

Invasive animal management in settled areas



The fragmentation of agricultural lands and natural vegetation, and high population density in settled areas create special problems in invasive animal management.

As population density increases, health and safety requirements constrain invasive animal management activities that were once routine in areas used for agriculture. Human populations on the rural fringe are now made up of people from a wide variety of backgrounds.

These people differ in their knowledge of animal ecology and opinions on how and when to deal with invasive animals. Many new residents in rural fringe areas are unfamiliar with vertebrate management techniques. Inevitably, this can lead to frustration, disagreement and sometimes conflict.

However, invasive animals can be managed in settled areas using improved knowledge of animal ecology and a cooperative community approach to invasive animal management.

Management of animal problems should be based on reduction of impacts. Integrated invasive animal management is the best way to achieve impact reduction—there will be no single method that achieves impact reduction or control for all species in all situations.



Legal requirements

Foxes, rabbits, feral cats, wild dogs, feral deer and feral pigs are restricted invasive animals under the *Biosecurity Act 2014*. They must not be kept (fox, dingo and rabbit only), given away, sold, or released into the environment. The Act requires everyone to take all reasonable and practical measures to minimise the biosecurity risks associated with invasive animals. This is called a general biosecurity obligation (GBO).

What is an invasive animal?

Invasive species associated with settled environments are mainly species that have strong associations with humans. Many have historically been bred and kept as livestock—for food, as working animals or for companionship. Other animals have been bred for sport or had their wild populations managed for this purpose. Some invasive animals fit several of these categories. Rabbits (*Oryctolagus cuniculus*), for example, have been hunted in the wild for sport, raised for food and fur, and kept as pets.

An invasive animal is one that is known in some circumstances to cause one or more of the following outcomes:

- it has a negative impact on primary or other production
- it has a negative impact on human health or safety
- it directly reduces the sustainability of native flora or fauna populations or the resources upon which these depend
- it creates a nuisance that reduces the quality of life for a community.

The settled landscape

A cooperative approach to invasive animal management is always desirable, but in settled areas this is essential if meaningful results are to be achieved. This point is illustrated in Figure 1. In sparsely settled areas, a invasive animal population may affect relatively few landholders. Since these will usually be producing similar crops or livestock, cooperation is mutually beneficial and easy to achieve. The same number of invasive animals in a more densely settled area, with small property sizes, will often affect a large number of properties and people.

On the urban–rural fringe, some larger properties may also be affected, and local authorities or state agencies may manage some of these properties. Participation of all parties is vital. Under these circumstances, effective planning is needed to implement the best combination of control measures at the required scale.

Impacts

Invasive animals have significant social, economic and environmental impacts. These will vary in type and extent with species and land use.



Impacts on settled areas can be divided into the following four broad categories.

Figure 1. Impact of invasive animals on landholders in urban and rural areas



Impact Of Pests On Landholders In Urban And Rural Areas

LEGEND

-  Fox territory
-  Property boundary

NOTES

Fox home ranges vary in size according to the availability of food. Home ranges in closely settled areas are generally smaller. The striped boxes represent typical urban fox territories of 30 Ha.

The map demonstrates that control of pest animals such as foxes requires the involvement of far more land owners / occupiers in urban - as opposed to rural - areas. A single land owner or occupier may have difficulty meeting legal obligations for control of "declared" animals.

Disease and parasites

Some invasive animals carry diseases and parasites of humans, wildlife, livestock and pets. In more heavily settled areas, contact between wild animals, livestock and people may be closer and more frequent than in less-settled areas.

Livestock predation and crop damage

There are significant areas of cropping on the urban–rural fringe and some invasive animals may affect production on some properties. For example, pigs are a serious problem for some market garden growers, and deer and hares can cause damage to horticultural and viticulture crops and to trees in revegetation or aesthetic plantings.

Pets on the urban–rural fringe are frequently injured or killed by feral predators, particularly wild dogs. In rural–residential areas, attacks on pets are frequent as residents often incorrectly assume that living on acreage entitles them to allow pets to wander unrestrained. Pets that are allowed to wander may also be injured or poisoned during animal control programs.

Environmental impacts

Feeding and other behaviours of invasive animals can cause changes to vegetation and the structure and integrity of the environment. These changes may be localised or may affect the landscape on a broad scale.

Social impacts

Urban invasive animals have a number of direct and indirect impacts on the people who live near or interact with them.

Humans and invasive animals

Invasive animal problems in settled areas are, more often than not, problems of human origin. If we have a poor understanding of animal behaviour and ecology, we may do things that encourage problems with animals or exacerbate existing problems. Feeding wild dogs, for example, shows that good intentions and poor knowledge of animal ecology can create serious problems. We may also take inappropriate action in response to an animal problem.

Poor knowledge of animal behaviour may lead us to blame animals for problems they have not caused. Cats may not always be the cause of bird declines in an area. The real cause may be loss of habitat. Poor knowledge of animal ecology can also lead us to design ineffective or counterproductive animal control programs. For example, under some circumstances, control of wild dogs or foxes can actually increase damage done to livestock. Control of one predator may result in an increase in problems with another.

Our knowledge of exotic animal ecology remains incomplete—particularly of invasive animals in settled areas. In addition, there is often little information to indicate what attitudes communities have to problem animals. Judgements about other people's attitudes are often coloured by our own opinions. We may assume that because we believe an animal is bothersome or dangerous, most other people will also believe this.



In situations where there is conflict over how to deal with an animal problem, it is often possible to solve the problem in a way that satisfies all interests—such solutions are arrived at through discussion and problem-solving.

Control

Any integrated invasive animal management scheme needs to be based on good information and a complete understanding of the problem.

All animal control should be directed at minimising impact, not at killing the greatest possible number of invasive animals. Good impact reduction can often be achieved without killing many animals. Prevention should always be the first response to a problem. Prevention is often more effective and easier to practise in a settled landscape than other control techniques. To reduce impact, it may also be necessary to prioritise and direct control efforts where they have the greatest sustained reduction of impact.

The least expensive methods of controlling invasive animals are very often unavailable in settled areas or cannot be deployed at a scale that gives the appropriate level of control. The methods that are most often available for use in settled areas are labour-intensive and therefore expensive.

All control methods are subject to some form of regulation. Legislation and associated regulations are designed to ensure that invasive animal control is humane, does not pose a serious risk to human safety or the welfare of non-target animals, and does not cause environmental damage.

There is a large range of methods that can be used to reduce impacts; however, they may not all be as effective or applicable in all cases. Two groups, lethal and non-lethal, are useful approaches for the control of invasive animal damage in settled areas. It is important that the full range of control options available is reviewed for each situation, and that more than one may need to be used for effective impact reduction.



Some specific examples of control options are given below; however, there are numerous others and many new, novel control approaches are being trialled.

Non-lethal

Exclusion—Penning or shedding domestic animals may protect them from the invasion of invasive animals, and tree guards placed around plants may decrease grazing.

Biological control—This is effective in reducing large numbers, but will not solve individual problems alone.

Habitat manipulation—Removing food and water sources, breeding sites or excluding them may reduce invasive animal population growth or tendency to occupy an area.

Practices such as changes in land use or management.

Lethal

Poisoning or shooting—Fluoroacetic acid, strychnine, PAPP, pindone or shooting may be used to control invasive animals. However, closely settled areas do restrict the use of these control options.

Trapping—Using snares, nets or cage traps may allow individual invasive animals to be caught and relocated or disposed of humanely.

Biological control—This is effective in reducing large numbers, but will not solve individual problems alone.

More information

For more information contact your local government or visit biosecurity.qld.gov.au.

This fact sheet is developed with funding support from the Land Protection Fund.

Fact sheets are available from biosecurity.qld.gov.au. The control methods recommended should be used in accordance with the restrictions (federal and state legislation, and local government laws) directly or indirectly related to each control method. These restrictions may prevent the use of one or more of the methods referred to, depending on individual circumstances. While every care is taken to ensure the accuracy of this information, the department does not invite reliance upon it, nor accept responsibility for any loss or damage caused by actions based on it.

