



Ensuring acceptable animal welfare standards under the Australian Feral Camel Management Project

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Ensuring a high standard of animal welfare has been a priority for the Australian Feral Camel Management Project (AFCMP). This paper discusses some of the animal welfare considerations in developing a pest animal management strategy. It also outlines the implementation of formal control technique operating procedures, with associated training and verification, that has occurred under the AFCMP.

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It is important to be able to justify feral camel management programs in terms of their measured rather than perceived impacts.

Making the case for pest animal management programs

The first step in preparing a pest animal management plan is 'defining the problem' in terms of actual rather than perceived impacts (Braysher and Saunders 2003). This step is essential in order to:

- justify the costs and potential animal welfare implications of management
- ensure that the management response is focused on impact reduction rather than just removing animals (which, contrary to popular belief, are not necessarily the same thing).

The Royal Society for the Prevention of Cruelty to Animals (RSPCA) also believes that invasive vertebrate management should be justified in terms of defined impacts and clear management objectives (*RSPCA Policy E02 Management of wild animals*, available at www.rspca.org.au).

The Australian Feral Camel Management Project (AFCMP) is based on a comprehensive review of feral camel impacts (Edwards et al. 2008) and has specific objectives in terms of density targets at particular sites. The project has a comprehensive Monitoring, Evaluation, Reporting and Improvement (MERI) component.

Appropriate selection and implementation of management tools

If effective management of pest animal impacts requires removal of the animals themselves (as opposed to exclusion, deterrents etc.), selection of removal techniques becomes a key part of developing a management plan. Key considerations for selecting removal techniques include: humaneness, human safety, non-target impacts and cost-effectiveness.

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The main feral camel management methods are aerial culling, ground culling and mustering.

Another consideration is the ability of the technique to achieve a rapid and sustained reduction in the pest animal population. This consideration has animal welfare implications, by avoiding the need for recurrent culling of large numbers of animals, and is an issue that is identified in *RSPCA Policy E02 Management of wild animals*.

A model has been developed to assess the relative humaneness of pest animal control methods (Sharp and Saunders 2008). The model enables a humaneness matrix to be developed for specific control methods that considers the potential for animal suffering in the lead-up process to death (e.g. herding feral camels prior to shooting) and as part of the mode of death (e.g. an animal being shot in the head versus the chest). In

2010, feral camel control/removal methods were assessed using the model by an 'expert panel', based on the evidence available at the time of their perceived animal welfare impacts. The results of this assessment are shown in Figure 1. The assessment assumes compliance with best practice as defined by agreed Standard Operating Procedures (SOPs). In practice, the actual humaneness of operations is very much dependent on the skill of removal operators and their ability to comply with SOPs, which includes ensuring that control is carried out under appropriate conditions. It is acknowledged that there is a level of inherent subjectivity in this assessment process, particularly when there are gaps in the available information on which the assessment is based.

There are inherent, but manageable, animal welfare challenges associated with all feral camel removal techniques. Aerial-based culling can be an extremely effective removal technique for feral camels in that it can achieve rapid population knockdown and a high standard of animal welfare. Feral camels do not exhibit a strong 'flight' response, moving relatively slowly away from helicopters and very rarely breaking away from the mob. The open country that camels typically occur in permits very close helicopter proximity, and high visibility, providing ample opportunity for rapid follow-up shots. However, this is a highly technical activity which depends very much on the skill of both the shooter and the helicopter pilot. In the 2010 humaneness assessment,

the technique was considered to provide minimal suffering prior to death but potential (dependent on operator skill) delays in time to death and associated suffering.

In the case of ground-based culling, operators have the advantages of usually not shooting from a moving platform and, often, not shooting at moving animals. However, they are usually much further away from animals than with aerial-based culling, with associated poorer visibility and reduced opportunities for rapid follow-up shots. Humaneness outcomes are therefore highly dependent on shooter skill. The other problem with ground-based culling as an impact reduction method is that it is not suitable for achieving rapid population knockdown of high-density populations: it may only remove an individual animal from a group, is geographically limited by vehicle access and is time-consuming. Its main role is to complement other methods to manage relatively small localised populations. As with aerial culling, the 2010 assessment of the technique found that it provides minimal suffering prior to death, but a potentially protracted mode of death.

Removal of feral camels for slaughter or export is a multi-stage commercial use process: mustering, holding in yards, loading onto trucks, truck transport and ship transport (live export) or slaughtering (local abattoir processing). There are animal welfare challenges at each stage that require diligent attention by all operators, but this is more difficult

to manage than the single-stage process of culling. There are also potential issues with the duration of the commercial use process (days up to weeks, depending on the nature of the operation) which require careful management. In the 2010 assessment, only the first stage of this process (mustering) was assessed: the technique was considered to involve potentially protracted suffering.

AFCMP processes to ensure acceptable animal welfare outcomes

To ensure acceptable animal welfare outcomes under the AFCMP, there has been a focus on: establishing agreed SOPs for the three removal approaches (aerial-based culling, mustering and ground-based culling); developing extension materials with associated training against these SOPs; undertaking auditing of removal operations against the SOPs as well as veterinary verification of animal welfare outcomes; and inviting RSPCA oversight of this process.

Aerial-based culling under the AFCMP involves qualified government marksmen and extremely experienced helicopter pilots, and both understand the importance of complying with the aerial culling SOP. This approach has ensured the safety and humaneness of these removal operations and any issues with

the SOP and/or animal welfare in the early stages of the AFCMP were quickly rectified through cull team discussions about veterinary reports. The AFCMP has also provided the opportunity to train and assess new aerial cull team members to build capacity for professional feral camel management into the future.

The AFCMP has devoted considerable resources to training and assessing mustering teams on Aboriginal lands as well as ensuring that appropriate commercial use infrastructure (suitable yards, troughs and loading ramps) is in place. Where there have been any issues with the SOP and/or animal welfare, these have been discussed with removal operators in an effort to improve future operations. The AFCMP has only been able to assess the mustering, holding and loading stages of commercial use operations; not the transport and slaughter arrangements. No camels have been mustered and transported for live export under the AFCMP.

Although aerial-based culling and commercial use have been the main forms of feral camel removal under the AFCMP, it was recognised early in the project that Aboriginal rangers and communities needed to have their own capacity to manage localised feral camel impacts (e.g. small groups of feral camels at waterholes, roads, airstrips and even in the communities themselves). The AFCMP has provided rigorous ground-based culling training to almost 50 people in three jurisdictions, as well as

helping to ensure that these people have access to the appropriate firearms and ammunition as specified in the ground-based culling SOP.

AFCMP results against the theoretical humaneness model

The experience of the AFCMP has provided considerable additional information regarding the animal welfare impacts of feral camel removal methods. In light of this new evidence, there was a case for the relative humaneness matrix for feral camels to be reconsidered:

- The SOPs on which the 2010 assessments were based have been improved and refined. In most cases for aerial and ground-based culling, there is minimal stress inflicted on animals prior to shooting commencing and the duration of shooting a group of camels is relatively short. This is the case relative to mustering, whereby animals will experience: a relatively prolonged muster (hours rather than minutes); being held in yards for a period of days; being loaded onto a truck; long-distance transport from remote areas to ports or abattoirs; unloading and a further holding phase; herding/ slaughter in the case of a local abattoir, or loading and shipping transport in the case of live export; and potentially unknown overseas fate in the case of live export.
- Mustering was assessed in the 2010 assessment as a stand-alone non-lethal method, but is usually undertaken in conjunction with transport and slaughter (a lethal outcome). This is noted in the footnotes to the matrix but should be considered in the overall assessment in order to be able to properly compare the relative humaneness of this to shooting methods.
- In the aerial shooting SOP, there is a deliberate 'overkill' policy of placing at least two shots into the head and/or chest region. In reality, the majority of first shots are to the head region, with a well-placed head shot ensuring instant insensibility and/or death, with a follow-up shot to either target region (usually the chest) all but ensuring death. The application of this policy was not fully considered in the 2010 assessment.

The humaneness matrix was updated accordingly in 2013, as per the revised version at Figure 2.

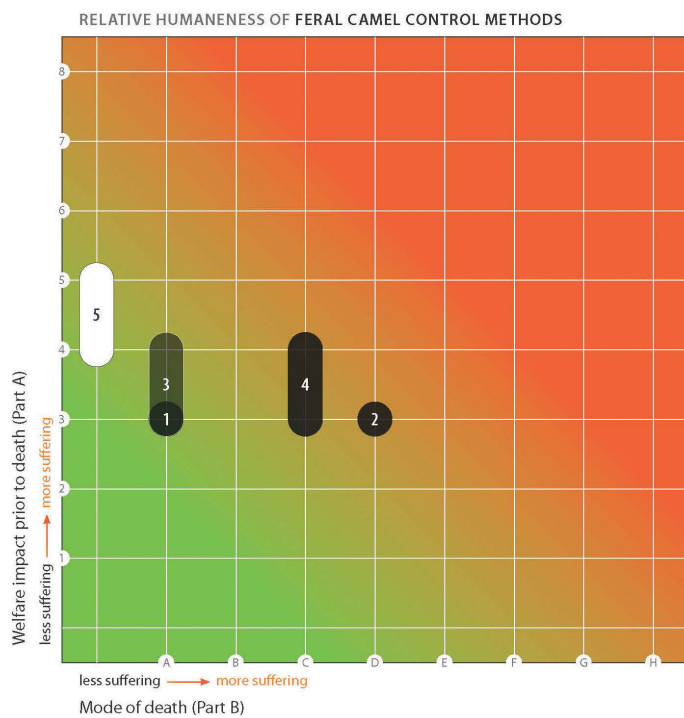
It is important to note that for both parts A (welfare impact prior to death) and B (mode of death), the ratings could have a large span of outcomes, depending on the skill of operators and their ability to comply with the relevant SOP. This is why the AFCMP has had a strong focus on operator skill, training against the SOP and follow-up verification and feedback.

References

- Braysher, M and Saunders, G (2003) *PESTPLAN: A guide to setting priorities and developing a management plan for pest animals*. Bureau of Rural Sciences, Canberra.
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- Sharp, T and Saunders, G (2008) *A model for assessing the relative humaneness of pest animal control methods*. Australian Government Department of Agriculture, Fisheries and Forestry, Canberra, ACT.

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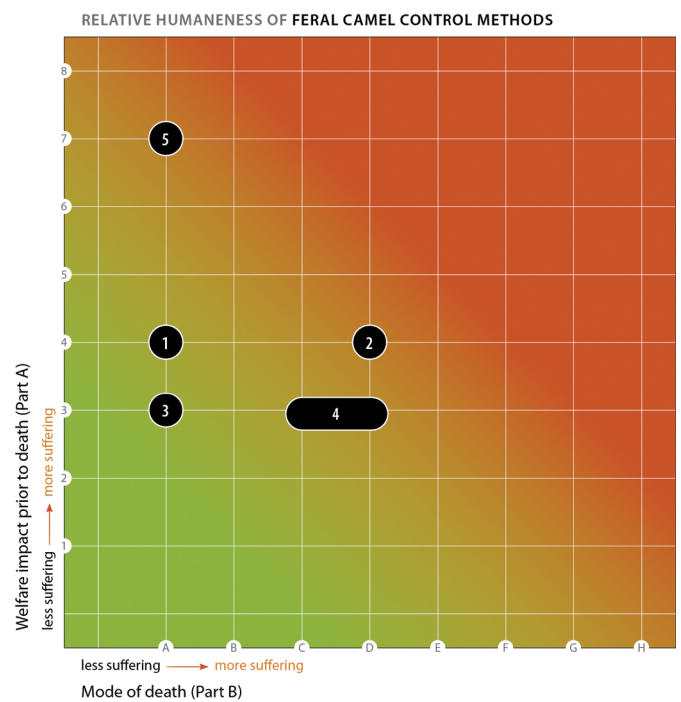


KEY

- ① ground shooting-head [3A]
- ② ground shooting-chest [3D]
- ③ aerial shooting-head [3A-4A]
- ④ aerial shooting-chest [3C-4C]
- ⑤ mustering* [4-5]
- non-lethal method
- lethal method

*Note: the humaneness of mustering is highly dependent on how the subsequent stages (i.e. holding in the yards, drafting, shooting or transport) are conducted. The cumulative effects of these stages will compound welfare impact.

Figure 1: The 2010 matrix for relative humaneness of feral camel control methods.



KEY

- ① ground shooting-head [4A]
- ② ground shooting-chest [4D]
- ③ aerial shooting-head [3A]
- ④ aerial shooting-chest [3C-D]
- ⑤ removal and killing at domestic abattoir [4-7A]
 - stage 1 mustering (5)
 - stage 2 yarding and holding (6-7)
 - stage 3 loading and transport (7)
 - stage 4 lairage (5) and slaughter (4A)

Figure 2: The revised (2013) matrix for relative humaneness of feral camel control methods.