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ACTHA INC. NEWS
JUNE - JULY 2010
Newsletter of the ACT Herpetological Association Inc.

YOUR COMMITTEE

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* *Denotes Life Members*

The Yellow Spotted Bell Frog, Litoria castanea, was recently found by a NSW fisheries officer. *See page 6 of this Newsletter*

Please Note!

The date for the next ACTHA Meeting

HAS BEEN MOVED TO TUESDAY, 29TH JUNE 2010

DIARY DATE

The *bi-monthly* meetings of the Association are usually held on the **third Tuesday of the month at 7.30pm**, Southern Cross Club, Catchpole Street, Macquarie, Belconnen.

UPCOMING MEETING

Tuesday, 29 June 2010

Guest Speaker:
Ric Longmore

The Red Cross Snake Institute in Bangkok is South East Asia's regional authority on the production of antivenom. It was opened by the President of the Thai Red Cross Society in 1923 and the Commonwealth Serum Laboratory in Melbourne was instrumental in assisting Thai researchers develop efficient antivenom production in an area of the world where many people die annually from snake bites.

Ric has visited the Institute many times on his trips to Thailand over many years and is keen to share his experiences by taking ACTHA Members on a virtual journey using his slide images. A meeting not to be missed!

IN THIS ISSUE

ACTHA presents a cheque to the Australian National Botanic Gardens: page 2.

The value of surveys and putting dots on maps: an exceptional talk was given at our April '10 Meeting by David Hunter, NSW Dept of Environment, Climate Change & Water on the importance of conducting surveys and recording this information, allowing a greater capacity to assess and monitor levels of reptile population decline, from page 3.

David Attenborough on snakes: page 8.

Rising temperatures drive lizards to extinction: researchers at the University of California in Santa Cruz, along with colleagues from across the globe, reached these conclusions after comparing their field studies of lizards in Mexico with extensive data from around the world, page 10.

Burrowing into ACTHA's past: 1986, page 12.

Above: Ric Longmore presents the cheque to the Director of the ANBG, Peter Byron.

ACTHA once again makes a large contribution to the Australian National Botanic Gardens

Joe McAuliffe, President ACTHA

Several members of ACTHA's Committee recently held a morning tea at Hudson's Café to present a cheque to the Director of the Australian National Botanic Gardens (ANBG), Peter Byron.

As in past years, half of the net door takings from ACTHA's annual *Snakes Alive!* Exhibition, which is held at the Gardens, is contributed to the ANBG to assist them with their education programs. These programs include a strong herpetofauna focus which encompasses many of the reptiles who call the ANBG home.

The value of surveys and putting dots on maps

ACTHA's April 2010 talk was given by David Hunter, Biodiversity Conservation Section, NSW Department of Environment, Climate Change & Water

This article by Mandy Conway, with images and assistance by David (below).

The value of surveys

Benefits

- greater capacity to assess and monitor levels of decline;
- greater capacity to assess conservation status and prioritise actions;
- determine habitat requirements and develop management actions to protect critical habitat;
- assess impacts and protect habitat;
- undertake population genetic study.

The importance of people recording data on all facets of a reptile they're interested in (location, habitat and taxonomic descriptions etc) cannot be emphasised enough, especially at a time when numbers of many species are rapidly declining and efforts need to be made to conserve remanent populations. This historical information plays a vital role in assessing species population and developing useful and targeted methodology to try to ensure a species' existence. To undertake capture, breeding and reintroduction programs, really a last ditch effort, is incredibly costly and resource intensive and a long term commitment spanning many years, indeed decades. It is a process that should not be undertaken lightly and decisions on whether it is really necessary, because of all the resources required, can be made more effectively with hard data on a species current distribution, ie ' dots on maps'.

Thorough, targeted surveys using appropriate techniques provide invaluable information for undertaking threatened species recovery programs. This is the sort of information gives us the strongest clues as to what is driving the species distribution, and what we should do to maintain it. The same applies for assessing the impacts and protection of habitat. We have remanent patches of native vegetation across the landscape and people want to spend money and effort protecting it. Why do this randomly when it can be done taking into account the protection of habitat for threatened reptile species, which has been identified from surveys.

Catchment Management Authorities (CMA) typically request advice about where a threatened species occurs before embarking on habitat restoration activities. Recent genetic studies have revealed how little we know about the diversity of our herpetofauna at different levels ie what species we have out there, and genetic sub-structuring within a species (significant evolutionary units or significant management units). Across the landscape we have populations regularly blinking out, and we need to know where to focus our efforts in terms of protecting key populations. Identifying important populations is best achieved through an understanding of a species genetic variation across the landscape, as this would allow for a strategy to maximise the conservation of genetic diversity. Again, this is best achieved after surveys have identified the current distribution of a species.

Example 1: Southern Corroboree Frog

We might perceive to know a species distribution, where it exists and in what numbers, but it is amazing what turns up when people actually go out and look closely, systematically working across the landscape.

The black triangles in Figure 1 (*right)* indicate areas where Will Osborne found the Southern Corroboree Frog in the mid 80's, a thorough and systemic survey undertaken at the time. The result was a baseline data set of knowledge which was monitored to several levels of intensity. Will Osborne discovered on subsequent surveys that the frog was disappearing, contracting greatly in its range and by the time Dave got involved in 1995/96 only a few locations still contained specimens. Only thirty-two Southern Corroboree Frog males remaining in the wild!

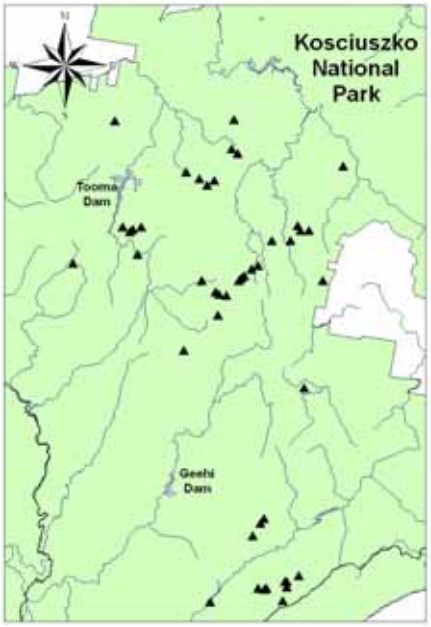


Figure 1

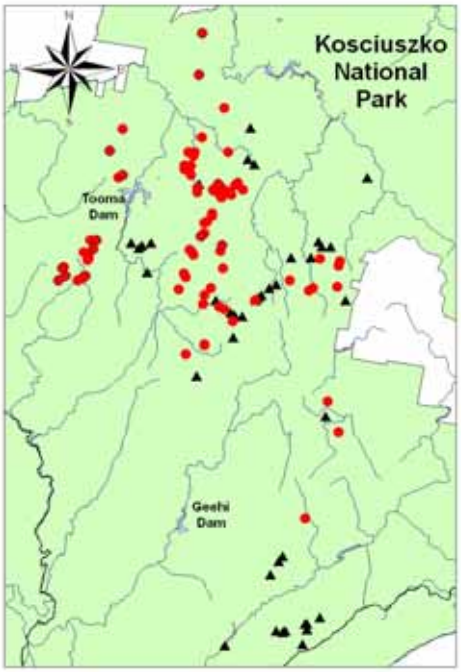
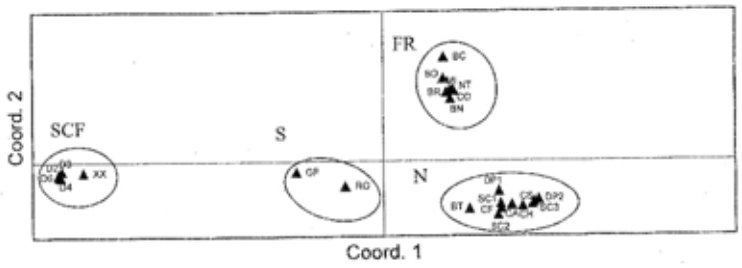


Figure 2

The dots in Figure 2 (*left*) indicate where frogs were found after Dave revisited Will's work and conducted surveys on a finer scale. Instead of surveying a bog at the top of the valley and one at the bottom of the valley Dave surveyed all the little pockets of potential habitat in the valley. The use of a helicopter was initially needed to locate promising areas.

Field trips of six weeks solid work over three years resulted in fifty sites with 450 males being recorded. Because we were dealing with a species in rapid decline, this type of data puts us in a powerful position to make confident decisions about the actions required to move forward. ie captive breeding: Gerry Marantelli's breeding facility utilises several shipping containers containing frogs at various stages of development. Running costs involve many 10's of thousands of dollars each year to feed the frogs let alone the man hours and infrastructure required.

Corroboree Frog Microstats (*below*). *Assessment of genetic diversity in the critically endangered Australian corroboree frogs identifies four evolutionarily significant units for conservation.*



Southern Corroboree Frog cluster. Northern Corroboree Frog clusters (NCR) - three distinct clusters that can be recognised based on their genetic composition. To conserve the evolutionary potential of the NCR we need to look after all three groups.

Example 2: Booroolong frog

Figure 3 (*top right*) shows the Booroolong Frog's historical locations prior to the mid 1980's. The records are fairly comprehensive, particularly in the New England Tablelands area. Over the next decade this little brown frog quietly disappeared, along with a lot

Figure 3

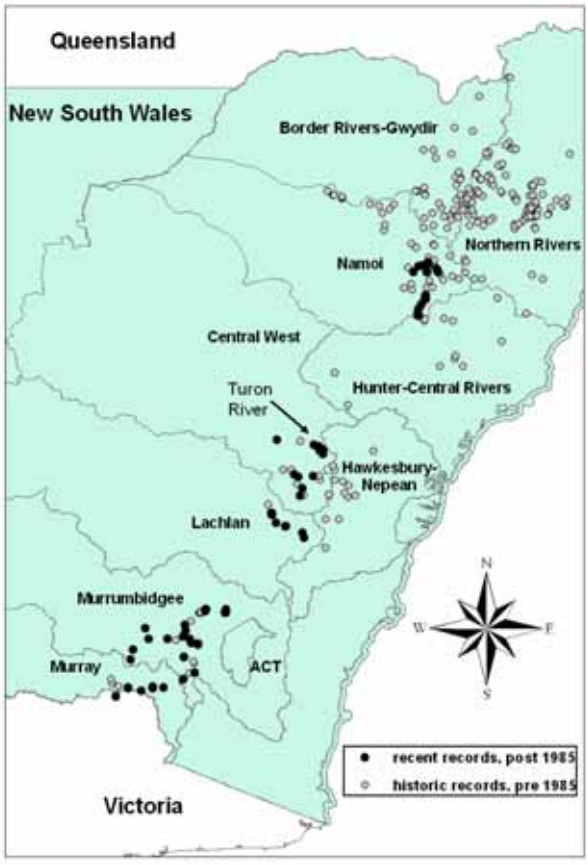


Figure 4

of other frogs. Until the 1990's the frogs hadn't previously attracted much interest. Apart from a small area on the Abercrombie they appeared to have vanished. Systematic surveys were conducted and fortunately the frog was re-located (black dots on Figure 4 (*above*)). The Lachlan and Murrumbidgee Catchments had few historical records of populations

but when the area was thoroughly searched the situation proved not to be so dire. Just because there were no historical records didn't mean they weren't actually there. These frogs were primarily found in the agricultural landscape, with one population discovered in Victoria. More recently another population was discovered nearby, which is fortunate because the drought had severely impacted numbers in the only known Victorian population. Dave highlighted the difficulty in getting resources and funding to do this type of very labour intensive work even though the value of such work is immense.

The image above shows land clearing where the Victorian Booroolong Frog population occurs. The area has been completely denuded of riparian vegetation causing large scale erosion. This particular site was only remaining viable because it was receiving large winter flushes of water causing sediment build up to wash away. Since 2003 there have been no winter flushes in this stream and monitoring a 5km section of stream has shown that 95% of its habitat has been lost as a result of not having the sediment flushed through the system. Sediment has remained and clogged up the habitat with weeds and willows, etc.

The image below shows ongoing disturbance processes. "If you didn't know the frog was historically here you wouldn't now target the area

for survey work, or try to enhance the quality of the habitat to slow down the ongoing degradation."

The final image (*above)* shows unlawful dam creation measures being carried out by various farming communities so they can water their stock in this time of drought. A highly illegal practice that Government agencies are aware of, however without more resources or a shifting of priorities they are not able to regulate. Small wonder there are such massive problems in the Murray River system where all the other major tributaries are being affected in the same way. The use of front-end loaders, digging ever deeper to find water and damaging the area is pure vandalism. But farmers in the area, as elsewhere, are highly stressed managing their properties through the drought. Men's support groups are being formed at a record rate and one can see why Government agencies may be reluctant to act in certain instances.

Catchment Management Authorities are now endeavouring to work with farming communities in a positive way. If we have dots on maps showing where species are then unsophisticated but effective work can result. "If you're going to spend $ protecting this river then why not do it where we have these endangered species."

Dave is currently monitoring some of these sites. He is not advocating the locking-up of these areas, instead farmers are approached and riparian zone preservation is discussed. A separate paddock is allocated and it is managed in a different way: you pulse-graze it at certain times of the year to assist with weed management in a way that promotes revegetation of native vegetation. To farmers this is a palatable idea. At the moment, because of the drought, fencing is not making a big difference. However in future years, with more rain, these sites will begin to demonstrate their value.

The Booroolong Frog, its eggs are laid in rock crevices.

Studies have identified the most important part of the Booroolong Frog's habitat is the rocky sections of stream. A detailed correlative study has revealed, however, that the most important feature is the rock crevices. Booroolong Frogs like to mate and lay their eggs in the crevices. Willows colonising large stretches of river banks have clogged these crevices up with their root system of surface mats. Without the crevices the rocks are useless to the frogs. This vital piece of information has initiated a willow removal program which will re-establish breeding grounds along with the replanting of native replacements.

The image above shows a former willow site which

was cleared three years ago. The debris has washed away re-exposing the crevices and the Booroolong Frog has returned.

Example 3: the Yellow Spotted Bell Frog

The Yellow Spotted Bell Frog, *Litoria castanea*, is yet another example. It hasn't been seen for 30 years, presumed extinct, until a specimen was recently found by a NSW fisheries officer: in a creek running through some paddocks with prolific in-stream vegetation including aquatic plants. The fisheries officer (Luke Pearce) had been undertaking fish surveys when he heard a 'plonk' in the stream and turned to see a big green frog just before it disappeared out of view.

A farmer recalls how prolific the frog was in his dams in the 70's and yet there are few records of their actual distribution. Response to the decline of the frog would have been better if we had known their actual range. Putting records in for even common species is something for which the value cannot be underestimated. Taking voucher specimens is an important aspect of keeping records.

L. castanea numbers have declined with the degradation of habitat however it is the Amphibian Chytrid Fungus which has drastically reduced numbers. Certain species are more susceptible to Chytrid Fungus and this frog is one of them. Dave has seen three different species which are Chytrid Fungus free populations: the Spotted Tree Frog, Southern Corroboree Frog and Alpine Tree Frog. The numbers of these frogs in a Chytrid Fungus free pocket are as in the good old days, even with the drought.

Green and Golden Bell Frog from the Captains Flat area, NSW and how a herp enthusiast's find has made a difference

Recently, a family who are members of Frogwatch, have found a population of the Green and Golden Bell Frog in a travelling stock reserve in the Captains Flat region. This means Dave and his team will hopefully be able to get a covenancy over the Reserve and use it as a monitoring point, of great importance due to limited access at other sites where this species occurs. This family were interest in frogs and had some idea of what they were looking at which resulted in a really important find. Dave and Will Osborne are meeting the family to discuss ongoing management including water quality testing and monitoring.

Bibron's Toadlet

This frog was once common around Black Mountain in the ACT, the Brindabella's and throughout the Southern Tablelands. It's population has crashed in large sections of its range however conservationists can't quantify this because no very few records where collected prior to its decline. Ross Pengilley made some notations, but only in certain localities.

Entries to the wildlife atlas in the past would have helped gauge the rate of population declines of many species. The accuracy of the information, including

exactly where surveys were undertaken and the numbers found is one of the most important factors. This type of information will enable conservationists to target and repair riparian vegetation in critical areas.

The ACT population of the Grassland Earless Dragon (*right)* is another species once relatively common. Recent thorough surveys and monitoring have demonstrated the level of decline recently suffered by this species. The Canberra population of this dragon is probably one of the best surveyed reptiles in the country. The level of work has been phenomenal and has allowed for confident management decision to be made for this species. Further south on the Monaro Plains, there has only been scant work on this species. This has made management of this population problematic, as it is difficult to put recent declines and further loss of habitat into a meaningful context.

In Summary, populations can be discovered by just getting out there and surveying. It's amazing what turns up once you start looking. By knowing where species occurs, some of the greatest threats to their persistence can be mitigated (loss of habitat due to urban, agricultural, and industrial development), and a strategic focus to implementing recovery program can be undertaken.

See also 'Recovery efforts for Kosciuszko's threatened frog fauna' article based on Dave Hunter's talk to ACTHA in August 2009. ***ACTHA News Oct - Nov 2009****, page 8.*

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Above and left: Farmers have been approached by the CMAs and riparian zone preservation discussed. A separate paddock is allocated and it is managed in a different way: it is pulse-grazed at certain times of the year to assist with weed management in a way that promotes revegetation of native vegetation.

David Attenborough on snakes

'David Attenborough takes us into the world of snakes - their evolution and how they live today.'

Source: ABC Radio National, The Science Show, presented by Robyn Williams, 29 May 2010 http://www.abc.net.au/rn/scienceshow/stories/2010/2912391.htm

"There's something profoundly unsettling about snakes. It's the way they look at you with that steady unblinking stare. It's as though they've come from another world, and indeed ancestrally they almost certainly have. They've come from underground.

There's a lot to be said for a life spent beneath the surface of the earth. Conditions are much steadier than on the surface, there's no wind to buffet you, no great swing of temperature between night and day, and you're out of the way of other larger dangerous animals that might be seeking to make a meal of you. And there's a surprising amount of food; roots and bulbs if you're a vegetarian and, if you're not, worms, beetle grubs, termites and other insects, as well as of course other mammals that have taken to the subterranean life.

Above photo of David Attenborough was supplied by Rebecca Bangay.

Backbone animals first clambered up out of the water and onto the land around 170 million years ago, but it seems that quite soon after that some of them started to burrow and disappear below the surface of the earth. One of the earliest to do so was a branch of those very first four-legged backboned animals, the amphibians. They're called caecilians. The name is hardly familiar and you're not likely ever to have seen one of these extraordinary creatures, yet they are surprisingly abundant, particularly in the warmer parts of the world. There are 160-odd species. Most are around a foot in length but one, from Brazil, is almost five feet long and is as thick as a man's arm.

They have concertina-like grooves encircling their hairless moist bodies, but these are superficial, a by-product of the way the animal burrows through the ground, pushing its pointed head through the soil so that its body is extended and then edging itself up so that the concertina rings close. There are no traces of legs, either externally or even internally. But if you are incautious enough to pick one up, you know immediately that it's not a giant earthworm, for its long tubular body doesn't flop about, this animal writhes, it has a backbone, and what is more it bites with small but very sharp teeth.

Below ground of course it's impossible to see anything, so eyes are of no use. Consequently the caecilians' eyes have not only degenerated into useless relics but are covered in skin and without function. The animals do, however, have a special sense organ all of their own. It's unlike anything else developed by any other animal; a pair of little tentacles on either side of the head, each lying in a groove between the remnants of the eye and the corner of the mouth. The caecilian can erect them and wave them about, and since there are nerves connecting to them it seems certain that they are sense organs of some kind to help the animal find its prey and, one presumes, its mate, by smell.

The most recent backboned animals to abandon light and air and go below are the mammals - moles. They went down around some 45 million years ago, so recently in evolutionary terms that they've not yet lost their arms and legs as the caecilians have. The eyes of European moles, although tiny and buried deep in the fur, are still sufficiently functional to enable their owner to tell the differences between light and darkness. And there are other moles, in Africa, whose eyes are covered with skin so that they're totally blind and have a head that is reduced to little more than a furry wedge with a leathery front edge.

The most important group of backboned animals to have made the move underground are the reptiles. Different families have done so at different times. One, the amphisbaenids or blind snakes did so quite early on in reptilian history and are still there. Others such as the skinks still seem to be in the process of doing so. Skinks are those stout lizards with scales that are so smooth

and fit so neatly together that the animals seem to be polished and are a delight to hold.

Between them they illustrate almost every stage of leg loss. Some have four legs that they can waggle but which are virtually useless for getting around, others have lost their hind legs, and some, called sandfish, which live in dunes, have lost their legs altogether and swim, as it were, through the sand, with wriggles of the body at such speed that they're very difficult to catch.

But to come back to snakes. I've said enough, I hope, to convince you that animals living underground tend ultimately to lose both their limbs and their sense organs. Snakes certainly lack legs, superficially at least. But some do have relics of them. Boas and pythons have two small claw-like spurs either side of the vent which are each connected internally to one or more elongated bones deep in the flesh.

Externally they have no sign of ears or a tube leading to an eardrum. Instead their inner ear is connected by bones to the jaw so that snakes can hear (if 'hear' is the word I want) by resting their jaws on the ground and detecting vibrations. But snakes do have eyes. Surely if they in the past lived underground they would have lost them. Well, their eyes in fact are extremely odd and quite unlike the eyes of any other animal. For one thing they lack lids, so snakes can't blink. Instead their eyes are protected by large transparent scales that come away when the animal sheds its skin. And a snake can't move its eye in its socket as well as we can, for whereas we have eight muscles to do that, a snake has only six. As for focus, we and most other backboned animals achieve that by altering the curvature of the lens within the eye. Snakes do not have that ability. Instead they've developed a way of moving the whole lens backwards and forwards. It seems that the snakes' eyes have re-evolved, been re-built, as it were, using a greatly reduced number of parts, further evidence that snakes did in the past live underground.

Fossil remains of truly ancient snakes are rare, but there is a snake-like skull that dates back to around 85 million years ago. That was the time when the dinosaurs were rampaging around the land, when underground was, by and large, a good place to be. But then of course the dinosaurs suddenly disappeared. When they did, it became relatively safe for snakes to return to the surface. There were not many big birds at that stage in evolutionary history to threaten them, but there were quite a lot of nice little furry mammals to eat.

Once above ground, the snakes began to prove that four legs are not, after all, the only effective way for a backboned animal to get around. They use several methods, but most can curve their bodies into an S-shape so that their flanks can get a purchase on irregularities on the ground. And if you've ever tried to chase a snake, you'll know that many species can move across the ground much faster than you can.

Some snakes have also developed special additional sense organs. They smell with their fork-shaped tongues, a talent they may have inherited from the land-living group from which they are descended, the monitor lizards. By flicking this in and out they're able to collect molecules in the air and carry them back to a special sense organ in the roof of the mouth.

But the most highly developed snakes, vipers like rattlesnakes, have a pair of small but deep and narrow pits in front of the eyes. These are sense organs like no other in the animal kingdom. They're heat detectors, so sensitive that they can register the presence of a small warm-blooded creature such as a mouse up to 18 inches away. What is more, that sense is narrowly focused into what amounts to a beam, and since the snake has two such pits, those beams enable it to locate a mouse so well that the snake's strike when it comes hits its target with great precision like the punch of a skilled boxer, neither falling short nor overshooting. And since the rattlesnake is primarily a night-time hunter, those heat detection pits are much more valuable than eyes. But even so, the unblinking but vague stare of a snake still unnerves me, and maybe you. These creatures are aliens. They almost certainly have come from another world, even if it is a long time since they were there."

■

Above: 'Eric', a 6 month old Diamond Python, is a huge fan of David Attenborough!

Rising temperatures drive lizards to extinction

Source: ScienceDaily, 13 May 2010
This article is reprinted (with editorial adaptations by ScienceDaily staff) from materials provided by ***American Association for the Advancement of Science****, via EurekAlert!, a service of AAAS.*

For many lizards, global climate change is a matter of life and death. After decades of surveying *Sceloporus* lizard populations in Mexico, an international research team has found that rising temperatures have driven 12 percent of the country's lizard populations to extinction. An extinction model based on this discovery also forecasts a grim future for these ecologically important critters, predicting that a full 20 percent of all lizard species could be extinct by the year 2080.

The detailed surveys of lizard populations in Mexico, collected from 200 different sites, indicate that the temperatures in those regions have changed too rapidly for the lizards to keep pace. It seems that all types of lizards are far more susceptible to climate-warming extinction than previously thought because many species are already living right at the edge of their thermal limits, especially at low elevation and low latitude range limits.

Although the researchers' prediction for 2080 could change if humans are able to slow global climate warming, it does appear that lizards have crossed a threshold for extinctions -- and that their sharp decline will continue for decades at least.

Barry Sinervo from the Department of Ecology and Evolutionary Biology at the University of California in Santa Cruz, along with colleagues from across the globe, reached these conclusions after comparing their field studies of the lizards in Mexico with extensive data from around the world. Their research will be published in the May 14 issue of *Science*, the peer-reviewed journal published by AAAS, the non-profit science society.

After compiling the global field data, Sinervo and his colleagues studied the effects of rising temperatures on lizards' bodies, and created a model of extinction risks for various lizard species around the world. Their model accurately predicted specific locations on five continents where populations of lizards have recently gone extinct, and it might inform researchers on how these patterns of extinction will continue in the future.

"How quickly can Earth's lizards adapt to the rising global temperatures? That's the important question," Sinervo said. "We are actually seeing lowland species moving upward in elevation, slowly driving upland species extinct, and if the upland species can't evolve fast enough then they're going to continue to go extinct."

According to the researchers' global model, which is derived from today's trends of carbon dioxide emissions from human activities, about six percent of lizard species are due for extinction by the year 2050. Since carbon dioxide hangs around in the atmosphere for decades, the researchers say that this statistic can no longer be avoided. However, they do say that concentrated global efforts to reduce carbon dioxide in the atmosphere could possibly avert the 2080 scenarios, in which 20 percent of lizard species are expected to disappear from the planet.

The detailed study notes specifically that lizards that bear live young are particularly at risk of extinction, compared to those that lay eggs. "Live-bearers experience almost twice the risk of egg-layers largely because live-bearers have evolved lower body temperatures that heighten extinction risk," Sinervo said. "We are literally watching these species disappear before our eyes."

Sinervo began focusing his attention on lizard extinctions after he noticed an obvious trend during his field work in France. He identified an unsettling pattern of lizard extinctions with French researchers, Jean Clobert and Benoit Heulin, while they were surveying some of their well-documented populations. Disturbed by their findings, they contacted colleagues around the world -- Jack Sites and Donald Miles in the United States, Fausto Méndez-de-la-Cruz in Mexico, and Carlos Frederico Duarte Rocha in Brazil -- and a global collaboration ensued.

"This work is a fine example of interdisciplinary science and international collaboration, using methods and data from a range of scientific disciplines to improve confidence in the prediction of the biological effects of contemporary climate change, and in particular showing how long-term records and research are so crucial to the understanding of ecological change," said Andrew Sugden, the International Managing Editor of *Science*.

"We would never have been able to do this without certain free, online tools like Google Scholar and Google Earth," Sinervo said. "It took us awhile to pinpoint the appropriate search terms. But once we did, we locked onto key published studies. I was surprised at how fast researchers began sending us data… That's what happens though: When scientists see a problem, with global evidence backing it, they come together."

In order to fine-tune their model with this surprising global outpouring of data, Sinervo and his colleagues used a small electronic device that mimics the body temperature of a lizard basking in the sun. They placed these thermal models in sun-drenched areas for four months at sites in Mexico where lizard populations were still thriving -- and at sites where they have already gone extinct.

"There are periods of the day when lizards can't be out, and essentially have to retreat to cooler places," Sinervo said. "When they're not out and about, lizards aren't foraging for food. So we assessed how many hours of the day lizards would have been driven out of the sun at these different locations. Then, we were able to parameterize our global model."

For the authors, who claim a deep appreciation for these lizards and the important role the reptiles play in the global food chain, these findings are both "devastating and heart-wrenching." But, they say, hope does remain for the world's lizards.

"If the governments of the world can implement a concerted change to limit our carbon dioxide emissions, then we could bend the curve and hold levels of extinction to the 2050 scenarios," Sinervo concluded. "But it has to be a global push… I don't want to tell my child that we once had a chance to save these lizards, but we didn't. I want to do my best to save them while I can."

This report by Sinervo et al. was funded by the National Geographic Society, UC Mexus, UCSC Committee-On-Research, National Science Foundation awards, CNRS fellowships, visiting Professorships from the Museum Nationale d'Histoire Naturelle and the University of Toulouse, CONACYT grants and fellowships, CONICET grants, FONDECYT grants, SMSI grants, UNAM and AMNH scholarships and grants, an Academy of Finland grant, ARC grants, and the Bean Life Science Museum.

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Burrowing into ACTHA's past: 1986

By Mandy Conway

This month we re-visit the ACTHA group's second year. Interestingly, much of the discussion at the time involved a wildlife atlas which would hopefully lead to a better understanding of local reptile distribution. This complements *'The value of surveys and putting dots on maps'* article on *page 3* of this Newsletter.

A.C.T. HERPETOLOGICAL ASSOCIATION

18 March 1986

ACT Herpetofaunal data collection

In 1985 the ACT Herpetological Association set up a standardised system for recording field observations of reptiles and amphibians in the A.C.T. This involved filling in either a habitat or species orientated data sheet each time observations were collected. Examples of these forms are enclosed with this newsletter for anyone who has not received them. At least some members of the HA have filled in a number of the forms so it would be a good idea to appraise their usefulness as soon as possible. If you have completed forms and would like to submit them to the HA could you bring them to the next meeting or post them to Klaus Henle or Will Osborne at the Department of Zoology, Australian National University, P.O. Box 4, Canberra, ACT 2601.

Jervis Bay Survey

During the summer the HA in conjunction with the ACT Parks and Conservation Service commenced a survey of the herpetofauna of the Jervis Bay area. The survey was given a high priority because of the lack of information on the herps of the JB area and because of the recent proposed changes in land use (see enclosed newspaper cutting). Three successful trips were made to JB to survey frogs and to establish pit trap-drift fence systems. However a fourth trip was attended by one lonesome member only (MB)! Whilst initial enthusiasm was shown for the survey it is disappointing that so few people could make it down for a weekend. Some of us from the Zoology Department are planning to carry out some opportunistic searching of different habitats at Jervis Bay in April. REB is also taking 2nd year students on a collecting trip so hopefully further observations will be made before the weather cools.

14. April 1986

Meetings and talks

Our last meeting was well attended (10 people). Will Osborne gave his talk on the influence of an experimental burning on reptiles; Mark Lintermans summarized the results of the Jervis Bay survey: While some of the drift-fence lines and pit-fall traps could not be used due to flooding, a large number of specimens were caught in those traps which were operated. Most captures were frogs and a few common lizard species but two Tiliqua casuarinae were also trapped. Mark's report showed that the trap lines need maintenance work and that additional hand searching will be desirable. How important surveys like ours are may be demonstratet by the fact, that responibility for Jervis Bay will be shifted from ACT National Parks to the Department of Territories - and the same may happen to Nymagee National Park. For Jervis Bay this definitely means a considerable decrease in the size of the park and its value as national park. Without a good knowledge of the distribution of animal groups like the herpetofauna it is difficult to make even recommendations which areas should be saved. Unfortunately, this is exactly the situation, Klaus Henle was warning against in our initial talks to set up our ACT herpetological association. I remember that hardly anybody understood such arguments at that time. If we don't watch it, it may be too late once we realize what should have been done. So I can just hope that we all can show our initial enthusiasm again.

Our next talk will be a beautiful slide show on the amphibians of Kakadu NP by Ken Thomas. We will meet on 29.5. at 7p.m. for the business meeting and at 7.30p.m. for the talk.

Data sheets

No summary could be given during our last meeting as only three persons handed in their data sheets so far. Therefore I have to sent out a new reminder to all to handle their data sheet in either to Will Osborne or Klaus Henle.

Jervis Bay Survey

We intend a short survey at Jervis Bay either next or the following weekend. If you are interested to join us, please contact either Will Osborne (493057) or Klaus Henle (494074).

Klaus Henle

OBSERVATIONS ON LITORIA AUREA/RANIFORMIS: John Wombey would like to receive any information on recent sightings for these two species within the ACT. As we still have only very few data sheets we can't help him, documenting once more the poor documentation of the ACT herpetofauna. We hope that a few more of us now take more initiative, collect field data and send us the completed data sheets. Also, only very few older observations are so far documented on our data sheets. If we ever want to understand changes in the abundance and distribution of a particular species we urgently need such information.

***Above:** extract from October 1986 meeting*

SPECIFIC HABITAT SHEET

A.C.T. REPTILE AND AMPHIBIAN INVENTORY

OBSERVER'S NAME: DATE:

SEARCH EFFORT: Active Search : : Man hours . . . . . Time of Day . . . . .
Chance encounter : : Approx. size of area searched . . . . . .

WEATHER: Sunny : : Windy : : Overcast : :
Partly cloudy : : Light Rain : : Heavy Rain : :
Snow : :

LOCATION: Name . . . . . Latitude . . . . . Longitude
Description . . . . . .

DESCRIPTION OF ENVIRONMENT FOR EACH HABITAT EXAMINED

SLOPE: Steep (>30°) : : Hill Top : : ASPECT: . . . . . .
Gentle : : Valley : :
Plain : : Large Plain : : ALTITUDE . . . . . .

HABITAT DESCRIPTION:

Rainforest	: :	Pine Forest	: :	Sphagnum Bogs	: :
Tall Open Wet Sclerophyll Forest	: :	Tea Tree Scrub	: :	Swamps	: :
		Heath	: :	Lake	: :
Open Dry Sclerophyll Forest	: :	Sub-Alpine Woodland	: :	Pond/Dam	: :
				River	: :
Woodland	: :	Native tussock grassland	: :	Creek	: :
Riverine Woodland	: :			Suburban	: :
		Pasture	: :		

Other (specify) . . . . . .

Evidence of a Burn (comment) . . . . . .

GENERAL DESCRIPTION:

. . . . . .
. . . . . .
. . . . . .
. . . . . .

Comment:

SPECIES SHEET

Species:..... (No.) | Observer's Name:..... | Year.....

DATE	TIME	LOCALITY	LONG.	LAT.	ALT.	ASPECT	WEATHER	HABITAT MACRO	HABITAT MICRO	NO. OBSERVED	COMMENTS

ACT HERPETOFAUNAL SURVEY

Guide to Completing the Habitat and Species Forms

Examples of both the habitat and species data forms are appended to this guide. Please refer to them if you require an example of how a form should be completed.

Where different categories are listed under a single heading (eg. weather, slope, habitat description), please tick the appropriate box(es). For sections without listed categories (eg. abundance, micro-habitat, reproduction) choose the number code(s) from the categories listed below, and record in the appropriate place on the sheet.

If you are unsure which category applies to your observation, or you did not note it at the time of the observation, please record a zero.

a) Location: Describe in a few words as accurately as possible the location of the site where the observations were made.

b) Latitude and Longitude: Can be taken directly from maps such as the 'Territory of Jervis Bay Vegetation Map' or the 1:100,000 Map of the ACT. Remember to record from the top, left-hand corner of the Lat. Long. cell the locality is in.

c) Aspect: Use only with sites that are sloping. Use the symbols N, S, E, W, to refer to the direction the site faces.

d) Weather: Please use the corresponding number(s) to record the weather conditions at the time the observations were made:

1. Clear
2. Partly cloudy
3. Overcast
4. Light rain
5. Heavy rain
6. Windy
7. Snow/hail

e) Habitat: This section should be used for recording the type of environment (vegetation type, water body, etc.) that the observation site is in.

- For the habitat/community orientated sheet please mark appropriate boxes.
- For the species orientated sheet please select the appropriate number from the following list, and place it in the box on the data sheet.

1. Rainforest
2. Tall open-forest (wet sclerophyll)
3. Open-forest (dry sclerophyll)
4. Savannah woodland
5. Riverine woodland/forest
6. Subalpine woodland
7. Pine forest
8. Tea-tree scrub
9. Heath
10. Grassland*
11. Pasture
12. Sphagnum bog*
13. Swamp*
14. Lake*
15. Pond/Dam*
16. River*
17. Creek*
18. Large rock outcrop*
19. Suburban
20. Other (please specify)

* You may wish to record the type of habitat surrounding these areas. Please place these remarks under the heading 'General description' or comments.

f) General Description: Record any comments which may further describe the area (eg. conservation area, construction area, detailed notes on the habitat(s)).

g) Species List: If possible use the corresponding numbers from the attached list of species. However, you may write the name of the species if you find it easier. If the species is not on the list, write its full name, and briefly describe your method of identification under the 'comments' section.

h) Microhabitat: Microhabitats are listed on the attached sheet. Please select the appropriate number(s) and record in the box on the data sheet. If the microhabitat is not listed please describe it in the comment section.

i) Abundance: Please record either the actual number of individuals observed, or one of the abundance rankings from below.

A -	1 to 5 individuals	E -	50 to 100 individuals
B -	5 to 10 individuals	F -	100 to 1000 individuals
C -	10 to 20 individuals	G -	1000 + individuals
D -	20 to 50 individuals		

j) Reproduction: Use one or more of the following categories.

0 - No comment
1 - Eggs
2 - Larvae
3 - Juveniles/subadults
4 - Gravid female
5 - Male in nuptial colours, or with nuptial pads
6 - Mating
7 - Calling
8 - No sign of reproduction, reproductive behaviour not observed.

k) Comments: Please record any additional information that you think may be relevant. Use the back of the form if necessary Any negative observations; eg. not finding any specimens in an area which you knew from previous observations had supported a good population, would be valuable to note here. Other comments could describe habitat disturbances such as rocks being overturned or removed, logging operations, recent fires, signs of recent flooding, etc.

MICROHABITAT CATEGORIES

1. Tree/tall shrubs (>2 m high) • on trunk or main branches
2. Trees/tall shrubs (>2 m high) • on foliage or small branches
3. On shrubs (<2 m high)
4. Amongst shrubs on the ground
5. In or on leaf and bark litter
6. On logs
7. Under logs
8. Inside logs (hollow or rotting)
9. On stones/rocks
10. Underneath stones/rocks
11. In rock fissues
12. In soil/sand
13. In burrows
14. Underneath other objects (eg. rubbish)
15. On bare ground
16. In dry grass/herbs
17. In swampy wet grass or herb vegetation
18. In moss
19. On emergent/floating aquatic vegetation
20. In water amongst emergent/floating aquatic vegetation
21. On open water surface
22. Beneath water surface
23. At water's edge
24. In small water bodies such as puddles, ditches, seepages
25. In gardens/parks
26. Buildings
27. Road
28. Other (please specify in comment)

SPECIES L.

1. *Adelotus brevis*
2. *Helioporus australicus*
3. *Limnodynastes dumerilii*
4. *L. peronii*
5. *L. tasmaniensis*
6. *Mixophyes balbus*
7. *M. fasciolatus*
8. *Neobatrachus sudelli*
9. *Pseudophryne bibronii*
10. *P. corroboree*
11. *P. dendyi*
12. *Ranidella parinsignifera*
13. *R. signifera*
14. *Uperoleia rugosa (Form B)*
15. *U. laevigata*
16. *Litoria aurea*
17. *L. citropa*
18. *L. dentata*
19. *L. freycineti*
20. *L. jervisiensis*
21. *L. lesueuri*
22. *L. peronii*
23. *L.phyllochroa*
24. *L. raniformis*
25. *L. verreauxii*
26. *Chelodina longicollis*
27. *Diplodactylus vittatus*
28. *Oedura lesueurii*
29. *Phyllodactylus marmoratus*
30. *Phyllurus platurus*
31. *Underwoodisaurus milii*
32. *Aprasia parapulchella*
33. *Delma impar*
34. *D. inornata*
35. *Lialis burtonis*
36. *Pygopus lepidopodus*
37. *Amphibolurus barbatus*
38. *A. diemensis*
39. *A. muricatus*
40. *Physignathus lesueurii*
41. *Tympanocryptis lineata*
42. *Varanus varius*
43. *Carlia tetradactyla*
44. *Cryptoblepharis virgatus*
45. *Ctenotus robustus*
46. *C. taeniolatus*
47. *C. uber*
48. *Egernia cunninghami*
49. *E. saxatilis*
50. *E. whitii*
51. *Hemiergis decresiensis*
52. *H. maccoyi*
53. *Lampropholis delicata*
54. *L. guichenoti*
55. *L. mustelina*
56. *Leiolopisma coventryi*
57. *L. entrecasteauxii*
58. *L. entrecasteauxii (Form A)*
59. *L. entrecasteauxii (Form B)*
60. *L. platynota*
61. *L. trilineata*
62. *Menetia greyi*
63. *Morethia boulengeri*
64. *Pseudemoia spenceri*
65. *Sphenomorphus kosciuskoi*
66. *S. quoyii*
67. *S. tympanum*
68. *S. tympanum VTF*
69. *S. tympanum CTF*
70. *Tiliqua casuarinae*
71. *T. nigrolutea*
72. *T. scincoides*
73. *Trachydosaurus rugosus*
74. *Typhlina nigrescens*
75. *Python spilotes*
76. *Acanthophis antarcticus*
77. *Austrelaps superbus*
78. *Cacophis krefftii*
79. *C. squamulosus*
80. *Crytophis nigrescens*
81. *Drysdalia coronoides*
82. *D. rhodogaster*
83. *Furina diadema*
84. *Pseudechis porphyriacus*
85. *Pseudonaja textilis*
86. *Unechis spectabilis*
87. *Vermicella annulata*
88. *Pelamis platurus*

Litoria tyleri
Litoria latopalmata

Please Note!

The date for the next ACTHA Meeting

HAS BEEN MOVED TO TUESDAY, 29TH JUNE 2010

Due to unforeseen circumstances the June ACTHA Meeting has been postponed and will be held on **Tuesday 29 June 2010**. We know it's winter and our reptiles have become sloths, but this is no excuse for members. **Please support our Society and brave the chill to come along and listen to Ric give his much anticipated talk and slide show on the elapids of Thailand.**

ACTHA News
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