



# WA cane toad update



Department of Environment and Conservation



December 2010

## Blue tongue lizards tracked for cane toad research

Radio transmitters have been fitted to 12 blue tongue lizards in the east Kimberley to monitor the potential impact of cane toads on the native species.

The study is being carried out during the wet season, which generally runs from November to April, by researchers from the University of Sydney in collaboration with the Department of Environment and Conservation (DEC).

Professor Rick Shine from the University of Sydney said the blue tongue lizards were being tracked by graduate student Samantha Price-Rees in the irrigation area where cane toads were present.

“We know that cane toads have a significant impact on predatory species, including blue tongues. The numbers of these lizards have plummeted in our Northern Territory study areas after the cane toad invasion and the same thing is likely to happen in Western Australia, so we are exploring ways to reduce the lizards’ vulnerability,” Professor Shine said.

“We have shown that in the lab, we can teach lizards to leave cane toads alone by exposing them to a toad meal that makes them nauseous but doesn’t kill them. The challenge now is to see if we can do the same thing with wild lizards.”

Professor Shine said the use of radio transmitters allowed them to closely follow individual lizards to see if they would ignore the toads or if they would be tempted to try one.

“Unfortunately cane toads are toxic to blue tongues so if they attempt to eat a large toad, death is likely,” he said.



Blue tongue lizard tracked during survey work.

## Carbon dioxide effective for killing cane toads: study

Field trials carried out by DEC in consultation with Kimberley Toad Busters (KTB) have refined procedures for cane toad control.

Results from the trials showed that cane toads need to be exposed to carbon dioxide gas for a minimum of four hours in normal dry season conditions before they die.

DEC Principal Zoologist Dr Peter Mawson said the July 2010 trials examined whether carbon dioxide gas was an effective agent for euthanasing cane toads under the *Animal Welfare Act 2002*, which requires that all vertebrate animals, including pest species such as cane toads, are killed in a humane manner.

“In our first trial we found that after carbon dioxide gas was pumped into a properly sealed bag containing cane toads, all of the animals were dead within four hours. During the second trial, it was determined that up to 20 cane toads per bag could be euthanased by exposure to carbon dioxide gas,” Peter said.

“DEC scientists were able to validate concerns that toads exposed to carbon dioxide for shorter periods would either just hold their breath or use their physiological ability to deal with the increased carbon dioxide.

“The trials have also addressed one of the actions outlined in the *State Cane Toad Strategy 2009–19*, which is to research and promote the use of acceptable methods for euthanasing and controlling cane toads.”

Separate Commonwealth-funded studies are also being carried out by the University of Wollongong to develop codes of practice and standard operating procedures for the euthanasia of cane toads. It is anticipated that these will be available in 2011.



KTB's Ben Scott-Virtue using the carbon dioxide method to euthanase cane toads.

# Perth cane toad creates media frenzy

Dozens of media reporters converged on a Bayswater property in November, following the discovery of a cane toad in the front garden.

DEC Wildlife Officer Allan Madgwick attended the residence to collect the large adult cane toad, which had been captured by the owner after she discovered the invasive pest and reported it to the Department of Agriculture and Food's Pest and Disease Information Service, which operates the cane toad hotline.

Allan said it was not known how the cane toad arrived in Perth.

"DEC is investigating all possibilities, but the cane toad must have been transported from a population in Queensland, northern New South Wales, the Northern Territory or the east Kimberley," he said.

"It is likely the toad has hitchhiked on a vehicle, but the resident who found the toad in her yard is not aware of any vehicles from interstate or northern WA that may have stopped at her property.

"The resident who discovered the cane toad should be praised for her quick response in capturing the toad and alerting authorities."

The cane toad hotline was flooded with calls following the media coverage. Many of the reports investigated by DEC involved native frogs that had been mistaken for cane toads, such as the motorbike frog, western banjo, hooting frog, moaning frog and crawling toadlet, prompting calls for Western Australians to become more familiar with their native frogs.

Residents are encouraged to report any possible cane toad sightings to the cane toad hotline on 1800 084 881 (freecall) to have them correctly identified. This will help ensure that harmless native frogs aren't killed by people mistaking them for cane toads.



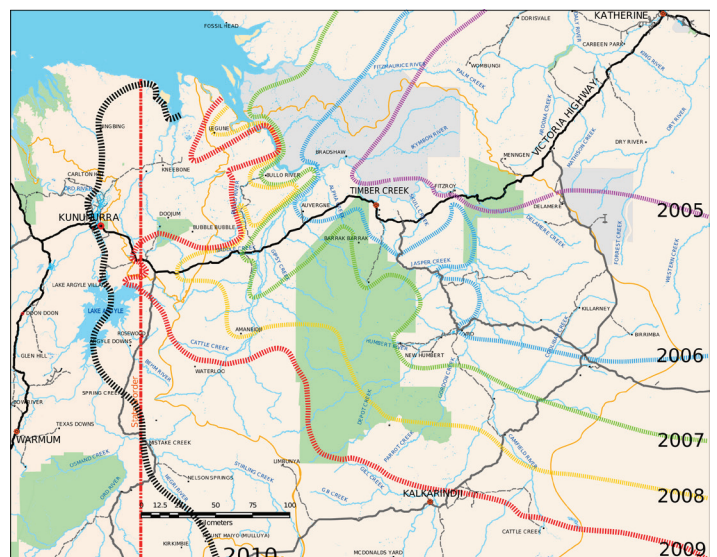
Mistaken identity – the motorbike frog and western banjo frog are commonly mistaken for cane toads.

## Cane toads: the three main stages of establishment

**There are three main stages of establishment of cane toads – explorers, colonisers and breeders.**

**Explorer toads** are individual cane toads ahead of the breeding population that are in low numbers, usually female and much larger in size than the general population. Explorer toads have been found in Kununurra, the northern end of the northern Ord River Irrigation Area, Cave Springs, Kumbarumba community, Hicks Creek, the western side of Rosewood Station and east of Limbunya Station.

**Colonising toads** are both male and female toads that are moving to waterholes to breed opportunistically. They are in lower numbers than the breeding population and are considered to be the first toads to establish breeding populations in new areas. Colonising toads are currently located along Golden Gate Track, Mount Zimmerman, Point Springs, the eastern shore of Lake Argyle and as far south as the Behn River.



Frontline location of cane toads, as at 9 November 2010. Compiled by DEC from data made available from DEC and KTB on-ground operations.

**Breeding population.** This is the main cane toad population that has significant and ongoing breeding events. The western-most breeding population at present is located along the NT-WA border to the east and north of Kununurra.

# Education programs focus on biodiversity in 2010

During the year, DEC officers have worked to deliver conservation messages about the threat that cane toads pose to the environment.

The key messages were delivered to teachers, students and Indigenous communities in the Kimberley through the department's Bush Rangers and EcoEducation programs.

Since its inception in the Kimberley in 2009, the Bush Rangers program has helped to build a positive relationship with local communities and high school students, while EcoEducation programs are offered to teach children about biodiversity and the web of life.

Other highlights during the year included a teacher professional learning symposium in July which was attended by the State's chief scientist Professor Lyn Beazley and the development of a Kimberley education manual that is focused on the threats facing the Kimberley's biodiversity such as cane toads, uncontrolled bushfires and weeds.

In an effort to gain a better understanding of the impact of cane toads on native species, eight biodiversity surveys were completed across the east Kimberley. Miriuwung Gajerrong rangers and numerous volunteers assisted with the survey work, which included bird surveys and detailed descriptions of vegetation impacts at each site.

Significant discoveries included the trapping of several planigales and a Lakeland Downs mouse that was not commonly found in the east Kimberley. A long-haired rat was another significant find as it was the first record of one since the 1970s at Weaber Range.

The biodiversity surveys have been done for the past two years and they represent the most intensive biodiversity survey effort for the east Kimberley. The information collected will contribute to the development of recommendations to the Yoorrooyang Dawang Park Council for the future management of the area, which will include management options to help reduce the impact of cane toads.

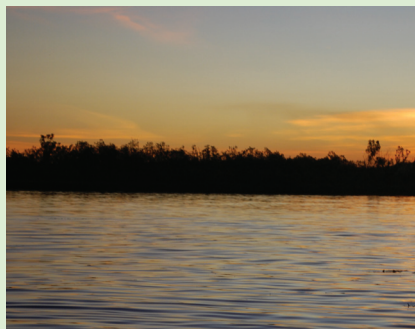
DEC officers also handed out more than 1,000 survey forms to the community to gain an idea of what information residents will find useful. DEC's Kununurra office will hold a community information exchange session in 2011.



Miriuwung Gajerrong Ranger Leslie Moore and Bill Stewart undertaking survey work in the Kimberley.

## Cane toad surveillance priority areas in the Kimberley Region for 2011 include:

- Lake Argyle Road; spillway access road
- Packsaddle Road
- northern end of the northern Ord River Irrigation Area
- Western Highway
- Eastern Highway
- Livistona Reserve
- Lakeside Estate; Lily Creek
- Lake Kununurra
- Mirima National Park



(Clockwise from top left) Lake Kununurra, Packsaddle Road, Lake Argyle, Mirima National Park.

# Cane toad trial to assist native fishery at Lake Argyle

A study at Lake Argyle in the east Kimberley is helping researchers gain a better understanding of the potential impact of cane toads on two important native catfish species.

The eastern side of Lake Argyle, particularly around Matilda Creek, is a popular feeding ground for the shovel-nosed catfish and silver cobbler. Each year, between 95 and 155 tonnes of silver cobbler are extracted from the Lake Argyle silver cobbler fishery.

PhD student Ruchira Somaweera from the University of Sydney is working with DEC to determine if these two species are being impacted by cane toads.

“I have seen catfish foraging in areas that the toads are now using as breeding sites, so it is likely that these species will encounter toad eggs and tadpoles and try to eat them,” Ruchira said.

“This study involves feeding cane toad eggs and tadpoles to the catfish to see if they will eat them and if they can survive if they do.

“We also want to observe if the catfish will learn to avoid toad eggs and tadpoles in later encounters.”

Ruchira said he had observed dead catfish during fieldwork following the arrival of cane toads at Lake Argyle last year.

“We are not yet sure if these deaths are caused by toads and that’s what I hope to establish from this research.”

State Cane Toad Initiative Program Leader Corrin Everitt said Ruchira’s trial was supported by DEC, and other government agencies including the Department of Agriculture and Food WA (DAFWA) and the Department of Fisheries.

“Predicting the ecological impacts of invasive species on native fauna is a formidable challenge for conservation biologists,” she said.

“We hope this trial will increase our understanding of the effect of toads on these native catfish.”

Further information about the State Cane Toad Initiative is available from the DEC website [www.dec.wa.gov.au/canetoads](http://www.dec.wa.gov.au/canetoads), or by contacting DEC’s Kununurra office on 9168 4200.

## Can you help...?

DEC and KTB will continue to carry out surveillance and management of cane toads in the Kimberley during 2011. State Cane Toad Initiative officers have been carrying out biodiversity surveys in the Mirriuwung Gajerrong joint management reserves in the east Kimberley. Anyone who is interested in helping with the surveys next year is invited to call State Cane Toad Initiative Program Leader Corrin Everitt on 9168 4200.



**Cane toads are a declared pest in WA under the Agriculture and Related Resources Protection Act 1976 because of their impact on native species by predation, poisoning through ingestion or competition for habitat and food.**

As a result, a permit is needed to import or keep cane toads, except where people find individual toads and immediately transport them to a field collection point as part of busting or mustering activities.

While the current status of cane toads is under review, the need for permits to import and hold the animal is a legal requirement under the Act because there is a risk that cane toads may escape or be released in areas where they are not yet established in the wild. In the past, there have been instances where Australian authorities have seized cane toads which were being kept illegally as pets.

For further information please contact Marion Massam, Development Officer, Invasive Species (Vertebrates), DAFWA, on 0427 778 313 or email [marion.massam@agric.wa.gov.au](mailto:marion.massam@agric.wa.gov.au).

For more information contact the DEC cane toad team on 9168 4200 or email [corrin.everitt@dec.wa.gov.au](mailto:corrin.everitt@dec.wa.gov.au).