

INQUIRY INTO PROPOSED AERIAL SHOOTING OF BRUMBIES IN KOSCIUSZKO NATIONAL PARK  
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SUPPLEMENTARY QUESTIONS

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1. Contraceptive Methods: Could you elaborate on the specific immunocontraceptive trials you've conducted in captive brumby populations? What were the outcomes, and how do you envision using these methods in wild brumby populations?

Response: I conducted trials with a GnRH vaccine, called Improvac. The mechanism of action is the same as that of other GnRH vaccines which are used in wild horses in other parts of the world, called Gonacon. Gonacon is not currently available in Australia. Improvac on the other hand is available in Australia, being manufactured for use in pigs. Hence this was the reason for choosing Improvac, in addition to it being very inexpensive. I trialled it in both mares and colts. The outcomes were extremely variable between individuals with it being highly effective in some individuals, and ineffective in others. In mares it generally delayed oestrous for approximately 6 months on average, but did not reliably delay oestrous beyond one year. As such, all mares housed with a fertile stallion, became in foal within 12 months of receiving Improvac. Consequently, this would not be an effective immunocontraceptive to use in wild free-roaming brumby populations.

2. Feasibility and Effectiveness: From your experience and research, how practical and feasible are current contraceptive methods for controlling wild horse populations in large, open environments like Kosciuszko National Park?

Response: Currently available contraceptive methods are not practical and feasible for large scale application in Kosciuszko National Park. In other words, at the current time it would not be possible to effectively manage the horse population across the whole of Kosciuszko National Park using contraceptive methods. HOWEVER, they would be practical and feasible to apply across certain sub-populations of horses in Kosciuszko National Park. For example, the former Scientific Advisory Panel advised the government to initiate reproductive control trials in horses at Kiandra. The reason for this is several fold; firstly, development of more humane scientific and practical solutions to population management need to start somewhere – a magic bullet will not be developed overnight – it is only through instigating trials, evaluating efficacy of different techniques, identifying challenges, and developing ways of overcoming those challenges, that contraceptive methods suitable for use in Kosciuszko National Park will be developed. Secondly, as outlined in the SAP report, and stated in the Consensus guidelines for Ethical Wildlife management, community acceptance is a critical component of any wild horse management plan being accepted. Reproductive control is largely accepted by the wider community as being a more progressive, and humane way of controlling wild horse populations, and so making some attempts to introduce and trial reproductive control alongside other management methods is highly desirable. Kiandra was suggested as an initial site for trials and community involvement, since it is an easily accessible area, the horses in that area are habituated to people and therefore mostly easy to closely approach, and the horses in that region are highly valued by the local community and hence there is a very high motivation for the use of non-lethal control methods in this population. Respecting community values is essential in achieving an effective wild horse management plan.

In addition, wildlife reproductive control is a highly dynamic field of research, with new developments happening all the time. Australia is well behind the rest of the world in trialling and further developing effective reproductive control methods. For effective methods to eventuate, Australia needs to be

involved in research and development of methods that are specifically available in Australia, and that are specifically suitable to application in KNP. For example there are methods that have not been considered such as dart administration of immunocontraceptives from a helicopter, and insertion of intrauterine devices that have specifically been developed for use in wild horses to achieve effective long term reproductive control.

3. Challenges and Solutions: What are your main challenges in applying contraceptive methods to wild horse populations? Are there any innovative solutions or technologies that could address these challenges?

Response: The main challenges that are particularly an issue in KNP compared to some other parts of the world, is that many of the sub-populations of horses in KNP are not closely approachable – in other words dart administration of contraceptive agents is not possible, and so horses would be required to be trapped first in order to administer these agents. Alternatively, trials to dart from a helicopter would be an alternative approach. The other challenge, is identifying agents with a high % efficacy, that have a long duration of action, following a single administration, as otherwise repeated administrations are required. These challenges are not insurmountable, particularly if we think of use of reproductive control in certain sub-populations of horses rather than as a sole management method across the whole park. More novel approaches to reproductive control may be more suitable, as opposed to the more commonly used immunocontraceptive methods in other parts of the world. For example, trapping of horses and placement of simple intrauterine devices is likely to be highly effective, and whilst not practical for wide scale use across the whole park, could be very practical and feasible for certain sub-populations of horses.

4. Ethical and Welfare Considerations: How do contraceptive methods compare to other management strategies, like aerial shooting or passive trapping, regarding animal welfare and ethical considerations?

Response: It would be fair to say that reproductive control as a non-lethal management method has much wider social acceptance than any lethal control methods. Non-lethal control methods are a more ethical way of managing animal populations. The animal welfare impacts of reproductive control would be variable dependent on the precise methods used, but are likely to be mild. Animal welfare impacts associated with different management methods can not be compared directly as such; it is like comparing apples with oranges – the impacts are different. For example, with passive trapping animal welfare impacts are mild; impacts are longer in duration than for example with aerial shooting, however they are very mild in intensity. Animal welfare impacts associated with aerial shooting on the other hand are short in duration, but severe in intensity. Generally, lethal control methods with animal welfare impacts that are mild in intensity would be considered more ethical than those with welfare impacts that are severe in intensity, even if the duration of those impacts is shorter.

5. Research Gaps: Based on your extensive experience with wild horses, what research gaps exist in contraceptive management for these animals? What studies would you prioritise to fill these gaps?

Response: Most research into wild horse contraceptive management has occurred in the US, with some in Europe. Whilst still applicable to Australia to some extent, these are different populations of horses; they tend to be smaller populations, in accessible locations, and the horses tend to be more habituated to people and so much more closely approachable. This is one key reason why most research to date in wild horse reproductive control has focused on immunocontraception – because dart administration of these agents is practical and feasible in those populations where the research is being undertaken. The horse population in KNP is different to these; it is a larger population, many

areas of KNP are not easily accessible, and most of the horses are not closely approachable. Therefore, a huge research gap of relevance to KNP is development of contraceptive methods that can be utilised in inaccessible areas and in horses that are not closely approachable. As these are more Australia-specific challenges, it is not likely that anywhere else in the world will undertake the research needed for reproductive control to become a reality in Australia. It needs to be Australia that leads this research to overcome these Australia-specific challenges. Different techniques are likely to be applicable across different areas of the park; for example immunocontraception would be suitable for some sub-populations that are easily accessible and closely approachable, whilst trapping and placement of intrauterine devices would be more suitable in other locations. For larger scale use in accessible populations, more novel ideas such as darting from helicopter, development of orally effective contraceptive agents may be the priority focus for further research.

6. Collaboration and Support: What kind of support and collaboration from government agencies, NGOs, and the scientific community would be necessary to advance research on contraceptive methods for wild horse management?

Response: It would not be hard to begin advancing contraceptive methods for wild horse management in Australia, because we are starting from nothing; zero research has been done to date on any reproductive control methods in wild free-roaming horses in Australia. The biggest hurdle to this is political and government agency support. There is already good support from NGOs and the scientific community and collaborations that have been waiting to happen for decades. The missing link is government support. Ultimately government funding would be necessary, and government agency staff involvement, for example if horses are required to be trapped. However the most crucial starting point in government support would simply be permission to initiate research trials. To date there has been no political and government will to support any kind of research on reproductive control in wild horse management. The starting point may not be KNP, but there are many other smaller populations of wild horses in NSW where reproductive control may be very feasible and would enable further research and development of techniques that may be more suitable for KNP. As previously mentioned some sub-populations in KNP may also be suitable for research and development. The biggest hurdle is government permission. For example, with the Scientific Advisory Panels recommendation for reproductive control trials in the Kiandra region of KNP, NGOs, community members and scientists were all ready to collaborate and work together in making this happen. Nothing happened because the recommendation was ultimately not taken up by government and not included in the management plan.

7. Public Perception and Education: How important is public perception and education in adopting and supporting contraceptive methods for managing wild horse populations? What efforts could be made to improve understanding and acceptance of these methods?

Response: I think there is already widespread public acceptance of these methods. It is easy for the public to educate themselves with internet searches, and most wonder why Australia is so far behind the rest of the world in this regard.

8. Long-term Management Plans: Considering the challenges associated with managing wild horse populations, what role do you see contraceptive methods playing in long-term management plans? Are there examples from other countries or ecosystems where such techniques have been successfully integrated?

Response: The biggest issue in Australia is the ongoing cycle of ineffective management, presumably in part due to lack of allocated staff and funds, leading to large increases in populations, with

subsequent panic, as is the situation in KNP now, leading to large scale lethal culling programs. This is why we are where we are now for government desire to undertake aerial culling. The same happened in Guy Fawkes National Park – minimal management – large population builds up – aerial cull – public outcry – new management plan for a short time, then management stops – population builds up again – then panic and another call for aerial culling. For long term management, this pendulum way of management needs to stop. It is not acceptable socially, ethically, ecologically and on animal welfare grounds to continue cycles of ineffective management followed by intermittent large scale aerial culls. Implementation of contraceptive methods would stop this cycle by controlling populations to prevent the rebound increase again after large scale culls. Reproductive control methods need to be ready to go though at this point, which they aren't because the Government will not engage in research and development at an early enough stage to ensure that reproductive control methodologies are ready to be implemented following a large scale cull, in order to prevent the rebound population increase. Then, the argument is used that the population is too large so reproductive control methods aren't feasible. For long term management, research and development into reproductive control strategies in Australia, needs to happen NOW.

9. Funding and Resources: What are the main barriers to funding and resources for conducting larger-scale trials of contraceptive methods in wild horse populations? How could these barriers be overcome?

Response: A lack of Government funding opportunities for non-lethal management of introduced species is the predominant barrier.

10. Comparative Analysis: Can you compare the cost, labour, and time investment required for contraceptive methods versus other population management strategies currently in use or consideration

Response: I am not privy to the costs, labour and time investment involved in the suite of management options currently utilised so do not have the information available to be able to make this comparison. There is some similar cost comparison data available for the US. It is hard to estimate reproductive control costs/labour/time investment as these will also vary significantly depending on the precise method used – in the same way as lethal control costs/labour/time investment will vary between ground and aerial shooting in situ, shooting in yards, and knackery. I would not expect the costs/labour/time investment on the whole to be substantially greater than other management methods, particularly when taken into account that reducing reproduction will reduce the need for other management methods in the longer term, and the number of horses requiring reproductive control would reduce over time. This is in contrast to removal and lethal control methods where when used alone, the requirement is infinite over time due to the continuous rebound increases in populations.