



Industry &
Investment



Invasive Animals CRC



CARING
FOR
OUR
COUNTRY

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NRM Notes

Issue 5 ~ March 2011

- FeralScan website launched – RabbitScan ready!
- Researching RHD – calling for dead rabbits
- Pest Tales – a new resource for primary school teachers
- IA CRC Update on the development of PestSmart Toolkits
- Monitoring your project – why it is so vital
- Special feature: Floods and Ferals

Welcome to our first edition of NRM Notes for 2011.

Our sympathies go out to the people who have suffered during the recent extreme weather conditions which have caused widespread damage and ongoing management challenges. Unfortunately, uncharacteristic weather can also create an ideal opportunity for pest animals to expand their presence and impacts. It is important to try and get in early, before pests become heavily established in new areas. Talk to your neighbours, local NRM agency, or contact me if you need assistance or ideas for managing your pest animals.

All the best and thanks for your ongoing interest, Jessica

RabbitScan Citizen Science website re-launched for farmers and communities

The Invasive Animals CRC in partnership with Industry & Investment NSW, the Australian Pest Animal Research Program, Woolworths, Toshiba, Western CMA (NSW), Landcare, and the ABC have released a new and improved RabbitScan website and mapping tool (under the FeralScan program) for farmers, community groups and anyone with a rabbit problem anywhere in Australia.

Building on the RabbitScan Citizen Science Challenge in 2009 and the ABC Feral Month program (in January 2011), the updated RabbitScan website provides a resource for landholders, community groups, and pest officers to map sightings of rabbits, record the damage rabbits cause, and record the control techniques being used to manage rabbits in their local area.

The website also provides links to possible funding support, online resources and rabbit control manuals. Anybody will be able to use RabbitScan to create a Rabbit Management Map for their property or local area, to assist with on-ground rabbit control and to track changes in rabbits in response to management actions. Importantly, any sighting data reported in RabbitScan will help to provide a national overview of the rabbit problem. For more information, visit www.feralscan.org.au/rabbitscan.



Above: Brian Lukins inspects a tree for ring-barking damage as part of RabbitScan.



Link: www.feralscan.org.au/rabbitscan

Contact: Peter West, Project Leader, Industry & Investment NSW: (02) 6391 3887 or peter.west@industry.nsw.gov.au



Researchers looking for dead rabbits

Researchers have made a plea to people who find freshly dead, but otherwise healthy-looking rabbits that may have died from rabbit haemorrhagic disease (RHD) or calicivirus - they want those rabbits' livers to study the RHD virus RHDV.

Industry & Investment NSW (I&I NSW) scientist, Tarnya Cox, says the livers will provide vital information to boost rabbit control in Australia. The 'RHD Boost' project team needs virus from rabbits which have died from natural outbreaks of RHD in areas where the virus hasn't been released, to analyse those changes.

I&I NSW and CSIRO scientists are currently identifying overseas strains of RHDV which might be effective against the genetic resistance rabbits have developed over the years. Meanwhile, scientists with Biosecurity SA are mapping the changes in the virus since its original release in 1996.

Dr Cox said the virus from dead rabbits will help unlock how the virus has changed over time so that we can ensure any new strains that may be released are as different from the current strains as possible.

"We need small portions of liver tissue from the dead rabbits, of around two centimetres square, which we are asking people to freeze in a plastic bag or container and contact us to arrange collection," she said. If people are a little squeamish about cutting out rabbit liver, they can just collect and freeze the whole rabbit. Sometimes predators take rabbit's liver very quickly but we can still get virus from heart or kidney tissue or bone marrow from hind legs.

Please note: Rabbits that die from myxomatosis are not required. Typically, they will be severely emaciated and usually have abscesses around their eyes and on their head. See more details and photos on the website below.



Top: Dr. Tarnya Cox, I&I NSW scientist.
Inset: An infected and a healthy rabbit liver.

Link: <http://www.feralscan.org.au/rabbitscan/pageContent.aspx?page=story3rhdv>
Contact: Dr. Tarnya Cox, Research Officer (Rabbits), I&I NSW: (02) 6391 3952 or tarnya.cox@industry.nsw.gov.au

Exciting new online resource for primary school teachers



Pest Tales provides primary school teachers (yrs 5 and 6) with a curriculum based education resource which explores the characteristics of pest animals and the complexities of dealing with them in Australia. The word 'pest' is generally used to describe an animal that causes damage to a valued resource. Such a pest may be destructive, a nuisance, noisy or simply not wanted.

Pest Tales provides a foundation for students to develop an understanding of how pest animals are able to adapt to a new environment and investigates current research involving Australian pest animals.

Pest Tales provides teachers with innovative student activities, research projects and debates.

- How can you avoid swooping magpies near your school?
- Is it a good idea to let your goldfish go in the local river?
- Can you design an attractive trap for a cane toad?

Detailed lesson plans are supplied with each activity. Several interactive online case studies are also available to demonstrate current strategies and research relevant to pest animal management in Australia today.



Link: www.pestales.org.au or www.feral.org.au
Contact: Jo Keogh, Institute for Applied Ecology, University of Canberra: (02) 6201 2481 or Jo.Keogh@canberra.edu.au



Calling all Expressions of Interest: Invasive Animals CRC Round 14 extension bid



We are seeking expressions of interest from those who want to be involved in the IA CRC's extension bid for 2012 and beyond.

Some of you have been involved in the IA CRC's collaborative pest animal research projects, or have trialled or read about our practical solutions to reducing vertebrate pest impacts, and have seen the real benefits of cooperative research. Your organisation can help continue the close collaborative work between industry, research and extension agencies – together we can manage Australia's pest animal problems at the local, regional and even national scales.

If you want to take up this unique opportunity to participate and collaborate in new and exciting research, and you are interested in being part of the new CRC for invasive animals, please contact Jessica as soon as possible. We'd really like to have you on board!

Link: http://www.invasiveanimals.com/wp-content/uploads/2010/12/ExtBid_prospectus_24Nov2010.pdf
Contact: Jessica Marsh, NRM Liaison Officer, Invasive Animals CRC: (02) 6391 3907 or jessica.marsh@industry.nsw.gov.au

PestSmart Toolkits on the way

The Invasive Animals CRC, with community consultation, is now developing a series of PestSmart toolkits. The PestSmart Toolkit will provide an accessible gateway to the improved best practice management of major pest animals through the development of innovative extension materials. The information packages, which are tailored towards landholders and land managers, will synthesise the practical insights from the Invasive Animal CRC's extensive seven year research and development program.



Toolkits are being developed for rabbits, wild dogs, foxes, feral pigs, feral cats, carp, and tilapia. Information will be provided in various forms such as fact sheets, case-studies, technical manuals and scientific reports.

"PestSmart", or the PestSmart Toolkits, will be showcased through a roadshow of strategically located workshops across Australia. The outcome will be more efficient delivery of accessible information to agricultural producers and other landholders on invasive animal control to reduce their impacts on the environment as well as livestock and cropping industries.

Link: <http://www.feral.org.au/pestsmart/>
Contact: Keryn Lapidge, PestSmart Project Manager, Invasive Animals CRC: (08) 8357 1222



Do you know about FeralScan?

Map feral animals in your area!

Get involved at www.feralscan.org.au

Coming soon:
CamelScan and FoxScan!



Have you secured funding for a project in 2011? Don't forget the importance of monitoring your work & outcomes

Monitoring pest animal projects is usually an afterthought receiving a small allocation of project resources and unfortunately is usually only done to satisfy various funding guidelines. However monitoring is much more important and if done properly, could be the basis for that next funding application – if you can show the positive outcomes your work is achieving, by monitoring the change, you are more likely to receive additional funds to continue work into the future. All projects should monitor before, during and after control or when management changes are applied.

Why we monitor and evaluate:

- Monitoring is done **before** the program to establish a benchmark of vertebrate pest abundance and to identify actual or potential damage. This will allow objectives and performance indicators to be determined.
- Monitoring **during** the program is done to determine how the program is progressing against set objectives. The monitoring may provide an early warning that a change in the management program is required so as to achieve control success. This form of adaptive management is recommended to help achieve outcomes within timeframes and budgets without sustaining too much damage.
- Monitoring **after** the program helps to determine the success of the program against the performance indicators, and to find out whether the program objectives have been achieved.



If you need any assistance with planning, implementing or monitoring your project, or would like more information on the monitoring manuals (pictured right), please contact Jessica.

Link: <http://www.dpi.nsw.gov.au/agriculture/pests-weeds/vertebrate-pests/general/monitoring-techniques>

Contact: Jessica Marsh, NRM Liaison Officer, Invasive Animals CRC: (02) 6391 3907 or jessica.marsh@industry.nsw.gov.au

Keeping the Management Pressure on Rabbits

Researchers are continuing to refine the options for broad-scale national rabbit management. The Australian Government has invested \$1.5M through the Caring for Our Country Program for scientists in the Invasive Animals CRC to investigate new strains of RHD to boost effectiveness of biocontrol of rabbits. The Australian Pest Animal Research Program is also supporting the FeralScan (and associated Rabbitscan) projects, which provide a web-based community reporting, education and extension tool for landholders and community groups. More details of these and other projects can be found at <http://www.invasiveanimals.com/research/programs/terrestrial/>.

Link: <http://www.invasiveanimals.com/research/programs/terrestrial/>

Contact: Dr. David Dall, Managing Director, Pestat Pty Ltd: (02) 6201 2568



Register at www.avpc.net.au

Online registration is NOW OPEN

The Australasian Vertebrate Pest Conference is a not-for-profit event held every three years to bring together researchers, managers, students and policy makers dealing with pest animals. Anyone working in the area or interested in animal control should plan on attending.

Mark the dates in your diary now!

Research in review...

This section of NRM Notes is dedicated to the scientific papers that have recently been published and don't readily find their way out to on-ground managers and members of NRM agencies. Below is a summary of a recent journal publication regarding pest animal management and its coverage in the media.

*The potential for participatory landscape management to reduce the impact of the red fox (*Vulpes vulpes*) on lamb production.*

Lynette J. McLeod, Glen R. Saunders, Stephen R. McLeod, Michelle Dawson & Remy van de Ven

From: Wildlife Research 37 (2010) 695-701.

Journal homepage: <http://www.publish.csiro.au/nid/144.htm>

Journal Abstract:

Red fox (*Vulpes vulpes*) predation has an impact on populations of many species throughout its range worldwide, and as such, the red fox is the target of control programs. We investigated the potential for participatory landscape management to reduce the impact of fox predation on major prey species, lambs. The present study monitored fox-management programs already operating across 4.5 million hectares of regional New South Wales to compare the impact of varying (frequency and spatial coverage) control effort on lamb survival. The frequency and timing of fox control was correlated with lamb survival. Lamb survival was higher in areas where fox baiting was carried out twice a year, in autumn and late winter/spring. Spatial coverage of the control program was also positively correlated with lamb survival. These results support the development of a high level of group participation in fox-control programs that considers both special and frequency of baiting programs.

"Group action lifts lamb survival"

I&I NSW Media Release (16 Feb 2011): By Bernadette York

A new study has predicted that farmers who participate in co-ordinated fox baiting programs with their neighbours could increase lamb survival rates by up to 20 per cent.

Industry & Investment NSW (I&I NSW) researcher, Lynette McLeod, said the large-scale study in central western NSW took advantage of existing fox control programs to explore the benefits of group baiting using 1080.

"The participation of close neighbours, those up to 2.5 kilometres away, was shown to be a key factor in lamb survival", Ms McLeod said. "Lamb survival improved as more neighbouring properties joined the group baiting program. The timing and frequency of baiting were also important factors influencing lamb survival".

According to Ms McLeod, lamb survival was higher in areas where fox baiting was carried out twice a year, in autumn and late winter or early spring. "Targeted control activities, when fox populations are most vulnerable, can add value to current management programs," she said. "Baiting in late winter or early spring period interrupts the fox's breeding period while baiting in autumn catches young foxes as they move to new territories. Our results support a strategy of high-level group participation across local landscapes and highlight the importance of timing and frequency of baiting to maximise the effect".

Group baiting also has biodiversity benefits as effective fox management helps protect native wildlife from fox predation. The study, covering an area of more than 4.5 million hectares and 20 percent of the NSW sheep flock, used novel approaches to obtain reliable data. "An incentive scheme where all respondents were entered in a prize draw to win agricultural supplies delivered input from 1034 individual properties across the region, contributed to the statistical power of our results", Ms McLeod said.

The study was funded by Natural Heritage Trust's National Feral Animal Control Program.

Of floods & ferals

The land of droughts and flooding rains has again lived up to its name.

Across the continent, with the higher than usual rainfall comes the promise of a boom in productivity. Swollen rivers and lakes bring on an explosion of colour and life as wildflowers bloom, native grasses thrive, and wildlife multiplies. These species are those that have survived the wait. They have built up resilience to the cycles of 'boom and bust': they know how to live with very few resources and are able to seize the opportunity to breed when favourable conditions arrive.

But native species aren't the only ones that have adapted to respond and quickly take advantage of a change in conditions. Pest animals, particularly those that rely heavily on pasture such as feral pigs and rabbits, tend to do very well in the months and years following high rainfall events. For example, under good seasonal conditions in western NSW feral pigs have been shown to produce two litters per year with a high survivorship of up to 10 per litter (Choquenot *et al.*, 1996).

Steve Lapidge of the Invasive Animals CRC says wild pig populations, which exploded in western NSW after the Bourke floods in 2010, are now predicted to rise in Queensland. He says mice are also an emerging problem due to changing conditions, particularly for southern states.

A dramatic increase in rabbit numbers is also expected over coming months due to prolonged spring conditions being experienced in southern Australia. If left unchecked, rabbit populations could again reach plague proportions. But even at low densities, rabbits can severely inhibit seedling growth suggesting that for some at risk native tree and shrub seedlings, there may be no 'safe' level of rabbit density (Cooke *et al.*, 2010). To make matters worse, a growing resistance to rabbit haemorrhagic disease (RHD) and myxomatosis appears to be helping boost rabbit numbers.

Although the response can be delayed, fox, wild dog and feral cat numbers will also increase after flooding rains due to the increase of their prey populations, which can have devastating flow-on consequences for livestock production, native wildlife survival, and vulnerable ecosystems. Mouse plagues which devastate grain growing areas are similarly known to be linked to drought breaking rainfall events (Krebs *et al.*, 2003).

Reactive pest animal control in response to plague-like population increases after high rainfall is rarely effective, as it comes too late to prevent significant damage. Although it may be difficult to identify and control pests in some areas due to conflicting priorities, maintaining or in some instances stepping-up pest management activities now will help to prevent populations from increasing even further over the coming months. It is important that the methods used are suitable for the conditions and the target species, and comply with best-practice.

Land managers, landholders and communities need to discuss pest animal impacts and to organise long-term, strategic, control efforts where possible, to help reduce the costs and risks of long-term damage. The added benefits of collaborative efforts across the landscape are even more important under these conditions.

References:

- Choquenot, D., McIlroy, J., Korn, T. (1996) Managing vertebrate pests: feral pigs. Bureau of Rural Sciences, Canberra.
- Cooke, B., Jones, R., Gong, W. (2010) An economic decision model of wild rabbit *Oryctolagus cuniculus* control to conserve Australian native vegetation. *Wildlife Research* 37, 558-565.
- Krebs, C., Kenney, A., Singleton, G., Mutze, G., Pech, R., Brown, P., and Davis, S. (2004) Can outbreaks of house mice in south-eastern Australia be predicted by weather models? *Wildlife Research* 31 (5), 465-474.



Reader photo: Katie Birch

Above: A fox on a pile of debris in the flood-swollen Burnett River at Bundaberg North. (Photo: The Courier Mail)

Below: Feral pig. (Photo: Queensland Government)



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