Progress Report SP 2006-004

Impact of cane toads on biodiversity in the Kimberley

Animal Science

Project Core Team

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Project Team	granted
Program Leader	granted
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Context

The invasion of cane toads is impacting on the biodiversity of the Kimberley and no technique has been developed to prevent their spread across the landscape. Earlier research in this project has identified that predators, such as northern quolls and goannas, are especially vulnerable to poisoning by toads and we have identified that it is possible to train some native predators to avoid eating cane toads. A taste aversion bait to prevent quolls eating toads has been developed and is being trialed during this project. Monitoring of northern quoll and reptile populations on Adolphus Island is required to understand how these species are likely to respond to the arrival of toads on islands.

Aims

- Test of taste aversion baits and the use of metamorphs to induce an effective response from native species threatened by toads.
- Develop operational techniques to roll out taste aversion training across Kimberley landscapes.
- Research techniques for taxa not currently believed to be able to benefit from taste aversion training such as elapid snakes.
- Monitor populations of susceptible species behind the toad front, including those where taste aversion training took place and control sites.
- Investigate where and how toads survive in seasonally dry habitats to better understand their colonisation of islands and their potential to spread into the Pilbara region.

Progress

- Operational trials of helicopter dropped taste aversion baits continued at several sites in the north Kimberley on Wunambal-Gaambera land and conservation estate. These have been spaced 10-30 km apart so that quolls can reinvade suitable habitat after the toad front has passed. The spacing of drops aims to result in the retention of as much potential genetic diversity as possible. The effectiveness of these drops will be assessed during the next wet season.
- Taste aversion bait trials and monitoring of quoll and goanna populations were undertaken at Mitchell River National Park. Low capture rates of quolls in newly invaded sites at Mitchell River National Park may be due to the poor wet season or initial toad impacts.
- A poor 2018-2019 wet season resulted in lower quoll recruitment and less goanna activity so data analysis is currently being undertaken to separate the impact of rainfall and toads.
- There has been regular foot surveys and remote camera monitoring of quoll and goanna activity on Adolphus Island following the arrival of toads on the island. Both quolls and goannas have persisted in the presence of cane toads.

Management implications

- The monitoring techniques developed on Adolphus Island will assist with the monitoring of other Kimberley islands for the arrival of toads and their impacts on native fauna.
- The involvement of Wunamal-Gaamberra and Wilinggin rangers and Traditional Owners in the research means that the results have been shared with the land-owners and further co-operative work on native title lands can potentially occur in the future.

Future directions

- Further refine the production and effectiveness of the taste aversion bait for quolls and investigate its use or that of a variant to induce taste aversion in some reptiles.
- Run operational trials at other sites in the north and central Kimberley and monitor the effectiveness for conserving populations of susceptible species.
- Complete research on cane toad survivorship over the dry season to allow a more informed appraisal of the 'waterless barrier' concept and the threat of toads on offshore islands of the Kimberley.