

# ‘Green bulldozers’ and ‘flammable triffids’: responding to the threats posed by invasive grasses in tropical northern Australia

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**Summary** Northern Australia, with many of its landscapes structurally intact, presents a unique opportunity to mitigate the impacts associated with invasion by tropical invasive grasses and other environmental weeds before they become intractable.

Invasive grasses have long been recognised as a major threat to a range of natural resource management goals and dominate environmental weed lists in Australia. Despite this recognition invasive grasses are typically under-represented in declared weed lists; which have contributed to the limited management response observed for many invasive grasses.

In addition to the under-representation of invasive grasses in declared weed lists we also identified a number of knowledge gaps which we believe has contributed to the limited management of tropical invasive grasses. In the Northern Territory we identified these as including:

- 1. The absence of a Weed Risk Management (WRM) framework** A consistent, rigorous and evidence-based approach to identify and prioritise the allocation of limited management and research resources.
- 2. Spatially-explicit risk assessment** Within a WRM framework the ability to explicitly incorporate models of potential distribution and hence relative risk of invasion.

- 3. Benefit cost analyses** Within a WRM framework to explicitly incorporate models which assess environmental costs and economic costs and benefits of invasive plants.

- 4. Understanding the ecology of invasive grasses** Improving our understanding of the ecological processes that control invasion success and the impacts that invasive grasses have on invaded ecosystems.

With the exception of the WRM framework, these gaps have been identified as issues requiring a response throughout Australia.

These gaps straddle a range of natural resource management policy and on-ground management response sectors as well as issues which require R&D. As such, addressing these gaps requires an approach which brings together policy makers, natural resource managers and research scientists.

We provide an overview of the research program we designed and implemented to address these gaps in northern Australia; present some of the preliminary results and outline the implications of our research to date.

**Keywords** Invasive grasses, weed risk management, northern Australia, risk modelling.