



## Guidance for the Eradication, Control and Management of Cane Toads (*Bufo marinus*) in Kununurra and the Kimberley

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## Foreword

*"It is important to recognise that the pristine terrestrial and aquatic habitat systems of the Kimberley are already under threat. Current land-care and resource management policies undertaken by land and resource managers have had a detrimental impact on Kimberley biodiversity. Most of our plant and animal biodiversity is in a fragile state. The impact of the cane toad in the Kimberley, if this is allowed to happen, will literally destroy one of the last unique biodiversity wilderness frontiers in Australia,"* (Lee Scott-Virtue, Kimberley Specialists; Kimberley Toad Busters.)

The objectives of the Kimberley Toad Busters, reflected in this plan, are:

- a) *Protect the biodiversity and natural habitats of the Kimberley from the cane toad;*
- b) *Prevent cane toads from entering Western Australia through the Kimberley region by on ground action organised and directed from Kununurra;*
- c) *Provide scientific research about cane toads and to set up a scientific database about cane toads;*
- d) *Foster public awareness about the risks posed by the cane toad to the environmental, social and economic values of the Kimberley by research, education and publication;*
- e) *Promote ideas and actions, which will enhance people's understanding and enjoyment of, and willingness to protect the natural environment and landscape from cane toads;*
- f) *Support the Kimberley Toad Buster volunteers by accepting donations and undertaking fundraising for their outgoing costs, safety equipment; and ensuring that adequate insurance cover is taken out by the volunteers but acknowledging that the Association must ensure that each volunteer is aware that she or he is responsible for ensuring that they are insured against injury and property damage incurred on any volunteer activities undertaken on behalf of the Association; and*
- g) *Acquiring, storing and keeping secure all equipment loaned, donated or purchased for the volunteer toad busting activities.*

## **Executive Summary**

The KTBs have prepared a cane toad guidance plan to manage the preparation of Kununurra and the wider Kimberley for the arrival of the cane toad, and the appropriate local response once they arrive. The following document is a working draft only. It is hoped that all stakeholders concerned about the need to prepare Kununurra and the wider Kimberley for the imminent arrival of the toad will build on these guidance notes and help implement its suggestions.

### **1. Introduction**

This document has been prepared by the Kimberley Toad Busters Inc. (KTB) to assist the Shire of Wyndham East-Kimberley and other stakeholders in developing a management plan for the expected arrival of cane toads in Kununurra. The environment of other Shires and stakeholders in the projected path of the cane toad advance will benefit by the use of information from this plan.

### **2. History of the Kimberley Toad Busters**

The KTB is an East Kimberley community volunteer organisation based in Kununurra and set up through the initiative of Lee Scott-Virtue of Kimberley Specialists in Research Inc working with the Kununurra community. Its aim is to physically interrupt and slow the invasion of the cane toad into Western Australia thereby limiting its impact on our ecosystems and the unique biodiversity they support until researchers and scientists develop a chemical or biological control method.

The KTB have been actively educating the East Kimberley and Western Northern Territory communities about the threat that cane toads pose and preparing for the fight to stop the cane toad entering the Kimberley, since September 2003. Planning for the KTB cane toad field campaign began in March 2005 with the Kimberley Specialists in Research organised Kununurra Cane Toad Forum. This successful event hosted eminent cane toad experts from all over Australia. The formation of the Kimberley Toad Busters' field catching and trapping program was one of the outcomes of this Forum.

The KTB volunteer organisation has been active in the field since September 2005. Since its inception, the KTB volunteer group has grown exponentially to nearly 2,000 volunteer members and supporters from all areas of the community who toadbus at every available opportunity.

The KTBs have been recognised world wide for their campaign and discoveries, and have been awarded in recognition of their work. Presently, the KTBs are holders of the National Banksia Community of the Year Award. They publish regular newsletters and media releases, and Kimberley Specialists maintains the KTB website, which attracts hundreds of daily hits, about all their work and information and results.

The KTB has secured Federal and State funding, as well as Lotterywest grants and private donations to provide the group with the necessary recurrent field costs, vehicles and equipment for its field campaign. KTB volunteers have contributed over 950,000 volunteer hours from their free time. They have hand captured, analysed and recorded data from over 245,000 adult breeding cane toads and destroyed millions of metamorphs and eggs out of the Northern Territory's fragile ecosystem. This phenomenal effort by the KTB will continue week after week to keep the Kimberley free of cane toads and their impacts. In July 2007, Professor Tony Peacock of the Invasive Animals Cooperative Research Centre at the University of Canberra reported on the "Community on-ground cane toad control in the Kimberley". Professor Peacock acknowledged the efforts of the KTB and said,

*"The community response to the cane toad invasion towards Western Australia is unprecedented. If the community support for WA's biodiversity can be successfully harnessed to assist with an overall cane toad [sic] there will be valuable lessons learnt that can be built on."*

Professor Peacock thereby recognised and commended the impressive involvement and uniqueness of the Kununurra community in their fight against the cane toad. Professor Peacock also recognised that should a scientific response to the eradication of the cane toad be identified that required delivery to the cane toads, that the KTB volunteer force represented a unique opportunity to scientists to facilitate that delivery.

### 3. Consideration of Potential Impacts

#### 3.1 Environment

The soil and water of the Kimberley will be irretrievably adversely altered by invasion of the cane toad.

Our waterways and billabongs are the life blood of the Kimberley desert and it is on them that many of our native species depend for survival. It is these places that the cane toads, who unlike our native frogs cannot survive long without water, in which the cane toads breed prolifically, along which the cane toads invade and in which cane toads wait out the dry season in readiness for the wet season forward invasion.

Not only is every life stage of the cane toad poisonous to our wildlife that eats it, it eats our wildlife and in many cases it is competing for the same food source. Clearly, the serious adverse impact of the cane toad on the Kimberley region and its wildlife would be devastating.

Alive or dead, cane toads are unsightly and foul-smelling. Dead animals poisoned by cane toads will be even more distressing. Pristine waters will be polluted by dead cane toads where their numbers are too great for the ecosystem to support or by fauna poisoned by cane toads.

## 3.2 Economic

The Kimberley region's three major economic areas of agriculture, mining and tourism will all be victims of the cane toad.

### 3.2.1 Agriculture

Agriculture will be affected by the pollution and blockage of irrigation systems, dams, waterholes, wells, troughs and pipes. Poisoning or ingestion of a variety of species fundamental to the wetland ecosystems, which support our agricultural industries is also likely. For example our cattle industry may suffer from the loss of insects beneficial to them or their environment: the KTBs have undertaken numerous autopsies of cane toads, which have revealed amongst other things, ingested dung beetles.

### 3.2.1 Tourism

Tourism would be adversely affected by a cane toad invasion. Thousands of tourists flock to the Kimberley each year from other parts of Australia and overseas. This is in recognition of what our pristine landscapes and wildlife framed in our incredible Australian wilderness and aboriginal heritage offer them. A cane toad invasion will adversely influence the decision of people to choose the Kimberley as their holiday destination. The experience of those that do come may be tempered by the altered environment caused by dying and dead animals, and polluted waters. Tourists travelling with pets and children will need to take extreme care to ensure protection against cane toad poison. Holiday accommodation outlets, which accept pets, will need to be especially careful in the management of the cane toad problem. It is also likely that our tour operators will experience negative impact on their businesses from the arrival of the cane toad.

### 3.2.3 Mining

The mining industry, like many other industries may experience costly problems such as equipment failure, blockages and pollution from cane toads. The nuisance factor of cane toad presence will be high due to the attraction of cane toads to bright lighting necessary in the mining industry.

### 3.2.4 Fishing

The contamination of and reduction in fish numbers due to poisoning by cane toads will impact on the potential for growth in the fishing industry in Kununurra. In addition, employers and future investors in the fishing industry would need to consider ways to protect their stock, their equipment from clogging and employees from poisoning due to handling. Existing and potential fishing industries will need to consider the impact of cane toads upon the functionality and logistics of the business reducing the profit margin.

### 3.2.5 Utility Providers

All utilities suppliers will need to consider the impact of cane toads. Some areas of concern include maintaining a safe drinking water supply, blockages, equipment failure, ensuring the safety of employees who come into contact with toads in underground tunnels, pits etc and many more.

## 3.3 Social

The cultural and natural heritage of the Kimberley will be irretrievably adversely altered by invasion by the cane toad. Furthermore, there are many potential social impacts from cane toads at a local level to consider.

### 3.3.1 Aboriginal Heritage

Our biodiversity is bush tucker to many remote aboriginal groups. Remote pristine billabongs sustain a way of life, which cane toads will disrupt perhaps irretrievably.

### 3.3.2 Urban Society

Extra care will be needed to safeguard children and pets during outdoor activities. In the garden, toads have been known to take refuge in swimming pools, ponds, pot plants and drainage pipes, and they are attracted to a bowl of pet food.

### 3.3.3 Recreational

The lifestyle of the typical Kimberley resident many of whom enjoy activities outdoors will be adversely altered by the arrival of the cane toad. Those activities that will be adversely impacted by cane toads include fishing, swimming (in river, lakes and waterholes), bird watching, camping, caving or simply just enjoying a pristine landscape whether walking, boating or driving.

## 4. KTB Recommendations

The KTBs make the following recommendations for cane toad control and management to be considered by all stakeholders.

### 4.1 Preparations for Cane Toad Arrival

The following suggestions are based on input from two and a half years organising toadbusting in the field by the KTB across 200,000 square kms of the Northern Territory's billabongs and waterways by many of our community members who are involved in this remarkable campaign.

#### 4.1.1 Permits

As a matter of urgency, DEC needs to provide advice to all stakeholders in regards to what permits are required - if any - to toad bust in Western Australia on some or all of the following:

- private land;
- local government owned or managed land;
- Crown land;
- in waterways, river systems and wetlands;
- DEC managed non-National Park lands; or
- National Parks and Nature Reserves,

accepting of course that entry, and conditions of entry, to those lands has been obtained by the relevant stakeholder from the relevant land holders. In addition, if DEC is aware of any permits from other organisations that the KTB and other stakeholders require to operate in Western Australia, they would need to advise relevant stakeholders accordingly. The KTBs will also be seeking permission from DEC to enter Crown land and DEC managed lands and WA waterways, wetlands and river systems in the East Kimberley for the purpose of toad busting.

#### 4.1.2 Prohibitions

It should be made illegal to harbour live cane toads without a permit or keep them as pets in Western Australia.

Permits allowing schools, universities and other institutions to keep live cane toads should be reviewed as to the risks of cane toad escape.

Any premises receiving goods from cane toad infested areas must be required to provide education and posters to employees responsible for unloading and packing. This includes trucking and train depots, and ports.

#### 4.1.3 Biodiversity Survey

The Kimberley is acknowledged worldwide as an area of pristine wilderness and exceptional beauty and biodiversity. In order to identify appropriate management practices and direct sufficient funding to protect this resource, we need to understand the biodiversity loss that could occur as a result of the cane toad invasion. Regrettably, the KTBs understand that only limited research has been conducted on the biodiversity of an area prior to a cane toad invasion for the purpose of measuring the impact of the cane toad. Kununurra and the broader East Kimberley community are in a unique position to undertake such a project and advance this knowledge. Because of the 4 year campaign by Kimberley Specialists in Research and the KTBs, there is already huge community support in Kununurra for resisting cane toads. KTB community education about cane toads has included what they look like and how to distinguish them from native frogs. This unique situation must be harnessed to conduct a biodiversity survey similar to the ABC's nationwide survey, 'What's In Your Backyard?' Resources would be

needed to design, advertise, print and distribute the survey as well as collect and analyse the results. There is a possibility of funding from NRM but this may not become available in time, at least for Kununurra. Such a program will also engage other community members who cannot toadburst, for various reasons, into the KTB campaign.

#### **4.1.4 Collection / Disposal Points**

A fundamental requirement for cane toad control will be the supply, placement and management of collection and disposal points for locally captured cane toads. Many people will not have the facilities or inclination to deal with captured living or dead cane toads. This may result in animal suffering, and decaying remains of cane toads in town and tourist venues, which sight and smell will be offensive, and could pose a health risk. Cane toads can carry infectious diseases such as salmonella, which cause diarrhoea and vomiting in humans. Other wildlife and family pets will be at risk from dead toads as the poison becomes inactive only some hours after its death.

Ideally, several cane toad collection/disposal points should be established throughout Kununurra and the East Kimberley. The Kununurra Vet Centre is run by veterinarian and toadbuster Sarah Brett who has offered the centre as a drop off point for cane toad disposal as well as a 'frog v cane toad' identification point. Disposal points could consist of a pit that will require a periodic soil layer dispersed over it or alternatively, an incinerator. Perhaps a pick up service could be offered by SWEK following a phone call from local residents. This would ensure correct euthanasing and disposal would occur. Collection points would require attendance to euthanase live toads.

#### **4.1.5 Cane Toad Traps**

Ideally, strategically placed cane toad traps would be distributed around Kununurra and surrounding areas. These would include areas such as gravel pits, roadside parking areas, well lit areas particularly near water and culverts. Vehicular stop off points should be considered as high priority for trapping or fencing because they are particularly vulnerable from cane toad hitch-hikers. Traps need to be monitored on a regular basis to ensure the caught toads are not subjected to unnecessary stress and to monitor the traps for bycatch.

#### **4.1.6 Signage**

Cane toad educative displays and road signage covering a wide range of cane toad information is required at strategic town locations such as the SWEK. Shire offices and high use buildings, such as the Kununurra Visitor Centre, the airport, bus stations, courthouse, hospitals, schools, Tuckerbox, Coles, sports centre, Camping retail and wholesale shops, petrol stations, caravan parks, accommodation places and in remote Aboriginal communities should be targeted. In addition, there could be signs at all WA/NT border point road entries. Good signage should also be erected at high density

tourist destinations such as Lake Argyle and the Bungles, and on all pastoral properties that run a tourism business.

A combination of signs would be ideal and include town locations of collection/disposal points, safety in cane toad handling, how to positively identify a cane toad and distinguish it from native frogs (a photographic comparison with the Burrowing Frog would be helpful), how to dispose of a cane toad, and relevant contact information. It is also important to inform people about the risk that cane toads pose to our biodiversity so they understand why this campaign is so important.

In addition, town perimeter information boards should be placed at all 5km mark entry points, trucking company dispatch points and all travellers arriving in Kununurra should receive a brochure about cane toads. Kununurra will be recognised as the WA town that is at the forefront of the cane toad battle.

The KTB brochure 'KEEP WA CANE TOAD FREE' already widely circulated by the KTBs contains the relevant information for wider dissemination through a properly funded signage and education campaign.

#### **4.1.7 Toadbusting Kits**

Preparation of 'toadbusting' kits, such as those already distributed by the KTBs, requires continued support and funding. These kits contain information such as cane toad identification, bin bags, nets and dettol. Production of good quality laminated photos demonstrating the difference between common native frogs and cane toads would be ideal as correct cane toad identification is essential. These kits would be available for sale to the public at strategic locations for cost price, or possibly financed by corporate or government sponsorship.

Encouragement to community members to purchase toadbusting kits and traps may come from the Shire via incentives such as a reduction in rates or perhaps funded entirely by SWEK. They could also be given a sign or poster to publicise the fact that they are participating in toadbusting.

#### **4.1.8 'Frontline' Lands**

It would be helpful if any Shire or other stakeholder management plan and resources were made available to 'frontline' property owners and lessees who border any of our waterway systems such as Lake Argyle, Ord River, Lily Creek Lagoon and the irrigation channels. These community members are likely to be significantly impacted by the arrival of cane toads and could have a higher degree of impact on the spread of cane toads in the area, especially if seen as an economic imperative. Freely available resources to these property owners/managers could play a major role in local cane toad eradication, control and management.

#### **4.1.9 Town Meeting**

A town cane toad meeting would be a productive course of action to maximise the dispersal of information with regards to the expected arrival of the cane toad which, with a continuation of the work of the KTB volunteers, is likely to be more of a trickle than a surge. The already engaged and cane toad educated community can learn more in respect to helping themselves, the community and the environment resist the cane toad invasion.

The Australian federal government declared the cane toad to be a national threat to Australia's biodiversity in April 2005. As Kununurra will be the first town in Western Australia to be confronted by cane toads, it has the potential to be a media story of considerable interest to all Australians and possibly world wide. A high profile 'personality' could be invited to chair the town cane toad meeting along with the media including those specialising in science reporting. This would also properly acknowledge the enormous and unique contribution of the Kununurra community to date, to the cane toad education, eradication, control, management, science and research to the Australian community.

A presentation by the various stakeholders including the Shire, the KTBs and DEC could be a showcase to promote a pro-active Shire and the unique cane toad expertise of the KTBs. Other areas, which would be covered, include:

- what to expect when the cane toads arrive
- identification of cane toads
- distinguishing native frogs from cane toads, metamorphs and tadpoles
- how to deal with cane toads, that is capture and disposal
- health and safety issues with regard to cane toads
- remote community involvement
- recent scientific breakthroughs
- call for volunteers including leaders, administration, marketing and equipment
- ensure all volunteers carry insurance cover when in the field
- KTB membership information
- availability of 'toadbusting' kits.

#### **4.1.10 Information Drop to PO Boxes**

This could be a joint Shire/KTB/DEC laminated information sheet with contact details, cane toad/frog identification, disposal point information and other relevant information. It may include a fridge magnet covering important points and contact details. The most efficient distribution method would be via a drop to all PO Box numbers and to all school children through schools. This would need to include communities, pastoral leases and National Parks important to this campaign.

#### **4.1.11 Online Education**

All community members and organisations keen to participate in and contribute to the cane toad management plan should be encouraged to read the Fact Sheets, Newsletters and other information on the KTB/KSR website [www.canetoads.com.au](http://www.canetoads.com.au). All participants in this cane toad management plan should be encouraged to have links from their own website to the KTB/ KSR website.

#### **4.2 On-going Cane Toad Management and Control in Kununurra, the Kimberley and WA**

WA cane toad control and management will be an issue for a number of years to come until scientists find a chemical or biological control. Management of the problem locally must be on-going. The Shire of Wyndham East-Kimberley should be funded to support a full time cane toad coordinator and control officer.

Important on-going cane toad management includes:

- scientific development and research into cane toad control and eradication
- management of cane toad disposal/collection points
- sale or distribution of equipment to dispose of toads
- monitoring, clearance and maintenance of strategically placed toad traps
- cane toad education (including remote communities in the Kununurra surrounds)
- supply of cane toad traps and fencing
- cane toad poison animal treatment and resuscitation information.

It will be productive to engage all educational establishments. Already there has been successful liaison between the KTB and TAFE with the establishment of a cane toad ranger course. Schools may be brought on board with environmental elements of the curriculum being taught by using issues surrounding cane toads and including toadbusting or biodiversity reconnaissance field trips. Educational events could be held at schools with the children 'educating' adults about cane toads by activities such as school plays, songs and artwork competitions.

The continuation of the enthusiasm of the community in controlling cane toads is imperative to the ultimate success of a management plan. This could be achieved by organising 'cane toad' events that are fun such as BBQs, quiz nights, cane toad hunts and awards. The Shire might even consider an annual "Control the Cane Toad Fair", which could be a draw for tourists.

## **5. Summary**

Based on the KTB's experience in cane toad control and the enormous Kununurra community involvement in its volunteer cane toad campaign, the following suggestions are initiatives which should be incorporated into the management plans of stakeholders. Focus must be on educating the community about:

- the correct identification of cane toads
- distinguishing frogs from cane toads
- safe handling of cane toads
- safe toadbusting
- the environmental, economic and social impacts of cane toads
- humane disposal of cane toads.

If these initiatives are adopted financial resources will be needed for:

- active liaison person/s
- cane toad traps for strategic areas (monitoring, clearing, maintaining)
- collection / disposal points for caught toads e.g. incinerator
- equipment to dispose of toads
- toadbusting kits
- signage
- education posters and brochures
- training seminars in remote communities and pastoral stations

**Kimberley Toad Busters Inc.  
April 2008**

Use of the information in this Guidance Plan is encouraged and fostered by the KTBs. Any further information or explanation should be directed to Lee Scott-Virtue. The KTBs simply request that they be acknowledged as the author of the guidance plan, and the information and advice contained therein.

Donations are urgently needed to keep up the work of the volunteer Kimberley Toad Busters. The KTBs are incorporated and are a federal government, Registered Environmental Organisation.

All donations to the KTBs are tax deductible.

KTB ABN 715 008 59318  
KTB Inc 797 223 032

Donations can be made online at [www.canetoads.com.au](http://www.canetoads.com.au) or mailed to our PO Box Address:

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**If everyone was a toadbuster,  
The toads would be busted!**