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Volume 10
August 2006

ANTI-RABBIT ROUNDUP

RFA welcomes industry funding for rabbit research

Special points of interest:

- Rabbit Research Progress
- National Feral Animal Control Programme
- Enhancing RHDV
- RFA Submissions
- Postgraduate Research Grant

Foundation for Rabbit-Free Australia Inc.
48 Oxford Terrace
Unley SA 5061
Tel: 0414 600 878
Email: keryn.lapidge@adam.com.au
Web: www.rfa.net.au

Over the last year or so, there has been a lot of 'behind-the scenes' activity and lobbying by RFA and action within Australian Wool Innovation Limited (AWI) and Meat and Livestock Australia (MLA) to review the current situation with rabbits in Australia.

Ten years have passed since the introduction of Rabbit Haemorrhagic Disease Virus making it important to see how things are going.

A review has been carried out by Dr Brian Cooke to look at ways of placing Australia's livestock industries in the best possible strategic position to handle future rabbit problems and research funding is now in place for:

- A review of all published information on RHD and analysis of Australian field studies to put together the most up-to-date picture on the present effectiveness of the disease in different parts of Australia.
- Tests to see whether rabbits are beginning to develop genetic resistance to RHDV.
- Additional studies to look at the present economic costs of rabbits and their impact on natural vegetation, this latter work being especially important in pastoral and farming areas.

Clearly, these studies do not cover all rabbit research but were chosen to complement other projects including one conducted by the Animal and Plant Control Group in South Australia's DWLBC who have been monitoring genetic changes in the RHD virus.

This is of course the other side of the coin because, in the case of myxomatosis, its loss of effectiveness was partly due to changes in the virus and partly due to the build up in genetic resistance in the rabbits.

In eighteen months time, when these research projects have been completed, we should be able to say how much more should be done to reduce continuing rabbit damage and, if rabbits are developing genetic resistance to the disease or the virus is attenuating, we can suggest how much longer RHD might continue to be useful.

The lobbying by RFA appears to have been timely as there is evidence from a number of sites, particularly in semi-arid areas, that rabbit numbers are slowly rising again after many years of relatively low numbers. This simply adds to the importance of trying to keep ahead of the rabbits rather than simply waiting until rabbit damage increases substantially and rabbits appear on the political agenda again.

Dr. Brian Cooke, Canberra

Dr. Brian Cooke will be a special guest at this year's AGM in November. See page 6 for details.

New Executive Officer

RFA has a new Executive Officer. Keryn Lapidge took over the role from Fred Bartholomaeus in May. Keryn became familiar with issues concerning rabbits and other introduced pests in her previous role as Communications Manager with the Pest Animal Control and Invasive Animals Cooperative Research Centres.

After studying Biology, and completing a Masters degree in genetics at Sydney University, Keryn spent time in Toowoomba and Canberra. She currently lives in Adelaide with her husband Steve, and their two daughters Darcy and Eden. Keryn enjoys reading, cooking and spending time with friends and family.

We warmly welcome Keryn to the position and look forward to RFA benefiting from her administrative, communication and computer skills.

National Feral Animal Control Programme (NFACP)

Australian Government
Bureau of Rural Sciences

The National Feral Animal Control Programme is a Natural Heritage Trust programme that aims to develop and promote improved management approaches to reduce the agricultural impacts of pest animals including rabbits, foxes, feral pigs, wild dogs, feral goats and rodents. The Programme is administered by the Bureau of Rural Sciences (BRS, part of the Federal Department of Agriculture, Fisheries and Forestry in Canberra) and currently has around $700,000 per year to support 20-30 research and extension projects around Australia.

BRS has been involved in national rabbit issues for over a decade, beginning with its coordination of national rabbit management guidelines ('Managing Vertebrate Pests: Rabbits') which were published in 1995. BRS also coordinated the 1996-98 National RCD Surveillance and Monitoring Program and has maintained an active interest in Rabbit Haemorrhagic Disease issues. This has included funding RHD research in South Australia and New South Wales, providing support for overarching RHD analysis by Brian Cooke, and the development of various RHD extension materials.

BRS has also supported projects on a wide range of other issues relating to rabbit management including: potential use of bait stations, minimal disruption warren ripping in vegetated areas (through use of explosives and mini-excavators) and fencing of remnant vegetation to reduce rabbit impact in Western Australia; review of rabbit toxins, baits and baiting practices; integrated fox and rabbit management; and PESTPLAN, a prioritisation and planning process for the management of rabbits and other pest animals. BRS has provided ongoing funding to the Victorian Institute of Animal Sciences to develop a carbon monoxide warren fumigator to replace the use of chloropicrin fumigant for controlling rabbits in areas inaccessible for warren ripping. The Invasive Animals Cooperative Research Centre has now expressed an interest in progressing registration of this product, and this is the subject of a current funding application to NFACP. *(See articles on page 6)*

The BRS attitude towards rabbits and rabbit management is similar to that frequently espoused by dedicated RHD/rabbit researchers/managers such as Brian Cooke, Greg Mutze and Steve McPhee, and by many landholders. We are concerned that the lessons that should have been learnt by the declining effectiveness of the myxoma virus within a relatively short time of its entry into the Australian environment, do not seem to have translated into capitalising more on the second opportunity we have been given with RHD virus. Fortunately some researchers have maintained an active interest in getting a better handle on the way RHDV works since the National Monitoring and Surveillance Program ended in 1998.

The recent approval to distribute RHDV on baits (in addition to likely future work to develop a shelf-stable RHDV product) combined with a greater understanding of RHDV epidemiology, will improve the ability of land managers to manipulate RHD outbreaks. Nonetheless, we clearly cannot rely on RHD to reduce rabbit impact on its own; hence the importance of developing and promoting an integrated approach to rabbit management based on a range of control techniques to suit different situations.

The Invasive Animals CRC and National Land and Water Resources Audit are currently negotiating a national pest management information system to monitor and map pest animal distribution and density. Over time, such a system will provide us with a clearer idea of whether we are succeeding in reducing rabbit densities and impacts generally, as opposed to just having some high-profile 'wins' in particular areas.

For further information on any of the above, including project reports and complimentary copies of BRS rabbit publications (to RFA members), please contact quentin.hart@brs.gov.au and/or have a look at: www.brs.gov.au/feral and www.feral.org.au.

Quentin Hart, Bureau of Rural Sciences, Canberra
See page 6 for information on new NFACP rabbit projects.

RFA contributes to NRM directions

William Morgan and Peter Allen met with Mr Dennis Mutton, Chair, SA Natural Resource Management Council (NRMC) in February 2006 following a RFA letter informing him of the outcomes of the RFA Workshop on Rabbit R&D Directions, 2005, and expressing RFA's concerns that the SA Government's trend to natural resource management administration could compromise resources for rabbit R,D&E.

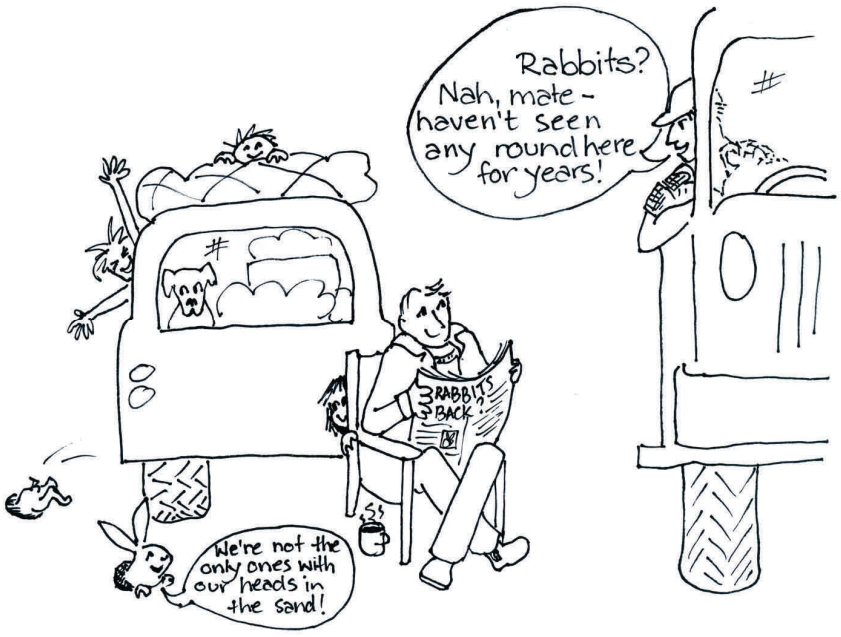
Dennis demonstrated a sound understanding of the current rabbit situation in SA and was supportive of the need for on-going, long-term rabbit R,D&E to keep rabbits under control to protect both primary production and biodiversity conservation. He was well aware that RHD was not the ever-lasting solution. He considered that the change in approach to NRM was not taking away emphasis on biological threats — solutions may be more integrated. Dennis was supportive of RFA's independent position in championing the cause for rabbit R,D&E; he believed that we do have a useful role in drawing attention to rabbits being an important element of NRM policies and directions.

He assured us that invasive pest species, including over-abundant native species, are being given high profile by the Council (Goal 4 in the State NRM Plan).

Dennis considered that RFA does have a role in NRM to:

1. Encourage peak NRM bodies
    a. Interface with the NRM Council on strategic and policy issues.
    b. Interface with regional boards on rabbit policy/action issues.
2. Encourage government departments to consider rabbit control in their policy/ research directions.
3. Provide publicity on the need for rabbit control.
4. Leverage funds for research programs.
5. Fund post-graduate education (RFA suggestion).

RFA is already responding to NRM Boards' Concept Statements.



Peter Allen & William Morgan

Queens Birthday Honours List, 2006

RFA's Chairman, Dr Peter Allen, was appointed as a Member (AM) in the General Division of the Order of Australia — "For service to science in the area of pest animal management through a range of research and administrative roles, and to rugby union football".

RFA congratulates Peter on this honour in recognition of his long-standing professional commitment to minimising the impact of invertebrate and vertebrate pest animals, both through the development and adoption of acceptable pest control strategies and through effective quarantine. Since his retirement from Executive Officer of the Animal and Plant Control Commission in 2000, he has been Chairman of the Pest Animal Control CRC, Chairman of the successful Bid Team for the Invasive Animals CRC and now Chairman of the Invasive Animals CRC. He is in his second year as Chair of our Foundation.

His rugby interests included representing SA as a player, President of Old Collegians Rugby Football Club and President of the South Australian Rugby Union. An eclectic mix of roles, some may say, but others would consider both roles to be managing ferals!

RFA submissions to Government Inquiries and Strategies

RFA has made submissions to the following government inquiries and strategies during the last 12 months:

- *Inquiry into the Impact on Agriculture of Pest Animals*. House of Representatives, Standing Committee on Agriculture, Fisheries and Forestry. Australian Government. 2005.
- *Inquiry into Australia's national parks, conservation reserves and marine protected areas*. Senate Environment, Communications Information Technology and Arts Reference Committee. Australian Government. 2006.
- *No Species Loss — a biodiversity strategy for South Australia*. Department of Environment and Heritage. South Australian Government. 2006.
- *Australian Pest Animal Strategy*. Vertebrate Pests Committee. Natural Resource Management Ministerial Council, Australian Governments. 2006.

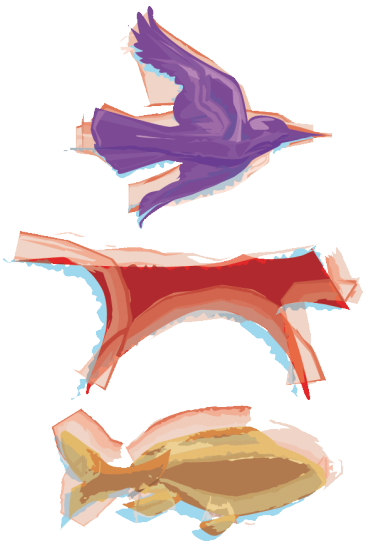
Copies of these submissions can be found on links at the RFA website, http://www.rfa.net.au/submissions.htm

Invasive Animals CRC: An active approach to rabbit control is essential

Rabbits: Are they really under control?

Rabbit Haemorrhagic Disease (RHD), introduced into Australia a decade ago, significantly reduced rabbits in many pastoral areas. The greatest gains were achieved in the arid zone and economic benefits have been estimated at some $300 m annually across Australia. However, recent spotlight counts of rabbits in north-western Victoria and the Flinders Ranges in South Australia suggest that rabbits are beginning to increase again.

An increase in rabbit numbers is not entirely unexpected. Australia has had a similar experience with the well-known virus that causes myxomatosis. When myxomatosis was introduced into Australia in 1950 it killed over 99% of the rabbits that became infected. It took only a couple of years before weaker, less virulent strains of the myxoma virus were found and it was shown a short time later that rabbits were also developing natural genetic resistance to the disease. By the mid-1960s, rabbits were again becoming a problem in many areas. Myxomatosis still continued to kill about 50% of rabbits that became infected but, because rabbits 'breed like rabbits', this was not enough to keep rabbits below the threshold where damage to pastures and crops became significant.



The wool and meat industries were well aware of the resurgence in rabbits as myxomatosis waned and a great deal of money and effort was spent in looking at alternative rabbit control methods, including improved poisoning techniques, development of warren ripping and of course new biological control agents to help support myxomatosis. European rabbit fleas were introduced to help carry the myxoma virus in areas where mosquito vectors were scarce and subsequently Spanish rabbit fleas were also introduced when the European rabbit fleas failed to establish themselves in the hotter drier parts of Australia. Nevertheless, the next major breakthrough came in 1988 when RHD broke out among wild rabbits in Spain at one of the sites where a study on rabbit fleas was in progress.

Despite this unexpected research 'windfall', it still took another seven years of research before the virus was considered safe for release. It was essential to confirm that it would affect only rabbits and would have no net economic or ecological costs.

Having two lethal viruses acting on rabbits is arguably better than one alone and indeed, as rabbits have been held low for over a decade this seems to be the case. Nevertheless, there is no room for complacency. Given the rate of development of resistance to myxomatosis, it would be unwise to simply 'sit back and see what happens' with RHD. An active approach is essential.

A major new CRC research project is underway looking at aspects of RHD rabbit management. Four main agencies are involved: Queensland DNRM&W, NSW Agriculture, DPI Victoria and DWLB South Australia with major support from other state agencies.

The project has several parts:

First, all the information on RHD both within Australia and from overseas will be reviewed. For example we can ask: What is happening in Europe where RHD spread some 5 years earlier than in Australia? Data from Australian field studies in temperate, Mediterranean-like and arid climatic zones will be thoroughly reviewed by researchers and a statistician to bring all the information into a form where we can readily make comparisons between sites and ensure that regional variations and patterns in the behaviour of the disease are thoroughly understood.

Second, young rabbits from many different parts of Australia will be collected and tested by challenging them with RHD Virus to see if they are developing resistance to the disease. The other part of the question, about possible changes in the virus, is already being tackled by collaborators in this project, the Animal and Plant Control Group in the Department of Water, Land and Conservation, South Australia.

The third and fourth parts of the project are aimed at assessing the costs of rabbits at their present relatively low levels; and these need to be measured not only in terms of the economic costs but also from a biodiversity perspective. The pastoral industry in low rainfall areas is entirely dependent on natural vegetation and so the impact of rabbits on natural pastures and shrub regeneration must be part of any wider consideration. By obtaining this kind of information it will be possible to ask: What more needs to be done? Of course, if rabbits are shown to be developing genetic resistance to RHD, the question may become: What will we lose if rabbits resume their former numbers?

The immediate outcomes from the project will be recommendations on how RHD might be managed to best effect. Approval has recently been given for RHDV to be released on baits but, because the patterns of disease outbreaks differ from place to place, this will be rather hit and miss without recommendations based on well understood regional patterns of disease spread. There are also ways of capitalizing on the natural spread of the disease, such as poisoning or ripping rabbit warrens at strategic times, and actions along these lines are also likely to prolong the usefulness of the disease.

Furthermore, in a more strategic sense, it may be possible to estimate how long Rabbit Haemorrhagic Disease and Myxomatosis together are likely to remain effective and whether or not some investment in research into new biological control agents might be worthwhile.

Enhancing the effectiveness of rabbit haemorrhagic disease virus

Rabbit haemorrhagic disease virus (RHDV, also known as rabbit calicivirus) was accidentally released from Wardang Island onto the Australian mainland in October 1995. Since that time it has spread to most areas of Australia occupied by rabbits.

Continued page 5…….

FOUNDATION FOR RABBIT-FREE AUSTRALIA POSTGRADUATE RESEARCH GRANT 2006

The Foundation invites grant applications from suitably qualified students in agricultural science, natural resource management, agricultural economics or social science who are intending to commence or have started approved Australian post-graduate tertiary studies (Masters or Doctorate degrees) that relate to the management and control of feral rabbits or to the species or ecosystems that are affected by feral rabbits.

Grants will be awarded on a competitive basis and may provide up to $5000 to support:

- overseas travel for a study tour; OR
- attending and presenting research results at a relevant international or national conference; OR
- a visit by an eminent overseas scientist, working on rabbits or in a related field, to Australia to mentor the student and address Australian and/or regional conferences; OR
- the purchase of essential equipment required for the post-graduate, rabbit-related research and development project.

The Grant is open to Australian citizens or students that have been continuously resident in Australia for three years immediately preceding the closing date for applications.

How to Apply for an RFA Postgraduate Research Grant

Details are on the RFA website at http://www.rfa.net.au/grants.htm

Applications close 27 October 2006.

Applications can be e-mailed to

keryn.lapidge@adam.com.au

or posted to

Mrs Keryn Lapidge
Foundation for Rabbit-Free Australia
48 Oxford Terrace, Unley, SA 5061

Enhancing RHDV (from page 4)……..

During the initial spread of the virus there were spectacular mortality events in the arid areas of Australia and in those areas rabbit populations have remained at some 80-90% of previous levels. In the wetter areas of Australia the effect of the virus is patchy with some sites showing no effect even when virus is released into apparently susceptible populations.

The reason for this patchy effect is not understood but it has been discovered that there are avirulent caliciviruses circulating in rabbits and it is possible that these could be interfering with RHDV. The evidence for the existence of these viruses is based on antibody studies in rabbits both before and after the escape of RHDV from Wardang Island.

The problem is that even though antibody studies can indicate the presence of these viruses, it is difficult to use these techniques to determine whether or not the viruses are affecting the spread of RHDV.

In an attempt to overcome this problem, the Invasive Animals CRC is funding a joint project between CSIRO in Canberra and the South Australian Department of Water, Land and Biodiversity Conservation aimed at isolating these caliciviruses. We can then determine if tests can be devised that will distinguish between the virulent RHDV and benign forms.

If we are successful in isolating and characterising these viruses then we will be able to look at the way both RHDV and the avirulent caliciviruses are spreading in rabbit populations and answer the question of whether or not the avirulent forms are interfering with RHDV. If they are, then this information may be useful in determining the best time of year for releasing RHDV on baits to avoid interference. If they are not, then this directs the research to identifying other factors that could explain RHDV patchiness.

Further reading:

Robinson AJ, Kirkland PD, Forrester RI, Capucci L, Cooke B, Philbey AW. Serological evidence for the presence of a calicivirus in Australian wild rabbits *Oryctolagus cuniculus* prior to the introduction of rabbit haemorrhagic disease (RHDV) and its potential influence on the specificity of a cELISA for RHDV. *Wildlife Research* 2002; 29, 655-662

Cooke, BD, McPhee S. Robinson AJ, Capucci L. Rabbit haemorrhagic disease: does a pre-existing RHDV-like virus reduce the effectiveness of RHD as a biological control agent in Australia. *Wildlife Research* 2002; 29, 673-682.

Tony Robinson, CSIRO Entomology, Canberra

FOUNDATION FOR A RABBIT FREE AUSTRALIA
Annual General Meeting

Notice is hereby given that the FOURTEENTH ANNUAL GENERAL MEETING will be held in the Board Room on the first floor of the Administration Building at the Adelaide Zoological Gardens, Frome Road, ADELAIDE SA on TUESDAY 14th NOVEMBER 2006 at 2:30 pm.

Dr. Brian Cooke will be guest speaker at this year's meeting addressing *"Future rabbit R&D directions in Australia"* - Brian was awarded the Eureka Prize for Environmental Research on rabbits, 2000.

Membership and /or donation form is on the next page of your Newsletter

For catering purposes, we would appreciate it if you could let us know if you plan to attend the AGM.

All members, *feel free to attend whether or not you have notified us.*

Non-members, *please let us know so that you can enter the zoo without charge.*

RSVP to Keryn Lapidge on mb 0414 600 878, e-mail keryn.lapidge@ adam.com.au

If you have a problem on the day ring Keryn on her mobile phone 0414 600 878

New NFACP rabbit projects

Shelf-Stable RHDV

Rabbit haemorrhagic disease virus (RHDV) is a very efficient and humane method of rabbit control and the Australian Pesticides and Veterinary Medicines Authority (APVMA) has approved RHDV on treated carrots or grain as a practical way of seeding the virus into rabbit populations where there has been limited spread. However, its practicality is still limited as the stock RHDV needs to be transported frozen on dry ice, which is classified as "Dangerous Goods". This dramatically increases costs (Dangerous Goods shipments are very expensive) and the likelihood that the virus is non-viable or ineffective in the field.

The IA CRC has successfully bid for a NFACP grant in collaboration with NSW Department of Primary Industries (who currently produces RHDV stocks and is a participant of the IA CRC) aimed at producing a stock of RHDV to be used in the same manner as the current product, but freeze-dried rather than as a liquid suspension.

Freeze dried RHDV would have the following advantages;

- Shipments of this product would no longer be classified as "Dangerous Goods" thereby eliminating existing logistical and distribution difficulties.
- At each of the production laboratory, intermediate distributors (state agencies, RLPBs) and the end user, the product is expected to be more robust, have a longer shelf-life, and could be stored ready-to-use whenever required.

Collectively these benefits should enhance the field-effectiveness and acceptability of RHDV as a rabbit bio-control.

Carbon Monoxide (CO) Pressure Fumigator

Where bio-controls (Myxomatosis and RHDV) have a limited effect on rabbit populations it will be increasingly important to integrate into the management strategy additional tools such as warren-destruction and warren-fumigation, especially in areas that preclude poison bait deployment.

This demonstrated need for an effective, safe, and humane warren-fumigation tool has resulted in the development of a prototype carbon-monoxide pressure fumigator by Victorian Departments of Sustainability and Environment and Primary Industries, which are both members of the IA CRC.

The IA CRC has successfully bid for a NFACP grant aimed at national field-testing and registration of the CO-pressure-fumigator.

Work planned under this grant recognises that warren fumigation is a valuable tool for integrated management of rabbits and is essential in many areas for the best-practice use of RHDV where its effects are patchy or the use of poisons is prohibited because of urbanisation.

Dr. Simon Humphrys, IA CRC Uptake Program, Adelaide
See http:www.invasiveanimals.com for more information and contact details.

FOUNDATION FOR RABBIT-FREE AUSTRALIA

Membership and Donation Form - 2006

Details for Membership or Donation

Title _____ Surname _____ Given Names _____

Organisation _____ _____

Address _____

_____State _____ Postcode _____

Phone _____ Fax _____Mobile_____

E-mail Address _____

DONATIONS OVER $2.00 TO THE FOUNDATION ARE TAX DEDUCTIBLE

I would like to contribute/pledge $_____ to support RFA's funding of rabbit research programs

MEMBERSHIP OF THE FOUNDATION FOR RABBIT-FREE AUSTRALIA

I would like to become a member of the Foundation for the period 1 November 2006 to 31 October 2007

Subscription Fees	Tick Box	
Student	$5.00	☐
General	$30.00	☐
Corporate	$100.00	☐
TOTAL	$_____	

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Easter Bilby rides again!

The Haigh's Easter Bilby Weekend in Rundle Mall is organised every year by Haigh's Chocolates and Rundle Mall Marketing. This year was a great success, due in part to a different setup. They arranged a stage, which drew a lot more attention than the previous carpet on the ground. The MC, Wendy Patching, did her usual excellent job, attracting the passers-by, dancing with the Easter Bilby and holding a "Guess how many Easter eggs" competition. Unfortunately, Kaye Kessing could not make it this year, as she was taken ill, but Wendy Patching did a marvellous job reading stories to the children.

Tim Rogers (left) and Richard Downward showing the way into the bilby tent—bilby ears and all!

The inflatable bilby tent from Aardvark once again towered above us, visible the entire length of the Mall, and providing an unusual spot for children to colour in Easter Bilby cards provided by Rotary's Australian Campaign for Rabbit Eradication (ACRE). The touch display from the Zoo was in the nearby shelter area, giving them a better location and more space. RFA and ACRE each had a collapsible canopy for our displays, giving us a larger and more defined area. Things were also made easier by the provision of a security guard, allowing us to store most display materials on site rather than packing them away overnight.

Haigh's as usual provided displays, the ever-popular chocolate tasting, cardboard bilby ears and their lovely old Model T Ford delivery van. It's a wonderful sight to see bilby ears flapping all up and down the Mall.

Thanks to our volunteers who made sure the display was manned throughout the weekend; Greg Mutze, Nigel Long, Chris Holden, Richard Downward, who also manned the ACRE display, Sharon Oldfield and Tim Rogers. Thanks also to organisers Kylie Turale and Sandra Gibson from Haighs and Kimberley from Rundle Mall Marketing.

Change of contact details

The RFA office has moved! The Invasive Animals Cooperative Research Centre has kindly provided some office space for RFA in their Adelaide office. The new RFA postal address is:
48 Oxford Terrace, Unley SA 5061.

Thanks

RFA would like to thank **Elders Ltd.** sincerely for their invaluable support with office space and postal arrangements over many years.

Wendy Patching and the Easter Bilby dancing up a storm