

# Managing predator impacts for resilient landscapes

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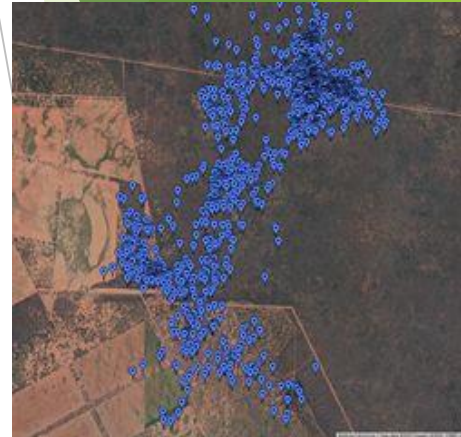
National Environmental Science Program

# Acknowledgement of Country

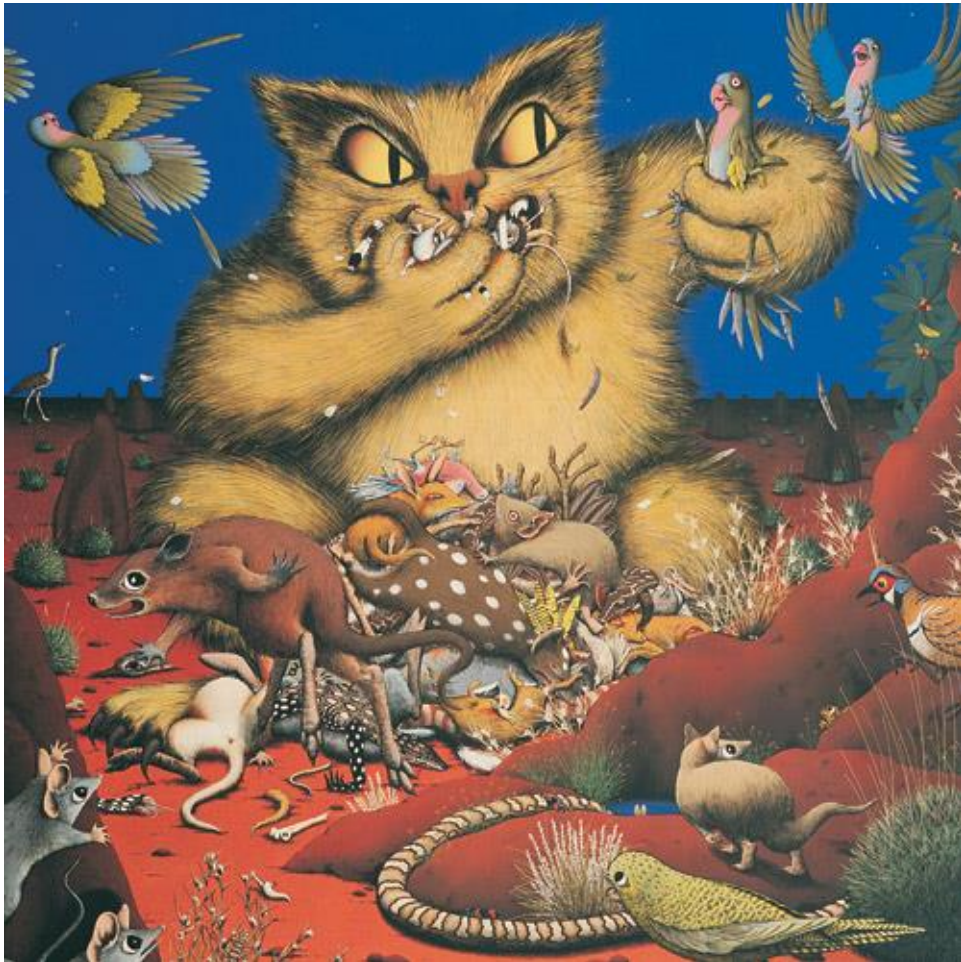
- ▶ We thank the Noongar people for hosting us on their lands and acknowledge the many Traditional Owners we work with across Australia, and their continuing connection to and stewardship of land, sea and community.
- ▶ All members of our research team pay our respects to Traditional Owners, their cultures and to their Ancestors and Elders.
- ▶ Our Indigenous research partnerships are a valued and respected component of National Environmental Science Program research, as well as those of the NSW State Government and the University of New England.

# Predators have multiple roles

- ▶ Predators provide ecosystem services by:
  1. **Hunting** – may have multi-level consequences
  2. **Moving** – transports organisms / propagules
  3. **Dying** – provides food / resources for other organisms
- ▶ Humans see some services as positive, others as negative.
- ▶ Land managers want to maximise the ‘good’ and minimise the ‘bad’



# Feral cats pose a massive problem



*'That feral cat', Kaye Kessing 1990*

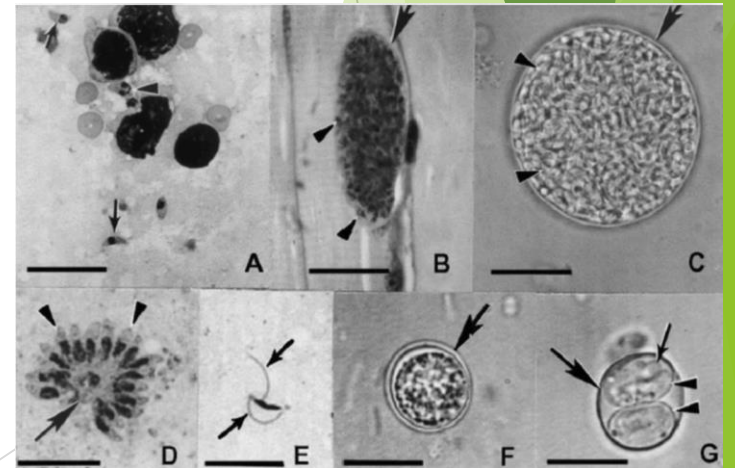
- ▶ Feral cats are:
  - **Hunting** – preying unsustainably on endemic fauna
  - **Moving** – harmful parasites / disease through our landscapes, impacting endemic fauna, livestock, pets and people
  - **Dying** – They do provide food / resources for other predators but as a population are more than coping with this pressure.

# Australian predator management

- ▶ We tend to worry first about minimising harm:
  - ▶ Stopping harmful effects of predation
  - ▶ Limiting spread of disease
  - ▶ Alleviating competition with endemics (e.g. quolls!)
- ▶ With feral cats we have become 'desperate';
  - ▶ National Key Threatening Process listing
  - ▶ National Feral Cat Taskforce
  - ▶ New lessons re impacts on people, wildlife, livestock and pets

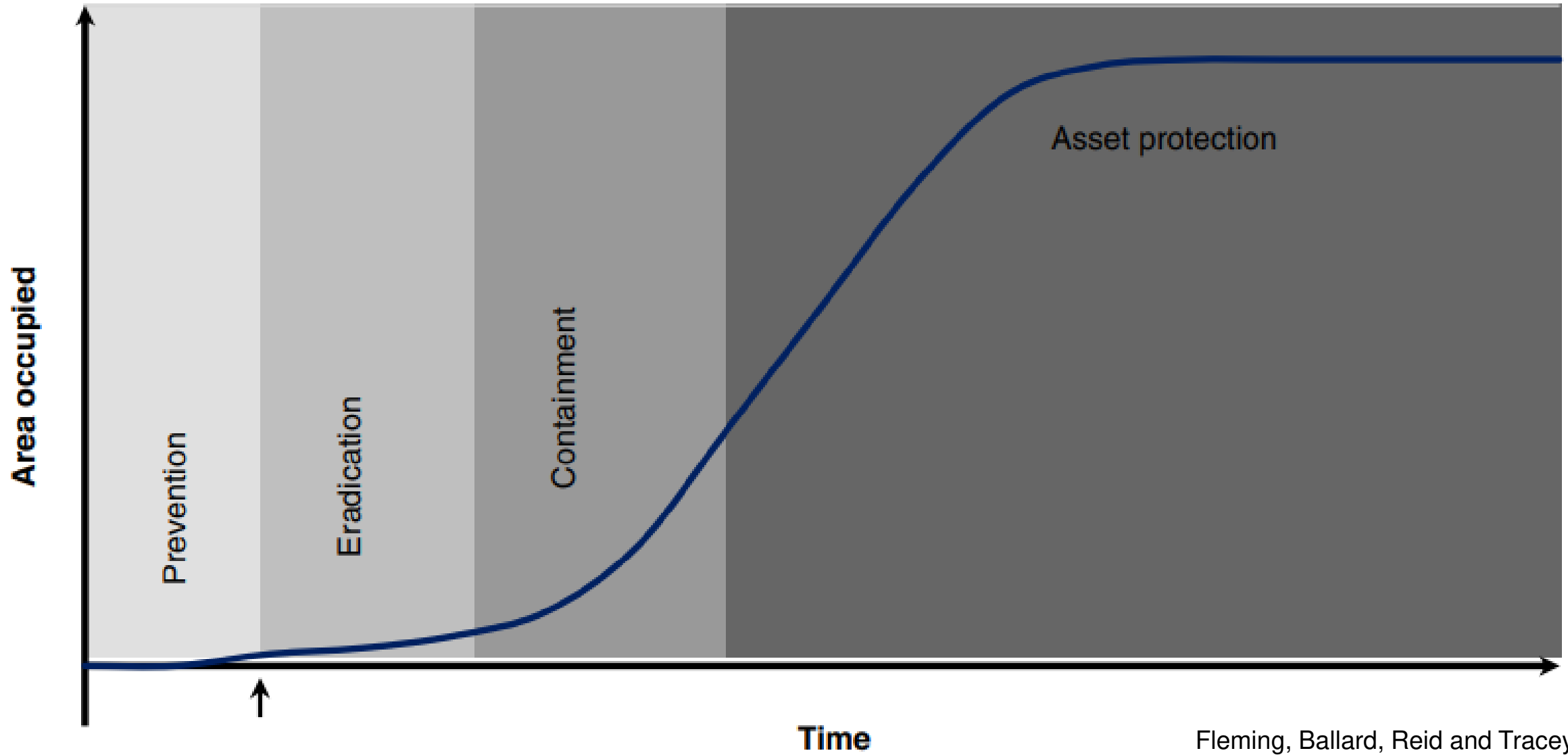


Dead feral cat, Image: G. Ballard



*Toxoplasma gondii*, Montoya & Contopoulos-Ioannidis (2021)

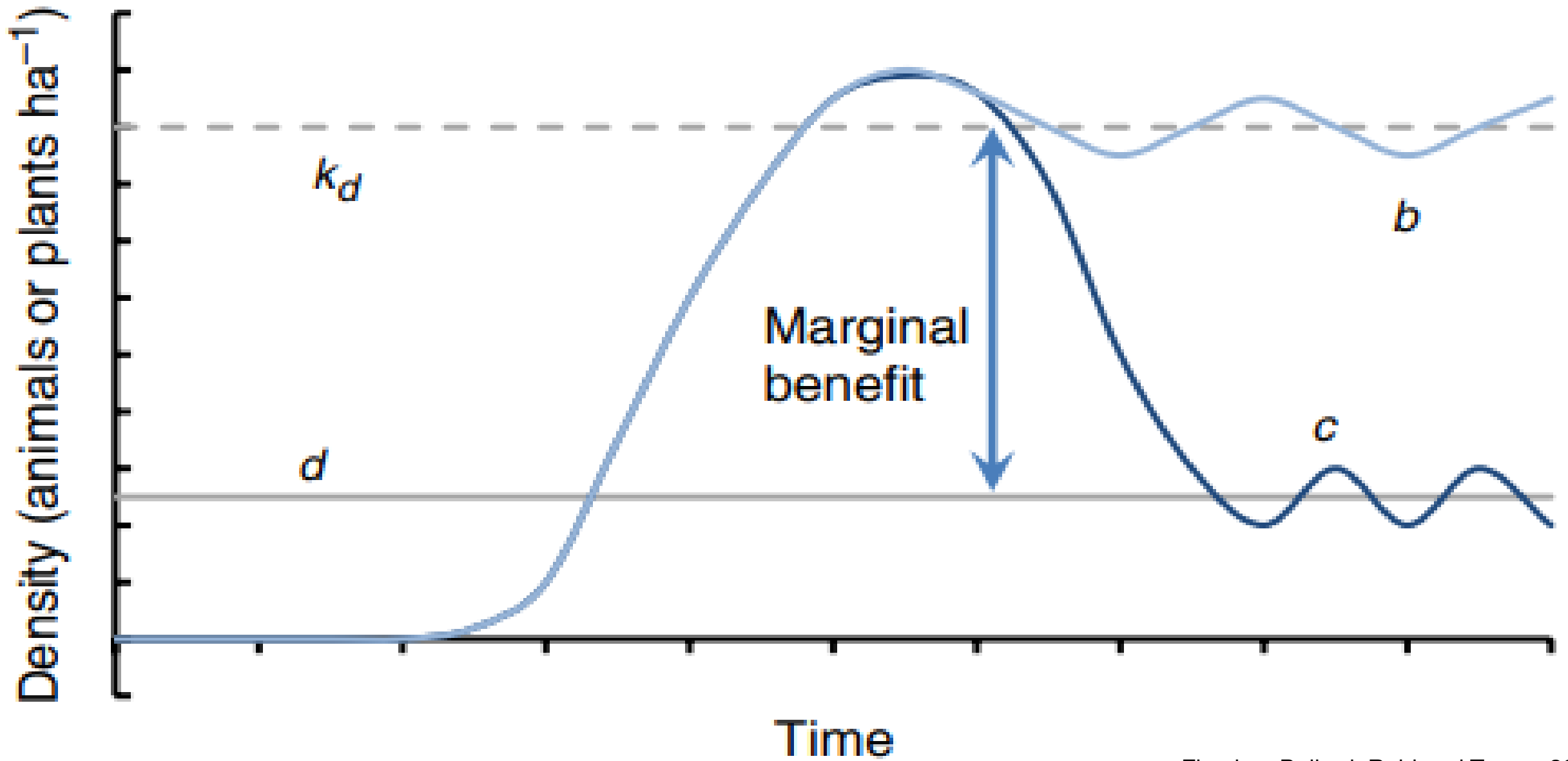
Expected cost



# (Re) creating resilient landscapes

- ▶ We want landscapes to withstand, or rapidly recover from, damaging events and processes
- ▶ Local asset protection won't provide landscapes resilient to feral cat impacts
- ▶ We need to suppress feral cats effectively at relatively large scales AND undertake complimentary actions to promote resilience
- ▶ Instead, we tend to take a simple approach:
  - ▶ 1. Cats are 'bad' for wildlife
  - ▶ 2. Let's kill as many cats as we can!
  - ▶ 3. Negative impacts will probably\* decrease
- ▶ All reinforced by an optimistic social norm: 'we are doing something!'

**\* we often cannot guarantee negative impacts will decrease!**





# Coordination



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graph TD; Coordination[Coordination] --> Central[• Feral cat control (at useful scales) in open landscapes  
• Fenced areas to protect at-risk fauna  
• Effective domestic cat management  
• Reliable monitoring  
• Advanced technologies (esp. control and monitoring)]; Science[Science] --> Central; PublicSupport[Public support] --> Central;
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Science

Public support

# Developing effective feral cat management strategies (NSW)

- ▶ 6 year project (2019 – 2025)
- ▶ Operating in 3 ecoregions of New South Wales
  - ▶ Northern temperate forests/woodlands, 4 x 20,000 ha sites (2 treatment, 2 'business as usual')
  - ▶ Southern coastal forests, 3 sites (1 treatment, 2 'business as usual')
  - ▶ Central semi-arid mallee, 3 sites (1 treatment, 2 'business as usual')
- ▶ Trying to:
  - ▶ measure the impact of various tools / strategies on feral cats and other fauna
  - ▶ Improve the way we monitor and control feral cats



## Effective strategies for feral cat control

How do we get densities low and keep them there?



## Cost-effective feral cat monitoring

Reduced effort associated with effective monitoring



## Stabilise / recover threatened fauna

Reduce risks from: Disease, Predation, Competition



## Land managers trained in 'best practice'

Key lessons shared to grow community of practice

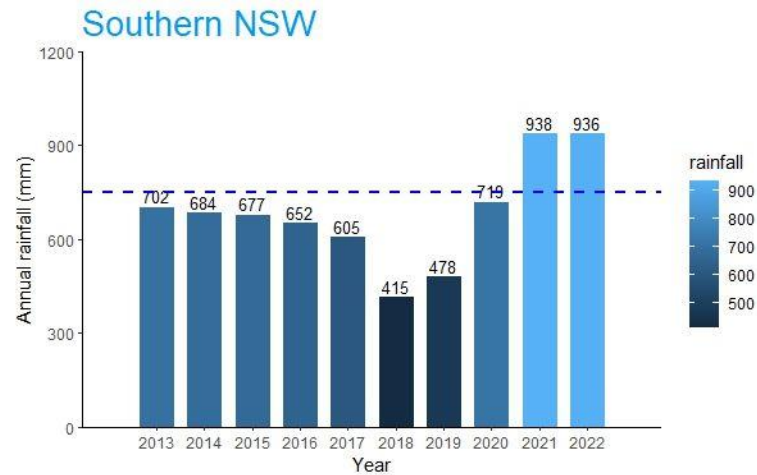
# Playing 'catch up' re baiting cats



# Our timing could have been better...



ET Feral Cat Project

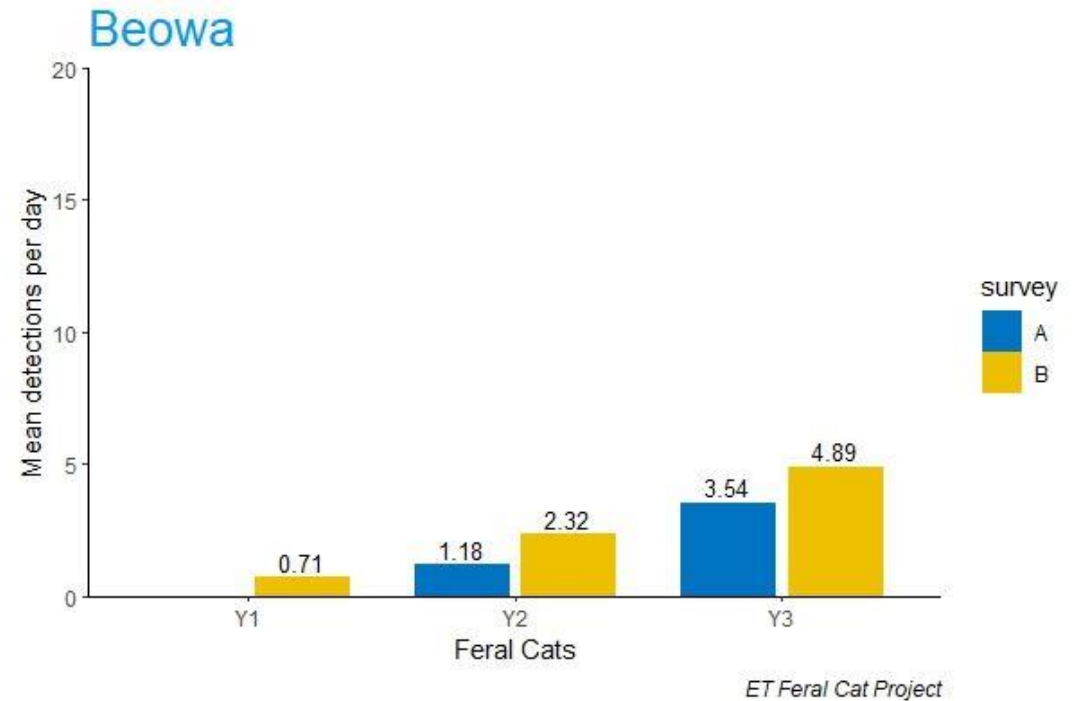
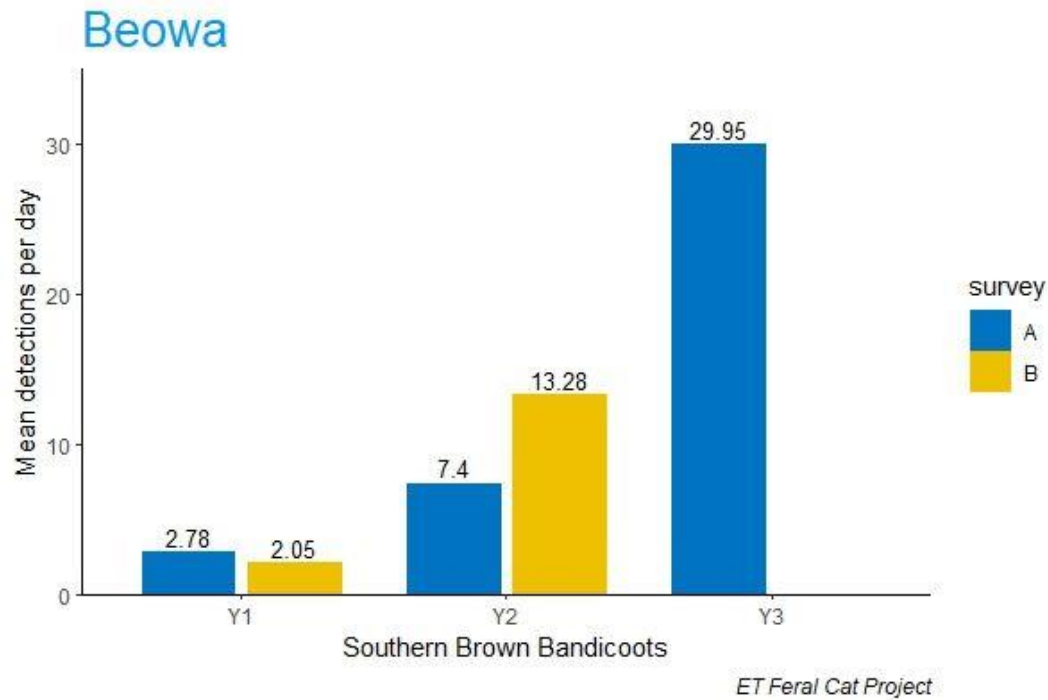


ET Feral Cat Project



ET Feral Cat Project

# It's been raining prey... and feral cats.

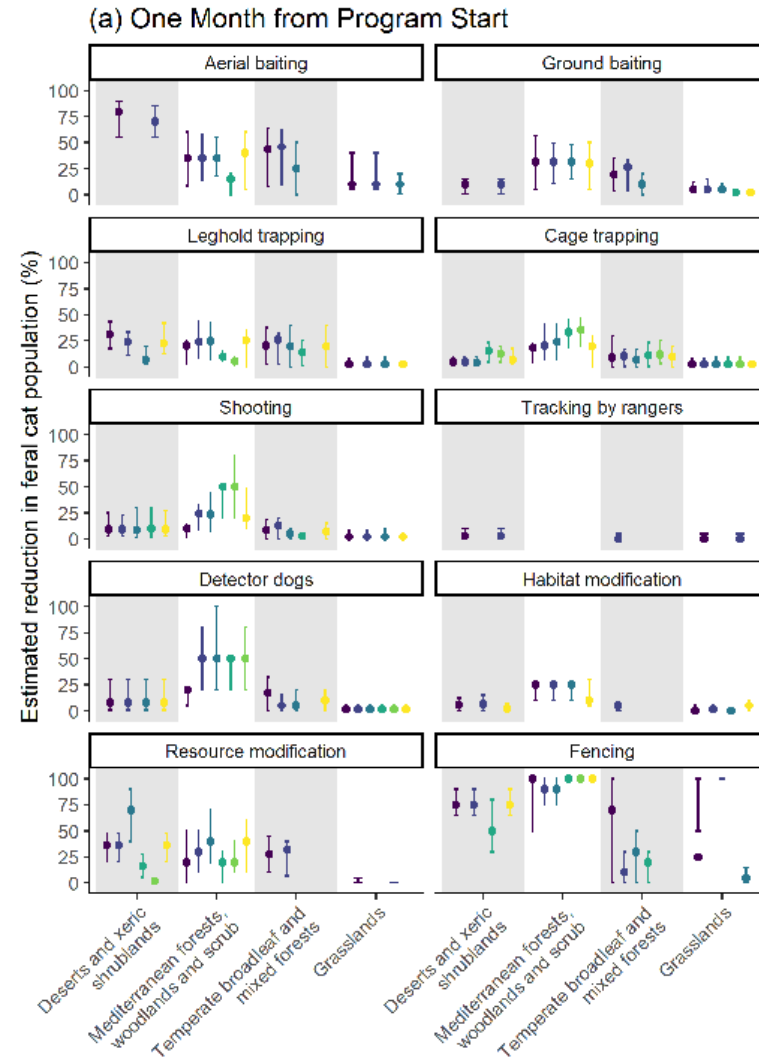


# Decision Support Tool for managers

- ▶ Dr Annalie Dorph (UNE) is developing an online tool to help guide managers of feral cats (and red foxes).
- ▶ Feral cat research and management experts are contributing their time and knowledge to help others make management decisions with confidence.
- ▶ In 2022, we held our first 'expert elicitation workshop'
  - ▶ Expectations about management outcomes were quantified, and
  - ▶ Research priorities for feral cats were determined



# Expected impacts on cat populations



From Dorph *et al.* (in prep.)



# National research priorities:

1. How should we monitor, to inform management?
2. What are the impacts of cats/foxes/dogs on prey species, with and without management?
3. What is the longevity of a management program (i.e. time to repopulation / reinvasion)?
4. How much transfer of cats occurs between urban and natural environments?
5. Which areas do we prioritise for eradication?



Resilient  
Landscapes

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# Projects to improve landscape resilience

- ▶ We are currently scoping new projects via the NESP Resilient Landscapes Hub
- ▶ In line with the TSAP we are actively discussing work involving / related to:
  - ▶ Understanding changes in feral cat ecology as their densities are reduced
  - ▶ Cat-Fox interactions in managed and unmanaged areas
  - ▶ Roles of lures / deterrents in feral cat management
  - ▶ New tools to aid management and/or monitoring of feral cats



# Acknowledgements

- ▶ The NSW Environmental Trust
- ▶ Resilient Landscapes NESP Hub
- ▶ Local Land Services NSW
- ▶ NSW National Parks and Wildlife Service
- ▶ NSW Department of Primary Industries
- ▶ University of New England
- ▶ Technical staff and research students
- ▶ Neighbours, collaborators and community research partners



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