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ACTHA INC. NEWS

FEB - MAR '14

*Newsletter of the
ACT Herpetological
Association Inc.*

YOUR COMMITTEE FOR 2013 - 2014

President	Dennis Dyer
Vice President	Ric Longmore
Secretary	Chris Harrison
Treasurer	Margaret Ning
Newsletter Editor	Mandy Conway
Webmaster	Angus Kennedy
Public Officer	John Wombey *
Excursion Officer	Ric Longmore *
Conservation Officer	Joe McAuliffe
Committee Members	Iris Carter
	Greg Flowers
	Peter Child
Student Representatives	Angelique Harrison
	Sophie Sloane

** Denotes Life Members*



Above, clockwise from top left: Greg Cover with Fingers the Carpet Python; Ric Longmore with his Woma; Dennis Dyer and a Spotted Python; Geoff Robertson and Blue-tongued Lizard; Jake McAuliffe with a Coastal Carpet Python.

IN THIS ISSUE

ACTHA's New Website is here!! Angus Kennedy has been spending long hours rebuilding ACTHA's Website and the details can be found on page 11.

Frogwatch update and Institute for Applied

Ecology lecture notice: page 2.

Snakes Alive! Exhibition 2014: starts on page 3.

being an Eastern Brown Snake: Steven Holland recently held an exhibition at Canberra's Museum and Gallery which showcased his magnificent bronze snake sculptures, page 6.

Reptiles Inc and The Canberra Reptile Zoo:

Peter Child gave an overview of his daily routine with reptiles at our October 2013 meeting, from page 8.

Vet encourages care for reptiles: ACTHA member Janet Wild describes the trauma to reptiles she sees as a vet in Wagga, page 12.

The Australian & International Scene:

Monitor Lizards found to breathe unidirectionally like birds, p13.

Australian endangered species: Hawksbill Turtle, p14.

Australian endangered species: Leatherback Turtle, p15.

DIARY DATE

The *bi-monthly* meetings of the Association are usually held on the **third Tuesday of the month at 7.30pm**. Our usual venue is:

**Belconnen Soccer Club, Hawker
(cnr Belconnen Way & Springvale Drive)**

UPCOMING MEETING

TUESDAY, 18 FEBRUARY 2014

Marg Peachey from ACT Wildlife will be our guest speaker at this month's meeting.

ACT Wildlife, a relatively new organisation, is now responsible for the rescue, rehabilitation and subsequent release of injured, sick and orphaned native wildlife in Canberra. Reptiles are often amongst the casualties and Marg will explain how ACTHA's recent Grant will help provide education materials for public awareness and carer training.



ACT & REGION FROGWATCH NEWS, NOVEMBER 2013

By Anke Maria Hoefer, Frogwatch Coordinator
Email: frogwatch@ginninderralandcare.org.au

Life after the Census

This year has been massive, and I am drowning in data and recordings. So far 161 surveys have been accepted, 164 submitted and 132 are in progress.

Census Results

From this year onwards and retrospectively for the last 3 years, we will publish all Frogwatch Census results online rather than in a paper version. We shall let you know once the new system is up and running!

Frogwatch Funding

Frogwatch could run out of funding by the end of 2014 unless it can come up with a great plan to save the program. If you are interested in contributing ideas please let Anke Maria know! A "save Frogwatch" workshop is being planned for early February 2014.

Ephemeral Zone Project

The Frogwatch Ephemeral Zone Project, funded through an *ACT Environmental Grant*, will undertake the re-vegetation of wildlife corridors at the edges of 30 water bodies across the ACT. Strategic planning was due to be completed by the end of Dec '13, however there is still time for input regarding waterways in need.

Ongoing Monitoring

Thanks to the volunteers who have committed themselves (and their friends and partners) to the ongoing monthly monitoring of a site. This will help Frogwatch learn more about frogs calling outside of October and about the shifts in calling behaviour throughout the year.

Special Thanks

Roger Hnatiuk has been instrumental in monitoring a number of sites at the Arboretum on a weekly basis throughout Spring. Thanks to his regular site visits, often accompanied by other volunteers passionate about the environment, we now have recordings of the Spotted Burrowing Frog (*Neobatrachus sudelii*), which is not often heard in the ACT. The species was detected in mid September after heavy rain falls at two of the Arboretum sites.

New Frog identification book

Frog specialist David Hunter has just published a fantastic frog identification guide:

**A GLOVEBOX GUIDE TO THE
HIGHLANDS, TABLELANDS AND SLOPES
OF SOUTHERN AND CENTRAL NEW SOUTH
WALES.**

The book includes great pictures and habitat information plus a frog call CD. If you would like a copy please contact David Hunter at the Office of Environment and Heritage Queanbeyan by email

David.Hunter@environment.nsw.gov.au.



LECTURE BY PROFESSOR RAY HILBORN

EVALUATING AND REDUCING THE ENVIRONMENTAL COST OF FOOD

The human population is projected to reach over 9 billion people by 2050, and population growth combined with increasing wealth leads to estimates that global food production needs to increase up to 50%.

Food Production now comes at a very high environmental cost, and it will only get worse as the food production system is pushed to its limits.

Some of the costs of food production include energy use, greenhouse gases, nitrogen and sulphur emissions, antibiotic use, land transformation, loss of biodiversity and soil degradation.

Professor Ray Hilborn a specialist in natural resource management and conservation from the University of Washington will review the environmental cost of animal source products, milk, eggs, meat, fish and show that there are often 100 fold differences in the cost of producing protein by different methods. Prof. Hilborn will discuss how we might reduce these environmental costs and contrast the approaches of traditional conservation of protected areas with 'new conservation' that involves conservation of groups working closely with food producers.

DATE: Thursday, 20 February

VENUE: Old Parliament House, Members Dining Room 2

TIME: 5:00- 6:00 pm

SNAKES ALIVE! AT THE BOTANIC GARDENS

By Louise Maher, 666 ABC Canberra,
20 January 2014



The snakes are back along with lizards, turtles and frogs at the ACT Herpetological Association's annual display.

Most people would run a mile to avoid a snake. But once a year people who are quite sensibly wary of snakes queue up to get up close and personal with them.

The *Snakes Alive!* Exhibition is held each year by ACTHA at the Australian National Botanic Gardens.

And it's not just snakes on display. You can also have close encounters with other reptiles and lizards including a (smallish) crocodile.

Association life-member Ric Longmore says it all began in 1987 when he put on a small exhibition for his colleagues at the Gardens. Over the years it's mushroomed. "It's marvellous to see," says Ric, "because this is our future and this is where we hope herpetologists of the future will get their interest and recognise the value of snakes, lizards, turtles, frogs - crocodiles even. They've all got their place in the environment."

Pythons

President Dennis Dyer says the focus this year is on Australia's rich diversity of pythons.

"Australia has more than half the number of pythons in the world," he explains. "We've got about 14 species in Australia of a world total of about 26."

Visitors to the exhibition are encouraged to hold and stroke the snakes under the guidance of volunteers. 17-year old Alisdair Robertson (pictured below at right) has been a member of



the Association for a decade and enjoys encouraging people to get more familiar with snakes, at least the ones at the exhibition.

"Most people's pet snakes aren't going to hurt them," Alisdair says, as he shows off Crowley, a Spotted Python. "But we've always got to remind people not to touch snakes in the wild because most of the ones living around here are venomous."

Jake McAuliffe, another volunteer, is draping his coastal carpet python 'Po' around the necks of two young visitors who are standing very still. "You hold a baby snake, yes it's exciting but you get a massive snake like this and it's maybe 11 or 12 years old...you feel the weight of it," Jake says.

"Whenever I'm stressed I get a big snake like this and I put it around my neck and it actually gives you a massage. Don't pay for it - just get a snake!"



A message from our President, Dennis Dyer
(seen above with fellow volunteer Lucinda Royston)

Snakes Alive! 2014 was conducted over seven days from 20 to 26 January, again at the Australian National Botanic Gardens (ANBG). It was a most successful event which fulfilled one of the Association's aims of educating the population about the importance of our herpetofauna in the environment. The theme for this year's display, which included Australia Day, was 'A Celebration of Australia's Pythons' as it is not generally recognised that Australia is home to more than half of the world's python species. To illustrate this, the pythons present ranged in size from the Pygmy Python to the Olive Python and included, for the first time, Ric's Green Python. Overall, the display included 35 reptile and amphibian species, including 14 species and subspecies of python. Members who provided their animals for display, feeding and handling are much appreciated.

(*Snakes Alive! 2014 cont'd*)

As previously, the display was set up by Peter Child and his assistants and this year occupied the three public rooms at the Crosbie Morrison Building. The Corroboree Frogs lent by the ACT Government and local tadpoles by Frogwatch were located in the small room, whilst the intermediate room included pythons, skinks, geckos, frogs and a continuous slide presentation of local herpetofauna. The main room was arranged with glass enclosures around the perimeter with turtles and easily handled skinks in the centre. A well commented feature of this year's display was the relatively open area in the centre of the main room which allowed visitors space when viewing the feeding sessions or other activities. The feeding sessions were held at 11am, 2pm and at other suitable times throughout the week. They were all a huge success and well attended (as can be seen in the image at right).



The total number of visitors just exceeded 2800 over the full week compared with last year's *Snakes Alive!* that had just over 1850 visitors over four days. The week day attendance was steady but in contrast to previous exhibitions, the attendance during the weekend was less than that of previous years, no doubt due to it being part of a long weekend. This year the raffle also went well, with approximately \$1100 from raffle profits and donations to be provided towards Corroboree Frog research.

Once again the ANBG was very effective with their publicity, providing the wonderful venue and facilities required for the partnership to be a success. The weather was perfect (especially given the extreme temps of the preceding week), and the local radio stations provided an opportunity for members to be interviewed, often with accompanying pythons and lizards. Louise Maher from the local ABC radio spent time at the display recording interviews which



were later broadcast. WIN TV (above) also visited the display and provided a great entertaining item on their evening News Program.

Amongst the many visitors, the Association was honoured by a visit from the Bangladesh High Commissioner and his wife, together with some of his staff.

The colouring-in competition winners and their families were given a private visit after the doors closed on Friday evening as their prize. This included much reptile handling and parents expressed much appreciation for the efforts made by

ACTHA members during this visit. The usual Wednesday and Sunday evening 'Get Togethers' were also held to celebrate what had been a most successful *Snakes Alive!* Exhibition.

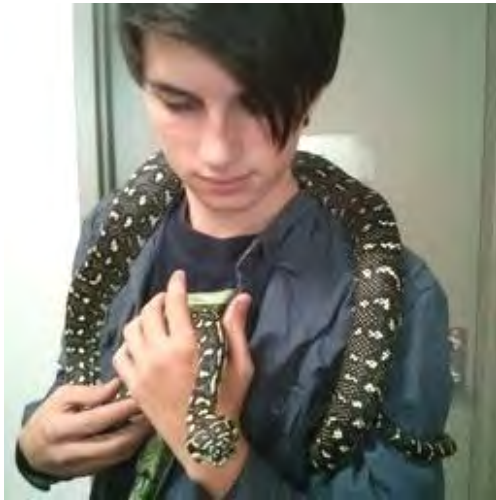
The Canberra Reptile Zoo provided many 'buy one get one free' passes to give to the Exhibition visitors, so hopefully the Zoo will notice an increase in their patronage.

Thirty ACTHA volunteers gave generously of their time throughout the week, with nearly half of these being at the display for at least six days. It is believed that this is the minimum number of volunteers required to run *Snakes Alive!* in a safe and effective manner. It was great to welcome two new enthusiastic volunteers this year, and it is hoped to see them again next year. The dates for 2015 *Snakes Alive!* will be determined soon to enable members to set aside time during a usually hectic January.



(Snakes Alive! 2014 cont'd)

Photos on this page by Alisdair Robertson and Geoff Robertson.



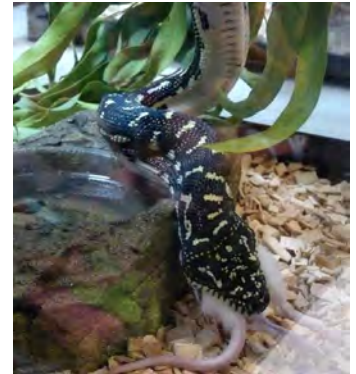
Connor McAuliffe (above) and Noah McAuliffe (below) manage the merchandise stand every year and really love their snakes!



A Bearded Dragon (above) and a Lace Monitor (right).



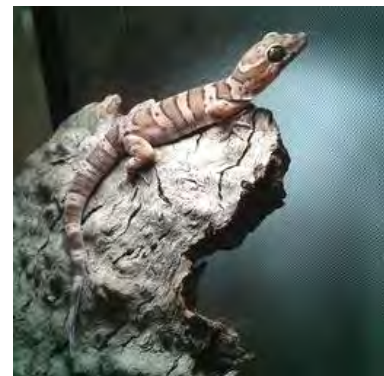
The Sand Goanna (above) rarely stopped moving, however the Boa Constrictor (below) only occasionally repositioned its coils....



A Diamond Python having lunch (above) and the Ring-tailed Gecko (below).



Ben and Kay Hick (above) and Mark Robertson (below) are regular volunteers and can answer even the most curly questions from the public.



Right:
The Blue-bellied Black Snake was initially quite feisty but settled down once a water bowl was installed. Shedding time?



BEING AN EASTERN BROWN SNAKE...

By Geoff Robertson



Steven Holland, ACTHA member, PhD student, and artist, recently held an exhibition at Gallery 4 at the Canberra Museum and Gallery (CMAG) which I enjoyed seeing just before Christmas.

ACTHA members are no strangers to Steven's work - he displayed fourteen striking bronze sculptures of brown

snakes at the entrance to *Snakes Alive* in 2012, and in 2013 showed a single black snake sculpture also made from bronze. He put in an appearance at *Snakes Alive!* again this year and was keen to speak with fellow volunteers and members of the public about their experiences with reptiles. He also took out a drawing pad and sketched some of the stars of the show.

In a less hectic moment, I found a quiet time to show Steven some photos that I had taken of his Gallery 4 Exhibition and asked him questions.

Geoff Robertson (GR): Steven, all the many elements of your artwork in Gallery 4 impressed me and it was great to see your artwork so publicly displayed. I was amazed by your covering the back wall of the enormous shop window of Gallery 4 with newspapers from which you had cut out uniform leaf shapes. These newspaper leaves littered the floor around several of your bronze brown snakes. I took some photos through the gallery window and was intrigued. What were you trying to achieve?

Steven Holland (SH): The answer to that question is simple and complex. As an artist with an interest in the actual life of snakes I had a number of ideas that I was exploring in the installation. The installation was called '*being*' and it used a number of artistic strategies to somehow show snake life and existence. I used the form of the bronze sculptures to spell out the life of the snakes. The sculptures were created in the shape of the letters '*b*' and '*e*'. Seen together they spelled the word '*be*'. The intention behind this was to communicate the



ongoing life of snakes (perhaps as a mating pair) and to convey the idea of living alongside snakes in our busy world; to literally let them be. That was the simple take home message of the artwork. The complex aspect of it was in the relationship between the newspapers and the bronze sculptures. I am interested in language and how words convey meaning about the life of animals. Newspapers are full of words and stories recording a human world. By cutting leaf shaped holes in this human world I was trying to create an opening through which snake existence could be contemplated on its own terms.

GR: Of course it is not easy to clearly articulate the idea of a snake's life. There are certainly many layers of complexity to your work, although each issue you raise is a simple question. Can you tell me where some of your ideas come from?

SH: The idea to show snake sculptures in a gallery context amongst newspaper leaves came from quietly standing with Joe McAuliffe as we watched a brown snake in a storm water drain at the Australian National Botanical Gardens just outside *Snakes Alive!* in 2012. Watching the snake move amongst the fallen leaves and bark under the trees was inspiring. In the filtered sunlight the snake respond to the smells, movements and vibrations of its environment which was also our world. This was the snake being in its natural world alongside humans being in their world. Quietly standing there, for a short while we were in the same world. The concept of '*being*' is natural; it is a state intrinsic to all life. It is so basic that we are seldom aware of it. Perhaps we get a sense of being when we are on the edge of being or just outside of it; when a life is born or dies. Any understanding of being is vast though. It encompasses individual and universal perspectives. The sudden appearance of a venomous snake brings our being into acute focus.

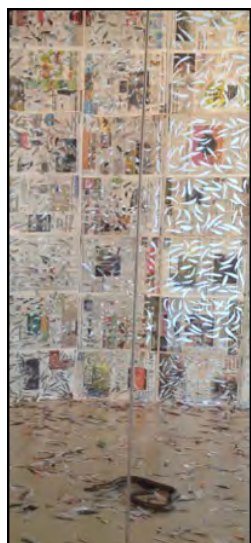
(being an Eastern Brown Snake cont'd...)

GR: Steven I have also heard you talk about your fascination with taxonomy. Would you like to elaborate?

SH: Yes, biological taxonomy is an example of language used to describe plants and animals. Based on evolutionary relationships these are words used to create an identity for the life of animals. The biological name of the Eastern Brown Snake is *Pseudonaja textilis*. The genus name *Pseudonaja* is made up of Greek and

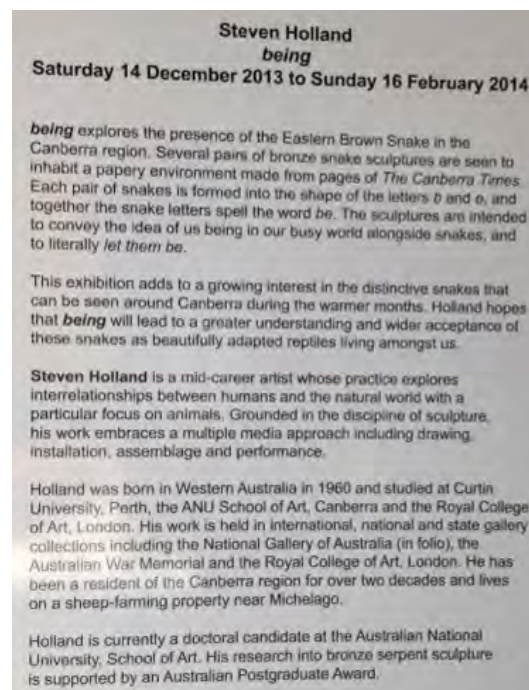
Sanskrit words meaning false or fake cobra. The species name *textilis* is Latin; it is used as an adjective to describe the snake as either woven or textiles or possibly even plaited.

Operating in different ways the name communicates the existence of Eastern Brown Snakes so that they can be distinguished from other snakes and be identified as highly venomous. *Textilis* is a slightly obscure word for the Eastern Brown Snake. Taken on



face value it might simply refer to the external woven appearance of the snake's scales. The name may also be a vestige of Natural History when the Eastern Brown Snake was classified in the closely related genus *Demansia* which stands for elapid snakes with slender, plaited, whip-like bodies. Perhaps, as the Australian naturalist David Fleay suggests, the name could imply the plaited rope grapple of intertwined rival males during breeding season. As an artist it interested me that encapsulated inside the name *textilis* is the word 'text'. I spend a lot of time looking closely at snakes when I am drawing and modeling them. It gives me time to think about how we make sense of another creature's life.

GR: Steven, I never thought of a brown snake in this way, that of a cobra that is not a cobra and



snake words woven together in a creative way. I can see why you say your ideas are simple yet complex. I was also interested by what you said about the help you got from ACTHA. I know that Ric gave you a skin of his Death Adder.

SH: The skin that Ric gave me has helped to model detail into my bronze sculptures. I used it as a guide to recreate the snake called Rowen that Ric kept for many years. ACTHA has been a great assistance in helping me get closer to live snakes and to learn about issues facing the survival of frogs, and the impact of cane toads on our environment. ACTHA has given me insights into all things herpetological in exploring my ideas, and provides feedback on my sculptures. I have found it very helpful to discuss my projects with ACTHA members like Dennis, Ric, Mandy, you and visitors to *Snakes Alive!*. I feel that my outlook has been greatly broadened through ACTHA and I am impressed by the creativity of herpetologists and how they deeply care about biodiversity. I think it is important for an artist to be a part of the wider community and it is an honour to be associated with ACTHA. If all goes well I hope to display my sculptures of Rowen at *Snakes Alive!* in 2015.

GR: It sounds like you would like more snake skins?

SH: Yes, if anyone has any shed elapid snake skins I could use them in my study, that would be great. It would help me to celebrate the secretive snakes that we share the world with; and thanks for your interest in what I am doing Geoff.



REPTILES INC & THE CANBERRA REPTILE ZOO

By Mandy Conway



At our October 2013 meeting, ACTHA members were treated to a slide show, accompanied by an overview from Peter Child, of the

day-to-day flurry of activity that is Reptiles Inc and The Canberra Reptile Zoo. He will also briefly highlighted the differences in reptile keeping regulations between NSW and the ACT.

In the beginning...

Since Peter was a child he has been passionate about reptiles of all shapes and sizes. "My dream came true!" when, in the late 1990s, he opened his Reptiles Inc shop in his backyard in Kambah, ACT. Needless to say he quickly ran out of room for his thriving business and had to move the shop to another premises in Kambah, on Mannheim St.



Peter talked about his experiences in the early years of his business before detailing

some of the good practices he uses in this trade. He is selective to whom he sells his animals to and made it quite clear to his audience that all pet reptiles should be adequately housed and kept in optimal husbandry conditions. Sound advice is crucial and he and his staff have always prided themselves on this over the years. In his view, many new owners are not given much advice when they purchase their new pet through generalist pet shops. "If a pet shop is found to be doing the wrong thing, I can counter that by doing the right thing," Peter added.

Whilst still supplying reptile enclosures, furnishings and foodstuffs in Kambah, and now two other locations, eighty to ninety percent of Peter's work currently centres around educating the public about all aspects of Australia's reptiles. The retail side of Reptiles Inc. supports Peter's reptile education initiatives.



A year of reptile displays

Reptiles Inc. provides educational visits to schools, fetes and other small gatherings each week, almost on a daily basis. Birthday party bookings are also very popular. Then there are the mega events!

Earlier this year, Reptiles Inc held a stall at the **Royal Canberra Show** (above). The outdoor display was very popular. "People just can't seem to get enough of reptiles! It's a really positive swing towards reptile likeability amongst the general public," Peter said.

For yet another year Peter and his team were asked to set-up a display in the grounds of the **Governor General's residence**. Approximately 15,000 people attended the Open Day. Shopping malls were also frequented during the year and Peter really needed his team members to help satisfy the public's eagerness to see and touch the reptiles being displayed.

ScienceWeek

is held over two days at the CSIRO Discovery Centre (right). Many people mark this yearly event on their calendar!



The largest and most challenging display takes place at **Floriade**. Peter estimates that between 25-30,000 people ventured through his reptile display this year. The whole team is needed to ensure the event runs smoothly. The tent accommodates 100 people at a time, and people are ushered through every 15 minutes or so to keep the queue size manageable.



Above: Peter Child in action!

Each morning the reptiles are brought in and settled into their enclosures for the day. For security reasons, and the animals sake, they are returned home at night. Peter is often asked if this exercise really stresses the animals. "Are they happy? probably not. But I know they are not unhappy. When the animals are unhappy they soon let us know. My Perentie, for example, is placed into a plastic storage container in which it only just fits. This is like kids wearing a seatbelt, for their own protection. It's not like you leave them like that all day." Peter went on to say "You pick up a goanna, which starts to get excited about what might be happening next, and as you approach the tub the animal goes limp, as if to say 'oh, we're going home...' There is no way you could get a Perentie into one of these tubs if it didn't really want to!"

The next largest display for which Peter supplies enclosures and animals is ACTHA's own **Snakes Alive! Exhibition** which is held at the ANBG during the January school holidays. The reptiles at this event are looked after by many ACTHA members who volunteer their time throughout the week-long event.

Canberra Reptile Zoo: Peter's new initiative with fellow Reptile Inc. colleagues Antony and Karen

Operating now for about 18 months, Canberra Reptile Zoo's owners have made enormous changes to the building which once housed the

former Reptile Sanctuary and before that Ross Bennett's Australian Reptile Centre. It has now become a very popular tourist attraction.



(Reptiles Inc & The Canberra Reptile Zoo cont'd)

Renovations by Peter's father, Derek Child, have been fast and furious during the past 12 months and Peter expects this to continue for some time yet. Currently being revamped is the crocodile enclosure. The scrub python-display is also receiving a major makeover due to the recent loss of several juveniles. The current occupant is doing very well. The enclosure includes floor heating spotlights heating in the water et cetera.

An enclosure which contains hopping mice provides a good example of food, prey, and predator to young visitors.

There are not many exotic animals at the Zoo, however four species are being considered for inclusion. "We already have a boa constrictor and hope to receive some land tortoises and iguanas." Peter wants to be able to explain the difference between many reptile species that people often confuse. For example, an iguana versus a goanna, or a boa constrictor versus a python. Peter cited the recent example of two children being crushed to death by a boa constrictor overseas. Visitors have commented on the "dangerous snakes being displayed" and Zoo staff have had to explain the difference between a boa constrictor and Australia's scrub python: a long and large animal that looks similar but which does not have the body mass of the boa to be able to crush a pair of children.

Birthday parties are another good source of revenue for the Zoo and up to six of these can be held on weekends, which are now fully booked to Christmas. A reptile show is included in the middle of the party which is entertaining whilst educational. The Zoo is now teeming with passionate volunteers who thoroughly enjoy being there.

Renovations are also being made outside. A paddock behind the zoo, which has remained unused for 16 years, will be turned into a 'maze' where various statues, including water buffalo, pigs, foxes, dinosaurs, crocodiles, kangaroos and other fauna, will form an educational display.



(Reptiles Inc & The Canberra Reptile Zoo cont'd)

"The statues are a point of reference." Peter explained. "Dinosaurs are a great lead into reptiles. A dinosaur is a reptile (because they are scaly and believed to be cold blooded) but a reptile is not a dinosaur (reptiles have the wrong hip configuration to be considered a dinosaur). This is a good example of the type of stuff we talk about." The 'ferals' area, to be called 'Feast or Foe?', will challenge visitors to think about whether the animals are food or a problem pest. Quiz sheets will be given out to make the experience even more interesting.

The retail side expands

As well as an outlet within the Zoo, to cater for Canberra's north-side reptile keepers, Peter has a new shop based in a rented warehouse in Queanbeyan. Opening has been delayed because of Queanbeyan Council regulation requirements relating to any new business endeavour. Peter said he was not made aware of this when he signed the lease and is currently in negotiations to be able to open the shop as soon as possible.

Keeping native animals as pets: Reptiles

Peter emphasised just how popular reptiles have become over the past few years, explaining that there are now 18 businesses in NSW and 24 businesses in Victoria who conduct reptile 'shows'. In the ACT there is just Reptiles Inc., which is why he is so busy! Bowing to pressure from interest groups and reptile keepers, the NSW Government has now made it possible for pet shops to sell reptiles. Peter advised that the new regulations are stringent.

Summary of Media Release by NSW Minister for the Environment, Robyn Parker MP, Monday, 25 March 2013.

The new rules will bring NSW in line with other mainland states, making it easier for people to find and select reptiles as a pet, ensure keepers receive information about keeping them healthy and provide greater transparency about where and how reptiles are being sold. "There are more than 16,800 licensed reptile keepers in NSW, which show just how popular they have become as pets," the Minister said. "Until now they have only been able to buy pets online or at reptile expos but not at reputable and well established pets stores."



Above: the new Scrub Python enclosure and below , the new croc tank.



The new rules will allow pet stores to sell five species of lizard, eight types of python, two turtle species, bearded dragons and geckos.

A code of practice has been developed by the National Parks and Wildlife Service to help people provide the right standard of care. Pet shops will also be assessed by the NPWS to ensure they provide adequate care, hygiene and education for would-be keepers, including a reptile identification test. "They do have unique needs." Pet shops will need a Fauna Dealer's licence.

All reptiles traded at a registered premises must be kept in the care of a person who can

demonstrate that they have at least three years relevant experience.

A fauna dealer must accept the return of any reptile purchased from them at no cost to the purchaser. This requirement must be displayed at each registered premises in a conspicuous location.

All reptile enclosures must comply with the minimum requirements for size (*details are available in an Attachment to registration certificate which can be viewed at www.environment.nsw.gov.au*

Absent from the NSW list is the Diamond Python and the Shingle-back Lizard, Peter commented. "Unfortunately, people may potentially be tempted to take these animals from the wild and sell them as a direct result of these species' omission."

The cage sizing identified in NSW's policy is to be continually updated as keepers and pet shop owners identify problems. For example, you could keep three bearded dragons in a suggested 2 x 2 foot tank; quite inadequate and the enclosure size has since been adjusted.

Canberra's list includes only local native animals, the original policy apparently written to cover for any potential release of unwanted pet reptiles into the wild. This would not cause a direct impact to our local native wildlife was the general consensus at the time, however the spread of diseases in this scenario is a disturbing possibility.

Canberra's legislation is currently under review and is available for comment and input. The ACT Government is also working on a code of practice, which aims to address the often differing advice given to hobbyists for housing their pet reptiles.

Enclosure sizing

There was some discussion on appropriate cage sizes and the point was made that cage sizes will differ for young versus adult for any given species. Peter emphasised that he likes to display an adult of any species he sells so that potential buyers are aware of what to expect.

There is a vast difference between the enclosure needs of different reptile species too: arboreal lizards versus ground dwelling lizards. An increase of 20% for each additional animal also needs to be factored in.

To own or not to own...

Peter has observed that much of the general public's understanding of reptile ownership is fairly basic at best. People want to see them and often then want to own one. It is really up to people like Peter and his team, and reptile enthusiasts like most of ACTHA's membership, to shepherd potential owners in the right direction.

When selling an enclosure for around \$300+, Peter will tend to include an animal like a blue-tongue lizard. At least then he knows the animal will be kept in appropriate housing.



ACTHA'S NEW WEBSITE DEVELOPED & MAINTAINED BY ANGUS KENNEDY

Snakes Alive! 2014 has come to a wrap and, as always, was a great success. It doesn't end here though; once the dust settles on our flagship event, ACTHA continues to actively pursue online and social media to promote an understanding and appreciation of Australian herpetofauna and the work of the Association year round.

The ACTHA website has been rebuilt on a new, more stable platform. The website remains one of our main points of contact with the public and we continue to get regular enquiries and significant visitor volume. You can view the new website at <http://actha.org.au/> Critical feedback and suggestions would be very welcome as the last of the content from the old website is put online - let us know what you think!

Some highlights:

<http://actha.org.au/news.html>

<http://actha.org.au/snakes-alive.html>

<http://actha.org.au/research.html>

Further, the ACT Herpetological Association Facebook page is being very well run by our young members

Alisdair Robertson and Beth Josey at <http://facebook.com/actherpetologicalassociation>. I want to thank them for their hard work and encourage you to check out the page, like it and share it with your friends. Alisdair and Beth have been busy posting new and original content and really selling ACTHA's work, particularly *Snakes Alive!*. Show them and the Association some support by promoting ACTHA on Facebook!

As always, if you have any suggestions or feedback on the work of the Association in the online arena, do not hesitate to let us know.

Vet encourages care for reptiles

By Stephanie Muir, *The Riverina Leader*, 7 Feb '14



Above: On the mend: an endangered Broad-shelled Turtle is recovering from being hit by a car in Wagga, NSW.

They are the vulnerable, unobtrusive and shy creatures that, in the words of Wagga veterinarian [& ACTHA member] Jan Wild, "ask very little of us". Yet, they are often left for dead, their plight ignored, after falling victim to a dog attack or car.

Jan, a respected veterinarian at Lake Road Veterinary Clinic, is appealing to the Wagga community to heed a message to "look out" for the abundant species of reptiles that call the region home.

Her call comes just days after an endangered broad-shelled turtle and young blue tongue lizard entered her care.

"The young blue tongue lizard was found by a council worker with his tail hanging on by a thread but he could be saved," she said.

"I would say his tail has been driven over. I removed his tail, sealed off the wound, gave him a dose of antibiotics and he is now doing well.

"Some lizards, like this guy, will grow their tails back. It won't match perfectly but functionally it will be fine. I would say he will be in care for the next 8 to 12 weeks before he is released."

Jan believes the survival of the maimed blue-tongue lizard highlights the important role members of the public can play in protecting injured reptiles.

"Many injuries are treatable and the reptile can be rehabilitated and released with the right treatment," she said. "Reptiles can survive after

losing a leg or a tail. Some species will regrow their tails but others won't.

"Likewise, depending on the extent of the injury, turtle shells can heal.

"There are some life-threatening injuries that mean they can not be saved but, if the animal is brought in to us, we can still give it the appropriate care and/or euthanise it carefully and humanely to end the suffering."

Jan said there are many simple ways members of the community can help decrease the number of reptiles needlessly injured.

"Reptiles don't ask for much and the least we can do is look out for them," Jan said. "When someone is driving and they see a reptile, either a snake or a lizard on the road, they can do their best not to hit it by slowing down or even stopping if it safe to do so. If it is in the middle of the lane, put the wheels either side and drive over them without hitting them. "If you are out walking your dog, do not let them attack reptiles.

"Dogs, especially Jack Russell Terriers, will grab a lizard and shake it until the spine breaks. There is nothing we can do for them once that happens."

"People should also know it is illegal to attack or kill reptiles in the wild. Often people will attack a lizard thinking it is a snake or attack a snake that is actually completely harmless. We have a lot of completely safe pythons that live around here."

If someone does come across an injured reptile, Jan encourages them to safely catch the animal and bring it into the centre or contact WIRES.*

"The best way to approach them is to go up with a towel and drop it over the head and body before carefully rolling him up," she said.

"If you approach with a bare hand they will see you as a predator and they could try and escape even with an injury."

** Anyone finding injured wildlife in the ACT should call ACT Wildlife on*



THE AUSTRALIAN & INTERNATIONAL SCENE

Monitor Lizards found to breathe unidirectionally like birds

By Ewen Callaway, December 2013
Source: *The Conversation*, 1 Aug '13

A lizard captures oxygen from air both when inhaling and exhaling—a feat normally associated with birds. Many scientists believe birds developed

the adaptation to cope with the enormous requirements of energy needed to take flight, and the discovery of "unidirectional breathing" in the savannah monitor lizard raises questions about when and why the trait first evolved.

"To go and find a similar air-flow pattern in animals as distantly related [to birds] as monitor lizards is mind blowing," says Mathew Wedel, an evolutionary biologist at Western University of Health Sciences in Pomona, California, who was not involved in the discovery.

Mammals and many other vertebrates breathe tidally, which means that air travels into the lung to gas-exchanging cavities called alveoli and then back out via the same path. Not birds, which store some of the air they inhale in specialized sacs. When they exhale, oxygen is extracted from this air.

In 2010, a team led by Colleen Farmer at the University of Utah in Salt Lake City reported that alligators and other crocodile-like animals, practice unidirectional breathing. The discovery hinted that dinosaurs might have also breathed the same way. But Wedel says that "it wasn't super surprising that crocs might be a bit bird like", because their lungs resemble those of birds.

Now a team led by Farmer and her colleague Emma Schachner, an evolutionary biologist at the same institution, report in *Nature* that savannah monitor lizards (*Varanus exanthematicus*) use the same breathing mechanism.

Monitor lizards are a group of 70 or so species that includes Komodo dragons, the largest lizards on Earth. On the surface, their lungs look like they would use breathing, Schachner says. "When you pull the lungs out it just looks like a bag with chambers. It doesn't look

anything like the bird lung." But computed tomography (CT) scans revealed a large chamber, with a series of up to 11 brachial tubes branching off in parallel and linked to one another via perforations—a set-up that could enable one-way flow.

To test this possibility, the researchers dissected the lizards' lungs and filled them with water containing suspended spheres, to better track how the water flowed. The water flowed tidally through the large chamber, but unidirectionally in the smaller brachial tubes. Schachner's team confirmed that air followed these patterns during breathing as well by implanting sensors in the lungs of five lizards and measuring air flow as the animals breathed.

The discovery of unidirectional breathing in monitor lizards could either mean that the trait evolved in the common ancestor of birds, crocodiles and lizards—an animal that lived roughly 270 million years ago and resembled an iguana—or that the feature evolved independently in each evolutionary branch, Schachner says. To determine which scenario is correct, Schachner's team plans to study the breathing patterns of still more reptiles, such as iguanas, geckoes and bearded dragons.

Her team's study also raises questions about why unidirectional breathing developed in the first place. Farmer has hypothesized that it helps animals obtain oxygen while they're holding their breath because unidirectional breathing allows more oxygen to be extracted from air—something that many lizards do when startled. Crocodiles can hold their breath for upwards of 20 minutes, and ancient marine reptiles may have found the trait useful for long dives, Schachner says. The trait could have also been an adaptation to lower oxygen levels on Earth, she says. During the early Triassic era 250 million years ago, oxygen made up 12 percent of air, compared with 21 percent today. These lizards get more oxygen from air than any other reptile and they live in environments ranging from parched desert to tropical forest. Schachner believes that no one found unidirectional breathing in lizards because the trait is so hard to measure, especially in wild animals. Wedel hopes the discovery by Schachner's team will inspire others to eschew conventional wisdom.



Image above by Cheryl Ertelt

Australian endangered species: Hawksbill Turtle

Authors: Mark Hamann, Senior Lecturer in Environmental Science, James Cook University, Kimberely Riskas, MPhil candidate at James Cook University

Source: The Conversation, 1 August 2013

Right: A female Hawksbill Turtle nesting in northern Australia, Scott Whiting

The Hawksbill Turtle *Eretmochelys imbricate*, is one of the seven species of marine turtles and one of six in the family Cheloniidae. It is easily distinguished from other turtle species by its beak-like mouth and overlapping scales, or scutes. Harvested for centuries for their exquisitely patterned shell, some hawksbill populations now face an uncertain future.

Hawksbills, while widely distributed throughout the world's tropical oceans, prefer warm, shallow waters and lagoons. Although hawksbills are most commonly associated with coral reef systems, they sometimes nest in mangrove-fringed islands or beaches. Like other marine turtles species, hawksbills are migratory and can swim long distances between breeding and feeding grounds. Hawksbills spend most of their lives at sea, only coming ashore to lay eggs. Little is known about turtles' habitat use or behaviour during the "lost years" between hatching and their initial appearance at foraging grounds.

Much of what we know about the species comes from studies on nesting turtles and a few long-term foraging area studies. Sponges and algae make up the bulk of the hawksbill's prey, though their omnivorous diet also includes sea anemones and the highly venomous Portuguese Man o' War (*Physalia physalis*).

Hawksbills nest on the beaches of dozens of different nations, and the species is further divided into smaller genetically distinct management units or populations. Separating the species in such a way allows scientists to determine which populations are healthy and which are at risk. Thus, the species as a whole is made up of several management units, each

with its own potential for recovery or decline.

Status

Amid much debate the hawksbill turtle was listed globally by the IUCN as Critically Endangered in 2008. The debate largely centred around two areas.

First, some scientists argued that the IUCN Red List criteria are not suitable for listing marine turtles and that the species could not be critically endangered according to IUCN definitions.

Second, hawksbill turtles were traditionally used to supply Japan bekko (Hawksbill turtle shell) markets. Experts debated whether this use was sustainable.

One issue with using the IUCN Red List Criteria for hawksbill and other marine turtle species is that the status of the species varies throughout the world – certainly there are populations in trouble and those doing well. But for many there are few data to indicate status. Monitoring multiple populations can be challenging, especially when nesting occurs on far-flung islands and remote beaches.

In Australia, the hawksbill is listed as **Vulnerable** under the EPBC Act of 1999. The species is separated into three populations, but the status is only known for the population in far north Queensland, which is declining at 3% each year.

Hawksbills nest at low densities in the Great Barrier Reef and Torres Strait, although this population is not well studied. Together, the Dampier Archipelago and Montebello Islands off the northwest coast of Australia are thought to host one of the largest hawksbill populations in the world.

Threats

Across the globe hawksbill turtles have suffered from large-scale commercial use for the turtle shell trade. Trade ceased in 1994 when Japan withdrew objections to the turtle's listing on the Convention on International Trade in Endangered Species (CITES). Although the selling of hawksbill products is now illegal, many populations have not yet recovered.

Existing threats include consumption (mainly of eggs), predation of eggs by animals such as varanid (or monitor) lizards, incidental capture by fishers and coastal development.



In North Queensland, hunting pressure overseas and predation of eggs by goannas are suspected to be responsible for the observed 3% decline. Elsewhere in Australia, the main threats include habitat loss or change caused by the oil and gas industry; and light pollution, which disrupts hatchlings when hatching and adult orientation during nesting.

Strategy

There are several international agreements that act to manage hawksbill turtles. At a global level, the species are listed as Appendix 1 in CITES, which prevents international trade of the turtles or any of their products. At regional levels, instruments such as the Indian Ocean-South-East Asia Marine Turtle Memorandum of Understanding and the Inter-American Convention for the Protection and Conservation of Marine Turtles act to coordinate research, monitoring and management action.

In Australia, monitoring and management actions are guided by the Australian Government's marine turtle recovery plan. There are also regional frameworks such as the Great Barrier Reef World Heritage Area, the Barrow Island Long Term Marine Turtle Management Plan, and the actions of traditional land title holders (Groote Eylandt and Torres Strait).

Hawksbills in Northern Queensland in particular are in need of urgent management intervention. Managing Australian populations will require a concerted effort to reduce the predation of eggs by goannas and mitigate the impacts of lights and coastal developments on key rookeries. We will also need a multi-national approach to curb overseas hunting.

Conclusion

Hawksbill turtles are a key part of coral reef ecosystems around the tropical world. They have survived what many consider to be some of the longest, and most pervasive, turtle harvests across the globe. This species currently faces a panoply of additional threats, from capture in fisheries to coastal development. Strengthening political co-operation and international conservation efforts is an essential first step. Furthermore, addressing knowledge gaps for each population is critical in protecting the hawksbill from further decline.

Australian endangered species: Leatherback Turtle

Authors: Mark Hamann, Senior Lecturer in Environmental Science, James Cook University, Kimberely Riskas, MPhil candidate at James Cook University

Source: The Conversation, 15 August 2013

Right: Don't be fooled, this little guy will grow to be the largest turtle in the world, Flickr/ Jennie – My Travels



Leatherback turtles (*Dermochelys coriacea*) are the largest, oldest and most widely distributed of the world's marine turtles. Its appearance alone distinguishes the leatherback from its relatives: shell-less and bluish black in colour, with seven fleshy ridges along its back, and dappled all over with white spots. It is the only extant member of the ancient Dermochelyidae family, which first appeared around 100 million years ago.

Adult leatherbacks can grow to lengths of up to two meters and weigh as much as 700kg. In addition to its great size, the leatherback also undertakes the longest migration of any marine turtle, swimming on average 6,000km between feeding and nesting grounds.

Their diet consists almost entirely of jellyfish but also includes tunicates (relatives of sea squirts) and other soft-bodied invertebrates. In pursuing prey, leatherbacks can dive to depths exceeding 1,000m — a part of the ocean beyond the physiological limits of all other diving animals except beaked whales and sperm whales. Like these mammals, leatherbacks have adaptations to survive the lower temperatures and crushing pressures of these deep dives.

Leatherbacks can be found in all of the world's tropical and temperate oceans, and have been recorded in frigid sub-polar waters far outside the ranges of other marine turtles. In Australia, leatherbacks forage in coastal waters around much

of the country. Regular sightings occur in Western Australia, the Gulf of Carpentaria, eastern Australia and the cooler waters of southern Australia.

Leatherbacks nest sporadically in Australia, particularly in the Northern Territory. No nesting has been recorded in eastern Australia since 1996. There are no significant Australian rookeries, as nesting in the western Pacific region is concentrated in neighbouring countries such as Indonesia, Papua New Guinea and the Solomon Islands. Most of the world's leatherback turtles live in the Atlantic Ocean. The world's largest nesting population is in Gabon, in western Africa.

Status

There are seven different populations of leatherback turtles, determined by genetic and migratory studies. Each of these vary in size, range, status and trends. There are large populations in the Atlantic Ocean, and the north west Atlantic population is increasing. But the Pacific Ocean populations have declined by over 80% in the past 30 years. In an extreme case of prolonged egg harvest and poor management of turtle by catch, the number of nesting females at Terengganu, Malaysia declined from over 3,000 in 1968 to just two in 1993. This population has not recovered and is not expected to do so.

The IUCN is currently reviewing the global status of the leatherback turtle. In Australia, the EPBC Act classifies the leatherback as endangered.

Threats

The leatherback faces myriad threats throughout its range. Decades of consumption such as the collection of eggs for food and use as aphrodisiacs have nearly wiped out leatherbacks in Indonesia, Mexico and Costa Rica.

Large numbers of leatherbacks are also captured incidentally in commercial fisheries. Leatherback foraging habitat often overlaps with that of valuable pelagic fish species, such as tuna and swordfish. As a result, high levels of adult capture and mortality in these fisheries

pose a grave threat to populations. Entanglement in discarded nets and lines, or "ghost fishing", is a significant but understudied problem.

Plastic pollution of the world's oceans is a ubiquitous and pervasive threat to leatherback turtles, which mistake floating plastic bags and other debris for jellyfish. In 2009, a scientific study found plastic debris in one third of leatherback turtle necropsies across the globe.

Leatherbacks are especially at risk for eating plastic, which is carried by ocean currents to locations where the turtles feed.

Further threats to leatherbacks include loss of nesting beaches to coastal development, light pollution, nest predation by feral animals and continued illegal egg harvest.

Strategy

Conserving leatherbacks will require action from many different nations across the globe. Thankfully, their situation has not gone unnoticed and efforts are already underway in several countries. For example, in Costa Rica, the Leatherback Trust is a non-profit foundation that works to engage the community and protect nests at crucial beaches in Las Baulas National Park. Since its inception, poaching of eggs has been eliminated within the park.

In 2012, the US National Marine Fisheries Service designated nearly 44,000 square km of critical habitat area for foraging leatherbacks off the west coast of the United States. Although this population nests in the western Pacific, the adults feed off the US coast, and are often caught as by-catch in gillnet and long-line fisheries.

In the early 2000s, governments and NGOs helped establish community-based conservation in Papua New Guinea, West Papua in Indonesia, Solomon Islands and Vanuatu. These projects have gathered data that are essential for managing leatherbacks in their key Pacific nesting grounds. These projects need ongoing support.



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