Implementing humane and responsible feral cat control

WA Feral Cat Symposium, Mandurah - 31st May 2018

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Image source (numbat):
https://i.pinimg.com/originals/ec/ce/dc/eccedcfceb9dffb988462a686784dfb6.jpg

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Introduction

- Humane & responsible principles for pest management
- Sentience
- Assessing humaneness of control methods
- Five Domains
- Best Practice
- Issues of concern
- What is on the horizon?
- Animal Welfare Audit
- Definitions

Image source (greater bilby): https://www.arkive.org/greater-bilby/macrotis-lagotis/image-G131016.html

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Principles for humane vertebrate pest management

1. Justified

- Nature & severity of KTP
- Benefit outweighs harm

Image source (northern quoll):
https://www.arkive.org/northern-quoll/dasyurus-hallucatus/

2. Humane

- Most humane methods
- Appropriate equipment, SOPs & operator competency

3. Effective

- Aims to be achieved
- Monitoring & assessment

(Ref: HVPC Working Group (2004) A national approach towards humane vertebrate pest control Discussion Paper. RSPCA Aust.)

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Why does animal welfare matter?

Professor Bernie Rollin (Philosopher, Colorado State University)

- Advocates are here to remind us all why we need to do all we can to prevent animal suffering

New paradigm for animal welfare

- Not just preventing animal suffering
- Provide positive experiences – quality of life

Sentience

- Greater recognition of the importance of sentience & our obligation to consider it

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Sentience

Capacity to experience feelings

- Negative – pain, fear, frustration, anxiety
- Positive – satiation, contentment, joy, calm

Perception

- Being aware of changes happening around them

Cognition

- Remember, process and assess information
- Learn from experiences, assess risks & benefits, and make choices

(Ref: Broom DM (2016) Considering animals' feelings. Animal Sentience 2016:005.)

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Assessing humaneness of control methods

- Humaneness assessments help guide the choice of appropriate methods
- Relative Humaneness Model (2011)
  - Assumptions & evidence
- Worksheets

  Part A – prior to death (1-8) y axis

  Part B – mode of death (A-H) x axis
- Access via http://www.pestsmart.org.au/

A model for assessing the relative humaneness of pest animal control methods

Second edition June 2011

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Five Domains (the new Five Freedoms)

Physical/function domains (4) & Mental domain (1)

Mental domain

- Greater emphasis on affective (mental) state
- For every physical domain there will be an associated feeling/experience
- These will be either negative, positive or neutral
- Thus, for the negative impact(s) caused by a physical compromise, the accompanying affective state must also be considered
- Is cumulative & can be substantial

(Ref: Mellor 2004 Comprehensive assessment of harms caused by experimental, teaching and testing procedures on live animals. Atla)

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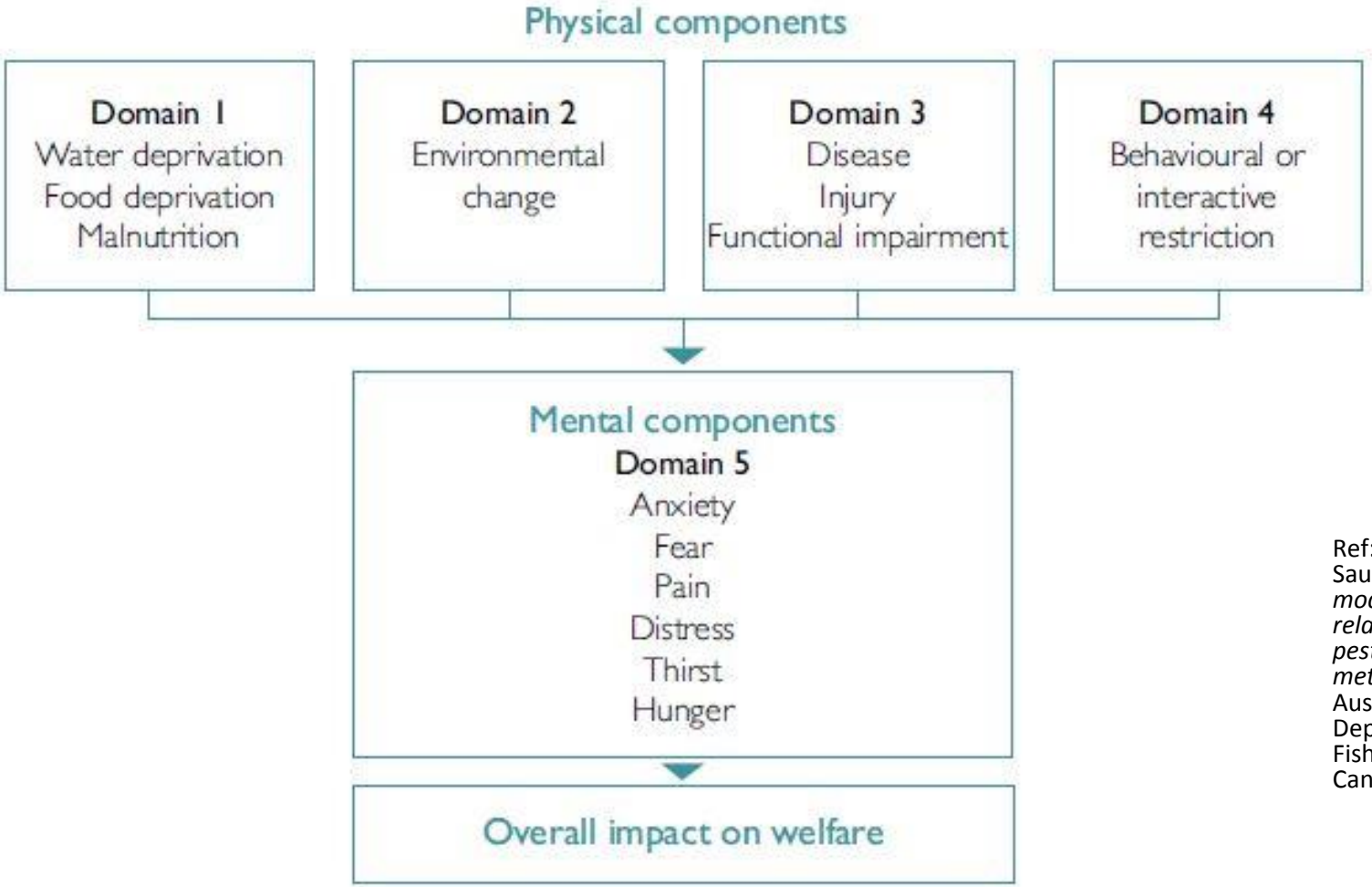
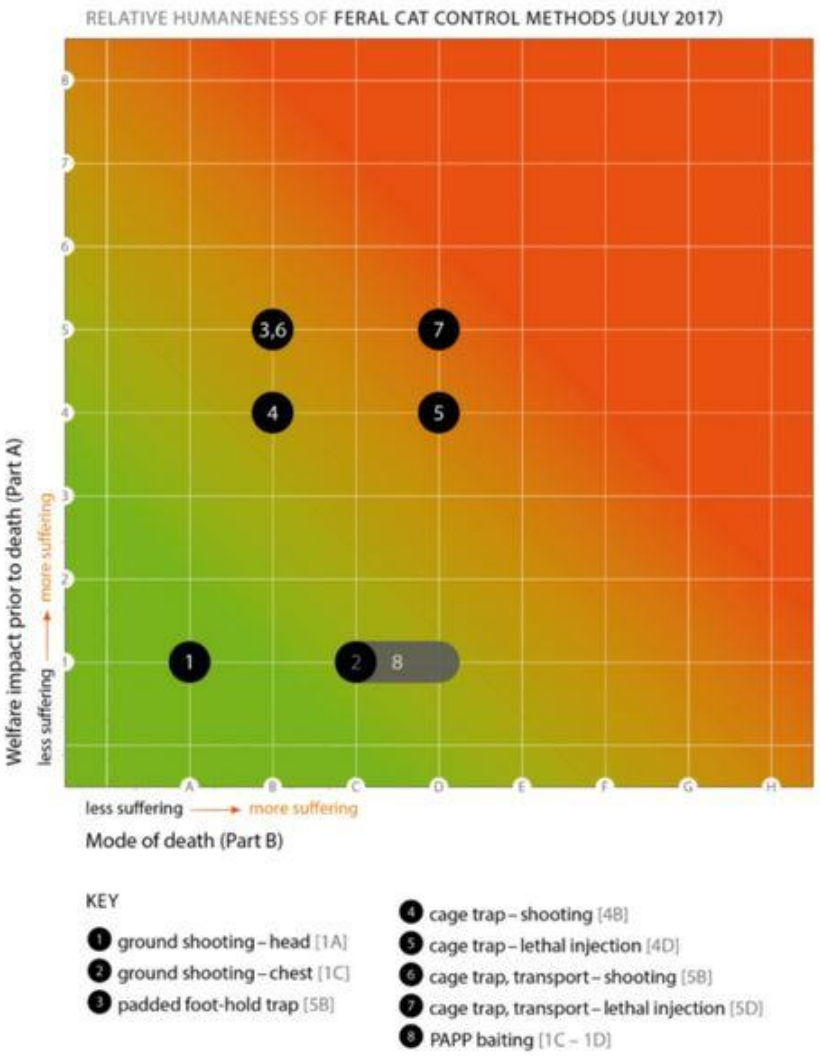
Figure 1: Five domains of potential welfare impact divided broadly into physical and mental components. Modified from Mellor (2004)



Ref: Sharp, T. and Saunders, G. (2011). *A model for assessing the relative humaneness of pest animal control methods* (Second edition). Australian Government Department of Agriculture, Fisheries and Forestry, Canberra, ACT.

Humaneness matrix – feral cats



- Relative humaneness of six aspects
  - shooting
  - leg-hold trapping
  - cage trapping
  - PAPP baiting
  - transportation
  - lethal injection
- Most humane is head shot by ground shooting
- Least humane is cage trap, transport & lethal injection

Worksheet – PAPP baiting

Control method: Poisoning of feral cats with CURIOSITY® para-aminopropiophenone (PAPP) baits

PART A: assessment of overall welfare impact

DOMAIN 1 Water or food restriction, malnutrition				
No impact	Mild impact	Moderate impact	Severe impact	Extreme impact

DOMAIN 2 Environmental challenge				
No impact	Mild impact	Moderate impact	Severe impact	Extreme impact

DOMAIN 3 Disease, injury, functional impairment				
No impact	Mild impact	Moderate impact	Severe impact	Extreme impact

DOMAIN 4 Behavioural or interactive restriction				
No impact	Mild impact	Moderate impact	Severe impact	Extreme impact

DOMAIN 5 Anxiety, fear, pain, distress, thirst, hunger				
No impact	Mild impact	Moderate impact	Severe impact	Extreme impact

Overall impact
No impact

DURATION OF IMPACT				
Immediate to seconds	Minutes	Hours	Days	Weeks

SCORE FOR PART A:	1

Control method: Poisoning of feral cats with CURIOSITY® para-aminopropiophenone (PAPP) baits

PART B: assessment of mode of death

Time to insensibility (minus any lag time)				
Very rapid	**Minutes**	**Hours**	Days	Weeks

Level of suffering (after application of the method that causes death but before insensibility)				
No suffering	**Mild suffering**	Moderate suffering	Severe suffering	Extreme suffering

SCORE FOR PART B:	C-D

Summary of evidence:

Duration –

After a cat has ingested a bait containing PAPP there is a lag period before signs of toxicosis such as head nodding, lethargy, ataxia (uncoordinated movement and difficulty maintaining balance), salivation and sometimes vomiting are observed[1,2]. As the toxicoses progresses, cats collapse and cannot move voluntarily. They appear unresponsive, but still show signs of awareness until they become unconscious for a short period just before death[2].

The duration of the lag phase, duration and severity of symptoms and time to death can be highly variable. In a pen study of 31 feral cats that ingested 78mg PAPP baits, the average time from bait consumption until signs of poisoning was 3 hours 51 minutes (range 43 minutes to 15 hours). The average time from onset of symptoms to collapse was 72 mins (range zero to around 5½ hours) and the average time from collapse to death was 107 minutes (range 30 minutes to around 8 hours)[2].

Suffering –

The lag period is likely to be associated with minimal suffering, however after the onset of clinical signs when cats cannot coordinate body movements it is likely that they will experience some distress, confusion and anxiety as they cannot perform normal behaviours (e.g. standing, moving, feeding, drinking, defensive and escape behaviours). Lethargy and weakness are also potential sources of distress.

In addition—during the later phase of toxicosis when cats are unable to move but are still conscious—if they were not able to seek appropriate shelter prior to becoming incapacitated, they are at increased risk of predation (e.g. from crows, other predators), aggression (e.g. from dogs, foxes, other cats) and environmental exposure, which could lead to further distress and suffering.

Overall humaneness score: 1C-D

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Best Practice

1. Use the most humane method

2. Comply with SOPs

- Ground shooting
- Cage trapping
- Padded jawed trapping
- Soft net traps
- Euthanasia

- Need additional SOPs
  - 1080
  - PAPP (coming soon?)
  - Feral cat exclusion fencing
  - Grooming trap

Standard Operating Procedure

CAT001: Ground shooting of feral cats

Prepared by Trudy Sharp, Invasive Animals CRC

Background

Feral cats prey upon a wide range of mammals, birds, reptiles, amphibians and insects. In some areas of Australia, especially many of the offshore islands, feral cats represent a significant threat to vulnerable and endangered native fauna. They may also have an indirect adverse impact on wildlife and livestock through the transmission of diseases such as toxoplasmosis and sarcosporidiosis. A variety of control methods have been used including shooting, trapping, poison baiting and exclusion fencing.

Shooting is one of the main methods of control currently used but it is labour intensive and not considered an effective broad-scale control method. It may be of use in reducing the local number of feral cats or targeting problem animals. Shooting is usually done at night from a vehicle with the aid of a spotlight, but can also be conducted during the day. Drives or 'battues', using a line of beaters often with trained dogs, are sometimes used to flush feral cats out from vegetation.

Shooting can be a humane method of destroying feral cats when it is carried out by experienced, skilled and responsible shooters; the animal can be clearly seen and is within range; and, the correct firearm, ammunition and shot placement is used.

This standard operating procedure (SOP) is a guide only; it does not replace or override the legislation that applies in the relevant state or territory jurisdiction. The SOP should

requirements (including OH&S) operating in the relevant jurisdiction.

Application

- Shooting should only be used in a strategic manner as part of a co-ordinated program designed to achieve sustained effective control.
- Although shooting can result in a localised reduction in feral cat numbers, it is ineffective in significantly reducing feral cat populations, particularly over the longer-term. Feral cats generally avoid human contact making them difficult to shoot.
- Shooting is more successful in areas with flat topography and open vegetation. It is not suitable where dense cover exists or in the vicinity of human habitation.
- Before shooting a cat, first establish that it is a feral cat, rather than a domestic pet or stray cat. Cats wearing collars should not be shot. It is recommended that landholders and neighbours be notified before commencement of a feral cat shooting operation so that they can take action to protect their domestic cats.
- Shooting of feral cats should only be performed by skilled operators who have the necessary experience with firearms and who hold the appropriate licences and accreditation. Storage and transportation of firearms and ammunition must comply with relevant legislation requirements.

(Ref: Sharp 2012 Model Codes of Practice and Standard Operating Procedures)

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Best Practice

3. Operator competency

- All involved
  - Government staff
  - Commercial operators
  - Community/landholders

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https://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/threatened-animals/western-ground-parrot

- All trapped animals to be killed by head shot, i.e. for landholders wanting to trap, the operator name and firearm licence numbers should be provided for all government, private and community based programs, including mining sites; or take to authorized operator.

4. Ongoing monitoring and evaluation

- Critical to ensure continuous improvement & evaluate programs

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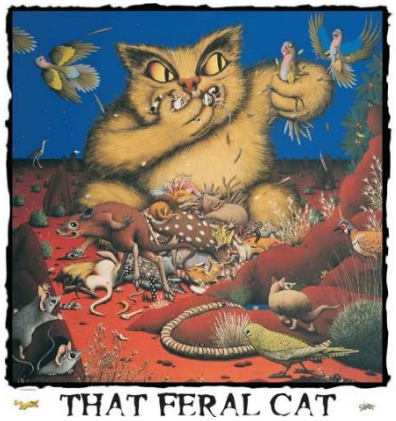
Other issues of concern



Kaye Kessing, 2004

Bow hunting

- 7.30 Report in March 2016[1]
- Should be prohibited due to suffering caused

Community drives using recreational shooters

- No evidence in achieving effective pest animal control
- Animal welfare concerns unless a strict requirement to demonstrate competency (not just a target test but on-the-job)
- Requires robust monitoring of population densities (feral cats & native species) as well as adherence to animal welfare requirements (head shot)

Demonising cats

- In dialogue & images – 'War on Cats' etc
- Kill rate targets not helpful as may incite cruel treatment of all cats (Adelaide man shoots neighbor's cat claiming it was feral[2])

1 **http://www.abc.net.au/news/2016-03-14/bow-hunting-of-feral-cats-condemned/7243820**

2 http://www.adelaidenow.com.au/news/law-order/shannon-aubert-receives-sixmonth-suspended-jail-sentence-for-shooting-neighbours-cat-four-times-with-a-bow-and-arrow/news-story/32ba32c150427313d1dff80aa0414f86

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What is on the horizon?

Improve lethal methods

- PAPP – reduce non-target risks & use in grooming traps
- LTD & TTD?

Non-surgical sterilization

- Permanent sterility using novel approaches[1]

Ecological approaches

- Fire & grazing management[2]
- Increase potential for native fauna to co-exist with feral cats[3]

CRISPR

- Offers potential but has ethical concerns

(Ref: [1]Hall et al (2017) Non-surgical sterilisation methods may offer a sustainable solution to feral horse (*Equus caballus*) overpopulation. Reproduction, fertility & development 29:1655-1666.

[2] McGregor et al (2014) Landscape management of fire & grazing regimes alters the fine-scale habitat utilisation by feral cats. PloS ONE 9(10).

[3] Doherty et al (2016) Impacts & management of feral cats Felis catus in Australia. Mammal Review 47:83-97.)

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KI Feral Cat Eradication Program
Animal Welfare Audit

Desk-top audit

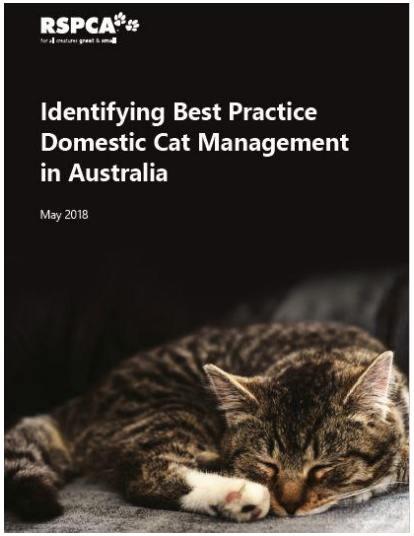
- Alignment of program plan with humane assessment tools

8 Principles of humane vertebrate pest control

- Justified – 1 (benefits vs harm)
- Effective – 4 (validated methods; monitor to assess)
- Humane – 3 (humaneness model; impact on non-target species; continuous improvement)

(Ref: HVPC Working Group (2004) A national approach towards humane vertebrate pest control Discussion Paper. RSPCA Australia.)

Defining cat populations



Feral

- Unowned, unsocialised, have no relationship with or dependence on humans and reproduce in the wild

Domestic

- **Owned**
  - are identified with & cared for by a specific person (direct dependence)
  - usually sociable, but may vary
- **Semi-owned**
  - are fed (+/- other care) by people who don't consider they own them
  - varying sociable, with many sociable
- **Unowned**
  - indirect dependence on humans; may or may not interact with humans
  - varying sociable, with some unsocialised

(Ref: Identifying Best Practice Domestic Cat Management. A Report RSPCA Australia, 2018)

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Summary

- **Principles of humane vertebrate pest control**
  - Justified
  - Effective
  - Humane
- **Humaneness Model & Five Domains**
- **SOPs & operator competency**
- **Monitoring & evaluation**
- **Continued research for more humane methods**

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https://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/threatened-animals/western-ringtail-possums

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Thank you

Image source:
https://www.google.com/url?sa=i&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjM8Z2X8p3bAhVOO7wKHVXnBRkQjRx6BAgBEAU&url=https%3A%2F%2Falchetron.com%2FMalleefowl&psig=AOvVaw0aDNjfDCpqUaJsNY5i6b9i&ust=1527235581786062

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