

# Vertebrate Pest & Weeds – Winter 2011

## INTRODUCTION

Invasive animal and plant species pose a serious threat to the Australian landscape and incur significant costs to agricultural production. Together vertebrate pests and weeds cost Australia's economy more than \$5 billion every year and have unmeasured environmental and social costs. Prevention and management programs for invasive species in NSW are implemented through two specialised units within Industry & Investment NSW (NSW DPI), and supported by broader biosecurity initiatives. The Vertebrate Pest Research Unit (VPRU) and Weeds Research Unit (WRU) both have strong national and international reputations as leaders in invasive species management research and implementation.

## VPRU'S RESEARCH CAPABILITIES

- » No single research provider in Australia can presently match our expertise in vertebrate pest management.
- » The VPRU is a core partner of the Invasive Animals CRC.
- » Our research and extension has led to improvements to and adoption of best practice management approaches for rabbits, feral pigs, wild dogs, foxes and feral goats.
- » Events such as exotic disease campaigns involving wildlife; mouse plagues or conflicts between indigenous species and agricultural production gain rapid notoriety and the VPRU is often asked to respond at short notice.

## WRU'S RESEARCH CAPABILITIES

- » The WRU carries out world class research in the areas of weed science, crop, pasture and environmental weed ecology and integrated weed management by cultural, chemical, mechanical and biological means.
- » It has the tools to effectively reduce the impact that weeds have on our primary industries and ecosystems.

## CONTACT US

For more information on our full portfolio please contact Glen Saunders (02) 6391 3890 or [glen.saunders@industry.nsw.gov.au](mailto:glen.saunders@industry.nsw.gov.au)

## PROJECT UPDATES

### HERBICIDE TOLERANCE OF WINTER CROPS (2009-2012)

**INTRODUCTION** - This is an on-going project managed by NSW DPI that screens new crop varieties for tolerance to herbicides before they are released and tests new herbicides against currently recommended varieties. We aim to help growers improve herbicide use and thereby significantly increase their yields.

**FINDINGS** - Two phases of the project have been completed. Herbicide damage has been routinely evaluated, together with the traditional yield assessment. Stage three is still in progress and will provide updated information to growers in order to reduce crop damage by herbicides and to improve farm income.



Contact – Peter Lockley,  
(02) 6938 1861

Partner - Grains  
Research & Devt Corp

### WILD DOG MANAGEMENT (2006-2013)

**INTRODUCTION** – Wild dogs cause millions of dollars worth of losses to Australian sheep, cattle and goat producers every year. At the same time, the dingo portion of the wild dog population is considered native. Management of wild dogs, therefore, has to meet the twin objectives of control and conservation and this is best achieved through a co-operative approach between private and public land managers.

The VPRU has been undertaking Invasive Animals CRC-funded research to support co-management of wild dogs by affected communities in eastern NSW for some years. As part of the monitoring required to evaluate community wild dog management plans, GPS logging collars have been fitted to wild dogs in areas of control activity such as aerial and ground baiting.

**FINDINGS** – This project is continuing but interesting

movements of wild dogs in the eastern fall country of the Great Dividing Range have been observed. VPRU staff have overseen the sign-off of a regional wild dog and fox management plan on the NSW mid north coast and two local wild dog management plans in southern New England. Last year the VPRU also assisted the Animal Science department of University of New England in developing a course in Wild Dog Ecology, which has been offered for the first time in 2011. Several PhD students are associated with the project and have investigated the genetics of the wild dog populations, the potential role of wild dogs in the cattle disease Neosporosis and the effects of human-provided resources on dingo populations in Central Australia.



Contact – Dr Guy Ballard, Armidale (02) 6738 8511

Partners – Invasive Animals Cooperative Research Centre, Australian Wool Innovation, NSW Dept Environment, Climate Change & Water, LHPA State Management Council

### MANAGING WEEDS & HERBICIDE DAMAGE IN COTTON(2009–2012)

INTRODUCTION – Northern NSW cotton cropping systems have successfully adopted moisture conservation and zero-tillage practices. However, the Roundup Ready Flex cotton varieties do rely heavily on herbicides to minimise competition with weeds. Emerging glyphosate resistance, is a major issue with 5 resistant weed species now confirmed.

FINDINGS – A competition-based spraying threshold has been established to optimise the use of glyphosate in Roundup Ready Flex cotton varieties. Ongoing work is refining and improving the value and usability of the threshold. The impacts of a range of antagonistic herbicides are also being quantified to allow cotton growers to properly assess herbicide damage and make informed post-damage management decisions. This project contributes to the Cotton Catchment Communities CRC activities by ensuring the continued economic management of weeds.



Contact - Graham Charles, Narrabri (02) 6799 1524

Partners – Cotton Catchment Communities Cooperative Research Centre & Cotton Research & Development Corporation

### RABBIT PROOFING RHD BOOST (2010–2012)

INTRODUCTION – Rabbits cost Australian agriculture \$200 million every year and are by far the sector’s most costly pest animal. With the benefits of the Rabbit Haemorrhagic Disease virus (RHDV) beginning to wear off (it was introduced in 1995), we are working against the clock to identify new strains that will revitalise this important biological control. If successful, this project is estimated to have a benefit of \$1.4 billion over 15 years.

FINDINGS – Field variants of RHDV are being screened by partners to determine local and regional levels of immunity and genetic resistance. The VPRU is developing a monitoring and release strategy for the new RHD virus. A decision framework is also being developed for local and national use and release of any biological control agent.



Contact – Tarnya Cox, Orange (02) 6391 3952

Partners – Invasive Animals Cooperative Research Centre, CSIRO EMAI

### LIAISON WITH NATURAL RESOURCE MANAGERS (ONGOING)

INTRODUCTION – The Natural Resource Management (NRM) regions are at various stages of implementing their programs and several have sought technical assistance from the Invasive Animals CRC, VPRU and other State agencies on how best to manage vertebrate pests. Despite much useful research having been done, many of these contacts indicate that there is a ‘knowledge vacuum’ among end-users about invasive animals and their management.

FINDINGS – This project, through the NRM Liaison officer, provides specialist invasive animal advice to (NRM) agencies including; pest species impacts, improved capabilities for best-practice, regional management of invasive animal impacts, and monitoring natural resource responses to pest control.



Contact – Jessica Marsh, Orange (02) 6391 3907

Partners – NRM Regions, Invasive Animals Cooperative Research Centre, State agencies

## PIS&R PROJECT UPDATES