RABBIT-FREE AUSTRALIA

Bilbies Not Bunnies

Foundation for Rabbit-Free Australia

Newsletter Volume 36, October 2022

Foundation Matters

Updates and notices for Foundation members and partners.

AGM - Meeting Notice

Our upcoming AGM will mark 30 years since the Foundation was incorporated in 1992 and we will celebrate by '**looking back and looking forward**'. A chance to reflect on past achievements, and acknowledge those responsible for them, and to consider our aspirations for the future.

Prue Adams (Prue Adams Media and well-known ABC/Landline presenter), will contribute with her reflections on 30 years of reporting on rabbits. Prue's presentation will be the inaugural 'Greg Mutze Oration**'**, named in recognition of the many contributions Greg made to rabbit research and the Foundation.

The meeting will be on **Thursday November 10,** at the Adelaide Zoo. For more information, see the **Meeting Notice & Agenda**.

Bookings: The AGM is free, but **booking is essential** and can be via:

- Events on our website, or
- Contacting our Administration Officer, as per the meeting notice.

Committee elections will be held at the meeting. If you would like to nominate a member to the Committee, please use the **Nomination Form** available from the Executive Officer and return it by Monday October, 24th.

Seeing the 'unseen' - Photo competition

A photo from PhD candidate, Neil Ross, caught our eye recently. It shows native pine seedlings in a rabbit-proof enclosure, ancient old pines in the distance, and no younger pines of any age in the rabbit-grazed mid-ground.

Some rabbit damage is devastatingly obvious, but often it is not. It is what is not there that tells the story and only an informed observer can 'see the unseen'.

Neil's photo has prompted the Foundation to invite members to send in their photos of rabbit damage - whether it be obvious or subtle like that above. The photo judged to be 'best' will earn the photographer a copy of Bruce Munday's book 'Those Wild Rabbits. How they shaped Australia'. Photos, as many as you like, should be sent our Administration Officer by **October 31**, and please include a bit of information about the image.

See '**Seeing what can't be seen**' for more information about the photo, Neil's studies of rabbit impacts and how Rabbit-Free Australia is assisting.

Rabbit-Free Policy documents

The Foundation has submitted a Policy statement to politicians around Australia, urging them to

- Fund the Centre For Invasive Species' national **Rabbit Biocontrol Research** and Innovation Plan as a whole, including monitoring,
- Fund and support the development of a **National Rabbit Action Plan** and the appointment of a national rabbit management coordinator, and
- Embed integrated rabbit control programs into **Drought and Bushfire Recovery Plans** to control feral animals when they are most vulnerable and give land managers crucial support when needed most.

The documents are available at our website, 'Time for a National Rabbit Action Plan**'.**

International Interest in Australian rabbits

International interest in Australian rabbit data, future collaborations, and prospective bio-controls for Australia were highlights from a recent trip to Europe by rabbit researcher, David Peacock. Rabbit-Free Australia helped cover travel costs so David could present at an international conference and visit researchers in **Spain and Portugal.**

For more information see a **Summary Report** of David's trip.

David (back, right) with researchers from Mexico and Germany.

Australian Rabbit Managers Network

Rabbit-Free Australia is facilitating the formation of an informal network of leaders in rabbit management around Australia. The Foundation, in conjunction with CISS, has invited 2-3 people per State and the Federal Government to take part. The forum will help the flow of information and ideas around the nation and facilitate collaboration where appropriate.

Next-Gen Biocontrol

New technologies bring the promise of more options for invasive species control, but there are always questions about broader ramifications and ethical matters like animal welfare to consider. It is important for the social and environmental issues to progress at the same pace as technical developments, so each arena may inform the other.

The Foundation was therefore pleased to help sponsor a one-day symposium to explore the technical opportunities and social implications of next-gen bio-controls for invasive species, hosted by The Royal Society of Victoria.

National NRM Regions Conference

Rabbit-Free Australia Chair, Wayne Meyer, will be presenting to the 8th National NRM Knowledge Conference from Oct 31-Nov 2, in south west WA.

Wayne will describe our efforts to initiate a 'national conversation' about rabbits and invite suggestions for an effective 'future-focused national network' that provides opportunities for people across Australia to be part of the conversation.

Rabbit News & Views

Stories about and from Foundation members and partners.

Myxo is still active

Current strains of myxomatosis are far more virulent than that released in 1950, but rabbits have increased resistance as well. Nonetheless, myxo is still important for rabbit control in Australia, and new bio-controls shouldn't be considered if they would reduce its effectiveness.

That is one of several conclusions from a 50 year review of European rabbit fleas and myxomatosis in Australia by **Brian Cooke**, published in Wildlife Research. Other observations are:

- Myxomatosis transmitted by European rabbit fleas kills young rabbits in winter and early spring, resulting in less grazing pressure and more good quality feed later in the season.
- High protein food allows effective late season breeding with enough young surviving to maintain the next generation.
- Rabbits can develop genetic resistance, yet viruses may develop greater virulence and maintain mortality rates.

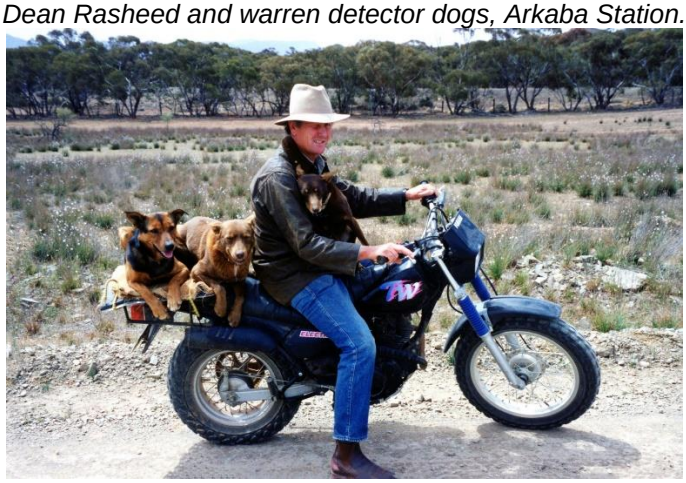
See our website's Latest News item for more information and to download copies of Brian's paper and our 2-page summary.

Rabbit eradication on Arkaba Station

Beginning in 1985, a property-wide program to control pest goats and rabbits paid big dividends for the Rasheed family, in South Australia's Flinders Ranges. Improved pasture and bush regeneration, fewer feral cats and more native birds, and better livestock production were the result of years of effort.

For more, see Dean Rasheed's story on **Pest Eradication on Arkaba Station**.

Dean Rasheed and warren detector dogs, Arkaba Station.



In memoriam - Dr Peter Kerr

Dr Peter Kerr investigated the evolution of Myxoma virus and European rabbit in Australia, producing over 52 research papers during his career, including recent work on the transmissibility of emerging Myxoma strains. Highly regarded for his curiosity, generosity in sharing, and pursuit of excellence, his presence will be sorely missed.

Snippets

A smorgasbord of news. Please see the original source for more information.

Ripping warrens to control feral cats.

A recent paper has concluded that destroying warrens that harbour feral cats in areas where cats experience heat stress would limit cat populations. See the '**Conservation Letters**' paper, 'Too hot to hunt', by Briscoe et al.

Pest eradication, a key to ecological restoration

Programs to eradicate invasive rats, cats, rabbits and goats have been a key to restoring the ecology on islands around the world according to a recent assessment of attempts on nearly 1,000 islands. The study by Spatz et.al, concluded that the removal of invasive species often led to a dramatic recovery of native species and their ecology. Pest control is a fundamental measure for sustainable landscapes and the protection of threatened species.

For more information see the journal article by Spatz et.al, in Scientific Reports.

Threatened trees essential for ecosystem survival

A global study has concluded that a third of tree species are endangered. The authors note that 'the extinction of a single species can cause a massive domino effect across everything else that interacts with it'. The story is a reminder of the role of rabbits in undermining the security of entire ecosystems.

Quolls in the Flinders-Gammon Ranges

Quolls are now thriving in the Gammon Ranges after being relocated from a population introduced to the Ikara-Flinders Ranges National Park. Rabbit-Free Australia providing some early funding to help start the initial introduction program. For more information see the FAME news item.

Social hierarchies favour genetic diversity

A strong social hierarchy (or 'pecking order') and territoriality help prevent inbreeding, giving species an adaptive advantage. Whether it be a dominant female stick-nest rat ruling the nest, or a dominant male rabbit ejecting young males from a warren and forcing them to settle in foreign territory, the result is the same - genetic diversity, saving the species from in-breeding.

A recent article by Isabelle Onley explained the process in greater stick-nest rats and other native species, and rabbit geneticist Amy Iannella has followed up with a Blog on how social hierarchy and territoriality benefit genetic diversity in invasive rabbits.

For more information see the 'Who rules the burrow?' Blog by Amy Iannella at our website.

Rewilding and Conservation

Renowned ecologist **Charlie Krebs** cautions that reintroducing vanished species, 'an action which cannot be undone', might not always be wise as our knowledge of ecosystems and climate change is often inadequate to predict the outcomes.

He concludes that while rewilding can be useful at the small scale, 'the losses we face are a whole Earth issue'. Charlie advocates more use of 'traditional conservation' actions, e.g. pest control, and more ecological research.

FOUNDATION FOR RABBIT-FREE AUSTRALIA Inc.

Notice of Annual General Meeting

To be held at
Plane Tree Centre
(formerly Santos Conservation Centre, opposite the Zoo entrance)
Adelaide Zoo, Plane Tree Drive.

on
THURSDAY, 10 November, 2022 at 2:00 pm.

Guest Speaker – Greg Mutze Oration
Prue Adams (Prue Adams Media)
'Reflections. 30 years of reporting rabbits.'

All members and guests are welcome, but **booking is essential**.
Exact numbers are required for planning and catering purposes.

Please RSVP by October 24
Register to attend and advise of any dietary requirements to
admin@rabbitfreeaustralia.org.au or 0417 518 266

Meeting Papers will be provided prior to the meeting,
to all members registered to attend.

Plane Tree Centre: on the left before entering the Zoo from Plane Tree Drive, in the Botanic Gardens.

FOUNDATION FOR RABBIT-FREE AUSTRALIA Inc.

Annual General Meeting Agenda

Plane Tree Centre,
(formerly Santos Conservation Centre, opposite the Zoo entrance)
Plane Tree Drive, Botanic Gardens.
(enter off Hackney Road)
Thursday, 10 November, 2022 at 2.00pm.

1. Welcome and apologies
2. Confirmation of Minutes of previous AGM
3. Reports:
    a) Chairman's Report
    b) Treasurer's Report
    c) Auditor's Report & Appointment of Auditor
4. Elections:
    a) Election of the Committee
    b) Election of Office Bearers
5. Greg Mutze Oration: Prue Adams (Prue Adams Media)
6. Any Other Business
7. Meeting Close (3:00 pm)

Meeting to be followed by afternoon tea.

Seeing what can't be seen.

One of the challenges of demonstrating the harm that rabbits cause is that their impact is often 'unseen'. It's what is NOT there that is important – things like the lack of regenerating seedlings due to selective grazing by rabbits.

That's why we love the following photo from Neil Ross, PhD candidate at University of New South Wales, of three young Callitris (native pines) in the foreground and some ancient pines in the background, likely to have been there for a century or more. In between there are no trees of any age. It is a photo of generations of missing pine trees.

The photo is of a twenty year old rabbit exclosure in SW NSW. Inside the kangaroo and rabbit proof fence the seedlings have survived and are growing into healthy young trees. Outside the fence, where kangaroos and rabbits are 'plentiful' while livestock and feral goats are absent, there are no seedlings and no young trees. Countless seedlings have been annihilated from this scene over the years.

Studies have shown that just one rabbit per two hectares will prevent any seedlings from surviving and pictures like this highlight what that means for an entire landscape and the functioning of ecosystems. Without research and without rabbit-proof exclosures like this one, it would be even harder for people to comprehend the harm that rabbits cause.

Foundation for Rabbit-Free Australia is helping Neil in his studies of rabbit-proof exclosures in NSW and SA. The more we can understand and demonstrate rabbit impacts, the better are our chances of ensuring governments and others continue to support research and the ongoing development of effective, long-lasting rabbit controls.

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International interest in Australian rabbit data.

The level of interest in data from a long-term monitoring site in South Australia (Turretfield) and the value of international discussions were two highlights from a recent trip to Portugal and France by rabbit researcher, David Peacock. Rabbit-Free Australia was pleased to support David by helping with travel expenses, as part of the Foundation's commitment to building research capability.

David's trip was to attend and present at the 6th World Lagomorph* Conference, and he arranged several side-visits while in Europe, meeting with leading rabbit and hare researchers from France, Portugal, England and Mexico. The meetings provided an opportunity to hear about their studies, to share information from Australia, and to explore opportunities for future collaboration. Topics of interest included:

Rabbit diseases. Myxomatosis, RHDV and immune systems are all being studied internationally, including antibody persistence and the prospect for inter-viral interactions such as between myxomatosis and herpes virus.

Leporid* herpes-virus (LHV). LHV-4 may have prospect as an additional biocontrol for rabbits in Australia. There are no native leporids in Australia that could be susceptible, it is likely that a vaccine could be developed to protect pet rabbits and preventing birth can be a very humane method of pest control.

Factors affecting rabbit survival. Better understanding the keys to rabbit survival includes research into the effect of early-life social and environmental conditions on survival, and the life history and demographics (age and sex profiles) of individual rabbits over time, including the analysis of sex-specific mortality patterns.

A 25 year rabbit monitoring program at the SA Research & Development Institute's Turretfield Research Centre is one of the longest running such sites in the world and its age is matched by the extensive range of data collected. Information is available on social structures, breeding, survival, family trees and genetics, including sera and tissue samples, and data on virus activity. David met several researchers that were very interested in the data and tissue samples, and collaborations may follow.

David came away from the trip with a wealth of new ideas and information, new and renewed contacts, and the prospect of collaborations between Australian researchers and international leaders in their fields.

David with researchers from Mexico and Germany at the World Conference.

* Lagomorphs include Leporids (rabbits and hares) and the closely related pikas.

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A rabbit control case study, by Dean Rasheed.

Rabbit and Goat eradication on Arkaba Station 1984-2009

Arkaba Station lies between the Elder Range and Wilpena Pound in the Flinders Ranges, South Australia. It is typical of the country loved by painter Sir Hans Heysen, who described the ranges as 'the bones of nature laid bare'. In the local Adnyamathanha language Arkaba means 'land of abundance'.

My wife Lizzie and I bought the 24,500-hectare (60,000-acre) property in 1984. Moving from a busy life in London to join me at Arkaba was a big step for Lizzie. The lack of internal roads and the rough country made getting around and mustering somewhat adventurous, but Lizzie quickly adapted to station life. She grew up in Norfolk, UK, and could handle both horses and motorbikes confidently.

I had flown over Arkaba many times and knew it was infested with rabbits, but we could see the potential if they could be removed. On the ground, the degradation caused by rabbit and goat infestation was evident and we began control programs in 1985.

Denuded hillsides, typical of pre-rabbit control times, showing where warrens have been ripped. Image: PIRSA

Myxomatosis was active in the Flinders spasmodically, however it was having less impact than in earlier decades. Ripping warrens using crawler tractors would become our main line of attack. Arkaba was held under a perpetual lease which gave us, and the bank, enough security to warrant the big investment needed for rabbit control.

I purchased our own tractor, which we operated regularly during this period. We also hired contractors with much larger machines as budgets allowed. Fortunately, we were able to use these contractors most years - sometimes for up to a three-month period.

Our first obstacle was the challenging terrain, including the southern wall of Wilpena Pound and the Elder Range to the west. There was considerable effort put into planning the program, especially the movement of machines and the sequence of treating the various paddocks. Aerial surveying helped with the planning as well.

Experienced dozer driver, Spencer McCourt, was always ready to experiment and we improved our techniques over time:

- We designed ripper boots, like a 'winged keel', for use in light soils. In the right conditions, it meant we didn't have to cross-rip, saving half the time.
- We varied the spacing between tines, using narrower set-ups in moister soils.

A rabbit control case study, by Dean Rasheed.

Spencer McCourt ripping a rabbit warren. Image: PIRSA

I learned how to manufacture and use explosives, which became invaluable in the most difficult terrain where it was impossible to take a bulldozer. I sometimes used fumigation as well, but it proved difficult and was not as successful as explosives.

Another success factor was using my working dogs as spotters. They became adept at leading a tractor to the next warren. We soon discovered that many rabbits are found outside of warrens and the dogs proved useful in flushing them out.

A rabbit control case study, by Dean Rasheed.

Dean Rasheed and warren detector dogs.

We would sometimes rip up to 130 warrens in a single day. Because Arkaba was heavily infested we were, in effect, cultivating many thousands of acres over this period, which greatly enhanced the regeneration process. We were fortunate to have such a wonderful natural seed source on Arkaba.

In some of the treated areas we would contour plough and introduce seed that I purchased from WA. The aim was to reintroduce salt bush into areas where I suspected it once had thrived. These techniques are expensive and we had limited success!!

One of the most significant ingredients for a successful program is the follow-up. Inspecting recently treated areas for possible re-opening of warrens is vital. These openings were easily treated with phostoxin tablets carried on a motorbike.

Goats were another feral pest, especially in the Elder Range, and we removed many thousands of them over the same period as our warren ripping. We mustered on horseback and also used skilled marksmen.

We were surprised how quickly the country responded once rabbits and goats were controlled. Within a few years it was evident that groundcover was greatly improved and we saw all types of native plants reappearing. Of-course weeds can flourish as well and we used short bursts of heavy grazing by wethers to control horehound.

When we took Arkaba over, it ran around 4,000 sheep and the country was in poor condition. After rabbit control, the land was healthier and we ran 7,500 sheep and 200 cattle.


Healthy, productive country following rabbit control.

Our rabbit control led to a reduction in feral cats as well. We stopped seeing tell-tale bird feathers around the troughs.

In 1995, when we were mustering the eastern side of Arkaba and preparing for our September shearing, we began seeing rabbit carcasses and realised that Calicivirus had arrived.

I consider myself to have been fortunate to have had support from Professor Brian Cooke and Nicholas Newland and many other people from government departments during this period. They also helped set up several successful field days on Arkaba that were very well attended.

The regeneration of many plant species over this period demonstrates how resilient the landscape is. I have a particular fondness for the return of the Bullock Bush or Rosewood (*Alectryon oleifolius*).

The benefits to the environment were clear to see and I like to think that our efforts were instrumental in getting programs like 'Operation Bounceback'* started.

I retired and we sold the majority of Arkaba in 2009, but retained a section that we still care for, planting a variety of different native trees.

Arkaba station is now run as a private nature conservation area in conjunction with luxury tourism. The shift from grazing land to conservation speaks for itself about the success of the management programs we began in 1985.

Dean Rasheed, 2022
Editorial: Peter Day

'Bounceback' is a landscape scale conservation program supported by governments on parks and sanctuaries, Aboriginal-owned land and pastoral properties in the Flinders, Olary and Gawler ranges.

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