

Eradicating cane toads in NSW outside their current range of distribution

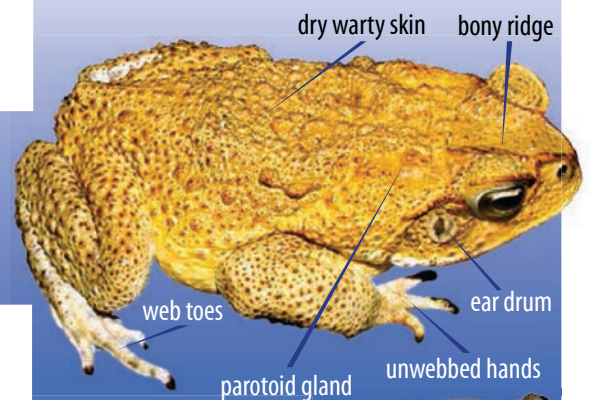
Cane toads have contributed to the decline of several native species and their continued expansion is likely to cause further declines in Australia's endemic fauna. They also pose a threat to domestic pets. This supplementary brochure is a summary of the best practice guidelines, which are aimed at councils, state agencies, industry or other landholders in areas outside the current range of the toad's distribution. The full guidelines provide an integrated management strategy that enables landholders to respond to new reports of cane toads in a swift and comprehensive way

How to identify cane toads

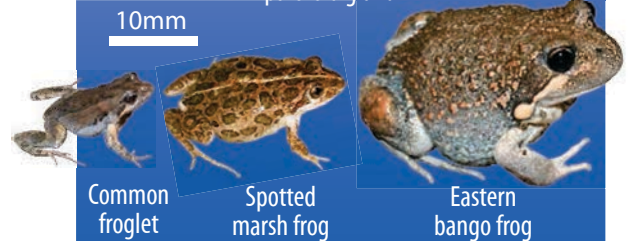
Native frogs are often mistaken for cane toads and accidentally killed. To positively identify a cane toad, *all* of the features shown here *must* be present as no native frog species would exhibit them all.

Cane toad or native frog?

Unlike native frogs, adult cane toads have all these features



10mm



Many people have difficulty telling native frogs and cane toads apart because they share some features such as warty skin, a visible ear drum and webbed toes.

How to identify spawn and tadpoles

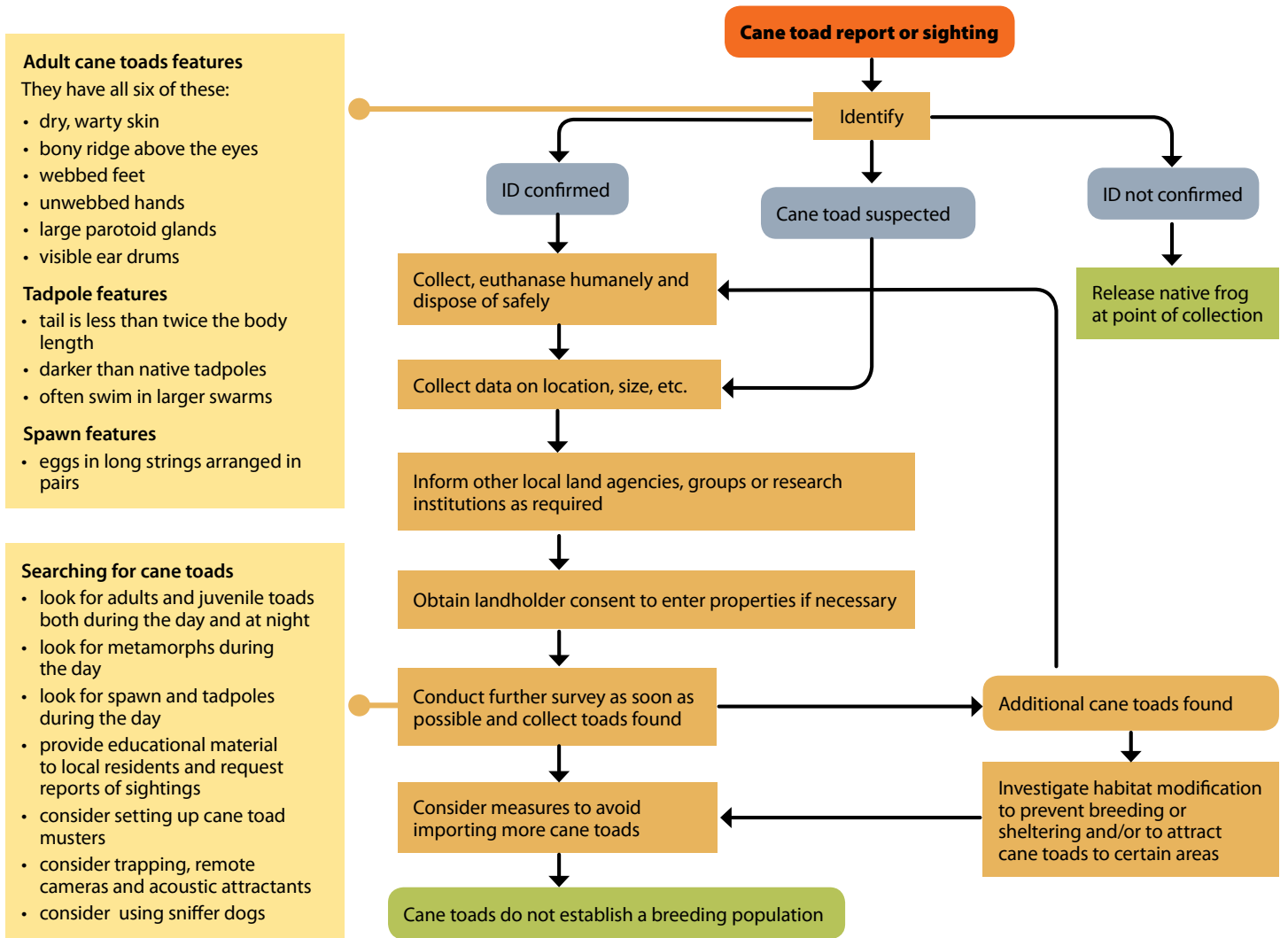
Cane toad spawn forms in long strings of black eggs which are arranged in pairs in continuous jelly. Cane toad tadpoles:

- are dark black in colour (most native tadpoles are brown or grey)
- newly hatched are of a smaller size than most native tadpoles (cane toad tadpoles have a body length of 11 mm, and are 22 to 30 mm including the tail)
- have a thin tail that is shorter than in native tadpoles (1 to 1.5 times their body length)
- have their eyes positioned towards the top of their head rather than the sides
- have visible nostrils
- have an underbelly that is black around the abdomen
- often swim in larger swarms than native tadpoles and aggregate at the margins of water bodies.



Swarming tadpoles. Photo: J Pumpars.

Response to cane toad sightings



All eradication programs should aim to prevent cane toads from establishing a breeding population. This figure outlines the basic processes that can lead to such an outcome, starting with the initial response to cane toad sightings.

How to find cane toads

During the warmer months (September to March), cane toads are mostly active after dark. Conduct visual searches at night using a strong torch and listen for calls. These surveys need to be on suitably warm and wet nights. It is worthwhile including daytime searches for sheltering toads but nocturnal searches are generally more successful.

Manual collection is generally very effective at keeping areas cane-toad free or keeping numbers low. It can be done by individuals, small groups or during coordinated cane-toad musters. When listening for calling males, keep in mind breeding toads may actually be present even if no calls are heard.

Where toads are being detected, undertake surveys weekly or in shorter intervals. Nearby areas that are not yet known to be inhabited by toads should be surveyed at approximately monthly intervals. During the colder months, search for sheltering toads during the day at shelter locations outlined on the next page.

Once the presence of cane toads in an area has been confirmed, consider using wire cage traps. These are fitted with a light to attract insects and subsequently toads. Calling in males may be elicited by playing back a cane toad call from an Mp3 player or similar portable device.



Cane toad, face detail.. Photo: OEH



Cane toad, side view. Photo: J Pumpars.

Where to find cane toads

Searches should start in the area where toads were reported, as it is important to collect all individuals that arrived in the same load before they disperse.

Focus searches in the following areas:

- **Open, disturbed or human-modified habitats close to water** such as riverbanks, cleared areas, woodland, parks, paddocks, golf courses and dams. Also check around buildings where sprinklers, leaking taps and air conditioners can provide moisture
- **Open corridors** such as roads, footpaths, bicycle paths, wallaby tracks and any other tracks made by animals or people
- **Open areas that are lit at night** such as under security lights or floodlights – lights attract the invertebrates that cane toads feed on
- **Water bodies** – cane toads need to hydrate their bodies every few days. Survey all available permanent and temporary freshwater bodies. Saltwater is less suitable but is not a complete barrier for their dispersal
- **Shelter sites** – cane toads most often shelter under crevices between rocks, in hollows under large trees and in leaf litter or dense vegetation on the ground. Artificial shelters include drainpipes or habitat in watered gardens; for example, between rocks, under dense vegetation or under logs.

How to find breeding sites

Cane toads prefer to lay eggs in shallow pools with open (not vegetated) gradually sloping, muddy banks. They tend to avoid flowing water and pools with steep surrounds. When they do breed in flowing watercourses, they prefer shallow, still areas. Favourable water temperatures for breeding are 25° to 30° C. Breeding ponds can carry water either permanently or temporarily.

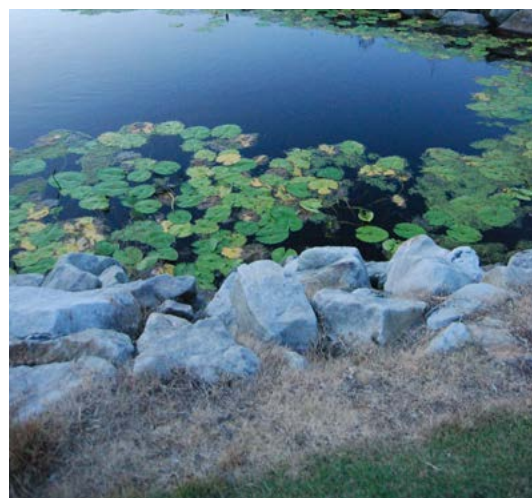
Tadpoles hatch within 24 to 72 hours after the eggs are laid. The strings of spawn are often tangled around rocks or water plants. They should be removed with the aid of a dip-net – gloves need to be worn as the eggs are also toxic.

The tadpole stage lasts from three to 20 weeks. Tadpoles are most active during the day and can be collected with a dip-net. A more efficient chemical method of trapping tadpoles has recently been developed (see the best practice guidelines for details). When dip-netting, take samples from different depths and from near the bank and further out. Take care not to collect tadpoles of other frog species.

Focus searches for metamorphs initially on the margins of water bodies as they tend to stay in such areas to avoid desiccation. They can disperse rapidly during wet periods or where sufficient local water is available. Surveys should mainly take place during the day, as this is when metamorphs are mostly active. Metamorphs at first only measure 1 to 1.5 cm long and are hard to find, so it might be useful to erect a 60-cm high silt fence around the pond. This stops the metamorphs dispersing while they grow into bigger animals that can more easily be detected.



Children enjoy taking part in cane toad musters. Photo: OEH



Still water: a typical cane toad breeding area. Photo: OEH



Chemical trapping of tadpoles. Photo: M. Greenlees.

How to handle and dispose of cane toads

Always wear protective gloves and eyewear when handling cane toads as they may exude a poison from their parotid glands, which sit behind the head.

Collect and hold cane toads in closed containers that are adequately ventilated and insulated to protect the animals against temperature variations. Provide a small amount of water.

Always collect data that may be important for land managers and researchers, such as location, time of year and day, number of toads found and toad behaviour.

Only authorised agencies or individuals should collect cane toads for euthanasia or research purposes. To arrange for confirmation of identification and pick-up of live toads to be euthanased or used for research purposes, contact the local council, National Parks and Wildlife Service office or state museum. Two methods of euthanasia are currently classified as acceptable by the Department of Primary Industries: stunning followed by decapitation, and gassing with carbon dioxide for more than four hours. Refer to the best practice guidelines for a complete description. When disposing of dead cane toads, consider that even freshly killed cane toads can poison other animals. One option is to place them in a covered compost or garbage bin.

How to involve the community

Targeted awareness campaigns can help elicit reports of cane toads from local residents. These need to focus on correctly identifying toads and encouraging people to report sightings to their local authorities. Such campaigns may include door-knock visits to residents, school education programs, media releases, workshops and mail-outs to residents and industry in areas where cane toads are suspected. The guidelines contain numerous different educational products used in NSW.

Cane toad musters are a good way to involve the community in monitoring and collecting activities. They involve a group of people collecting toads after dark. Organisers usually provide equipment (head torches, gloves, bags or containers to collect toads) and provide an OH&S introduction at the beginning of each muster. Potential OH&S risks are traffic hazards, poor visibility at night, snakes, toad poison and hazards near water bodies.

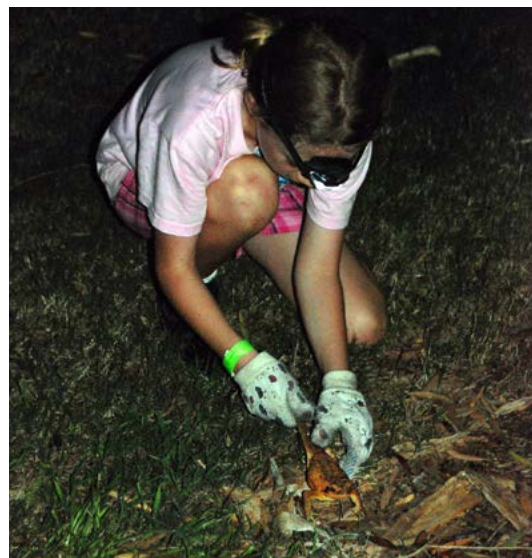
Cane toads continue to be transported to new areas. Businesses need to be aware of the dangers of importing cane toads and be encouraged to look at their supply chain to determine the risk. Materials such as piles of woodchips and mulch or hollow bricks often contain cane toads, so vigilance is required when unloading such types of load.



Always use gloves when handling cane toads. Photo: OEH



Cane toad extruding poison. Photo: A. White.



Catching cane toads during an organised muster. Photo: OEH

This summary is a supplement to
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59 Goulburn Street, Sydney NSW 2000
PO Box A290, Sydney South NSW 1232

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