The Cane Toad

History

Cane toads were deliberately introduced to Australia from Hawaii in 1935 in an attempt to stop French's Cane Beetle and the Greyback Cane Beetle from destroying sugar cane crops in North Queensland. The Australian Bureau of Sugar Experimental Stations made the release of 101 cane toads at Gordonvale in Queensland in 1935. They were unsuccessful in controlling the cane beetles.

Since then, the cane toads have spread rapidly, south into New South Wales, with one isolated community in Port Macquarie, and west into the Northern Territory. In March 2001 they reached the wetlands of heritage-listed Kakadu National Park.

Large female cane toad

Toad Facts

Habitat

The native habitat of cane toads is in Central and South America. They are found in sand dunes, coastal heath, mangroves and around rainforests. In Australia, most cane toads are found in urban areas, and in areas with grassland or woodland. They are basically a terrestrial animal but require access to water for rehydration and breeding.

Appearance

Cane toads are large, heavily built amphibians with a dry and warty skin. Their colouring ranges between grey and olive brown and their belly is pale with dark, irregular spots. Average-sized adults are 10-15 cm long, but they can grow up to 23 cm or more.

Gelatinous strings of cane toad spawn

Breeding

They breed in still or slow-flowing water often tangling the spawn around rocks or water plants. The appearance of cane toad spawn is unique in Australia and consists of long gelatinous strings with double rows of black eggs. Females lay 8,000 to 35,000 eggs at a time and usually breed twice a year. The eggs hatch in 48-72 hours into tadpoles. They develop into toadlets in between 17 days to 6 months. Cane toads need between 6 and 18 months to reach sexual maturity and have a lifespan of about 5 years.

Toxicity

Cane toads have large swellings on each shoulder, the parotoid glands, from where poison is squirted when threatened or handled roughly. They are toxic in all their developmental stages: eggs, tadpoles, toadlets and adult toads. The venom contains 14 different chemicals causing rapid heartbeat, excessive salivation, convulsions and paralysis. No humans have died in Australia from cane toad poison.

Cane toads have no known predator in Australia, with the possible exception of keelback snakes. Freshwater crocodiles, goannas, tiger snakes, dingos and western quolls are known to eat cane toads, but have died from the venom secreted by the toad. Some animals turn the toads on their backs and attack the soft belly, which is only mildly poisonous.

Environmental impacts

Cane toads are not officially recognised as a threatening process in Australia, because not all States consider toads to be a problem. Only animals that are of national significance are officially recognised as pests.

Although no extensive environmental monitoring studies have been undertaken, there is evidence of the environmental impacts of cane toads. A decline in quoll numbers and native frogs in areas where large numbers of cane toads are found has been recorded.

Cane toads eat mainly insects, but will eat any small creature that fits in their mouth. They also eat honey bees and are likely to compete for food with native animals. In addition they may carry diseases that could be transmitted to native frogs and fishes.

The parotoid glands on the shoulder are clearly visible

Current control activities

Different control methods for pest animals include conventional control techniques and biological control agents. The former have highlighted concerns in the community to develop more humane control methods of pest animals.

Current control activities are mainly taking place through quarantine checks and public awareness and response.

Toadlet on finger

For example, the importation of cane toads into Western Australia is illegal and authorities warn travellers to check carefully that cane toads do not hitch a ride on their vehicles from elsewhere.

There is currently no effective control method that can be applied to the vast area where cane toads have spread. In some areas, bounty systems have been established with community involvement. Such systems carry with them the danger of incorrect identification; at times two-thirds of animals brought in turn out to be harmless native frogs. Although bounties can provide local respite in the short term, they have not proven to be successful in sustainably managing cane toads in the long term or over large areas.

CSIRO scientists are working with gene technology to find a biological control method. Their research is described in the fact sheet CSIRO Cane Toad Research. Scientists of the University of Canberra are studying the environmental impacts of cane toads on native fauna in the Northern Territory. Scientists at the University of Adelaide are trying to find a sex pheromone in cane toads that may be used to disrupt their breeding cycle.

Contacts

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Links

CSIRO Cane Toad Research:
http://www.csiro.au/canetoad

Cane toads, giant toads or marine toads:
http://www.austmus.gov.au/factsheets/canetoad.htm

Cane toad site at Frogwatch:
http://www.frogwatch.org.au/canetoads/index.cfm

Sources

M. Tyler (1975) The cane toad (*Bufo marinus*).