

Inquiry into barrier fences in Queensland Submission

Author: Dr David Berman

Author's relevant experience:

- 26 years direct experience with wild rabbit research and management
- 19 years in Queensland conducting research to improve rabbit control methods and strategies and reduce the damage caused by rabbits (employed by Queensland Government then Queensland Murray Darling Committee)
- conducted research to measure the benefit of keeping rabbits out of the Darling Downs-Moreton Rabbit Board area
- relevant publications listed below

Terms of Reference:

● the management of the Darling Downs-Moreton Rabbit Fence by the DDMRB

Issues:

- vitally important to continue preventing rabbits from establishing damaging populations within the DDMRB area.
- over 1100 known sites mapped with rabbits within the DDMRB area and only two staff members expected to deal with these rabbit incursions.
- there are an unknown number of unmapped sites with rabbits within the DDMRB area.
- failure to recognise the threat of rabbits within the board area.
- DDMRB compliance staff are expected to visit all reported rabbit sites and can not spend enough time in key areas.
- rabbits produced within the rabbit board area by breeding are probably a greater threat presently than rabbits that could come in from outside the board area.
- little support for rabbit control/compliance from most local government pest officers.
- on State land or land managed by local councils there are some very productive rabbit populations and little is done by these landholders to remove the rabbits.
- little support from Biosecurity Queensland (some research into impact on crops).
- the DDMR board members are councillors with little if any experience necessary to make decisions on strategies required to remove rabbit populations from the DDMRB area.
- Board members are unaware of their lack of knowledge and do not therefore seek the advice required.

Solutions:

- redirect resources required to remove rabbits from within the DDMRB area
 - local council pest officers made legally responsible for compliance/rabbit eradication within their area so that they will work as a team with the DDMRB officers.
 - Biosecurity Officers and research staff need to work as a team with the rabbit board officers and local council officers.
 - Biosecurity Queensland in association with DDMRB officers need to conduct surveillance to determine the extent of distribution of rabbits within the DDMRB area.
 - treat rabbits within the DDMRB as Class 1 pests and use rabbit control for training for biosecurity, exotic disease/pest emergency response
 - staff/resources within DDMRB be redirected to rabbit eradication until the number of outbreaks have been reduced and rabbit populations are no longer sustainable within the DDMRB area.
- better target key rabbit "hot spots" within the board area

- maintain control activities at selected sites until rabbits in these “hot spots” are removed.
- concentrate on removing breeding places such as warrens, log piles, containers or preventing rabbit's access to breeding places such as hay sheds.
- employ an Executive officer for the DDMRB with pest animal expertise or obtain this expertise via consultancy.
- have a board member who has pest animal control experience/understanding.

● **the effectiveness of barrier fences at protecting stock and crops from wild dogs, rabbits and other introduced species**

The DDMRB fence has protected much of south east Queensland from the devastating impact of rabbits and associated predators such as foxes. There is no other sizeable part of Australia suitable for rabbits where we have prevented rabbits from establishing damaging populations. The DDMRB fence can certainly prevent movement of rabbits and has done a great job for over 100 years. However, the use of fences requires not only maintenance of the fence but considerable effort must be exerted to eradicate any outbreaks within the fence. The fence is of no use if sustainable untreated rabbit populations remain within the fenced area.

There are wildlife populations within the fenced area that have never been subjected to competition by rabbits and have never felt the impact of high fox numbers. High rabbit numbers support high fox numbers. Research at Cottonvale by Biosecurity Queensland demonstrated this clearly. Bandicoots, echidnas, bettongs and quoll are all protected from rabbit or fox impact by the DDMRB fence. It is likely that predation by foxes on sea turtles and water mice and other wildlife in the Sunshine Coast and Burnett areas would have been far greater had the DDMRB fence not prevented the initial invasion by rabbits.

Damage to stock and crops within the DDMRB would be very high without the fence. Only 150 rabbits (accommodated by three warren systems or a hay shed or two) can eat \$1 million dollars worth of lettuce in a year. Recent work by Biosecurity Queensland and University of Queensland shows that a very small number of rabbits can cause massive damage to horticultural crops. Work being conducted by QMDC and CSIRO will allow estimation of the potential total cost of rabbits to crops and stock within the DDMRB area if rabbits are not kept out. The benefit of keeping rabbits out for sheep/wool production was determined by John Robertshaw (1995) presented at the 10th Australasian Vertebrate Pest Control Conference.

● **the unintended impacts of barrier fences on native species**

Barrier fences can restrict movement of native species. Most of the damage caused by this was over 100 years ago when fences probably prevented native animals moving too and from drought refuge areas. Many of these animals are now extinct. The DDMRB fence does restrict movement of small rabbit sized animals but the benefits due to stopping the impact of rabbits far out-ways the unintended impact caused by the fence on the native species.

Relevant publications by submission author:

Justine V. Murray, David McK. Berman, Riex D. van Klinken: *Predictive modelling to aid the regional-scale management of a vertebrate pest*. *Biological Invasions* 11 / 2014; 16(11). DOI:10.1007/s10530-014-0673-6

D. Berman, M. Brennan, P. Elsworth: *How can warren destruction by ripping control European wild rabbits (Oryctolagus cuniculus) on large properties in the Australian arid zone?*. *Wildlife Research* 01 / 2011; 38(1):77. DOI:10.1071/WR09178

- J.C. Scanlan, D.M. Berman, W.E. Grant: *Population dynamics of the European rabbit (Oryctolagus cuniculus) in north eastern Australia: Simulated responses to control*. Ecological Modelling 07/2006; 196(1-196):221-236. DOI:10.1016/j.ecolmodel.2006.02.008
- D. Berman, P.J. Kerr, R. Stagg, B.H. van Leeuwen, T. Gonzalez: *Should the 40-year-old practice of releasing virulent myxoma virus to control rabbits (Oryctolagus cuniculus) be continued?*. Wildlife Research 01/2006; 33(7). DOI:10.1071/WR05004
- G. Story, D. Berman, R. Palmer, J. Scanlan: *The impact of rabbit haemorrhagic disease on wild rabbit (Oryctolagus cuniculus) populations in Queensland*. Wildlife Research 01/2004; 31(2). DOI:10.1071/WR00099
- G. P. Edwards, W. Dobbie, D. McK. Berman: *Population trends in European rabbits and other wildlife of central Australia in the wake of rabbit haemorrhagic disease*. Wildlife Research 01/2003; 29(6):557-565. DOI: 10.1071/WR00097
- SR McPhee, D Berman, A Gonzales, K. L. Butler, J Humphrey, J Muller, JN Waddington, P Daniels, S Koch, CA Marks: *Efficacy of a competitive enzyme-linked immunosorbent assay (cELISA) for estimating prevalence of immunity to rabbit haemorrhagic disease virus (RHDV) in populations of Australian wild rabbits (Oryctolagus cuniculus)*. Wildlife Research 01/2003; 29:635-647. DOI:10.1071/WR00114
- G. P. EdwardsA, W. DobbieB, D. Mc K. BermanC: *Warren ripping: Its impacts on European rabbits and other wildlife of central Australia amid the establishment of rabbit haemorrhagic disease*. Wildlife Research 01/2002; 29(6). DOI:10.1071/WR00098
- B. D. Cooke, D. Berman: *Effect of inoculation route and ambient temperature on the survival time of rabbits, Oryctolagus cuniculus (L.), infected with Rabbit Haemorrhagic Disease Virus*. Wildlife Research 03/2000; 27(2):137-142. DOI:10.1071/WR99074
- G R Fulford, X J Lee, D Berman, G Hamilton: *Interaction Of Myxomatosis And Rabbit Haemorrhagic Disease In Wild Rabbit*.

Conference Proceedings

- David M. Berman, D. Marshall, T. Garrett, J. Scriven, N. Morgan, H. Hosie, And Magdalena A. Zabek: *Monitoring tools and techniques for intelligent management of vertebrate pests.. Australasian Vertebrate Pest Conference, Brisbane, Australia; 05/2014*
- David Berman: *ARE WE GOING TO LET THE RABBITS WIN?. Queensland Pest Animal Symposium; 01/2012*
- D. Berman: *Control of rabbits in arid Australia: destroying the drought refuge. '14th Australasian Vertebrate Pest Conference', Darwin NT Australia; 06/2008*
- D. Berman, B. Cooke: *A method for mapping the distribution and density of rabbits and other vertebrate pests in Australia. Australasian Vertebrate Pest Conference, Darwin; 02/2008*
- M. Brennan, D. Berman: *The value of having no wild rabbits in south-east Queensland. Australasia Vertebrate Pest Conference, Darwin; 01/2008*
- David Berman: *Drought refuge destruction to control rabbits on Bulloo Downs Station southwest Queensland.. Australasian Wildlife Management Society, Camden NSWv Australia; 12/2002*

Berman D.McK: *Control of rabbits on Bulloo Downs cattle station, Queensland: Why hasn't rabbit hemorrhagic disease worked and what else can be done?*. 12th Australasian Vertebrate Pest Conference, Melbourne; 05/2001

Berman D, Robertshaw J, Gould W: *Where have they been, what have we done and where are they now?*. 11th Australasian Vertebrate Pest Conference, Bunbury WA Australia; 01/1998

Berman D, Dobbie W, Southgate R, Paltridge R: *Rabbits, bilbies, dingoes, foxes and cats in the Northern Territory*. Australasian Wildlife Management Society 10th Annual Conference, Armidale, NSW, Australia; 01/1997

Berman D, Brennan M, Cunningham G, Gould W, Moore D, Palmer R, Piddock S.: *Is rabbit calicivirus disease the "knockout punch" for rabbits in the north?*. Australasian Wildlife Management Society 10th Annual Conference, Armidale, NSW, Australia; 01/1997