NORTHERN TERRITORY GOVERNMENT

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Goyder Centre
25 Chung Wah Terrace
PALMERSTON NT 0830

Postal Address
PO Box 496
PALMERSTON NT 0831

[redacted]

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Standing Committee on Environment and Energy
PO Box 6021
Parliament House
CANBERRA ACT 2600

Dear Sir/Madam,

RE: CONTROLLING THE SPREAD OF CANE TOADS

Cane toads are widespread across the northern part of the Northern Territory extending as far south as Newcastle Waters. They have become established on some islands off the Top End coast. However, many NT islands remain free of toads, including Melville, Bathurst, Pobasso Island and Astell Islands and Groote Eylandt, all of which have high conservation values. Melville and Bathurst Islands and Groote Eylandt are three of Australia's largest offshore islands and are critically important refuges for a range of species, including many threatened species that have undergone severe declines on the mainland, such the northern quoll, brush-tailed rabbit-rat, black-footed tree-rat, northern hopping mouse and flood-plains monitor. The northern quoll was translocated to Pabassoo and Astell Islands in 2003 in response to the collapse of Quoll populations on the mainland as a result of the spread of cane toads. These islands remain important refuges for this species.

Cane toads have been directly responsible for the decline of various species through poisoning, including northern quolls and several species of large monitor lizards and elapid snakes. Although evidence is scant, toads may have contributed indirectly to other species declines through disrupting predator dynamics and food webs. However, based on available evidence no species has become extinct as a consequence of cane toad invasion. Furthermore, many of the aforementioned species are either persisting (albeit at lower densities) or showing some signs of population recovery, presumably from natural selection for toad avoidance.

To date it has been impossible to prevent cane toads from spreading into suitable habitat without a sea barrier. Their high mobility during the rainy season and exceptionally high reproductive output means that they can disperse to and establish in new areas very quickly, often before detection. Cane toads can establish satellite populations considerable distances ahead of the main invasion front through flood dispersal or by hitching rides on vehicles. Detection and eradication of hitchhiker toads and small satellite populations may slow down the rate of spread at the invasion front. However, unless individual cane toads are detected at new locations before they reproduce, it is virtually impossible to eradicate them.

Despite well targeted public education and community engagement campaigns, such as those undertaken in Darwin, Katherine and other NT communities before and during cane toad arrival, toads rapidly established in these areas, and no local eradication of cane toads has ever been achieved in the NT.

Due to the relative impact of cane toads on biodiversity compared with other known threats in the NT, and the inability to manage cane toads once established, the NT Government is focussing its efforts on ensuring that the remaining high conservation value offshore islands stay cane toad-free.

A combination of factors is probably responsible for the failure of cane toads to establish on various NT offshore islands, including: adequate seawater barriers between some islands and mainland inhibiting dispersal resulting from mainland river flood events or floating debris containing toads; lack of permanent freshwater on some islands; and presence of quarantine measures on some of the larger inhabited islands, such as Groote, Bathurst and Melville.

To date a range of measures have been instigated to varying degrees to prevent the spread of cane toads to some inhabited off-shore islands, including:

- Establishment of cane-toad fences around mainland port loading facilities (including barge depots) to prevent cane toads from entering craft using the facilities and any goods or equipment bound for off-shore islands.
- Regular checking of the areas within the fences to ensure that they are free of cane toads.
- Checking of all goods and equipment leaving mainland ports prior to loading.
- Establishment of cane-toad fences around island port facilities (including barge depots), regular checks within these areas for cane toads.
- Use of a cane-toad sniffer dog to detect any toads which may have arrived at the local port undetected.
- Targeted public education campaigns.

However, a combination of effective quarantine, adequate surveillance and early response measures are necessary to ensure that offshore islands remain free of toads in the long term, and this is not yet in place. The best example to date in the NT is Groote Eylandt. GEMCO, a subsidiary of South 32, operate a large manganese mine and port on Groote Eylandt. In collaboration with the Anindilyakwa Land Council and consultation with the NT Government, GEMCO is developing a comprehensive management plan to exclude cant toad establishment on Groote. Measures include:

- Pathway risk assessment to identify primary vectors and points of entry.
- Development of quarantine procedures at all freight and passenger embarkation ports to Groote.
- Construction of a robust, fit-for-purpose, cane toad barrier at the main freight port on Groote.
- Employment of a quarantine officer with a trained toad detection dog on Groote to undertake inspections of all arriving craft and freight.
- Establishment of cane toad traps and regular surveillance surveys at ports, settlements and potential waterbodies near potential arrival points.
- Awareness and education campaigns, including professional staff induction, school education programs, public billboards and broadcasts on all commercial flights to the island.

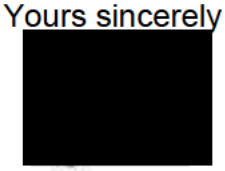
Emerging technologies such as eDNA have the potential to increase the sensitivity of quarantine, surveillance and response measures. However further work is required to operationalize methods.

To date capacity has been limited to establish similarly adequate fit-for-purpose measures for other offshore islands in northern Australia. Consequently the risk of establishment on some high conservation value islands remains high.

Presently the biggest risk to island establishment is commercial shipping, air and freight transport from the mainland to islands. Presently the level of quarantine undertaken at ports or on craft is largely at the discretion of operators.

In summary, stopping the spread of cane toads or removal of them from large areas where they currently occur is impractical based on current knowledge and technologies. Two criteria would need to be met to adequately address the issue of spread. Firstly, a method of broad scale control that was effective at reducing the species rate of increase to below zero across the relevant invasion front (including a suitable buffer). Secondly, management control to prevent extra-limital introductions or ability to detect and control such events. Until both these criteria can be met, the focus should be on protection of areas that are currently toad free where there is some reasonable ability to reduce the risk of introduction and local control is an option in the event of incursions. This strategy also protects areas that tend to be of high conservation values whilst providing the opportunity to get a better handle on long-term impacts through comparative studies.

Yours sincerely



Alaric Fisher
A/Chief Executive Officer

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