



# 6 Introduced Pest Animal Species

## 6.1 Overview

With the arrival of Europeans around 200 years ago, came numerous alien species that disturbed the Australian continent's vast range of natural environments. Most of these foreign invaders were brought to use for food and working the land but some were stowaways, hitching on the ships, humans and livestock. Not all the species that came were successful with many being outcompeted by the native flora/fauna. Some of the species that survived have flourished and populations have grown out of control, causing massive ecological disruption, with Australia having the largest array of species and the largest populations of invasive animals in the world.

### 6.1.1 Introduced species management

Introduced species can be placed into three categories:

- **Invasive** – This organism increases its distribution over large areas
- **Feral** – Animals that were intended for domestic/recreational purposes that have escaped and live completely wild.
- **Pests** – Animals that affect communities' welfare or wellbeing

As a Berry Landholder, you have the important responsibility to implement pest management on your property, regardless of size, to ensure the longevity of threatened species whilst also protecting livestock from disease. Pest management is more effective if a landscape wide program is implemented, therefore, it is strongly encouraged that all rural property owners within the Berry area participate.

**Section 6.2** provides information on Pest Animals in the Berry area and their control.

### 6.1.2 Pest management resources

There are numerous online resources that can assist you including:

- **DPI** (Department of Primary Industries) has information on [pest animals in NSW](#).
- **Local Land Services** provides [Vertebrate Pesticide Induction Training](#). To acquire and use 1080, Pindone, RHDV, or PAPP baits in NSW, you must be accredited (or under the direct supervision of an accredited person) with an AQF3 Chemical Accreditation or [Vertebrate Pesticide Induction Training \(VPIT\) course](#) accreditation. Historically, this has been done with face-to-face training, but landholders can also choose to undertake this training online.
- **South East Local Land Services** runs the Feral Fighters Program, to strategically target pest animals at a regional and state scale through strategic, coordinated group baiting control programs. Any land manager can become a Feral Fighter. Go to <https://www.lis.nsw.gov.au/regions/south-east/key-projects/feral-fighters>. Contact your Local Land Services Office 1300 795 299
- **Feral Scan** is an online data base <https://www.feralscan.org.au/>. Here you can register sightings of feral animals on your property, assisting with coordinating control methods with neighbours.

This is available as an app - **FeralScan Pest Mapping**.





### 6.1.3 Shoalhaven Fox Control Project

Information on foxes and why they are a major threat to native fauna and agricultural assets, such as new born lambs and calves is found in Section 6.2.1.

#### How the program operates

Working closely with South East Local Land Services as a major stakeholder in the program, the Shoalhaven Landcare Fox Control Program (Shoalhaven Fox Control (SFC)) engages trained landholders and volunteers to undertake a variety of fox control methods including: camera monitoring and data collection, trapping, baiting, and shooting of foxes across the Shoalhaven LGA.

The program operates completely free of charge. Social gatherings and workshop days are often held with the program's 85 Volunteers and 80 landholders. Since the program began 4 years ago, it is estimated that 2400 foxes have been removed from our local environment.

#### How can landowners become involved?

As conservation is a group effort, SFC encourage landholders to participate in the program where possible, and training is provided by both South East Local Land Services and SFC Program Coordinators.

By managing foxes on your landholding, you are making a significant change in the environmental balance, and in most cases where the program operates, SFC have noted livestock survival rates increase, and a resurgence in native fauna such as bandicoots, wallabies, bird species, turtles, frogs and reptiles.

#### Where to find more info and who to contact

The Shoalhaven Fox Control Program encourages all enquiries regarding fox management, no matter how insignificant it may seem. For more information please visit [www.shoalhavenlandcare.org.au/fox-control](http://www.shoalhavenlandcare.org.au/fox-control) or please contact the program coordinator.

Ryan Wall Ph:0414547839 Email: [slafoxcontrol@gmail.com](mailto:slafoxcontrol@gmail.com).

### 6.1.4 Pest animal legislation

The management of domestic and introduced pest animals is the responsibility of the landholder. In NSW, weed management is under the *Biosecurity Act 2015*

Legislation and other information regarding biosecurity can be found at: <https://www.dpi.nsw.gov.au/biosecurity/managing-biosecurity>.



## 6.2 Introduction to Pests Animals of the Berry Bush Corridor

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Domestic and feral animals are a major problem Australia wide. The impact of foxes, dogs and cats in particular on native fauna is likely to be significant, although no specific figures are available on the abundance or distribution of these pests in the Berry area.

Predator species such as foxes and cats decimate native populations of mammals, reptiles and birds while herbivorous species such as rabbits consume vegetation at a faster rate than it can recover or simply outcompete native rivals. This then leads to larger physical changes such as erosion and soil degradation. Not only do these species effect wild animals but harass and kill livestock threatening agricultural practices.

The Berry Bush corridors primary pest species include:

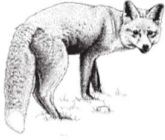
- Foxes
- Feral Cats
- Rabbits
- Wild Deer
- Feral Pigs
- Indian Myna Birds
- Feral dogs
- Feral Goats

See Sections 6.2.1 to 6.2.8 for information on these species.



## 6.2.1 Foxes

### Information



The red fox is a small to medium sized, burnished rusty red coloured canid. Closely related to domestic dogs, the adult European red fox (*Vulpes vulpes*) weighs about 5 to 9 kg with males generally heavier than females. Foxes were introduced into Victoria in the late 1860s and was first recorded in Western Australia (W.A.) in 1912.

### Distribution

The red fox is favoured by the fragmented landscapes common in all districts that provide shelter, food and den sites. Densities vary from around 1/km<sup>2</sup> in the coastal forests, 2 to 5/km<sup>2</sup> in the semi-arid and sub-alpine regions and 6 to 8/km<sup>2</sup> in the temperate grazing lands that cover most of NSW. Populations of the red fox are well established in peri-urban and urban areas where food is abundant, and densities may range from 12/km<sup>2</sup>.

### Impacts

They have a significant impact on grazing industries (spreading the abortion-causing Neospora disease in cattle, attacking newborn calves and mothers during childbirth and killing new born and young lambs and kids), on domestic livestock (in particular poultry), on endangered native animal species (five species are currently actively protected by fox baiting programs in the Shoalhaven) and on the general abundance and distribution of many small and medium sized ground dwelling native species. Foxes are believed to assist in spreading the mange disease among wombats. Additionally, foxes also have the ability to spread invasive weeds, carrying seeds in their fur.

### Control methods

Reducing the impact of the red fox relies on a mixture of control techniques comprising of poison baiting (certified personal only), shooting (licence needed), trapping (case traps, leg hold traps), fencing and guard animals. Targeting trophic cascade species such as rabbits and cats in conjunction should also be employed as an additional control method to maintain species dynamics. All these techniques have a short-term effect on local fox numbers. No single control method will be successful on its own and when foxes are removed from an area, reinvasion or immigration from existing untreated areas generally occurs within 2 to 6 weeks. The most efficient way to reduce the impact of foxes is to conduct a strategic coordinated program over several land holdings.

#### Source

<http://www.environment.gov.au/biodiversity/invasive-species/publications/factsheet-european-red-fox-vulpes-vulpes>



## 6.2.2 Feral Cats

### Information



Feral cats are predominantly solitary and nocturnal, spending most of the day in the safety of a shelter such as a rabbit burrow, log or rock pile. They are carnivores, generally eating small mammals, birds, reptiles, amphibians, fish and insects depending on their availability.

### Distribution

They are found all over Australia in all habitats, including forests, woodlands, grasslands, wetlands and arid areas. Feral cats are found in all habitats except the wettest rainforests on the mainland and some offshore islands. Dingos and foxes may restrict feral cat numbers by both direct predation and competition. Feral cats also fall prey to wedge-tailed eagles.

### Impacts

Cats are highly efficient and successful killers preying mainly on small vertebrates. They are identified as a threat to 35 species of birds, 36 mammals, 7 reptiles and 3 amphibians. Feral cats can carry infectious diseases which can be transmitted to native animals, domestic livestock and humans.

### Control methods

Control of feral cats is challenging as they are found in very low densities over large home ranges and are shy, making them difficult to locate. The current control methods of shooting and trapping feral cats are quite difficult, expensive and time consuming and require skilled staff. The most effective form of feral cat control over large areas is poison baiting.

### Source

<http://www.environment.gov.au/biodiversity/invasive-species/feral-animals-australia/feral-cats>



## 6.2.3 Rabbits

### Information



The European rabbit, *Oryctolagus cuniculus*, is native to north-western Africa, Spain and Portugal. The first genetically wild rabbits were imported into Victoria in 1859. This small population of 24 individuals grew to over 20,000 within 6 years. Rabbits quickly spread across Victoria and the rest of the continent. Within 70 years rabbits inhabited two thirds of the continent.

### Distribution

Rabbits prefer short grassy areas either found naturally, as in semi-arid areas, or resulting from heavily grazed pastures. They are common throughout suburban areas, foreshore reserves, rural lands, road reserves and neglected farmland.

### Impacts

The rabbit is classified as a major agricultural and environmental pest. Competes with livestock and native herbivores for food. Highly selective grazers that concentrate on the most nutritious plants and eat them below ground level. Can lead to change in species composition, disruption to regeneration and soil erosion. Can be a problem where farmers are trying to regenerate native vegetation or undertaking tree planting programs because it eats young tree seedlings and can also disrupt regeneration after fire.

### Control methods

Shooting is the most common method controlling rabbit populations and is effective for keeping moderate to low populations of rabbits down whilst supplying a source of meat. This is harder over a large scale but would be useful throughout the berry corridor. Destroying warrens is another effective method to reduce rabbit numbers especially on farmland where location of warrens is easier than in bushland. This is done by ploughing, blasting or fumigating the warrens. Ploughing is especially effective in the coastal berry area as the sandy soils are easy to dig. Poisoning is also a common method used as it requires the least effort, but baits could affect non-target species.

### Source

<http://www.environment.gov.au/biodiversity/invasive-species/publications/factsheet-european-wild-rabbit-oryctolagus-cuniculus>



## 6.2.4 Wild Deer

### Information



Deer were introduced to Australia in the 19th century, and today 6 species have been established in the wild. Australians have considered deer a pest and an important economic and hunting resource since their early introduction. Their preferred food is grass but they also eat the leaves of shrubs, trees and herbs, bark and some fruit.

### Distribution

Deer live predominantly in grassy forests. The habitats they occupy in Australia include rainforests, eucalypt forests and farmlands.

### Impacts

Wild deer can have a range of environmental impacts, including browsing and grazing that affects plant seedling recruitment and growth; damage to vegetation through trampling and antler rubbing; impacts on water quality through wallowing and faecal contamination; and transporting weed seeds.

Wild deer have a range of economic impacts, including competition with livestock for grazing resources and difficulty in 'resting' pasture in rotational systems; crop damage; damage to young trees in commercial forests through antler rubbing; and potential spread of disease.

### Control methods

Control measures for deer have not been extensively investigated as priority has been given to other pest species in Australia. A common control measure is shooting. This may be necessary if herds cannot be easily trapped and transported to a secure, enclosed area or when shooting of a small, isolated population will prevent that population growing in size or distribution. Shooting is carried out by recreational hunters and sometimes by professional marksmen. Where deer populations are well established, containment within defined boundaries may be the most efficient control approach.

### Source

<http://www.environment.gov.au/biodiversity/invasive-species/publications/factsheet-feral-deer>



## 6.2.5 Feral Pigs

### Information



The feral pig in Australia is a descendant of various breeds of *Sus scrofa*, the domestic pig. Pigs were kept by settlements unrestrained and in semi-feral conditions. Stock could readily escape and wander, and by the 1880s pigs had run wild in NSW.

### Distribution

In NSW, feral pig populations are found primarily in western areas, their distribution closely related to the location of inland watercourses and flood plains. Feral pigs need to live in moist areas that can provide adequate food and water and enough shelter. Increasingly, feral pigs have been spreading from exclusively inland areas to coastal regions such as berry.

### Impacts

Feral pigs' prey on newborn lambs. They also reduce yields in grain, sugarcane, fruit and vegetable crops through consuming or trampling plants. Fences and water sources can be damaged, and dams and waterholes fouled through wallowing and defecation. Feral pigs also compete with livestock for pasture and damage pasture through up-rooting vegetation. Feral pigs also eat a range of live native animals including, earthworms, beetles, centipedes, amphipods, snails, frogs, lizards, snakes, turtles and their eggs.

### Control methods

There are a range of methods used to control impacts of feral pigs such as fencing, it is sometimes used to protect valuable enterprises in small areas. Poison baiting with 1080 can be an effective initial control of pig numbers if undertaken in a methodical manner. It is particularly effective if green feed and other food sources are scarce. Shooting feral pigs from the ground is a method normally used opportunistically to follow up and maintain numbers after an initial knockdown program has occurred. Often ground shooting is conducted using dogs to locate feral pigs. This can be effective as long as both the dogs and the pigs are treated in a humane fashion. Trapping of feral pigs is an effective technique to use as a follow-up after an initial knockdown of a population and as a maintenance technique to prevent numbers from quickly building back up.

### Source

<http://www.environment.gov.au/biodiversity/invasive-species/feral-animals-australia/feral-pigs>





## 6.2.6 Myna Birds

### Information



The myna (also known as Indian, Calcutta or house myna) is a medium-sized (25–26 centimetres head to tail) but heavily built bird with mainly brown plumage. It has a dark brown to black head with a bright yellow patch behind the eye, and a yellow bill, legs and feet. Large communal roosts of up to 5000 can occur, but smaller roosts of 40–80 are more typical in Australia.

### Distribution

The common myna is a common inhabitant of urban areas, savannah, cleared agricultural lands, cultivated paddocks, plantations and roadside vegetation. Mynas are closely associated with human development, especially following initial introductions. They are non-migratory birds, so they tend to stay put for longer periods of time.

### Impacts

Mynas can cause considerable damage to ripening fruit, particularly grapes, but also figs, apples, pears, strawberries, blueberries, guava, mangoes and breadfruit. Cereal crops such as maize, wheat and rice are susceptible where they occur near urban areas. Roosting and nesting commensal with humans create aesthetic and health concerns. Mynas are known to carry avian malaria and exotic parasites such as the *Ornithonyssus bursia* mite which can cause dermatitis in humans. The myna can help spread agricultural weeds. Mynas are regularly observed to usurp nests and hollows, kill the young and destroy the eggs of native bird species including seabirds, parrots and kill small mammal.

### Control methods

Trapping is the most effective way of reducing numbers of mynas but has not been found to eradicate populations entirely. Because of this the best practice is to limit the damage that mynas can do to your property or locality. This can be done in several ways; Planting open canopy species to reduce communal roosting options, Feed pets indoors or after dark, seal off potential entry points to your roof to reduce nesting options, Remove access to any food source.

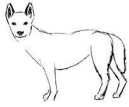
### More Information

<https://www.dpi.nsw.gov.au/biosecurity/vertebrate-pests/pest-animals-in-nsw/pest-birds/myna-birds>



## 6.2.7 Feral Dogs

### Information



Feral dogs are defined as: 'any dog, including a dingo, that is, or has become wild'. Wild dogs are predominately golden or yellow but can also be white, black, black and tan, brown, brindle, patchy and any combination of these. Weights of adult wild dogs generally range from 11 to 25kg for males and 7 to 22kg for females.

### Distribution

Feral Dogs are found throughout the eastern ranges, but the coastal hinterland and tablelands have the highest populations. Increasingly, wild dogs are found close to towns where they intermingle with local dogs and can become mis-identified as 'strays'. The wild dog is highly adaptable and may live successfully in arid to rainforest environments, providing there is an adequate supply of food, water and shelter.

### Impacts

Wild dogs may significantly affect domestic livestock industries such as sheep, cattle, goats and poultry, through predation and disease. The sheep industry is the most significantly impacted but attacks on calves and larger cattle are quite common. Predation may occur in all months of the year and patterns vary slightly among areas but commonly peaks in March to June on the tablelands and inland, and in October to November on the coast. The impacts of wild dogs on native species varies between areas. Predation by wild dogs can have negative impacts on some threatened species.

### Control methods

Wild dogs may have large home ranges that include a number of land holdings. Therefore, it is important for land managers to approach wild dog problems as a group. The aim of wild dog control should be to minimise the likelihood of wild dogs interacting with domestic livestock. No single control technique will solve a persistent wild dog predation problem. A combination of methods, such as ground or aerial baiting, trapping, shooting and fencing should be applied if the impacts of those pest animals are to be successfully managed.

### Source

<https://www.dpi.nsw.gov.au/biosecurity/vertebrate-pests/pest-animals-in-nsw/wild-dogs/wild-dog-biology>



## 6.2.8 Feral Goats

### Information



Goats arrived in Australia with the First Fleet in 1788. As they were small and hardy, ate a range of plants and provided milk and meat, they were convenient livestock for early European settlers. Feral goats have a varied diet — leaves, twigs, bark, flowers, fruit and roots. They will eat most plant types in pastoral regions and often consume vegetation that is avoided by sheep or cattle.

### Distribution

They are most common in the rocky or hilly semi-arid areas but are often found in sheep-grazing areas, where dingos and wild dogs have been removed or heavily controlled by pastoralists. They are found in many other areas including arid and semi-arid rangelands, as well as higher rainfall and agricultural areas of eastern NSW. They have benefited from sheep grazing practices and the provision of artificial water points throughout the dryer regions of NSW.

### Impacts

Feral goats have a major effect on native vegetation through soil damage and overgrazing of native herbs, grasses, shrubs and trees. This grazing can cause erosion and prevent regeneration. They foul waterholes and can introduce weeds through seeds carried in their dung. Particularly during droughts, feral goats can compete with native animals and domestic stock for food, water and shelter.

### Control methods

Feral goat populations tend to recover well from culling and, except on islands, eradication is usually not possible. To protect the environment, control is best focused on areas that contain threatened native plants, animals and ecological communities.

When looking for food, feral goats centre their movements around the availability of permanent water. In times of drought, they need to drink more and stay closer to water. This makes the water source an ideal place to trap feral goats by surrounding it with goat-proof fencing and using one-way gates that allow the goats into the trap to drink but does not allow their movement out again.

### Source

<http://www.environment.gov.au/biodiversity/invasive-species/publications/factsheet-feral-goat-capra-hircus>