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ACTHA NEWS AUG - SEPT 2009

Newsletter of the
ACT Herpetological
Association Inc.

**2009-2010 ACTHA MEMBERSHIP IS
NOW DUE - STILL ONLY \$10!**

To make sure your membership remains
current please come to our August Meeting,
or see the back page of this issue for
subscription payment options.

DIARY DATE

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

UPCOMING MEETING

Tuesday, 18 August 2009

Guest Speaker: David Hunter,
Threatened Species Officer,
Biodiversity Conservation Section,
NSW Dept of Environment & Climate Change

Recovery efforts for Kosciuszko's threatened frog fauna

David will talk about the conservation efforts being undertaken by his Department to help save several species of frogs in the Kosciuszko region from becoming extinct.



What is this reptile called and where does it live?
See page 2.

YOUR COMMITTEE

President	Joe McAuliffe
Vice President	Ric Longmore
Secretary	Angus Kennedy
Treasurer	Margaret Ning
Newsletter Editor	Mandy Conway
Public Officer	John Wombey
Excursion Officer	Ric Longmore
Committee Members	Christian Robertson Philip Robertson Dennis Dyer
Student Representative	Jake McAuliffe

IN THIS ISSUE

Frank Knight's gouache frog paintings are now available for sale, *page 2*.

New Zealand's Tuatara the Editor takes a break and visits NZ, *page 2*.

The snake and the goanna did you guess the species in our last Newsletter? *answers page 3*.

Why little brown frogs aren't boring! Our June guest speaker, Renee Catullo, ANU, gave members an insight into her research into these rather cute little critters, *page 4*.

IVF for the endangered Southern Corroboree Frog Initial trials at Monash University have given hope that IVF will help swell this little frog's numbers, *page 6*.

An exciting update on *Tidbinbilla's Northern Corroboree Frog breeding program*, *page 7*.

Water Snake startles fish so they flee into its jaws This snake is able to predict where a fish will move to and strike with effect, *page 8*.

The Victorian Government's Exotic Pest Animals Program, DSE.

Exotic species can prey on, compete with and spread disease to native animals with disastrous consequences. The development of a new Victorian Biosecurity Policy Framework for invasive plants and animals will enhance Victoria's ability to take a more comprehensive approach to protecting the State's biodiversity, agricultural and social assets from the increasing threat of exotic species. *See from page 9*.

A note from the Editor

The views expressed by contributors and authors and any links to Websites provided in this Newsletter are not necessarily those of ACTHA.

Plates of frog illustrations from the 'FIELD GUIDE TO THE FROGS OF AUSTRALIA' now available for purchase!

A 'Field Guide to the Frogs of Australia', text by Michael Tyler, illustrations by Frank Knight, is being published jointly by Steve Parrish & CSIRO Publishing.

Previous frog guides have used photographs but this new Guide uses A3-size gouache paintings on rag-board, which resists deterioration. Each of the 72 plates has between four and ten images, depending on the frogs depicted.

The plates represent the first comprehensive frog guide in the classical field guide format which Frank has used in his two previous Australian fauna guides; 'Birds' with Graham Pizzey and 'Mammals' with Peter Menkhorst.

They are being sold by Andrew Isles Natural History Bookshop. Individual plates and species can be identified through contacting Andrew Isles books@AndrewIsles.com or by reference to the Guide itself.



NEW ZEALAND'S TUATARA

By Mandy Conway

Earlier this year my other half and I went to New Zealand for a 2 week holiday. We restricted our travels to the top part of the South Island to ensure we experienced everything in the area. Well, the scenery is as breathtaking as everyone says, and we still can't believe you can be on a sandy beach and have snow covered mountains as a back-drop.

Reptiles? none!! except for the Tuatara which we couldn't go and see; most tourist trips to the smaller islands cease by May because of the impending very cold weather and choppy seas.

So I took notes and a picture of the Tuatara at a Christchurch Visitor centre (*pic on front page*). The following text accompanied the photo.

"**Tuatara** are found only in New Zealand - sole survivors of a whole taxonomic order of reptiles. Their ancient lineage goes back well beyond the age of dinosaurs. Tuatara no longer survive on the mainland. Current distribution is restricted to 30 odd rodent-free islands in Cook Strait and off the north-east coast of the North Island. Recent advances in the eradication of rodents from islands and in the captive raising of Tuatara have seen five new wild populations established in the last ten years."

There was also a little info on native frogs.

"**New Zealand's native frogs** are different to those found elsewhere in the world. All tadpole development occurs within the eggs, which are laid in damp soil; their life cycle requires no standing water. These frogs are virtually silent. In the South Island native frogs have survived only on Stephens Island and Maud Island. While some frog populations elsewhere in the world and in parts of the North Island have suffered dramatic declines, these small South Island populations appear quite robust. Conservation efforts focus on keeping the islands free of predators and disease and establishing new populations."





THE SNAKE AND THE GOANNA

June 09 ACTHA Meeting: species ID with the help of live specimens and a talk provided by **Peter Child, Reptiles Inc.** This article by Mandy Conway

For those who missed our last meeting, well, you missed Peter Child showing the 2 reptile species linked to the amazing photos in the last ACTHA Newsletter; ie the snake eating the goanna article.

ID: The **Yellow Spotted Monitor** (*Varanus panoptes*), is thought to be the road kill goanna, and the snake is a **Black-headed Python** (*Aspidities melanocephalus*). Both are common to the same region, the very northern part of Australia.

"Snakes and goannas have been known to go hammer and tong in the past" Peter said. "Here you have two animals who are not afraid of each other: a python who specialises in eating lizards and a goanna who will eat anything. At the end of the day it's whoever gets in with its head first...", a sobering thought to start the meeting.

The Black-headed Python was our first show and tell (once it was pried from this Editor). It is a specialist



reptile eater, so much so that when raised in captivity the newborn young will often refuse to eat anything else and can be extremely difficult to get going on other staples like rodents.

Black-headed

Pythons have large babies compared to a lot of other snakes. A newborn Black-head, which is quite heavy and very long, would be equivalent in size to a 6 month old Carpet Python.

As juveniles, Black-headed Pythons are striking with very defined markings. (Said snake, Editor's very favourite, was passed back to her to savour the moment longer.)

Peter then brought out a *Varanus gouldi* (Tinker Sand Monitor), which is closely related to *V. panoptes*. The Sand Goanna is not a particularly large lizard, reaching about 1.2 metres in 2 years. They are very active and like it really warm. Peter feeds all his other reptiles first and then gives whatever is left to the goannas: predominantly chicken necks, wings and legs as well as salad mix, tinned meat, crickets, worms and mice.

"Goannas have razor sharp claws and amazingly sharp teeth. They are the ultimate predator, even over crocs, because they have all the senses of everyone else. Claws to climb, dig and swim; a tail which is used for balance and speed; the excellent vision of bearded dragons; a forked tongue with the oral sensation of a snake; and they can hear you!"

On top of all that they are really smart and can problem solve.

"Example?" someone asked. Opening enclosure doors is a specialty and Peter found out that when they couldn't climb the ever heightening glass partition they would climb the backdrop wall instead and jump to the light fitting, swinging it until they could leap into the neighboring Perenti enclosure. Peter also observed them humbly moving around the enclosure until they saw him pick up the feeding gloves located way across the room, at which point they would fling themselves against the enclosure front.

(Peter wouldn't let this Editor leave the room with the Black-headed Snake. Anyone got a spare?!)



WHY LITTLE BROWN FROGS AREN'T BORING!

Our June 2009 ACTHA Meeting Guest Speaker was Renee Catullo, School of Botany and Zoology, ANU. This write-up by Mandy Conway

Renee is a Phd candidate at the ANU and studies the frog genus *Uperoleia*. Her research involves completing a genetic scan of many specimens to try and determine how many species within the *Uperoleia* genus there really are. This includes examining the true range of individual species. Her work thus far has shown a high number of as yet unidentified species and that the range of various species is quite different from what is currently thought. Whilst results are presently a little thin on the ground her work is starting to gather momentum and Renee would like to share her work thus far with ACTHA Members.

INTRODUCTION

Cryptic species can be fairly common within single wide-ranging species. Using genetics, animals once seen as one species have in fact been identified as two species. Behaviourally, frogs choose their mates based on calls (voice), not looks. "Species can look similar but they know who they are and do not interbreed." Renee said.

The prevalence of cryptic species has been identified throughout a large range of taxonomic groups. As an example, Renee described why Australia no longer accepts apples from NZ: Light-brown Apple Moth infestations. These moths have recently invaded California and differentiating amongst the 22 species is critical as control techniques need to be adjusted according to the species, US researchers have found.

VALUE OF A FROG?

A frog's permeable skin means it can respond quickly to any changes in climate, or to pollution factors. This makes them one of the most widely used study species. Sadly, frogs all over the world are declining extremely rapidly and their demise will impact heavily on most other reptile species because of breaks in the food chain. It has been noted that where there is a decline in frog numbers, reptile numbers have also diminished.

CONSERVATION ISSUES

A local example of cryptic speciation and management implications is our local critically endangered Northern Corroboree Frog. It, along with a bat on Christmas Island, looks like being one of the first vertebrate species in Australia in a

long time to become extinct in the wild.

Indications are that there will be no wild populations within two years; all remaining frog populations are likely to be in captivity.

A survey in 1999 found 450 individuals at 79 sites. In 2006 this number had dropped to only 39 individuals at 14 sites.

"Sphagnum bog sites in

the Brindabella's would previously have been home to around 100 individuals each. Current frog numbers wouldn't even cover one Sphagnum bog area."

The major factor in the Corroboree's decline is its high susceptibility to the *Chytrid* fungus. *Crinia signifera* (Common Eastern Froglet) is tolerant of this fungus ie it does suffer but not to the same extent. Unfortunately, because *Crinia* can carry *Chytrid*, it keeps the fungus population high.

AUSTRALIAN FROG DIVERSITY

Two main families of frogs exist in Australia:

Hylidae, known broadly as tree frogs, inhabit the wetter margins of the continent, especially in the north and east of Australia and across into Indonesia;

Myobatrachidae are an Australia based family and have some of the most unusual species, including the now extinct Gastric Brooding Frog. Most are burrowing or terrestrial.

Within the vast and diverse family of Myobatrachidae is the little brown frog *Uperoleia*, a very small (less than 3cm) morphologically conserved amphibian. Specimens from the Pilbara in the Kimberley, WA, and specimens from NSW have patterning and colour which will not be the only factors which tell them apart. More than 40% of museum specimens that Renee has genetically examined are incorrectly identified. "Colouring



doesn't mean everything for species although the pattern of pigment might." Renee said.

Uperoleia is quite easy to pick as a genus but beyond that is difficult to differentiate between species. Being quite small it can be confused with *Crinia* from a distance.

LOCAL SPECIES OF *UPEROLEIA*

Renee showed Members many slides of our local species, commenting that turning them over and looking at their bellies is really one of the only



U. rugosa, (image by Peter Robertson, Vic Museum)



U. laevigata, (image by Aust Museum)

ways to visually tell them apart as calls are very similar.

Uperoleia was first described in 1841 from a very specific area in WA. It has in the past been named under several different Genera but was reviewed and sorted into 17 species in 1981. At present there are 26 described Australian species plus some specimens from the southern tip of New Guinea.

Uperoleia has a really diverse habitat. Despite species looking similar they live in incredibly

diverse regions, from tropical rainforests to dry local forests to the middle of the Simpson desert (*U. micromeles* live up to 2m down in sand dunes in the Tanami Desert, NT) and near Cairns some live on the coast. One thing they share is being able to hide from researchers until monsoon type wet weather hits!

WHAT RENEE IS DOING

- Looking for cryptic species using genetics.
- Major taxonomic revision of the genus.
- Identifying areas of endemism (ie looking for species which exist nowhere else).
- Through genetics, gaining an understanding of how changes in climate and geology have influenced speciation.
- Population genetics in the Pilbara, WA.
- Modelling networks and reserves, given the niche we know they live in, how will these frogs move in response to climate change?

Changes in geology could explain *Uperoleia's* current distribution. Part of the research will involve testing general patterns against geology. East coast species are very different from others in this genus (25%), which indicates these animals have been separated from other groups for 20-40 million years. We are also starting to see groups making the inland zone home.

FROGGING - WHAT YOU SHOULD KNOW

Renee explained that studying frogs was fraught with difficulties and researchers had many responsibilities when conducting their studies. The following 'rules' apply to both researchers and the novice herpetologist.

Avoiding the spread of the *Chytrid* fungus is paramount!

- Wash hands thoroughly and remove soap because it can leave dry spots on the frogs.
- Wear well rinsed gloves because latex material does harm some tadpoles.
- Leave the bug spray alone. Put your hands in your pockets and get a dedicated insect control person to spray your arms etc, leaving your hands uncontaminated.
- Avoid spreading *Chytrid* between sites/ponds. Treat each site separately. Drying your gear will kill *Chytrid* but not entirely, so don't take the chance.

While you've got the little dudes:

- keep frogs in large freezer bags with some of their substrate but not too much water, they can drown;
- hold little frogs by their back legs;
- don't reuse bags and always release frogs where found.



U. tyleri, (image by Ehmann, Aust Museum)

IVF FOR ENDANGERED ALPINE FROG

NSW Department of Environment and Climate Change Media release, 18 May 2009

The Department of Environment and Climate Change (DECC) is exploring the use of invitro fertilisation (IVF) in a bid to increase the chances of survival for the endangered Southern Corroboree Frog living on the edge of extinction in the wilds of Kosciuszko National Park.

Once numbering in their hundreds of thousands, this spectacular, small black and yellow amphibian has been reduced in only a couple of decades to less than 200 breeding adults. Scientists believe its sudden and dramatic decline is due largely to the effects of a fungus known as the *Amphibian Chytrid*, which has devastated frogs worldwide.

With time fast running out the DECC has invested considerable time and resources towards a multi-pronged strategy for keeping the species alive.

DECC has now instigated an IVF program which will be conducted under contract by Dr Phil Byrne of Monash University in Melbourne.

"Initial trials at Monash University gave us hope that IVF will work for this frog. We now want to refine the techniques using additional animals at Taronga Zoo," Dr Byrne said.

DECC scientist, Dr Dave Hunter said today that it's hoped this will bolster a current captive breeding program.

"We've had some success breeding the species in captivity and now have breeding programs established at the Amphibian Research Centre in Melbourne as well as Taronga, Healesville and Melbourne zoos," Dr Hunter said.

"However IVF offers the prospect of improving our captive breeding success. The overall aim is to produce more eggs and frogs in captivity which can be later released into the wild.



"While adult frogs can be infected with *Amphibian Chytrid*, it's the tadpole stage where the species is most vulnerable. Tadpoles are

easily infected as they occupy small pools that are used by other frog species that carry the *Amphibian Chytrid*.



"We are breeding frogs in captivity to keep the population turning over in the wild until the species can adapt to the *Amphibian Chytrid* through natural selection. Some frogs will survive and as we continue breeding and returning frogs it's hoped that we will have effectively bred a line of Southern Corroboree Frogs which will be able to live with *Amphibian Chytrid*.

"While we pursue IVF and captive breeding we are also expanding an earlier pilot program installing artificial ponds within the species' primary habitat in Kosciuszko National Park.

"In the past week we have begun the installation of new ponds which are made of plastic and covered in mesh to keep out birds. These 360 litre ponds, gravity fed water from nearby streams via 50mm pipe, are set up to exclude the other frogs species which carry *Chytrid*.



"Within these tubs eggs collected from the wild can hatch and grow in *Amphibian Chytrid* free water until they reach the frog stage whereupon they can easily leave the pond to continue life in the wild.

"The program will operate across five sites with five ponds at each site. The pilot program proved quite successful so we are now committing to a longer term program with larger ponds to help recover this spectacular frog."

Photos available <http://www.flickr.com/photos/nswnationalparks/sets/72157617762362718/>

Contact: [Stuart Cohen](mailto:Stuart.Cohen@nsw.gov.au),
NSW National Parks and Wildlife Service.

AN UPDATE ON THE NORTHERN CORROBOREE FROG BREEDING PROGRAM AT TIDBINBILLA NATURE RESERVE, ACT

Carly Humphrys, Wildlife Officer, Tidbinbilla Nature Reserve

The recent arrival and set up of a new shipping container brings to three the total currently being utilised for the Northern Corroboree Frog breeding program. The new container operates as a second breeding facility and has enabled Tidbinbilla to maximise their breeding efforts. With 10 breeding tanks currently in the first breeding enclosure the new shipping container is a great help, having an additional 20 breeding tanks. Around 350 sexually mature frogs are housed in the breeding tanks. A tremendous amount of hard work went into setting up the third container in time for this year's breeding season.

After a successful breeding season last year, anticipation is high on providing another good one for 2009. Last year Tidbinbilla raised 111 tiny frogs from tadpoles, the first Northern Corroboree Frogs to be bred in captivity. These new little frogs are growing quickly with a big appetite for crickets.

A delegation for the front line Australian Alps Conference visited the Northern Corroboree Frog facility in May 09 as part of a workshop. With some media coverage the Senior Wildlife Officer and staff were able to present an important conservation message and awareness for the survivorship of the frogs. It was an excellent day with approximately 40 Australian Alps representatives who were thrilled to meet the frogs up close and personal.

With the breeding program in full swing, frogs have been calling passionately, and are even more stimulated after carers yell 'Hey frog'!

Now coming to the end of another breeding season the staff wait anxiously for the discovery of eggs. This achievement is a vital step towards preserving the future of this endangered species.

NEWS FLASH

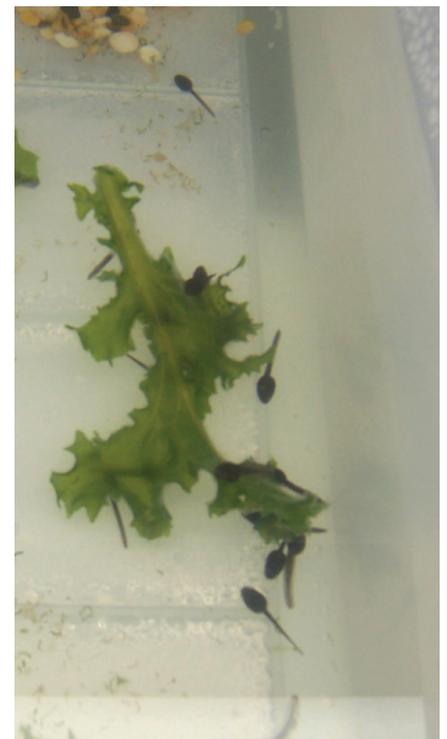
"After successfully producing 190 frog eggs last year nothing prepared us for the amount of eggs that were produced this year: **over 900 eggs!**

"This was no walk in the park when it came to setting them up. Already over 100 eggs have hatched into tadpoles. and it will be interesting to see the

percentage of eggs that will become frogs." Carly said. "Tidbinbilla currently have more Northern Corroboree Frogs in captivity than wild population numbers.



Breeding and raising frogs in captivity has a far greater survivorship rate than in the wild. The frogs housed at Tidbinbilla are able to grow in a relatively stable environment with minimal disturbances compared to those in the wild, which face threats such as feral pests trampling habitat and the dreaded *Chytrid* fungus. The captive insurance population at Tidbinbilla will eventually be released back into the wild to boost existing population numbers. These will hopefully help produce self sustaining colonies with greater buffers against threatening processes."



WATER SNAKE STARTLES FISH SO THEY FLEE INTO ITS JAWS

ScienceDaily (June 18, 2009), adapted from materials provided by Vanderbilt University.

Forget the old folk tales about snakes hypnotizing their prey. The tentacled snake from South East Asia has developed a more effective technique. The small water snake has found a way to startle its prey so that the fish turn toward the snake's head to flee instead of turning away. In addition, the fish's reaction is so predictable that the snake actually aims its strike at the position where the fish's head will be instead of tracking its actual movement.

"I haven't been able to find reports of any other predators that exhibit a similar ability to influence and predict the future behavior of their prey," says Kenneth Catania, Associate Professor of Biological Sciences at Vanderbilt University, who has used high-speed video to deconstruct the snake's unusual hunting technique.

His observations were published in an online early edition of the *Proceedings of the National Academy of Sciences*.

Catania, who is the recipient of a MacArthur "genius" award, studies the brains and behavior of species with extreme specialisations. He was attracted to the tentacled snake because it is the only snake that comes equipped with a pair of short tentacles on its nose and he was curious about their function.

"Before I begin a study on a new species, it is my practice to spend some time simply observing its basic behavior," Catania explains. The snake forms an unusual "J" shape with its head at the bottom of the "J" when it is fishing. Then it remains completely motionless until a fish swims into the area near the hook of the "J." That is when the snake strikes.

The snakes' motions take only a few hundredths of a second and are too fast for the human eye to follow. However, its prey reacts even faster, in a few thousandths of a second. In fact, fish are famous for the rapidity of their escape response and it has been extensively studied. These studies have found that many fish have a special circuit in their brains that initiates the escape, which biologists call the

"C-start." Fish ears sense the sound pressure on each side of their body. When the ear on one side detects a disturbance, it sends a message to the fishes' muscles causing its body to bend into a C-shape facing in the opposite direction so it can begin swimming away from danger as quickly as possible.

Catania is the first scientist to study this particular predator-prey interaction with the aid of a high-speed video camera. When he began examining the movements of the snake and its prey in slow motion, he saw something peculiar. When the fish that the snake targets turn to flee, most of them turn toward the snake's head and many literally swim into its jaws! In 120 trials with four different snakes, in fact, he discovered that an amazing 78 percent of the fish turned toward the snake's head instead of turning away.

Next, the biologist noticed that the first part of its body that the snake moves is not its head. Instead, it flexes a point midway down its body.

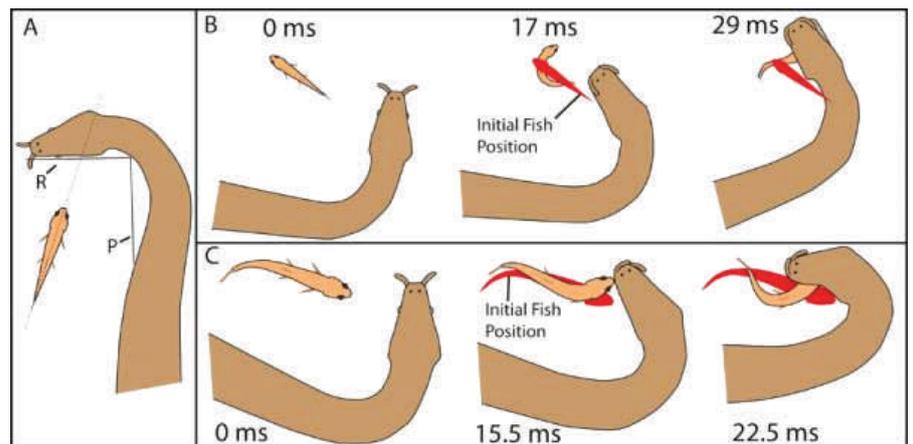


Illustration shows how the tentacled snake uses a body fake to trigger fishes' reflexive C-start response causing them to swim directly toward the snake's mouth. (Credit: Ken Catania)

Using a sensitive hydrophone that he put in the aquarium, he confirmed that this body fake produces sound waves intense enough to trigger the fish's C-start response. Because these sound waves come from the side opposite the snake's head, this reflex action drives the fish to turn and swim directly toward the snake's mouth.

"Once the C-start begins, the fish can't turn back," Catania says. "The snake has found a way to use the fish's escape reflex to its advantage."

As he studied the snake's actions even closer, he made an even more remarkable discovery.

When it strikes, the snake doesn't aim for the fish's initial position and then adjust its direction as the fish moves – the way most predators do. Instead it heads directly for the location where it expects the fish's head to be.

"The best evidence for this is the cases when the snake misses," says Catania. "Not all the targeted fish react with a C-start and the snake almost always misses those that don't react reflexively."

Catania's next step will be to determine whether this predictive capability is hard-wired or

learned. To do so, he hopes to obtain some baby snakes that have just hatched and videotape their first efforts to catch prey.

The research was supported by a grant from the National Science Foundation.

Vanderbilt University (2009, June 18). Water Snake Startles Fish So They Flee Into Its Jaws. *ScienceDaily*. Retrieved June 29, 2009, from <http://www.sciencedaily.com/releases/2009/06/090618170024.htm>

THE VICTORIAN GOVERNMENT'S EXOTIC PEST ANIMALS PROGRAM, Department of Sustainability and Environment (DSE)

"Environmental crime knows no borders. If agencies across Australia and overseas do not work together we will not defeat those who threaten our unique environment"

Keith Larner, DSE.

One of the greatest threats to our natural environment is the introduction of exotic animals. Exotic species can prey on, compete with and spread disease to native animals with disastrous consequences. For example, Inclusion Body Disease (IBD) is an insidious exotic disease that is fatal to members of the boid and python families of snakes. This disease poses a very real risk to our native populations of pythons both in the wild and in captivity. **A real case:** a native Olive Python seized under a Wildlife Act 1975 search warrant tested positive for IBD. Its enclosure was co-located with a boa constrictor. In addition, corn snakes could easily establish feral populations in Victoria as they occur naturally in similar habitats and will consume a wide variety of prey.

Victoria's agricultural productivity could be significantly impacted upon by new exotic species.



Burmese Python, photo by Jan Sevcik, Naturfoto

Public health is also at risk, as some illegally held exotic species are extremely venomous (some antivenins are not available in Australia) and some species have the potential to spread diseases to humans.

In 2000, DSE engaged PricewaterhouseCoopers to review its management of exotic vertebrate animals. The review findings centered around the limited nature of the Program and its focus on issuing permits, the absence of clear policy, legislative impediments and limited funding and human resources. These issues contribute to the continued trade in illegally held species and could lead to the deliberate release or escape of exotic animals.

Based on the review findings, clearer policy direction was established for the Program including:

- engagement of a Program Leader/Senior Investigator;
- increased powers for authorised officers;



Sand Boa, photo by Chris Harrison

- increased penalties and fines for illegal possession, trade and movement of exotic animals;
- improved community education.

Collaboration with other agencies

The Program has established effective links with other State law enforcement agencies, resulting in assistance from Victoria Police who support a wide range of DSE enforcement activities. The positive and cooperative working relationship with Victoria Police is vital, as statistics from the execution of the Program's search warrants for exotic reptiles show a strong correlation between native and exotic wildlife crime, the cultivating and trafficking of drugs and the possession of unlicensed firearms and prohibited weapons.

DSE Wildlife Officers, Forest Officers and Forest Rangers provide some on ground support to the Program (which is now embedded in the DSE Compliance Support Group). The Department of Primary Industries (DPI) and Fisheries Special Investigations Group have provided intelligence management and some surveillance support. DPI Farm Services Victoria officers have also provided support during search warrant actions.



Corn Snake

Program results

Recently, DSE published a brochure on what can be done to assist in the prevention of exotic animal crime. The brochure will also be distributed to interested members of the community to raise awareness of the Program both on request and at presentations given to the wider community.

Of note, as animal seizures have increased, the number of animals voluntarily surrendered has

also increased. DSE believes this is due directly to enhanced enforcement activities and increased community awareness. Much of this increased community awareness has been generated from articles that have been televised and published in leading newspapers about exotic species confiscations. People holding illegal species have become more fearful of detection and prosecution and hence are more likely to voluntarily surrender their animals. This represents a huge success for the Program. The origin of most confiscated exotic animals is unknown, as is their disease status. Because of this, the majority of seized exotic animals have to be euthanased. Retaining these animals in Australia represents an unacceptable risk as they could spread disease to our native wildlife. It is equally unsafe to return captive bred animals to their country of origin as they may introduce diseases not known to occur in that country. Species acquired which are listed as endangered or higher by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) are referred to the Department of the Environment, Water, Heritage and the Arts for a final decision on their future.

Species seized or voluntarily surrendered since the commencement of the Program are listed below.

Alligator	Snapping turtles
American alligator	Argentine boas
Ball pythons	Boa constrictors
Bonnet monkey	Bull snakes
Burmese pythons	Cane toads
Chameleon species	Cobra species
Common snapping turtles	Corn snakes
Crab-eating macaque	Emerald tree boa
European newts	Rat snake species
Garter snakes	Gecko species
Green iguanas	Japanese fire-
Bellied newts	
King snakes	Milk snakes
Exotic monitor species	Rainbow boas
Rattlesnake species	Red foxes
Red-eared slider turtles	Rosy boas
Sand boas	Tarantula
Trinket snakes	Viper species
Yellow anaconda	

Recent Operations Conducted

There have been a number of large scale operations undertaken since the Program was initiated.

Operation Albacore (2001 – 2003) Australia's largest seizure of exotic reptiles.

- Method* Intelligence driven investigation led by Program staff over two years.
- Result* 86 exotic snakes and four unlicensed native snakes seized.
- Notable sp.* East African Sand Boa (never before seen in Australia).
- Comments* Offender was a major breeder of illegally imported snakes.
- Outcome* Offender convicted and fined. Comprehensive media coverage generated additional intelligence.

Operation Mystic (2006 - 2007) A multi-agency investigation lead by DSE which involved government departments from New Zealand, QLD, NT, WA, SA, NSW and the Federal Government.

- Method* This investigation was successful because agencies shared intelligence and assisted in the execution of search warrants in three states.
- Result* A number of people in Queensland and Victoria are in the process of being charged for multiple charges for trafficking protected wildlife.
- Notable sp.* Corn snakes, Burmese pythons.
- Comments* Evidence clearly shows that retail pet shops are still being used to traffic wildlife.
- Outcome* A further two Victorian offenders will be charged in connection with keeping and selling exotic species.

At Blackburn Lake in metropolitan Melbourne, a total of four red-eared slider turtles were sighted.

- Method* A trapping regime was developed using the Queensland procedures. An expert from Queensland was flown to Melbourne to supervise the trapping.
- Result* Two turtles have already been captured at Blackburn Lake.
- Comments* DSE staff attended a Red-eared Slider Turtle workshop in southern Queensland where there is an established population. Staff attended to learn more about this invasive pest and to receive instruction on the latest trapping techniques.
- Outcome* Activation of the DSE trapping program both at Blackburn Lake and at other

suspected sites occurred in late December 2007 and early 2008.

Future of the Program

Intelligence held by the Program indicates that widespread smuggling of exotic wildlife into Australia continues with species finding their way into Victoria by a variety of means. For example, four parcels each containing an exotic python mailed from South Africa, were recently intercepted by Customs and AQIS officers. The



Veiled Chameleon, photo by Chris Kadet

offender, who has since been convicted and fined, was a well known Victorian reptile collector, breeder and dealer. Overseas collectors continue to breed reptiles with new colours and characteristics and the internet is increasingly being used to advertise and sell reptiles and other exotic animals across the globe.

The development of a new Victorian Biosecurity Policy Framework for invasive plants and animals will enhance Victoria's ability to take a more comprehensive approach to protecting the State's biodiversity, agricultural and social assets from the increasing threat of exotic species. In the future, proposed changes to legislation will strengthen the ability of members of the Program to confiscate assets as proceeds of crime.

To keep up with these new developments it is essential that authorised officers continue to upgrade and maintain their skills to have any chance of combating wildlife crime.

Source:

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Keith Lerner, Compliance Support Group, DSE

The full Australian Pest Animal Strategy document is available online at: www.environment.gov.au/biodiversity/invasive/ferals/index.html

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