding in frogs. **Sharron Perks** is also writing up her PhD on the evolution of male reproductive tracts in frogs and how that changes when species are polyandrous – comparative analyses, predictions and tests with *Geocrinia leai* (another frog for you snake people!)

Dale Roberts is on study leave – down at Albany again and thinking about what a great place it is to retire to! Drinking coffee at the York St Cafe and writing a lot on polyandry, chytrid fungus, sex in octopus and frog taxonomy! And, still thinking about more frog sex work with Leigh Simmons and Paco Garcia-Gonzalez who know a lot about crickets!

Nicki Mitchell's group

Nicki's lab has several new students, mostly working on turtles (marine and freshwater), her favourite frog model (*Pseudophryne*), and even cockatoos, but all within a broad framework of conservation biology and/or adaptation to climate change. There is lots of modelling (flavoured with physiology) and rushes of activity following rain. Nicki thinks she has finally exhausted her sources of papers on tuatara and is trying to find time to write about the research she's been doing in Australia.

Two students have started PhD's in the lab on an ARC linkage project – **Sophie Arnall** was persuaded to ditch mammals and work instead towards using physiological principles to predict suitable sites for 'assisted migration' of the western swamp tortoise, and **Hasnein bin Tareque** won an Endeavour Scholarship and is learning how to incorporate hydrological modelling with conservation planning. **Tara Jones** completed her honours project in 2009 and found out that heating the growing ponds of Western Swamp tortoises speeds up hatchling growth, which could counter some effects of a drying climate. **Tegan Box** is about to hand in her honours thesis focused on a modelling technique for predicting sex ratios of flatback turtles, and **Lorian Woolgnar** starts a similar project in a couple of months, but focusing instead on Loggerheads (funded by a grant to Nicki from the Australian Academy of Sciences). **Caitlyn White** and **Lauren Gilbert** (both 4th year students) are trying to protect western swamp tortoises from rat predation, and working out what tortoises eat at translocation sites, respectively. **Angie Eads** (2010 honours student) has a grant from NCCARF (National Climate Change Adaptation Research Facility) to examine the genetic basis of desiccation tolerance in frog embryos, and is busy learning about quantitative genetics (about which Nicki knows very little).

WA Museum

Research on the systematics of WA's frogs and reptiles has continued, with three new frogs and five geckos described since 2008, plus a new desert skink. Continued collaboration of **Paul Doughty** with molecular labs around Australia has been fruitful, as almost all species descriptions have used genetic information as well as generic rearrangements to *Ctenophorus* and *Eremiascincus*. Many of the projects have involved bright young student herpos, including gekkologists **Paul Oliver** (University of Adelaide) and **Mitzy Pepper** (ANU). Super skink boy **Sven Mecke** has made major inroads into sorting out the slippery *Eremiascincuses*, and we hope to have Sven back to count as many scales as his heart desires (something he likes to do very much).

Surveys of the Kimberley region for frogs have continued with a successful trip in January in which two new species of frogs were discovered (watch this space!). **Paul Doughty** is currently writing up a synthesis chapter of Pilbara herps after a 3 year survey with the Department of Environment and Conservation. Write-up of the Kimberley Island survey will follow shortly thereafter.

WA Department of Environment and Conservation (DEC): David Pearson, Bill Stewart, Lauren Brown and DEC regional staff

Projects to monitor the impacts of the arrival of cane toads in the East Kimberley are continuing. Pre-toad vertebrate surveys have been undertaken in many newly-declared conservation reserves in conjunction with Miriwung-Gadjerrong ranger groups. Surveys of croaking frogs and large mosquitoes continue along East Kimberley highways in the wet season. **Bill Stewart** waded in flooded swamps near Kununurra and in the hills around Lake Argyle throughout the wet season in pursuit of radio-telemetered snakes. There were no recorded mortalities due to toads amongst the 4 species tracked. Bill has also helped out Uni of Sydney students **Ruchira Somaweera** (freshwater crocs) and **Chris Spraggon** (taste aversion in goannas) with the capture, handling and husbandry of study animals.

An ARC-linkage project (Uni of Sydney, DEC, Australian Reptile Park and DEWHA) to identify those Kimberley species most at risk from toads has now been completed. Write-ups are in progress. A paper on the impact of toads on threatened camaenid snails has been published (Pearson *et al.* 2009). A new ARC-linkage is examining techniques to mitigate the impact of toads on those species identified as being at particular risk (goannas, some snakes and blue-tongues). As part of this project, conditioned taste aversion (CTA) is being field-trialled in goannas and blue-tongues around Kununurra. Further south in WA, monitoring of a translocated population of Lancelin Island Skinks has continued. Perth Zoo-bred stock was released on Favorite Island off Jurien Bay and this translocation appears successful, with frequent captures of reproductive island-born adults. A draft recovery plan for WA populations of *Egernia stokesii* has been distributed and is currently being updated in response to comments.

The annual French pilgrimage to Perth occurred in October 2010. **Xavier Bonnet**, several naïve students and DEC staff visited Carnac Island over a 7 day period and captured and marked in excess of 100 tiger snakes. Data from this study was included in a recent paper about the decline of snake populations (Reading *et al.* 2010).

Where are they now?

David Kirshner

Former ASH member (1981-1986)

Current Affiliation:

Sydney Aquarium
Sydney Wildlife World

For several years I was a member of ASH while undergoing my PhD at the University of Sydney under the supervision of Gordon Grigg. My first ASH conference was in Anglesea, Victoria, in 1981, only three days after my arrival in Australia from my native Canada. Gordon had written about the conference before I had left Canada and somehow I had interpreted the pronunciation as 'an-gee-see-ah' rather than 'angle-sea'. On arrival in Sydney I had asked Gordon when we were going to 'an-gee-see-ah' and, without skipping a beat or giving anything away with as much as a facial expression, he smiled and said 'in three days'. Word spread quickly and for the first day or two of the conference I had a constant flow of people asking me how I was enjoying 'an-gee-see-ah'. Fortunately, I found this incredibly funny when I learned the real pronunciation a day or two later and that was my introduction to the gang that was ASH.

On completion of my PhD I followed another major interest, art, and freelanced as an illustrator for many years. Although my clients included advertising agencies and magazines, the bulk of my work was wildlife illustrations for non-fiction books.

For the past eight years I've been working as the Senior Graphics Manager for Sydney Aquarium and Sydney Wildlife World. The bulk of my work is interpretive graphics, producing signs and audiovisual displays informing the public about the animals on exhibit. Although the words 'senior' and 'manager' appear to suggest a larger team, for the most part I've been a one man band, creating the concepts, researching the information, writing the text, taking the photographs, rendering the illustrations, shooting (and editing) the video, designing the final graphics and/or audiovisuals and then organising the printing or electronic displays. For the occasional larger job requiring an external contractor, I have acted as both art director and scientific consultant. Working for a non-government commercial enterprise that sees itself in the business of 'edutainment', the trickiest part of my job is sneaking in educational material while keeping the bulk of the content entertaining enough to satisfy senior management.

Although most of my hobbies resemble my professional life (wildlife art, photography and videography), I also keep and breed varanids at home and have consequently helped a few film crews shoot footage of baby monitors hatching for reptile documentaries. In addition to this, I am currently working on a book on the biology of crocodiles with Gordon Grigg, producing illustrations to go with his writing.

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