TOADINATOR™

Toad Trap

Acknowledgements

This project is a collaboration between Animal Control Technologies Australia (ACTA) & James Cook University (JCU) College of Science and Engineering, and was supported by an Australian Research Council (ARC) Linkage Grant.

The **TOADINATOR** and **ACTA-ATTRACTA™** were designed to trap cane toads (*Rhinella marina*), but these traps can be used for other large terrestrial invasive amphibians, including black-spined Toads (*Duttaphrynus melanostictus*), and American bullfrogs (*Lithobates catesbiana*). The technology to capture other calls for other species is being developed and should be used when targeting species other than cane toads.

New technology to help reduce cane toad numbers

Introduced cane toads adversely affect Australian ecosystems. Toads are toxic to native predators, compete with and prey upon native species, and can spread disease.

The **TOADINATOR** cane toad trap is compact, lightweight, portable and easy to assemble. The trap has been specifically designed to attract and trap cane toads using proven finger door technology and a solar powered, self-charging light and sound attractor unit (the **ACTA-ATTRACTA™**) that can attract toads.

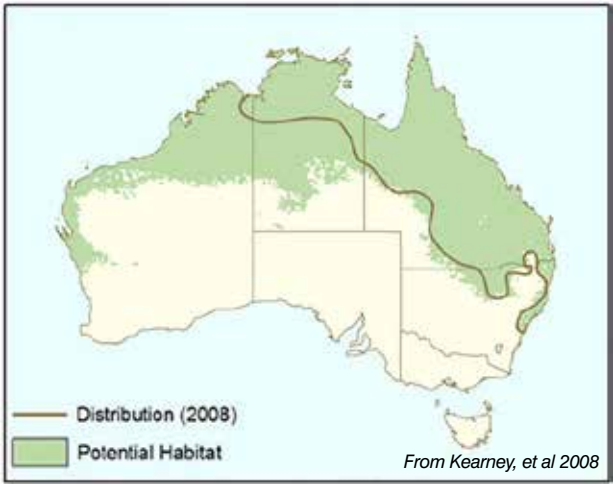
The **TOADINATOR** when combined with the **ACTA-ATTRACTA™** is effective in a range of environments including residential and high use public areas. It has been rigorously field tested by leading research staff at James Cook University.

Product features

- ✓ **Australian designed**
- ✓ **Tested in difficult tropical environments**
- ✓ **Durable and long lasting**
- ✓ **Flat packed for transport**
- ✓ **Easy to assemble and handle**
- ✓ **Safe to use in any environment**
- ✓ **Light-weight**
- ✓ **Variable volume settings**
- ✓ **Solar powered and water resistant**
- ✓ **Galvanised for long life in tropical conditions**

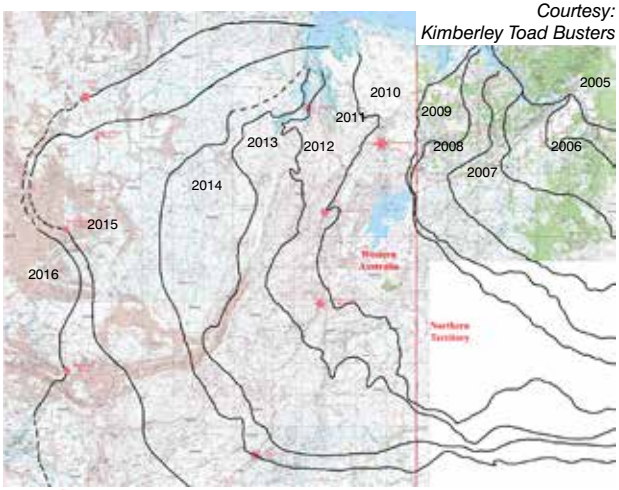
The Australian cane toad problem

Cane toads (*Rhinella marina*) infest northern Australia, from the east coast to the Kimberley region. Cane toads have not yet reached their potential distribution, and they will spread further west and south over time. Their ability to survive a wide range of temperatures means they will continue to spread. Wherever they occur they will impact on native species and habitats.



Cane toads are currently spreading rapidly from the Northern Territory into the North West of WA.

Courtesy: Kimberley Toad Busters



Life cycle and breeding

An adult female can lay up to 20,000 eggs in a single breeding event. They can lay eggs at any time, but breeding is more common during the summer months. Cane toads lay their eggs in long dark coloured strings.


Source: Dean Goodgame, Kimberley Toad busters

This helps with identification as they are the only amphibian in Australia that does this. The eggs, tadpoles and adults are all toxic, and juveniles reach maturity in about 12 months.


Source: Dean Goodgame, Kimberley Toad busters

Cane toads live for about 5 years. They grow to 250mm in length, although larger toads do occur.

The breeding potential of cane toads highlights the importance of removing toads, especially adult females, from the environment. Even at a local scale, removing females has the potential to significantly reduce the number of offspring produced over time if control is sustained.

Impacts of invasive toads

When cane toads arrive in a new area, many large vertebrate predators including goannas, quolls, snakes and birds, can be killed from consuming the front line of the toad invasion. The insidious process means the following toads are unopposed. Cane toads also consume insects, which are food for native animals. Toads also have negative impacts on some ground-nesting birds, such as bee-eaters as they consume eggs and chicks. Cane toads can also take over burrows of native burrowing wildlife.

Reducing the cane toad numbers can help minimise these impacts at a local scale.

Presently, there are few methods available for controlling cane toads other than removal of individuals.

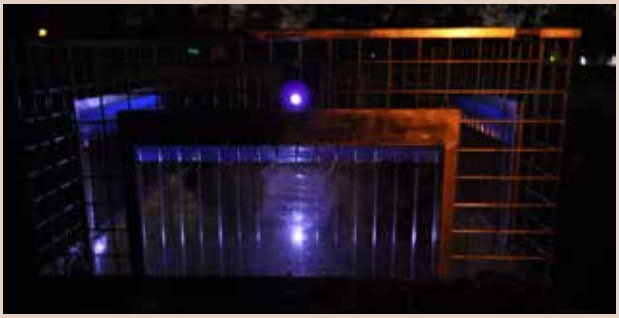
The **TOADINATOR** significantly reduces the effort required to control individual toads. Hand capture helps but is labour-intensive. It can be included in an integrated approach to cane toad management in association with the use of multiple **TOADINATOR** traps at strategic locations.

How the Toadinator works

The **TOADINATOR** is a cage trap designed specifically for the effective capture of cane toads.

On three sides, the cage has specialised one-way finger doors that allow toads to enter but not exit.

The **ACTA-ATTRACTA™** is an electronic lure designed to bring toads to the trap. The **ATTRACTA™** has an inbuilt UV light that attracts insects, which in turn attracts toads, because insects are a favoured food source.



The **ATTRACTA™** also has a sound unit which comes preloaded with a series of cane toad calls. These calls are specific to cane toads and are demonstrated to be attractive to females.

The solar powered **ATTRACTA™** has onboard power storage, so an external power source is not always required. It turns on at night when toads are active but is off during the day.

The **ATTRACTA™** has a volume control which is important in residential areas.

Why the sound lure is important for successful toad capture

The **ATTRACTA™** technology, which provides calls specific to lure female toads is the key to the success of the **TOADINATOR**.

JCU researched male cane toad calls, and identified what made their calls attractive to female toads. During trials, capture rates increased 10-fold when calls were used in combination with light and sound. Calls with specific features were found to be best for removing females, and it is important to remove female toads from the population because fewer eggs will be laid for future generations.

The pre-recorded **ATTRACTA™** calls are selected to maximise luring of both sexes. Toads are attracted by the sound and by the insects that are attracted to the light as well.

Easy steps to use the Toadinator

1 Assemble the trap using the full instructions that are provided with the **TOADINATOR** unit.
A quick setup instructional video is available on our *You Tube site - Animal Control Technologies.*

Construct the metal cage first, comprising the solid roof and floor, 3 one-way finger doors, one mesh 'rear' door for emptying the trap, and a hook on the underside of the lid to hold the light and sound attractor unit.

2 Connect the **ATTRACTA™** to the solar panel using the water proof lead provided and position the solar panel where it can collect sunlight during the day.

The unit can also be powered from mains power using the power adaptor provided. Allow a few hours for the internal batteries to charge then switch the unit on.

3 Place the **ATTRACTA™** into the **TOADINATOR** cage using the specialised hook and pass the cable through the rear panel.

4 Place the trap in the field on level ground where toads are active. Ensure there is no vegetation that may obstruct the doors.

5 Ensure the trap is shaded but the solar panel is receiving sunlight by utilising the long cable supplied. Place water dripper bottle (supplied) onto the cage.

6 We recommend checking the trap daily and disposing of any captured toads humanely. Refill water dripper bottle if required.

7 Remove any trapped toads by opening the large, rear mesh door, and tipping them into a secure bag or bucket. Toads are excellent escape artists, so carefully tie the bag or secure the lid. Dispose of toads in a humane way.

8 Relocate the **TOADINATOR** if you are not having any success after a short period of time, approximately 5-7 days.

Helpful tips

Timing of trapping

Toads can be wary of new things within their environment, so it may take a few days for the toads to start using the trap – don't be disheartened if you don't catch anything straight away!

The **TOADINATOR** can be used all year round in all environments. More toads will be captured in the wet season than in the dry season, but we recommend trapping throughout the year. Although the overall **numbers** of toads captured are greater in the wet season, a greater **proportion** of the toad population will be removed if trapping is conducted in the drier months.

Site selection

Place traps in areas where cane toads are present but not wanted. For example, in private gardens, public shared spaces and public resort areas. They can also be placed in areas that require protection from cane toads such as toad-free ports, islands and high-value areas with rare or threatened species. The following points must be considered when setting up the **TOADINATOR** in any environment:

- Avoid placing traps where there is a risk of flood damage to the unit, but make sure there is a water body in the greater vicinity of the trap, toads can live in dry areas as well as waterways but placement of the traps near to water bodies achieves maximum capture rates.
- Place traps at least 200m apart, otherwise trap catchment areas will overlap.
- Place traps appropriately or adjust volume so the sound does not disturb residents.

Checking traps

The **TOADINATOR** should be checked regularly and should not be left unchecked for longer than 2 daysWhen checking the trap, make sure you check the solar panel for obstructions, as the electronic lure will not work each night if it cannot charge throughout the day.

It is also recommended to check the trap and **ATTRACTA™** unit at night to ensure it is working correctly.

If you leave the **TOADINATOR** set for a long period of time, you must offer water via a regular pet water-dripper bottle (provided). Place the trap in a shaded area if possible.

Captured cane toads can be easily removed from traps by opening the rear door and emptying them into a large bag or bucket. Cane toads must then be disposed of in a humane way.

Humane disposal of toads can be done by cooling then freezing the toads, or by exposing them to carbon dioxide gas (licensed operators only). We are presently researching a new, humane and fast acting toxin, for humane disposal of toads. We do not support the use of common cleaning and disinfecting agents for killing toads.

Sources of additional information

Kearney, M, Phillips, BL, Tracy, CR, Christian, KA, Betts, G & Porter, WP 2008, 'Modelling species distributions without using species distributions: the cane toad in Australia under current and future climates', Ecography, vol. 31, pp. 423–434.

Data and field testing details can be found at the link attached https://scholar.google.com.au/citations?user=fXdzNylAAAAJ&hl=en

Be careful when handling toads

CAUTION: *Cane Toads have toxin glands (parotoid glands) or swellings on each shoulder which can release a milky white poison if threatened or handled. Bufo toxins are a complex mix of toxic steroid lactones including cardiac glycosides. Deaths in humans have not been recorded in Australia but cane toad toxin can irritate mucous membranes and cause pain and severe eye irritation and temporary visual disturbances. If swallowed, the toxin may affect the heart, blood pressure, breathing and can cause paralysis, salivation, twitching, vomiting, convulsions and paralysis and can result in death for many native animals and pets.*

First aid treatment includes washing the eyes, mouth and nose with water and affected people should seek assistance from the nearest hospital emergency department.

ACTA products for large-scale pest animal management available through agencies and/or leading rural merchant stores:

FOXOFF®
Fox Bait

For the control of foxes

SLUGGOFF®
Slug & Snail Bait

For the control of snails & slugs in the home garden

FOXSHIELD®
Fox Bait

Fish based bait for fox control

DEN-CO-FUME®
Fumigation Cartridges

For the control of foxes in natal dens

DOGGONE®
Wild Dog Bait

For the control of wild dogs

RABBAIT®
1080 Oat Bait

For the control of rabbits

RABBAIT®
Pindone Oat Bait

For the control of rabbits

MOUSEOFF®
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For the control of mice in crops

MOUSEOFF®
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RATTOFF®
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MOUSEOFF®
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For the control of mice and rats in domestic, commercial & industrial buildings

PIGOUT®
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FOXECUTE®
PAPP Fox Bait

For the control of foxes

TOADINATOR™
& ACTA ATTRACTA™

For the control of cane toads

DOGABAIT
PAPP Wild Dog Bait

For the control of wild dogs

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