NSW GOVERNMENT | Department of Primary Industries

Managing Invasive Animals: Thoughts of an Old F##t on Practice, Science and Art.

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Acknowledgements

- I am based at Orange, which is also on Wiradjuri country, but have worked on the lands of many first nations peoples: I acknowledge the elders of all these lands.
- I acknowledge and thank the many colleagues I have worked with for their support, ideas, grunt and friendship. They may recognise some of the ideas outlaid here.
- Invasive animal management is largely about people management & I acknowledge all the champions who have helped engage pest-affected communities.

AUSTRALIAN VERTEBRATE

PEST CONTROL CONFERENCE

DUBBO N.S.W.

JULY 1983

WORKING PAPERS

1080 stock solution

FERAL PIG DAMAGE CONTROL SURVEY IN AN AREA ADJOINING THE MACQUARIE MARSHES

T. KORN[1] AND C. SHANDS[2]

SUMMARY

A survey of 27 landholders who participated in the N.S.W. North-West Feral Pig Control Pilot Scheme from 1978-1981 was carried out in mid 1982. The survey area covered approximately 250,000 ha surrounding and including the Macquarie Marshes and contained approximately 50 properties.

It was found that landholder knowledge of feral pig damage and control was increased mainly by participation in co-ordinated group control programmes and individual contact with Pastures Protection Board control staff.

Lamb marking percentages increased by 23 to 50 per cent on five of the 21 properties running sheep because of effective feral pig control programmes. Two other properties were able to run breeding ewes for the first time because feral pigs had been controlled. Only two of five properties with less crop damage were able to estimate crop yield increases (one to five per cent, and six to 10 per cent).

Overall, 1080 poison was considered to be a more effective poison than C.S.S.P. (TM) for feral pigs where extensive areas and large numbers of feral pigs were involved.

The survey confirmed that co-ordinated group control programmes are an effective means of controlling feral pigs by increasing landholder awareness and knowledge of feral pig damage and control.

Some things don’t change

Some things change

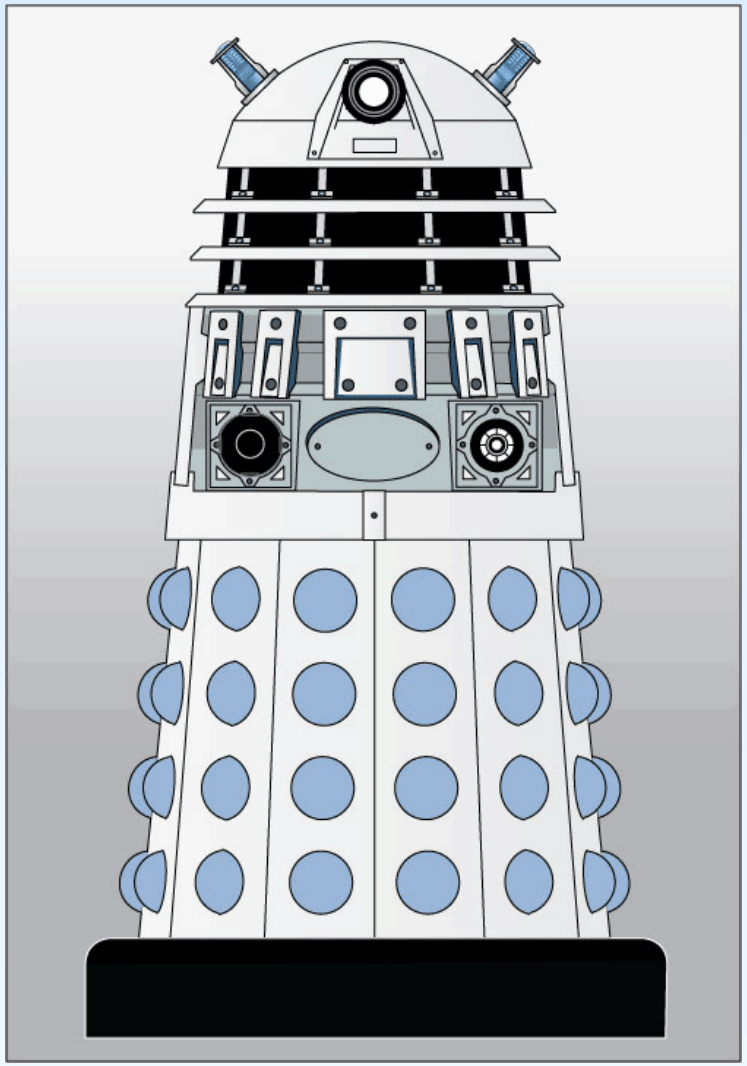
Techn


FERALSCAN .ORG.AU
Providing a community pest animal recording and management tool
Celebrating 10 years of supporting communities, and hosting 250,000 records
Record pest animal activity in your local area to protect farms, biodiversity and communities
WildDogScan
DeerScan
RabbitScan
ToadScan
MouseAlert
CamelScan
FeralScan
PEST MAPPING

Monitoring technology changes

WHS-approved foot ware

Theft-proof camera traps



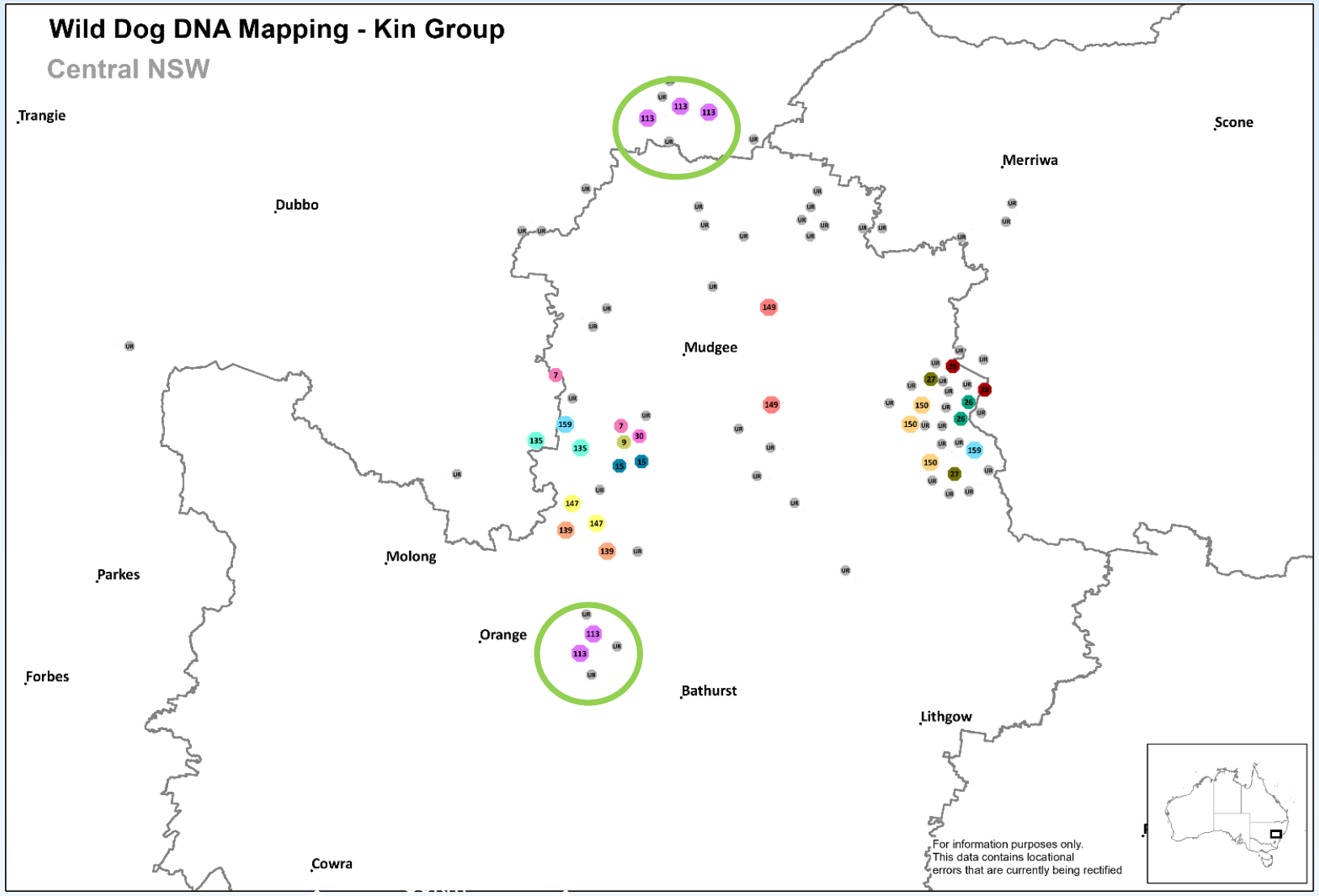
Aerial survey developments

NB Flight suits & helmets

DNA: What management scale is needed?

- Dingo Purity

  ~96% hybrids



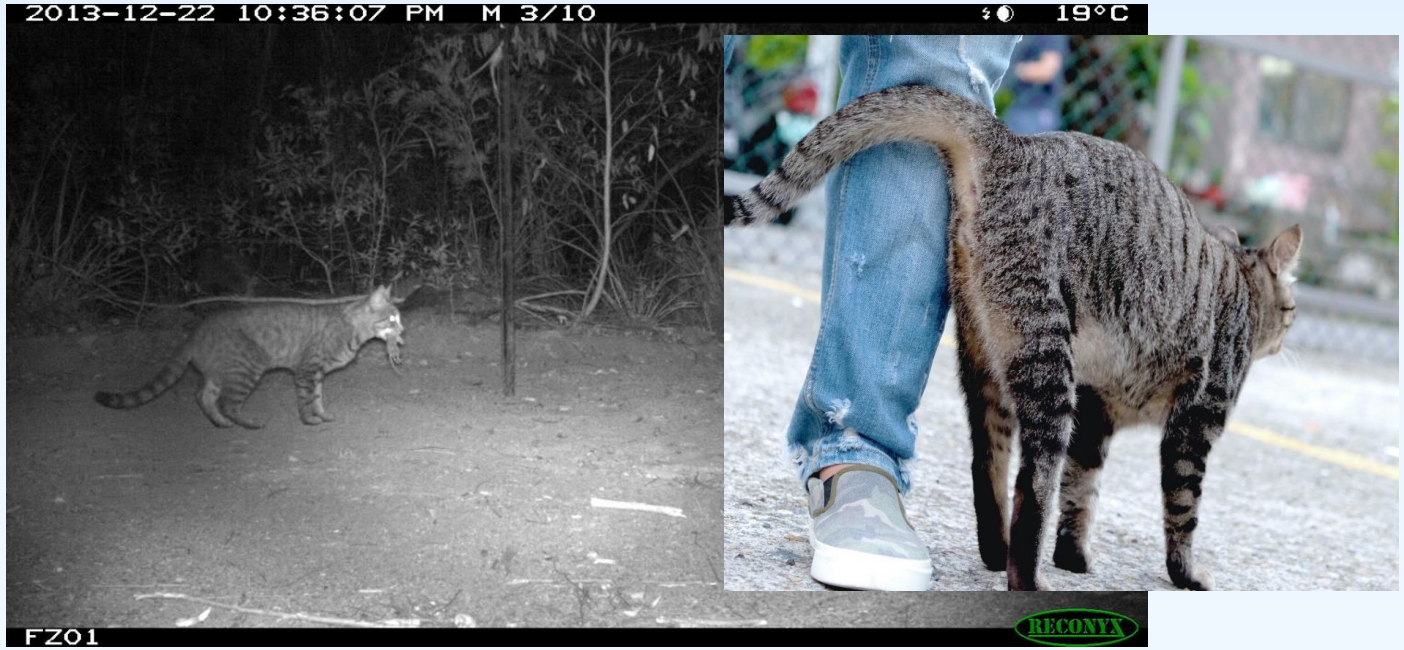
Invasive animal management: Conceptually simple

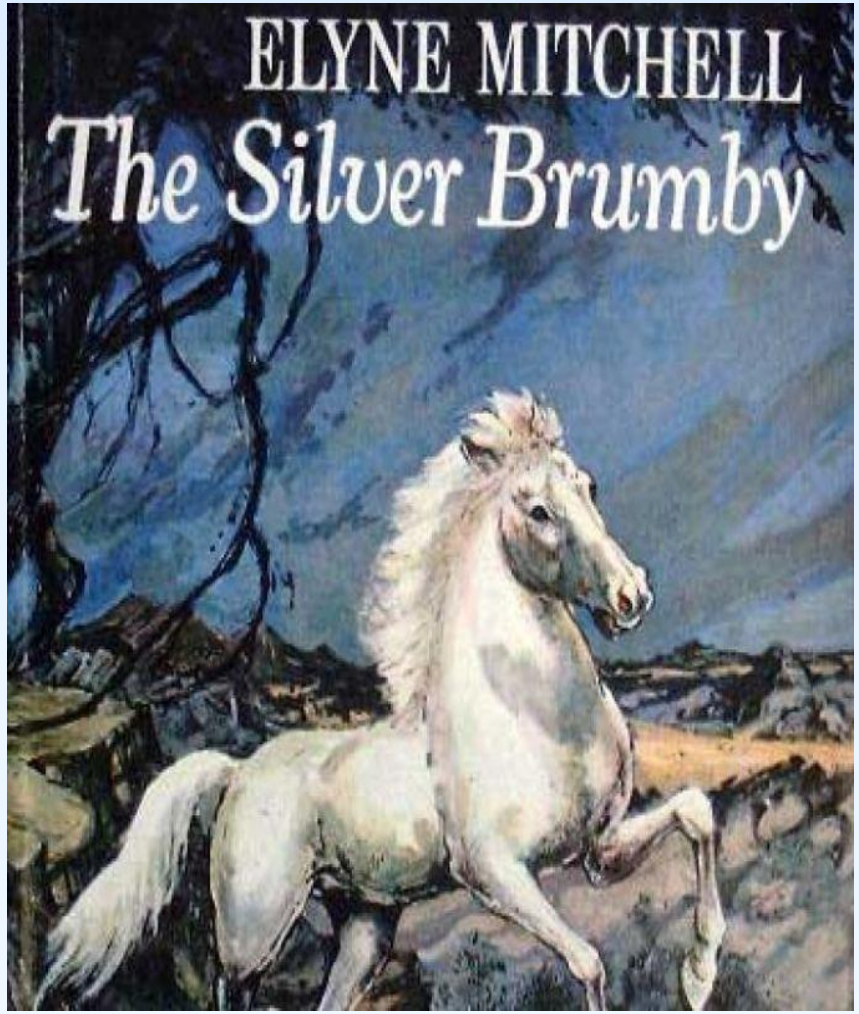
- Manage the situation rather than the species
- For established invasive animals,
  - Positive impacts (beneficial), maintain or increase their numbers & monitor
  - Negative impacts (detrimental), decrease their numbers & monitor
  - No impacts (neutral), do nothing & monitor

- Ecological & economic questions

Invasive animal management: Practically complex

- Human dimension is most complex
- Social science questions





Botany
Ecology
Biology
Agronomy
Invasion Biology
Genetics
Ethology
Taxonomy
Restoration Ecology
Animal Production Science
Conservation Biology
Animal Welfare Science
Informatics & Data Science
Environmental Psychology
Pathology
Epidemiology
Citizen Science
Remote sensing
Climate Science
Mathematics
Computer science
Biometrics
Media Studies
Biochemistry
Economics
VET & Science Education
Arts
Adoption Science

Invasive Animal Management

Publication, Policy & Community Engagement

Outcomes

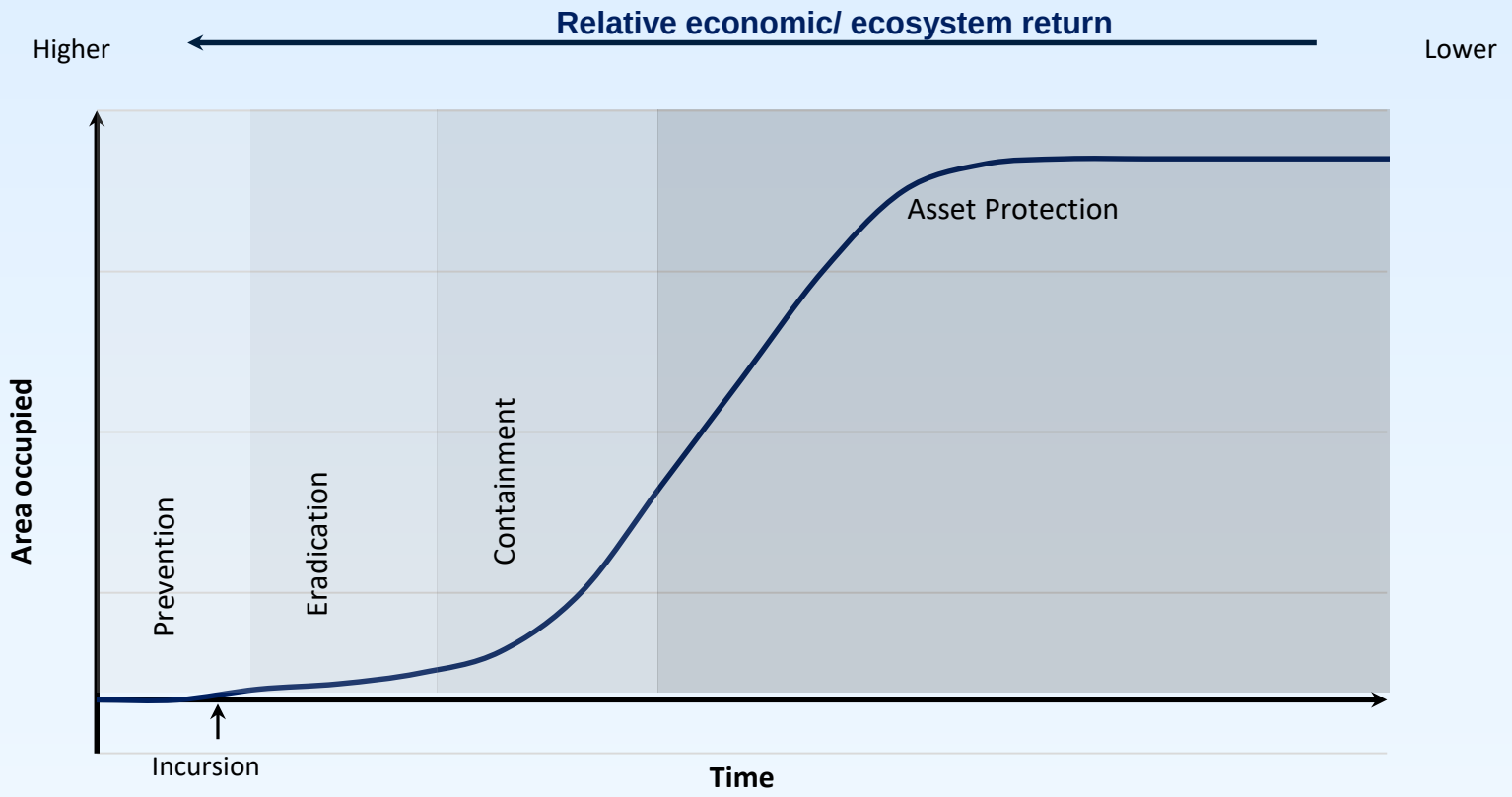
Better Landscape Management + Better Social Wellbeing + Ecological Theory

Fundamentals

- Density:Damage/Yield relationships
- Density:Control cost relationships

- Invasion curve

Traditional invasion curve: established pests & weeds



Established Predator Research

- What is the relationship between wild dog density and damage?

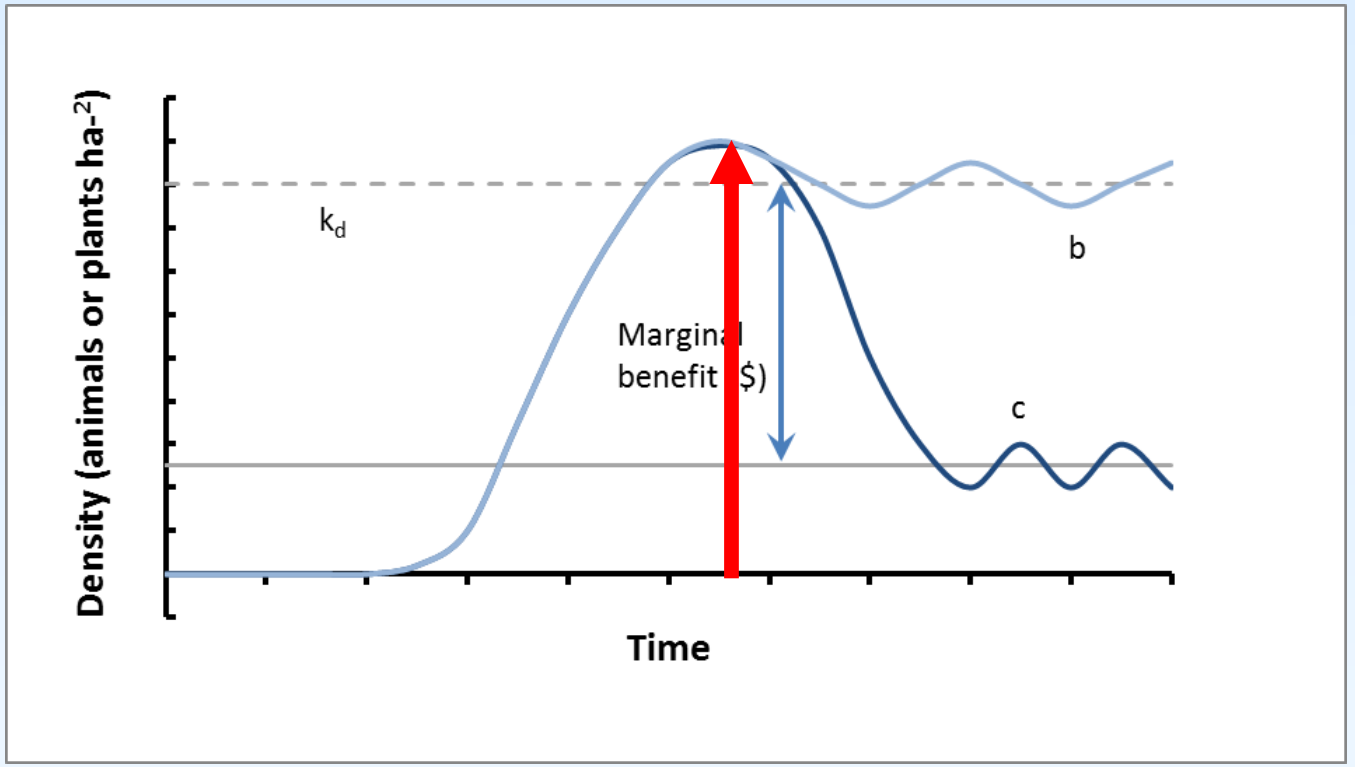
How much does it cost?

- Survey of 120 landholders in North-east NSW 1984/85
- 40% suffered damage
- Cost of control = saving 1 steer or 7 merino wethers

- No linear relationship between density index & damage suffered

- Reduce the likelihood of damage: control the population to below its rate of increase.

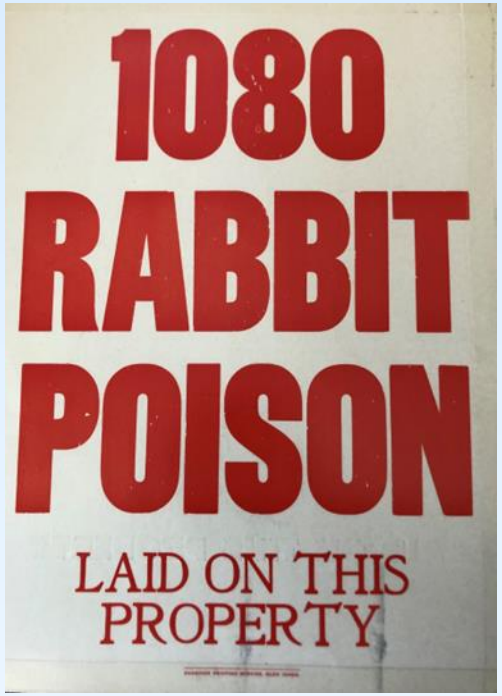
Revised invasion curve: Real suppression, then maintenance saves $

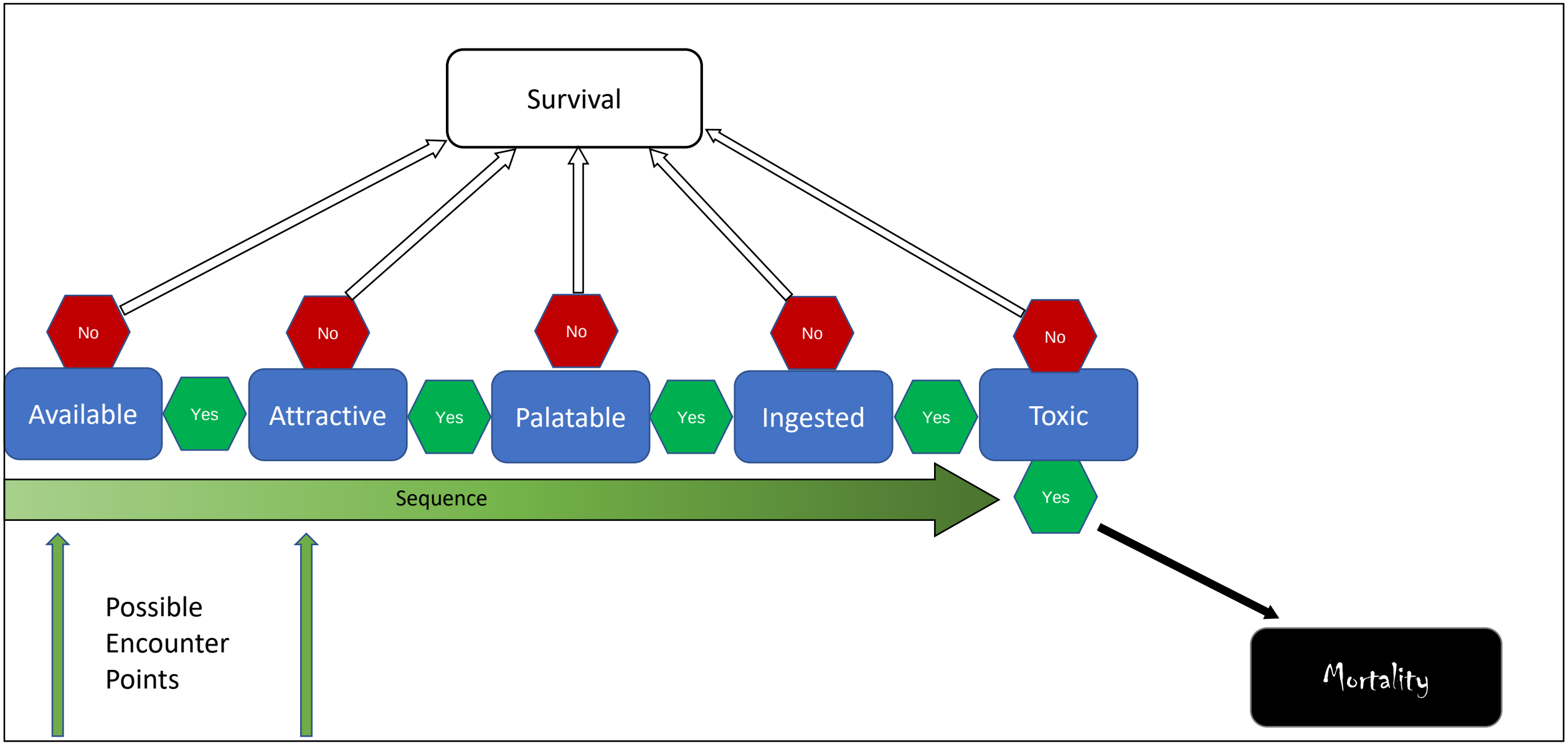


- k_d= degraded carrying capacity
- *T*= threshold impact density below which it is uneconomical to act
- b= dynamic density (and high cost) at “asset protection” and lowered carrying capacity
- c= dynamic density (and low cost) at *T*

Achieving –ve *r* : Baiting survival & mortality

- Baits need to be:
  - Available
  - Attractive
  - Palatable
  - Ingested
  - Toxic




Survival
No
No
No
No
No
Available
Yes
Attractive
Yes
Palatable
Yes
Ingested
Yes
Toxic
Yes
Sequence
Possible
Encounter
Points
Mortality

Issues of control tools

- Efficacy
- Practicality
- Risks & benefits to production animals
- Risks & benefits to domestic pets
- Risks & benefits biodiversity
- Risks & benefits humans
- Relative humaneness

Human dimensions of invasive animal management

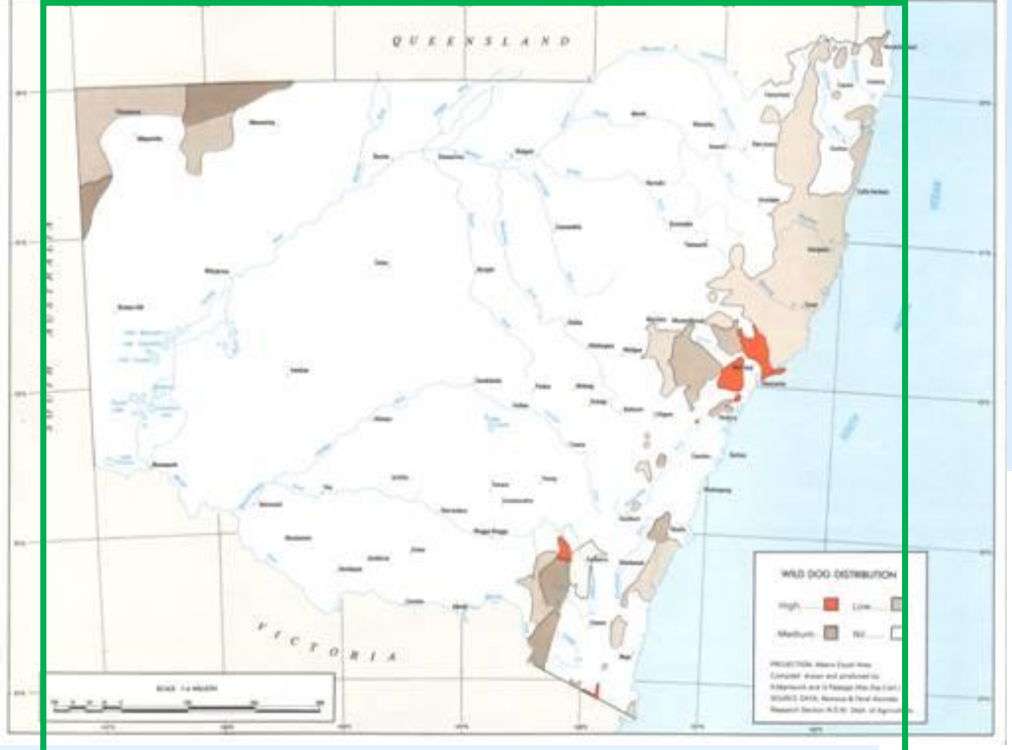
- People have different
  - Morals
  - Ethics
  - World views
  - Values
  - Attitudes
- Societies have
  - Different norms

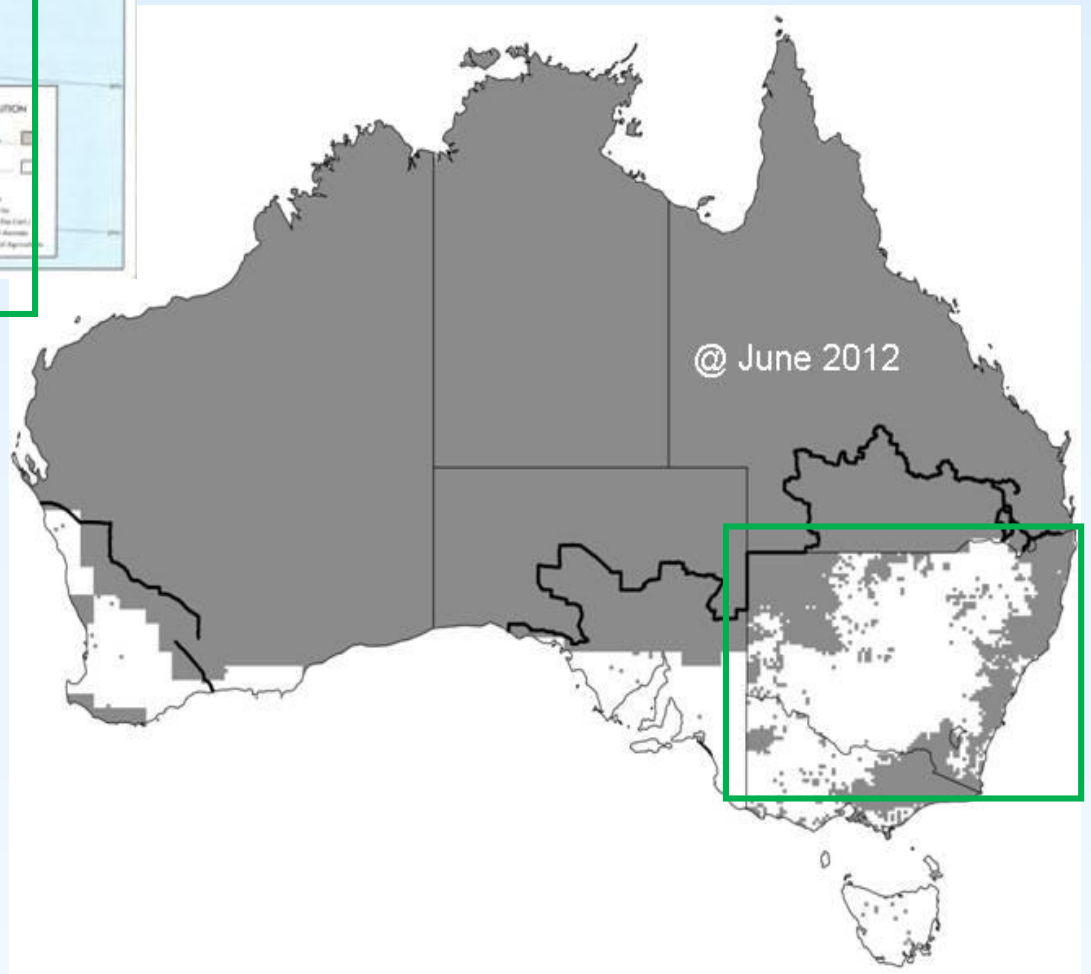
Some ethical considerations of Invasive animal control

- Humans introduced these species
- Humans are responsible for
  - Land stewardship
  - Agricultural production

- Wild rabbits are keystone species in native range
- Wild banteng cattle are endangered in their native range

Wild dogs are spreading in NSW



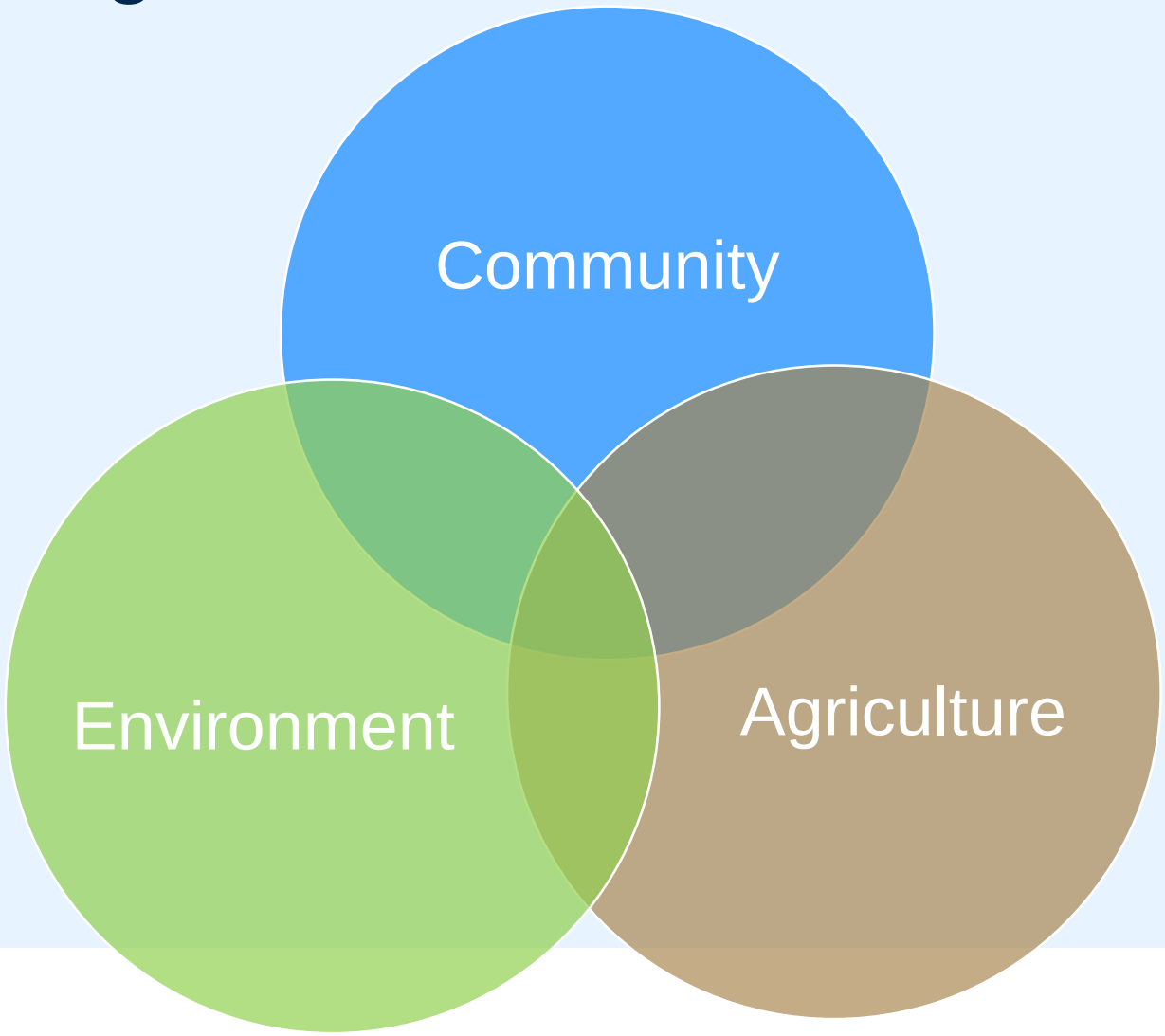


Things to be wary of

- New introductions
- Dingo sanctifiers
- Misuse of science
- Anti-1080 campaigns
- Compassionate conservation

- Polarisation into green & brown

Working in the olive green Agriculture ***and*** Environment



People involved in

- Livestock production
- Conservation
- Forestry
- Tourism
- Stewardship
- Community: Peri-urban, rural towns & villages

Start here

Define the Problem

Build Equity & Capacity

Nil-tenure strategy

Set Clear, Measurable Goals

Devise Action Plan with integrated control tools

Do it & Monitor

Evaluate the data

Modify & progress

No change necessary

Revise actions

Revise goals

Raise capacity

Redefine problem

Strategic Invasive Management Cycle

Political considerations: Politicians have different timeframes & objectives to managers

- Politicians
  - Output focussed:
    - How much was spent,
    - How many constituents benefited
    - How many Ministerials they receive
    - 12 month financial cycles
    - 3-4 yr electoral cycles
- Managers
  - Outcomes focused
    - What is the problem
    - What do we do about it
    - Who is affected
    - Where are the effects
    - What are the losses & costs
    - Are things better
    - Ongoing & seasonal cycles

A funding suggestion

- Financial year funding cycles are misaligned with biological & primary productivity cycles
- Special Purpose Pest Management Rate
- Management Opportunity Rate

Adaptability: take advantages of the sunburnt country

Drought, Fire, Flood

And I thank you for watching