

# NESP Northern Australia Environmental Resources Hub

Investing in science and communication to support  
sustainable development in Northern Australia



Territory NRM Conference, November 2017  
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National Environmental Science Programme

# Northern Hub

- **Goal to support sustainable development in northern Australia**
- \$24m+ over 6 years, 2015–2021
- Builds on investments in NERP & TRaCK
- Research prioritised by Dept of Environment & Energy
- Led by Prof Michael Douglas





World-class research to support sustainable development in northern Australia

# **Some findings & achievements**

Feral cats in Kakadu eat mostly (75%) small and medium-sized mammals



Fenced v. unfenced study inconclusive for impacts of cats on small mammals, likely due to short duration & low initial populations

## Kakadu's feral cats

One cat per 5 km<sup>2</sup>

Feral cats & fire are reducing small reptile populations



1. What research models can enable Indigenous people to be central and gain greater benefit from research?

2. What does Indigenous land management contribute when valued through economics?

3. How can both science and Indigenous knowledge be made more accessible and useful to Indigenous decision makers?

## Priority research needs for Indigenous land management



Michael Lawrence-Taylor

4. How can Indigenous caring for country be made sustainable?

5. What frameworks enable protection of country in response to new impacts?

Shared issues =

- illegal dumping
- compliance
- increasing packaging
- lack of resourcing



## Waste in remote Qld coastal communities

Marine debris removal efforts =

- ~700 volunteers
- ~500 000 individual items
- ~40 tonnes

A networked regional recycling effort could reduce local waste, generate repurposed resources & create jobs

Repeated efforts to remove marine debris substantially reduce debris loads & on-going break-up of material

Solutions need locally tailored investments & to leverage all three tiers of government

1. Recognise traditional & legal rights & interests

2. Recognise Indigenous knowledge & governance arrangements

3. Use effective methods to build & share knowledge

4. Be place-based

## Protocols for Indigenous fire management partnerships



5. Work within the rules

6. Ensure benefits to local communities

Glenn Campbell



Understanding fish habitats in the Daly River - 30 sooty grunter (black bream) tracked using radio telemetry



## Informing water planning

Mapping productivity hotspots on Qld's Mitchell River floodplain - 3000 samples collected from fish, invertebrates & aquatic plants



Determining links between flow & ecology in WA's Fitzroy - pools & shallow 'runs' surveyed & relationships between seasonal calendar features & flows described

Investigating estuarine productivity - mudflats in the Flinders, Gilbert & Mitchell estuaries are equally productive but the Mitchell has more mudflats

Providing comparable information about the different social & economic benefits of ILMPs – size & distribution, links to wellbeing, role in knowledge-exchange & supporting businesses analysed


Working with Traditional Owners on NRM in Kakadu – research priorities identified

## Supporting Indigenous land management



Glenn Campbell

Empowering Traditional Owners to effectively use knowledge to influence land, water, development & conservation options – interviews, workshops & evaluations underway



Accounting for carbon stored in unburnt logs & leaf litter – data for revised ERF method collected & analysed

Investigating savanna riparian systems & their role as habitat & in successful fire management – river pools surveyed

Shaun Levick

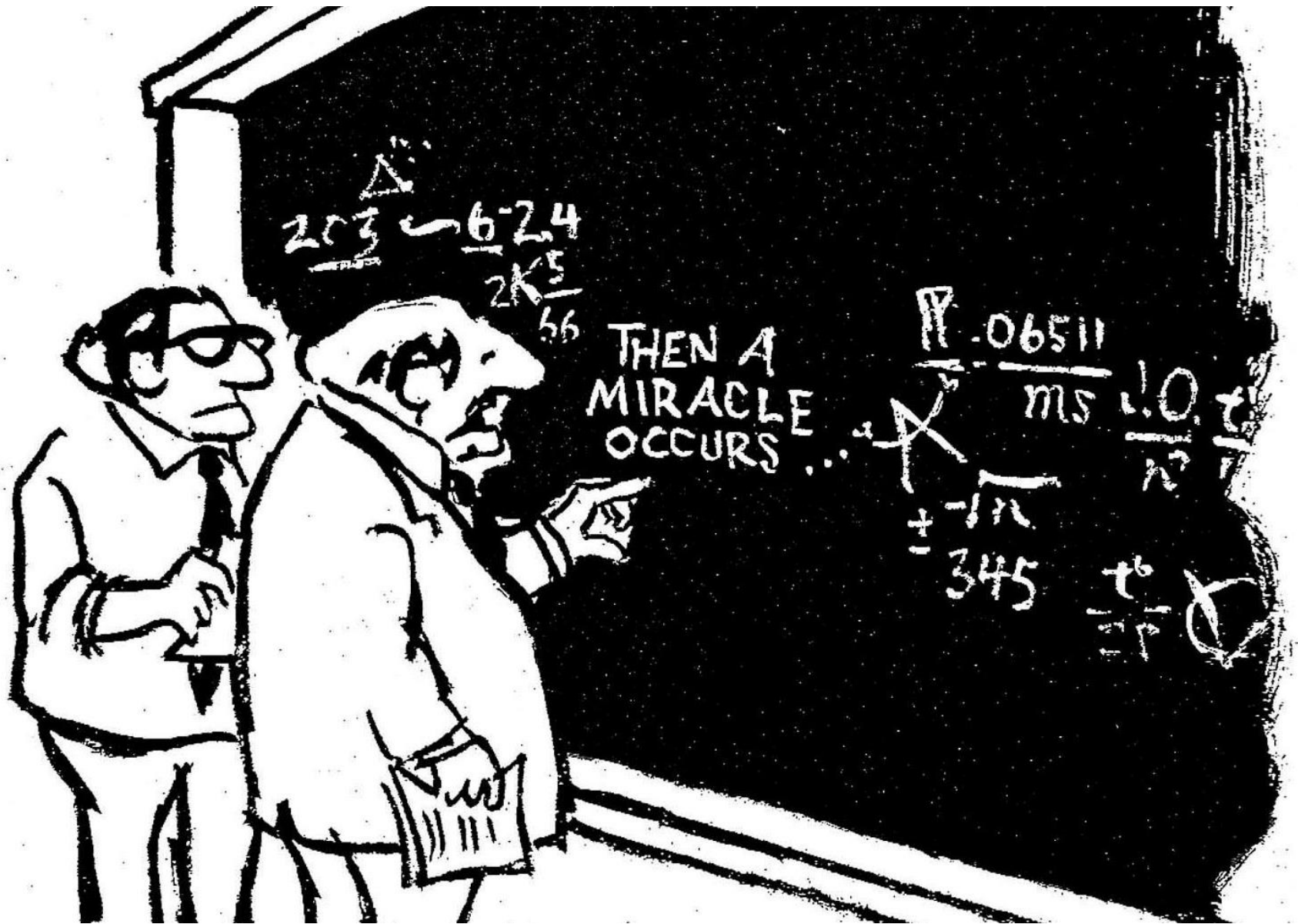
## Understanding & managing savannas

Assessing impacts of gamba gamba-infested savanna – case study vegetation & biodiversity surveyed & native seed bank viability being assessed



Glenn Campbell

**How?**



“I think you should be more explicit here in step two.”

IMPACT

OUTCOME 1

ENGAGEMENT GROUP

ENGAGEMENT ACTIVITIES

OUTPUTS

OUTCOME 2

etc

This research will support sustainable development in northern Australia by reducing risks to the Diamond River's flow-dependent assets, goods & services

**We will achieve this impact by:**

1. Informing revisions of the Water Allocation Plan for the Diamond River & licence conditions at specific sites

**We will do this by engaging:**

- DWNRM water allocation & planning staff ie Jo Byne, Pat Grig
- Other gov agencies & groups with a key stake with a stake in Diamond Rv water allocation ie DPIR (Xi Wetah), JLC (Mi Derin)

**through:**

- Implementing research agreements with DWNRM & JLC
- Updating & seeking feedback from these users at least once every 6 months
- Co-hosting with DWNRM a meeting/workshop(s) to discuss draft outputs with these users

**As well as by providing:**

- A. Recommendations (stand-alone 2-8pages) for environmental water requirements for selected riparian species and aquatic
- B. Supporting report/paper(s) on the water requirements of riparian vegetation and dry season pool fauna
- C. ....

2. Informing other key policies, plans & impact assessments to further reduce risks to the Diamond Rv's flow dependent assets

**We will do this by engaging:**

# Developing new & improved symbols for northern Australia



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# Will be added to existing resources



# Diagrams for context and comparison

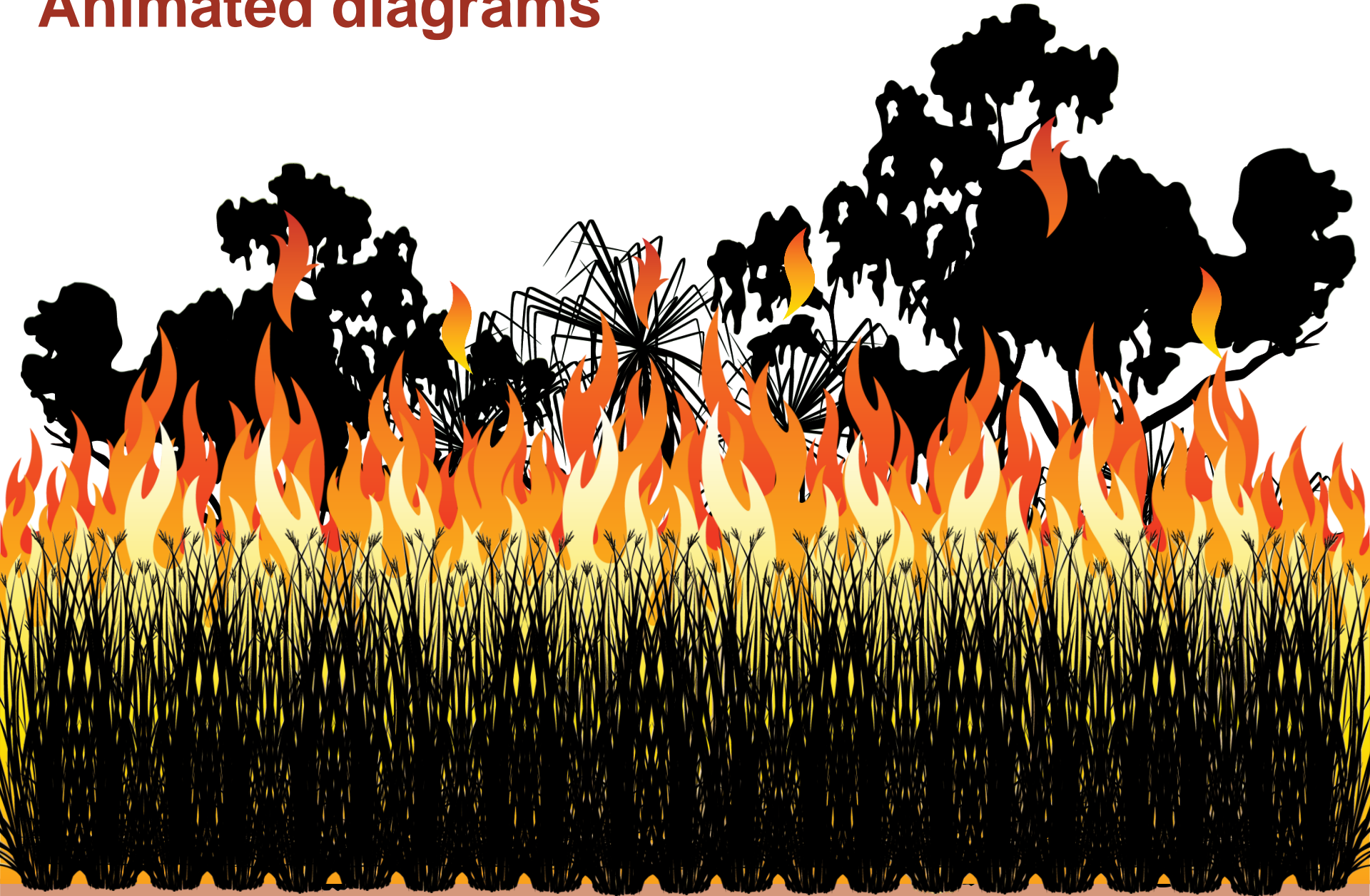
Lawn

Native grasses

Gamba grass



# Animated diagrams



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For more information:

- Hub eNewsletter
- North Australia News Roundup
- Hub website/Facebook/Twitter

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