Progress Report SP 2006-004

Impact of cane toads on biodiversity in the Kimberley

Animal Science

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Program Leader	granted
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Context

The invasion of cane toads is impacting on the biodiversity of the Kimberley and it appears little can be done to avoid or mitigate their threat. Previous work has identified that predators such as Northern quolls and goannas are especially vulnerable to poisoning by toads. Research has been focussing on using taste aversion training to mitigate the impact of cane toads on wild northern quoll and goannas (the latter with University of Sydney researchers).

In addition, the quoll and goanna populations on Adolphus Island are being monitored in association with the Kimberley Region to understand how these species respond to the recent arrival of toads on this island.

Aims

- Field test taste aversion training as a means to prevent the loss of native predators, especially with northern quolls and goannas.
- Develop techniques to apply taste aversion training should it be successful in inducing predators not to eat toads.
- Monitor quoll and goanna populations on a recently toad infested island (Adolphus) to understand if these populations will persist.

Progress

- Trials of a taste aversion sausages have been undertaken with floodplain goannas with short-term learning leading to increased survivorship of “trained” individuals. Two publications have been produced describing this work.
- Trials of taste aversion sausages were undertaken in Mitchell River National Park in 2015-6 but have been marred by access issues and an unmanaged fire.
- In conjunction with regional staff, surveys and trail camera arrays have been established on Adolphus Island to monitor quoll and goannas populations following the arrival of toads on the island.
- Published papers on behavioural responses of reptile predators and native rodents to invasive cane toads in *Austral Ecology* and the *Journal of Pest Science.*

Management implications

- This collaborative project with the University of Sydney has identified that taste aversion training of floodplain goannas leads to increased survival. The technique could be used to preserve goanna populations at high value conservation sites and on islands that are invaded by cane toads.
- Taste aversion training using toad sausages laced with a nausea-inducing chemical or “teacher toads” leads to short term taste aversion. If longer taste aversion is demonstrated, this will be a valuable technique to protect island populations of susceptible species.

Future directions

- Northern quolls surveys and camera trap arrays on Adolphus Island will be used to ascertain whether northern quolls persist and develop taste aversion in the absence of intervention such as taste aversion baits.
- Trials with taste aversion baits are proposed to continue at Mitchell River National Park in the north Kimberley to see whether this technique has value to reduce the impacts of cane toads on northern quolls. In particular, research will focus on how long northern quolls remember taste aversion linked to toads and how best to deliver the technique in the field.