



Pest busters

Pest animals are a major problem in Australia. Their impact on agriculture, and what needs to be done about them, is being investigated by the House of Representatives Agriculture Committee. Mike Braysher looks at the nature of the problem and how some pest management projects are working.

Australia has the dubious honour of having one of the richest assemblages of introduced animals in the world. Between 1840 and 1860 alone, more than 60 different species were introduced to Australia. Most were brought in by acclimatization societies that worked enthusiastically to spread the world's "useful and bountiful species". They included monkeys, mongoose, antelope, llama, banteng cattle, ostrich, pheasants and mute swan. Fortunately, most introductions failed despite actions to protect them, such as killing native predators including birds of prey. Other animals such as foxes, rabbits, deer, water buffalo and starlings did well and are now some of our most serious pests. As well as deliberate introductions, some animals became established accidentally: being domestic stock such as pigs, camels and goats; as well as pets and ornamental species such as cats and goldfish that escaped and established wild (feral) populations.

What makes an animal a pest? The answer may seem obvious but the reality is far more complex. Take feral pigs in far north Australia as an example. They are variously viewed as a pest of agriculture and the environment, an animal of commercial value for recreational hunting and commercial harvest, and an important animal for ceremonial occasions. Their status can even change from season to season. Some Queensland banana growers have said to me that pigs are great at cleaning up fallen fruit when the case price is low, but they want to trap and sell them when the price of bananas is high.

Trout are another example. Studies have shown that they are voracious predators of native fish, but state fishery agencies still stock rivers and lakes with trout and protect them during their breeding season. They are a highly valued resource!

Pests may variously be destructive, noisy, a nuisance, out of place or simply not wanted. The more accurate answer to the question "What is a pest?" is that an animal is considered to be a pest because it is in conflict with human interests. A more precise definition is only those animals *that cause significant damage to a valued resource*. The pest status of an animal can change with time, between areas or according to the perception of the assessor. Under this definition, native animals such as kangaroos and possums can be a pest in some situations.

The success of pests in Australia is due to aspects of their biology, combined with habitat changes that provide them with good conditions, and a lack of diseases and few predators. Most pests can rapidly recover their numbers following drought or control operations. Under favourable conditions, feral pigs can nearly double their numbers within a year after a knockdown, while a pair of rabbits can produce 30 to 40 young a year. Clearing land to promote pasture and providing water has also contributed greatly to the success of pests such as goats, pigs and horses. Unlike many of our now rare native animals, most pests thrive in human disturbed areas.

Until recently, the attitude towards pests was to try and kill as many as we can. Each year hundreds of thousands of foxes, rabbits, kangaroos, goats, pigs, mice, cats and carp are trapped, poisoned, shot and otherwise destroyed because of the economic losses and environmental harm they are believed to cause. The hope has been that they can be all but eliminated by declaring them a pest and requiring land managers to continually suppress or eradicate them. However, we now know that it is unlikely and unrealistic that established pests will be eradicated, that is, every last animal removed. The possible exception is in some local situations and on offshore islands. It is sobering to remember that pests such as

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rabbits and foxes are descended from original releases of very few animals, probably less than 50!

Controlling the damage due to pest animals is much more complicated than simply reducing pest numbers. Before starting, it is important to understand the problem that pests are thought to be causing. The problem may be poor lambing percentage, fence damage, reduced crop yields, complaints from neighbours or emotional stress from worrying about the next pest attack. Strategies then need to be developed and implemented to achieve the desired result. Killing pests might be the best way, but changing the timing of lambing to coordinate with neighbours or planting a decoy crop to attract birds may be better and cheaper.

Pest management is just one element of a complex economic, environmental and social system within which farmers and other land managers operate. A whole-of-system approach is required. This was brought home to me when I was running a workshop on pest management in the south-west of NSW. While the attending pastoralists said that they wanted to manage the rabbits, pigs and foxes on their properties, they did not seem to be very enthusiastic about dealing with the problem. A group confirmed this at morning tea. As one of them said: "We would like to manage our pests, but it is difficult to find the time and money when we haven't turned a profit in the last three years. Any spare cash after servicing debt is spent on essential maintenance. On top of this our kids are studying in Mildura and do not

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want to take over the farm after we go. Also we have lost a lot of the heart of the local town through closure of banks and other centres."

In other words, pest animals are only one of a number of factors that determine the viability of a farming enterprise. Farmers need to determine where they best put their scarce resources to get the best return: choosing the best type and variety of crop; better water distribution; a new tractor; weed control; a more productive ram; a more focused marketing strategy; etc. The complexity of pest management has become even greater because of the need to consider



Above: Rangers Lisa Thomas and Rhett Robinson inspecting a newly discovered malleefowl nest. Below: Ranger Rhett Robinson, ecologist Mike Blake and Narelle Rodway from the Dubbo Rural Lands Protection Board with a map of the area baited to control foxes. Photos: AUSPIC



animal welfare concerns as well as the concerns and needs of neighbours.

Many groups and individuals have an interest in pest management. They include farmers, nature reserve managers, banks, government agencies, animal welfare and nature conservation groups. Failure to adequately consult and take into account the views of the major players when planning and conducting pest management can undermine its success. Relevant stakeholders need to be identified early and be actively involved in the planning and implementation of the program. Without an inclusive, cooperative approach, there is

unlikely to be ownership of the problem and the solution, and hence effective management of the damage due to pest animals is unlikely.

What should we do? There are a range of techniques and strategies that have been shown to be effective in controlling the damage due to pests. Further research might increase the efficiency of the techniques, but current methods are unlikely to be replaced by high-tech, "magic bullets", at least not in the short term. Effective control of pest animal damage is possible provided the available techniques are applied strategically, taking into account the range



Farmers sign up for the Goonoo fox control program. Photo: Dubbo Rural Lands Protection Board

of other factors that influence the agricultural or natural resource that is of concern. Also local constraints such as potential non-target wildlife, or limitations due to harvesting requirements and other farming operations, need to be considered.

To be effective, almost invariably pest animal management needs to be applied across a broad area with appropriate long-term follow up to reduce the impact of reinvasion or resurgence of the pest population. Consequently, pest management needs to be coordinated across a range of land tenures such as agricultural land, national parks, and land managed by other agencies such as the Department of Defence. The experience and attitudes of all those concerned need to be considered and valued, not just those of the so-called 'experts'.

The primary role of national, state and territory agencies is to provide the policies and framework to enable the effective and efficient management of pest animals and, of course, to manage pests on the land for which they are responsible. Rarely can Commonwealth and states/territories direct pest management from their capital centres. Pest animal plans need to be locally developed and owned and implemented by those who have the greatest stake in the results and whose time and resources will mostly be required.

This integrated and strategic approach to pest control is delivering excellent results. Good working examples of the strategic, coordinated approach include the Goonoo Fox Control Program near Dubbo (NSW) and the West Coast Integrated Pest Management Program in the far west of South Australia.

The Goonoo Project in NSW is a community driven collaborative fox control program that is centred on the Goonoo State Forest and surrounding properties within a 20 kilometre radius. The total baited area is 1,700 square kilometres. It has the dual aims of managing the damage by foxes to lamb production and protecting the endangered malleefowl. It is coordinated through a committee that includes farmers, Dubbo and Coonabarabran Rural Lands Protection Boards, NSW State Forests and National Parks and Wildlife Service NSW. The program commenced in March 2003 and the participation rate has grown rapidly with 120 farmers now involved in fox baiting around Goonoo Forest. To date there has been a greater than 90% reduction in fox density across the baited area. Ongoing monitoring is assessing the reduction in lamb losses and the recovery of malleefowl.

The West Coast Integrated Pest Management Program in South Australia is a similar but larger program that commenced in 2000 and covers an area of 1.5 million hectares around Venus Bay Conservation Park. There are

now over 400 farmers and other land managers involved. This makes it one of the largest coordinated pest management programs in Australia. Farmers are happy with reported increases in lambing percentages of between 5% and 15%, despite the poor seasons. On the conservation side, brush-tailed bettongs and greater bilbies continue to flourish with the Conservation Park.

What about the future? Agricultural practices are continually evolving with new crops and changed practices such as rotational cropping. As a result, animals that were once thought not to cause significant damage suddenly have taken advantage of the new conditions. The huge increase in wine grape production, which provides a ready resource to starlings and other birds, is an example. There is also the threat of new and emerging pests from new introductions and escapes. The weather loach, a popular aquarium fish, is an example. It is rapidly

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establishing throughout the Murray Darling Basin although we do not yet know what damage it might cause.

Pest management must become smarter and adapt to the ever-changing needs of land managers and the desires of the community. It should be based on the best available information and procedures that are humane, cost-effective and integrated into a whole-of-system approach to sustainable land management. The longer term aim is for land managers to have the commitment, knowledge, skills and methods to adapt their pest management to the changing economic, environmental and social conditions in which they operate. ■

Mike Braysher is Professor of Natural Resource Management, Applied Ecology Research Group, University of Canberra, ACT.

For further information on this topic see: Olsen, P. (1998) Australia's pest animals – new solutions to an old problem, Bureau of Resource Sciences and Kangaroo Press, Canberra.

For more information on the House of Representatives Agriculture Committee's inquiry into the impact of pest animals on agriculture visit www.aph.gov.au/house/committee/primind or email primary.industries.reps@aph.gov.au or phone (02) 6277 4500.