KEEPING KIMBERLEY CANE TOAD-FREE

On 3 May 2006, Winston Kay, Program Co-ordinator, State Cane Toad Initiative, Department of Environment and Conservation (formerly Conservation and Land Management) spoke to the Kimberley Society about the State Cane Toad Initiative and how we can help to keep the Kimberley free of cane toads.

Cane toads are native to Central and South America, ranging from southern Texas and Mexico through to Argentina and Brazil. They have been introduced to many countries around the world, especially islands of the Pacific Ocean and Caribbean Sea. In some countries such as Egypt, Thailand and Taiwan, cane toads failed to become established following their introduction. Despite that, they have been nominated by the Invasive Species Specialist Group of the World Conservation Union (IUCN) as among 100 of the 'World's Worst' invasive species.

Cane toads were brought to Australia in 1935 in an attempt to control native beetles that were damaging sugar cane crops. One hundred and two toads (one died in transit) were imported from Hawaii (where cane toads were introduced in 1932) and released near Gordonvale, QLD.

At that time, the principal advocate for the cane toad importation was Dr Reginald Mungomery, Director of the Meringa Sugar Experiment Station. In 1935, he wrote:

> To others who…suggest the possibility that the toad will, in turn, itself become a pest, we can point to the fact that nearly 100 years have elapsed since it was first introduced into Barbados, and there it has no black marks against its character. Experience with it in other West Indian Islands, and in Hawaii, certainly points to the fact that no serious harm is likely to eventuate through its introduction into Queensland.

Even at that time, the importation had its detractors. In 1936, Walter Froggatt, President of the NSW Naturalists Society, wrote in *Australian Naturalist* magazine:

> …This great toad, immune from enemies, omnivorous in its habits, and breeding all the year round, may become as great a pest as the rabbit or the cactus.

Between 1950 and 1965, cane toads were widely used in Australia for pregnancy testing.

Impact of Cane Toads in Australia

All life stages of the cane toad, including the eggs, tadpoles, juveniles and adults, contain toxins that are poisonous to most native predators as well as to humans, cats and dogs. Cane toad toxin or bufotoxin is a cocktail of cardio-toxic compounds, which are primarily contained in the large (parotid) glands above the shoulders. Bufotoxin also occurs in glands in the skin along the dorsal surface.

Cane toads have a phenomenal reproductive capacity. A female toad may lay over 30,000 eggs in a single clutch and breed twice per year. The eggs hatch within 48–72 hours and the tadpoles metamorphose into juveniles within three weeks to six months depending on environmental conditions, especially temperature. They reach sexual maturity in 6–18 months and live for about five years in the wild.

Cane toads are generalists. They will eat anything they can fit into their mouths but they mostly eat ground-dwelling arthropods such as ants, beetles and termites. They can occupy and breed in a broad range of habitats.

Much of the scientific data on the impacts of cane toads in Australia is inconclusive. Cane toads are not known to have caused the extinction of any native animals since their introduction in 1935. Yet, cane toads can impact on native fauna by:

- Poisoning native predators;
- Competing with native animals for food and other resources; and
- Eating native animals.

Toxic ingestion: Cane toads have probably had the most significant impact on native predators by poisoning them following ingestion. Species at greatest risk include the northern quoll, large-bodied goannas and frog-eating snakes.

Competition: Toads are likely to compete with insectivorous reptiles, especially ground-feeding geckoes, for food. They are also likely to compete for shelter and breeding sites with some native species. They are known to use the nesting holes of the rainbow bee-eater and will eat both their eggs and chicks.

Consumption of prey: Toads can attain high densities, especially during the first few years after the colonisation of new areas. They mainly eat insects such as ants, termites and beetles, and may have significant localised impacts on these groups.

Cultural effects: Toads can poison a number of goanna species that are important bush-tucker for Aboriginal people.

Economic impacts and impacts on human health: Cane toads are likely to have had economic impacts and impacts on human health, though these are very hard to quantify. There is no evidence that cane toads adversely affected eco-tourism following their arrival in Kakadu National Park in the NT. However, toads are known to consume as many as 100 honey bees per day in QLD, which required the hives to be elevated above the ground on stands.

It has been reported that cane toads eat human faeces, though they may be attracted to the insects on the faeces. As a result, it is possible that they may be a vector for some human diseases.

Current status (As at 3 May 2006)

In the 70 years since their introduction, cane toads have colonised much of Queensland and spread south into coastal areas of northern NSW (as far south as Port Macquarie). They entered the NT in the early 1980s and are now on the outskirts of Darwin.

Cane toads are not currently established in the wild anywhere in WA. The nearest population is at Timber Creek in the NT, about 200 km from the WA border. Cane toads periodically turn up in freight from interstate. It is illegal to keep or import cane toads in WA but no penalties are imposed for inadvertently bringing a cane toad into the State. The authorities are more interested in identifying potential pathways into WA. Any sightings of cane toads in WA should be reported to freecall 1800 084 881.

The Victoria River is a major pathway towards WA and is the focus of control operations being undertaken by the State Government and community groups. The river has a catchment area of about 66,000 km2, which is larger than the State of Tasmania. The lower reaches of the river flow in a north-westerly direction toward the WA border. During the wet season the river at the Victoria River Bridge can rise 19 metres above its dry season level and the lower reaches have an extensive flood plain that can temporarily become an inland sea.

Toads are believed to have colonised the Sir Edward Pellew group of islands in the NT by being transported to them in floodwaters during a single but intense wet season. Some of these islands are up to 20 km offshore. They have also been reported as swimming short distances between islands in the Caribbean. It is

therefore possible that toads could be transported along the coast into WA in floodwaters from the Victoria River.

Identification of cane toads

A significant problem that has occurred in the NT and QLD is that many native frogs become casualties of people who kill them in the mistaken belief that they are cane toads. It is really important to be able to accurately identify a frog as a cane toad before taking any action to destroy it.

Adult cane toads are large terrestrial amphibians with dry warty skin. They are much larger than most native frogs and have bony ridges above the eyes running down to the tip of the snout. They also have distinctive enlarged glands above the shoulders and behind the eyes that contain most of the bufotoxins. Their call is a distinctive high-pitched staccato purr, similar to a telephone dial tone. Cane toad tadpoles are different to the tadpoles of native frogs but can be difficult to distinguish for the inexperienced. More information can be found at www.canetoadbattle.com.

The State Cane Toad Initiative (SCTI)

The WA State Government has allocated $2.5 million since December 2004 for cane toad management and the Commonwealth Government has contributed $600,000. The Department of Environment and Conservation (formerly CALM) is the lead agency responsible for implementing the state initiative. The Department of Agriculture and Food is also involved, particularly in the areas of biosecurity and quarantine. The State Government is working cooperatively with community groups such as the Stop the Toad Foundation and Kimberley Toad Busters.

Four key programs are being implemented under the Initiative:

1. Fighting the entry and establishment of wild populations in WA
2. Biodiversity asset ID and protection
3. Public awareness of cane toad issues
4. Effective statewide coordination of actions against cane toads

How can you help?

- Familiarise yourself with native frogs in your area and remain vigilant.
- Report all suspected sightings in WA to freecall 1800 084 881 (take a photograph or catch the animal if possible but make sure it’s secure).
- Check your vehicle and gear if you’ve been camping in a cane toad area.

- Control cane toads in your backyard if you live in a cane toad area.
- Participate in community action with groups such as Stop the Toad Foundation or Kimberley Toad Busters.

Toad euthanasia: If you find what you believe is a cane toad and decide to kill it, first, make sure it really is a cane toad. There are good resources available on the Internet to assist with identification, or contact your local DEC office. Currently, there are two accepted methods for members of the public to kill cane toads:

- Pre-cooling in an ice bath or fridge, then freezing until rock solid or for at least 24 hours.
- Stunning then decapitation.

Dispose of the carcass by deep burial (so that native animals don't dig them up and get poisoned) or incineration.

You will need to be careful to avoid contact with the toxins. If toads are treated roughly or feel threatened, they will exude toxins (thick milky liquid) from their parotid glands, so treat them gently. Wearing gloves and eye protection is advisable and washing your hands with soap and water after handling any toads is recommended. If any toxin gets into your eyes or mouth, wash the affected area thoroughly with copious amounts of fresh water (do not swallow) and seek urgent medical attention, or call the poisons information centre on 13 11 26 if medical attention is not readily available.

Animal welfare considerations: Toads are often vilified and mistreated in Australia but really are just another species of frog that happen to be in the wrong place courtesy of human error. If you do decide to kill a cane toad, do so quickly and in the most humane way possible.

An animated short film can be viewed at **www.cane-toad.com**
For more information:
Websites:

www.calm.wa.gov.au

www.museum.wa.gov.au/frogwatch/

www.frogwatch.org.au

www.agric.wa.gov.au

http://frogs.org.au

www.stopthetoad.com

Books: *Frogs of Western Australia* (WA Museum)
Contact: Dr Winston Kay at DEC: email **here**

Chris Brenton, with input from Winston Kay

Editor's note: Kimberley Society member Russell Gueho of Broome advises that the Stop the Toad Foundation now has an electronic newsletter available to anyone who wishes to receive it. You can subscribe (free) at:

http://www.stopthetoad.com/index.php where you will find lots of information and an audio of the cane toad's call.