

Kimberley Toad Buster's

News Letters



The aim of this website is to document the Kimberley Toad Busters fight to stop the cane toad crossing into Western Australia and to provide the Western Australian Community some understanding of the enormous efforts (and contributions) that can be made by unpaid volunteers!

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Prepared by Lee Scott-Virtue, President & Founder of KTB Kimberley Toad Busters.

KIMBERLEY SPECIALISTS
Caring for the Kimberley



We need to stop burning the Kimberley
We must stop the Cane Toad



IF EVERYONE WAS A TOADBUSTER
TOAD BUSTERS



THE TOADS WOULD BE BUSTED

KIMBERLEY TOAD BUSTERS NEWSLETTER 46:

22/04/2012

The Cane Toad is a *Key Threatening Process* to the Australian Nation

Declared by the Federal Government 12 April 2005

KTB Newsletter

This 46th Kimberley Toad Busters' Newsletter is produced by Kimberley Specialists In Research Inc in conjunction with Kimberley Toad Busters Inc. Kimberley Specialists, a founding member of the Kimberley Toad Busters, continues to support the campaign against the cane toad by supporting www.canetoads.com.au raising funds and supporting cane toad scientific research.

Prepared by Lee Scott - Virtue President & Founder of Kimberley Toad Busters

KTBs are a tax deductible entity. Please see our website for our direct donation facility or how to sponsor toad busting or one of our research or educational projects.

**IF EVERYONE WAS A TOADBUSTER
THE TOADS WOULD BE BUSTED!**

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1: Kids @ Risk Positive Outcomes Program

Still very much in a working draft form at present the following is an overview of how Kimberley Toad Busters see this proposed program being run.

Kimberley Toad Busters have developed the Kids @ Risk Positive Outcomes Program to address social issues within the community associated with juvenile delinquency. The program aims to reduce anti-social behaviour, increase self-esteem, create positive leadership abilities, create self-awareness, and increase school attendance amongst the youth of Kununurra.

The program supports a collaboration of agencies such as Save the Children, Juvenile Justice, Kununurra Police and Kununurra District High School who are currently independently attempting to reduce the impact of these issues on the community as a whole. It is about co-ordinating the activities that the organisations are individually trying to achieve and bringing them altogether to perform greater positive outcomes. The program requires regular outlined activities from the agencies in order to balance the outcomes and behaviours that are to be integrated throughout the program.

The Kids @ Risk Positive Outcomes Program aims to provide structure and interdependency between these agencies to target kids with innate leadership skills and build them into positive role models for their peers and their community. The program works around a holistic approach with all organisations and individuals involved. With the Kimberley Toad Busters organisation participants will be guided through behaviours in order to become more respectful, responsible, prepared and safe in their day to day lives. They will also provide educational, 'classroom like', situations which will allow the participants to practise the behaviours associated with mainstream schooling. This will give them the skills to eventually integrate more successfully in a classroom, including goal setting and writing skills. Kimberley Toad Busters will also conduct toad busting and biodiversity group activities in order to reduce anti-social behaviours. Leadership roles will play a part in these activities to give participants a sense of ownership in the activity in order to increase self-esteem.

Participants will undergo activities to increase their self-awareness, including sessions with a nutritionist who will inform and guide participants through a program about their diets and how a healthy diet can positively improve their physical and mental wellbeing. Indigenous elders will offer guidance on spiritual wellbeing, and teach them to be more respectful of the land in which they live and, provide them with the knowledge of their culture.

The candidates will participate in physical activities (e.g. toad busting, canoeing) that will help improve their co-ordination skills, physical endurance and self-esteem. Candidates' knowledge bases will be improved through all activities including knowledge on local flora and fauna, nutrition and cooking, uses of various pieces of equipment, and local laws. Learning bush survival skills and overcoming fears (through abseiling and handling fauna such as snakes) will increase participant's self-esteem and make them more aware of their surroundings.

Candidates for the program are qualified through the agencies using set criteria to increase the likelihood that positive outcomes are achieved by participants. The target age range for participants in the program is nine to twelve years of age. Once candidates are qualified they are guided through the 5 week intensive program that focuses on building social skills and developing positive leadership qualities. Desired outcomes of the program are tracked and monitored for progress by the participants and ongoing opportunities for further participation is dependent on improvement in / achievement of the desired outcomes.

Family and community input is an essential component of the program. Positive leadership and social skills are developed through role modelling and mentoring and therefore candidates and their families are expected to make a commitment to the full five week program. Each individual candidate will have an individual mentor, someone who is involved in that candidate's life (e.g. older sibling, grandparent, neighbour), who is at least 18 years of age. It is the mentor's role to also commit to the five weeks and to offer a reflective period with the candidate after each of their sessions and assist them throughout the five weeks to maintain their commitment. Mentors will be offered the opportunity to undertake activities similar to those offered to the candidates. This will allow relevant talk between candidate and mentor, and give each mentor the same knowledge and experiences that the candidate undergoes.

Candidates in the five week program work through the three phases of I Do (Leaders), We Do (Together), You Do (Kids) with each session they attend in order to build a sense of competency and achievement with the aim to continue in the program in a mentoring role to further candidates as they develop social and leadership skills. Having activities from each organisation minimises the time that the candidates may be unsupervised and unguided. It is important for the candidates when developing their independence and competency to attend consistent guided activities and reflect upon those with their mentors. The program aims to assist in integrating the candidates into mainstream society, whether it be attending school or behaving in an appropriate manner when in or away from their home environments.

When measuring whether the project has achieved its expected outcomes observations will need to be made about whether or not a reduction in the number of anti-social behaviour among the youth has occurred and, if there has been an increase in school attendance among participants. Follow up sessions will need to be conducted in order to converse with participants and their mentors in order to reflect on their experiences and whether or not they are making a difference in their lives.

2: Outcome of 'trial' weekend Kids @ Risk Positive Outcomes Program.



In collaboration with a number of government organisations including Save the Children, businesses and individuals KTB held their first weekend 'testing the waters' trial program on the 14th and 15th of this month. The target age was between 9 and 12 years of age.

The weekend was an enormous success with all the kids who attended asking to come back for the program. All participants had to canoe from Lake Argyle to Go Wilds Adventure Tours camp on the Ord, a distance of around 30 km, then prepare their own camp, help with the preparation of the meal, toad bust and record native biodiversity, as well as abseil down a cliff so none of it was easy.

Other activities included learning about local flora and fauna, nutrition and cooking, uses of various pieces of equipment, and local laws, learning bush survival skills and much more.



without the collaboration of businesses such as Lake Argyle Cruises, Go Wild Adventure Tours, Triple J Tours as well as the involvement of individuals such as nutritionist Steve Stevets, Paul Mock from the Sandalwood Sanctuary and Kununurra Youth Group, Bob Cooper, Bush Survival Expert, and visitors Sam Murray, Managing Director of Rustic Pathways and Nick Brockhoff from Operations Flinders this first trial' would not have been nearly as successful. KTB will now start preparations to begin the proposed full 5 week Kids @ Risk Positive Outcomes Program.

3: Update on KTB's Research Program.

Kimberley Toad Busters have been facilitating and sponsoring university students and researchers from around the world since 21006. KTB are currently facilitating several research projects and have recently appointed a Biodiversity Research Coordinator to assist with the KTB "What's in your Backyard?" program and with visiting research students. At present this position is largely voluntary until KTB find additional funding for the Research program.

1. Biodiversity Recording and monitoring project:



Gary Rethus, Lyndon Smith and Andrew Rethus are currently undertaking biodiversity recording programs at KTB's Nicholson Station Depot. Gary Rethus has 10 years experience working with the Victorian National Parks and has recorded a significant number of species at the Nicholson Depot and at Moralla Gorge. He has also started a recording program at a gorge system just north of the station and with toads now only around 20km from this system information on what species are present will be critical in order to see what the impact is once toads arrive. Lyndon Smith is an IT and maths specialists and is assisting in the recording and statistical analysis of species recorded. Andrew Rethus, a high school student at KDHS, has been assisting in the ID process. Gary Rethus has been contracted to KTB as our Biodiversity Rresearch Coordinator and will work with other researchers sponsored by KTB.

As stated by Lyndon Smith "We are swiftly trying to gain an understanding of the area, investigating the fauna in their natural habitat before they are interrupted and wiped out. This research will hopefully lead into greater changes for Kimberley Toad Busters and everyone's plight. We've come across Australia to help KTB's with a problem that will soon affect wildlife across the country if Cane Toads continue to adapt and evolve".

2. Anthropological research into volunteer groups dealing with the cane toad issue:



Jon Nyquist is a student of anthropology from Norway and is undertaking a 6 month research project looking at introduced species such as the cane toad, their impact on Australian society and relations to nature as part of a Master's thesis. Jon has now been working with KTB since the 5th of January and has been 'blown-away' at the range and depth of KTB activities. Jon has actively participated in the general toad busting activities with all the different groups that make up our volunteer base and has become a valuable leader in the KTB work with troubled Indigenous youth. He has also participated in some of the remote reconnaissance tracking activities and said he is finally becoming comfortable with Kimberley outback conditions. Jon's studies will be the first time anyone has looked in depth at the complex and varied issues volunteers face when dealing with government.

Jon has certainly shared the process of some of KTB's most frustrating moments while dealing with bureaucratic red tape over access issues to the Bungle Bungles and permits to get even the most basic biodiversity research permits. Hi thesis will make fascinating reading.

Brief synopsis of the research by Jon Nyquist.



“The project will investigate the complexities of dealing with an invasive species. Contrary to a lot anthropological literature on the subject which focuses on the discourses of nature conservation, I aim to look at the practices on the ground and in action. The project will call into question a paradox of nature conservation much present in the literature, that it is a matter of conserving nature by unnatural means. This rests on an obsolete dichotomy of nature and culture, and is much too simple. I aim to show how complex the situation really is. I am academically engaged in an ethological turn in anthropology called multispecies ethnography.

I will focus on how the cane toad affects life and society, both indigenous, in the rest of the community and with the KTB. I will look at what the event of toad bust does at different levels of scale, and on how the toad bust affects life locally, how it affects at a longer time scale and over distances. I take the toad bust to be an event that is not reducible to interventions in the environment, but is connected to and part of, many other aims, goals and projects. Seeing every toad bust as a uniquely singular event, I aim to articulate and unearth these connections.

Also of interest is how the toad busting, the cane toad, and everything that the toad busting affects is susceptible to changes politically and in the scientific community. Thus I will look into an interesting tension between the practices of volunteer natural science and government funded academics, engaging an anthropological literature on ‘research in the wild’, a form of research that is not cut off from the heterogeneous networks that constitute it but is intrinsically a part of different communities at different levels of scale.

Another focus is how people relate to and live in an environment which is irreversibly altered, and currently undergoing rapid changes. I will also look at human/animal relations, aiming to answer a question of how it is possible to responsibly affect and be affected by the cane toad, and also on how the people and the cane toad are mutually affected, both as life forms and forms of life”.

3. Lungworm Parasite Research.

Jordy Groffen, one of KTB’s first Dutch Internship students is back for the 4th time to continue his ground breaking and innovative research into the Lungworm Parasite. Jordy’s previous research revealed and confirmed that the lungworm was fast catching up with the frontline colonising toad fronts making their way across the north of Australia. This time Jordy is accompanied by Leonie Jacobs, also a Masters graduate from Holland and a specialist in animal behaviour and welcome. Both Leonie and Jordy will spend 12 months working with KTB on a number of environmental projects.



An overview of some of the research projects Jordy and Leonie will be undertaking while working with KTB.

1. *When is the density of lungworms actually affecting cane toads?*

First, we need see whether lungworms affect natural antibodies titres. Natural antibodies are produced without previous infection, whilst normal antibodies are produced when infection with a pathogen occurs. Natural antibodies are part of the humoral immune system and have been shown to act as a first line of defence against pathogens such as bacteria and viruses. Natural antibodies were identified in several reptiles, but never in cane toads. Blood samples will be taken from toads from different locations with different parasite densities. Analysis could show that the number of natural antibodies is lower in highly infected toads, compared to toads with low lungworm and no lungworm infections. Natural antibody titres will be compared to health parameters (e.g body weight, number of eggs in gravid females) to get insight in the density of lungworms actually affecting cane toads. If lungworms affect the immune system (natural antibodies), this confirms the findings that lungworms negatively affect cane toad health. With this information, lungworms can be used as a biological control for eradication of the cane toad.

2. *A non-invasive method to determine lungworm infection in toads*

Lungworms are known to pass eggs and/or larvae through the digestive system of the toad, and so reproduce. Faeces of cane toads could give insight in how infected a toad is. For this study, faeces of cane toads will be compared with actual lungworm numbers to validate this method. Expectations are that a positive correlation exists between number of eggs and larvae in the faeces and actual lungworm numbers in the lungs. Using infected cane toad faeces could be the way to infect healthy cane toads without actually introducing more cane toads.

3. *Migration of the lungworm parasite*

As the lungworm could possibly be used as a biological control for cane toads, lungworm migration is of interest. Insight in this migration could show the effect lungworms have on cane toad migration. The migration of the lungworm parasite in the Western cane toad frontline has been mapped from 2008 until 2011. This migration will be mapped again in 2012 and compared to the previous years. Besides this, distance between cane toad frontline and lungworm frontline will be compared. This knowledge could give insight in where human intervention is mostly needed.

4. Behaviour in cane toads

Cane toad migration is subject of discussion. Experience shows that migration is led by numerous males followed by several females. The reason behind this imbalance between males and females at the frontline could be due to behavioural differences between the two. To study this, coping styles will be examined in cane toads. Active and reactive coping has been established in many animal species (e.g. chickens and pigs) and is shown to be a valid way of determining behavioural responses in an individual. Different tests will be applied to study coping styles in toads, e.g. the back test, where toads will be held on their back for a short amount of time and latency for vocalising and struggling will be recorded. Expectations are that males are more active in their behavioural responses and that females are more reactive. Knowledge on behaviour can give insight in why toad migration is led by numerous males and could help in finding a possible solution to stop this migration.

4. Looking at the impact of cane toads on small vertebrate species.

Amber Heitman is the third Dutch University Internship student KTB have sponsored over the past 5 years. Amber will be working with KTB for 4 months and will be looking at recording small reptile species in areas that have not yet been invaded by the cane toad and in areas where toads have been arrived. Amber's research, facilitated and sponsored by KTB in partnership with her university is a continuation of a Masters research sponsored by KTB in 2008 and 2009. Lyall Grieves completed his Masters in 2009 looking at the potential impact of the cane toad on small reptiles. Amber will be looking at 3 of the sites recorded by Lyall before the invasion of toads and that have now had had toads for 2 years.

The significance of this research: To undertake a research program looking at the full impact, both direct and indirect, of cane toads on small reptile species by looking at the interactions and impacts the cane toad has, and will continue to have, on small reptile communities found in the Kimberley region and the further understanding of impacts through competition for food and habitat. This research is a continuation of the previous work undertaken by Lyall Grieves for KTB.

5. Documentaries of KTB Education and research projects.



KTB have been privileged to have the filming and documentary expertise of Dutch camera man Matthias van Zomeren. Matthias has accompanied researcher Amber Heitman to record her field work and to make a documentary of this research. Matthias will complete a documentary of KTBs research work and the many trials and tribulations a volunteer organisation has to go through to get permits and funding for critical research such as that KTB sponsored for Amber by KTBfor.

Matthias has worked in the Dutch news and television film industry and has already completed three short film segments on the KTB work with various Indigenous groups.

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4: Some brief Cane Toad 'Facts' & 'Figures'.

KTB had a very interesting time recently looking at some of our toad busting totals, hours and \$ input. The figures are very conservative and the hourly rate based on a mere \$25 per hour.

- Approximately 2.4 million adult toads have now been taken out of the environment by KTB volunteers.
- This represents around 552 tonnes of biomass removed.
- KTB volunteers have put in approximately 240,540 hours toad busting and other associated activities.
- This represents around \$6,013,500 in dollars contributed by community in the cane toad fight so far.

Based on the \$1.2 million provided by the state government the \$6,013,500 hours of volunteer work equates to more than a 400% return in monetary value for every dollar contributed by the government. An interesting question though is how do you measure, in dollars, the actual social, economic and environmental achievements of a volunteer group like KTB?

Interestingly enough, if the state government had put in the same amount of people and effort to achieve the same results as KTB have, it would have cost the government conservatively around \$15,635,100.

5: The Cane Toad Kimberley Invasion Front Line and predicted advance.

Despite the rather 'dry' wet for most of the season toads have continued their relentless move across the Kimberley. Although low in numbers and with minimal breeding due to the consistent



and diligent activities of Kimberley Toad Busters and a very energised Kununurra community, toads have now reached Diggers Rest Station to the west of Wyndham and north of the Cockburn Range, the Pentecost River on the Home Valley and El Questro boundary, 30 kilometres south of the turn-off to the Bungle Bungles, the eastern most aspect of the Osmond Range, the Frank and Ord Rivers west and east of the Bungles, Bellburn and Buchanan Creek systems in the Bungles, and possibly as far south east as the mouth of the Tuner River.

Toads have also reached Nicholson Station although are still around 40 km short of the homestead. Toads are just short of the Fitzroy Catchment area and are expected to reach this sometime this year. Toads are expected to hit Halls Creek also this year. Once toads make it into the catchment area of the Fitzroy they are expected to reach Fitzroy sometime next wet season. Thanks to the education work undertaken by KTB Halls Creek, Fitzroy and Derby are well prepared for the arrival of the cane toad. A number of groups from each town have begun the KTB “What’s in your Backyard?” biodiversity recording program and will be able to monitor the impact once toads arrive.

The KTB maps show the full extent of this invasion and a projection of where toads will get to by the end of 2012. The maps are being up-dated continually.

For a clearer view of the main maps go to our website www.canetoads.com.au.

Maps of WA and the NT is available on the home page. Google maps showing where toads and breeding have been found are also available on the home page.



Kimberley Toad Busters awards!

For more information on any of the articles contact:

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All donations are tax deductible.