



**The fox (*Vulpes vulpes*) is one of the most successful predators in the world. Their diet consists of one third wildlife, one third pest animals like mice and rabbits and one third livestock.**

This fact sheet is designed to assist people with identifying the problems they might encounter with foxes, and to provide options for fox management and control.

Foxes were first introduced to Australia in the 1870s. They have spread to become one of our major vertebrate pests and are a major threat to our livestock and small native mammals, birds and reptiles in townships, agricultural and pastoral areas.

### Life cycle

Foxes breed once a year, during spring. Generally they use a hole burrowed below ground (known as an 'earth' or 'den') in which to give birth, but they have also been known to use cavities under buildings.

On average a fox will produce three to six cubs at a time, but only a few reach maturity. Cubs generally appear in late spring and, once independent, disperse to find their own territory the following autumn.

The life span of a fox in the wild can be up to eight years, but in urban fringe areas the average is

around 18 to 24 months with road kills being a major cause of death. When a fox dies, another may move into its territory.

### Fox problems

The impacts of foxes should not be taken lightly. It has been estimated that foxes cost more than \$200 million in terms of loss of production to the agricultural industry, ongoing costs of control, and loss in biodiversity. See Table 1 for more detail.

Table 1: Cost of foxes

Cost component	Control (\$)	Loss (\$)
Sheep production loss	-	17.5 million
Environmental impact cost	-	190 million
Management cost	16 million	-
Research cost	4 million	-
<b>Total cost</b>	<b>20 million</b>	<b>207.5 million</b>

Source: Pest Animal Control CRC 2004

The magnitude of this impact is due to the fact that foxes are omnivorous as well as being highly opportunistic feeders. They will eat almost anything, including lambs, goat kids, poultry, native birds, fish, turtles, crayfish, molluscs, earthworms, frogs, turtles, voles, bilbies, reptiles, rodents, berries, seeds, fruit and eggs.

They have an acute sense of hearing and are able to hear their prey moving through grass and pounce.





**The fox is a declared animal under the Natural Resources Management Act 2004 and therefore it is the responsibility of property owners to control them.**



They also store food in numerous small caches, to be eaten when food becomes scarce during leaner months.

Foxes are very territorial and will travel widely within their area in search of food, often disappearing from one part of their territory for a number of days or weeks, only to reappear when food in that area is more readily available. They generally forage for food at night and hide during the day in drain pipes, under piles of timber, in hollow logs or within dense vegetation.

Other problems that may be encountered if foxes are present within your local area include:

**Human interaction**

There have been no substantiated cases of foxes attacking people, however, foxes have been known to bite in self-defence if cornered or caught. Never feed foxes, as this will encourage them to associate humans with food.

**Diseases**

Foxes can carry hydatids (tapeworm) which can infect humans. Precautions similar to those used to guard against infection from domestic dogs should be used.

Foxes also carry mange and other canine diseases that can be transmitted to dogs if they come into contact with an infected fox.

**Preying on domestic livestock and pets**

Given the opportunity, foxes will attack and kill pet rabbits, guinea pigs, poultry and aviary birds. They will also attack lambs, chickens and kid goats. These attacks can be devastating as foxes will often kill more animals than they require for their immediate food needs.

Foxes rarely bother cats or dogs and generally only fight if they are cornered and cannot escape.

**Preying on native animals**

A wide range of small native mammals, birds and reptiles are highly susceptible to fox attack; in some cases fox predation is resulting in the extinction of several species. Hand-feeding native animals, such as possums and birds, puts these animals at risk as they become conditioned to be less wary and are therefore more susceptible to fox attack.

**Fox management and control options**

The fox is a declared animal under the Natural Resources Management Act 2004 and therefore it is the responsibility of property owners to control them. It is also illegal to keep foxes as pets.

Consider a control program that tackles all your pest animal issues as any reduction in one species may lead to an increased population of another.

Pest animal control is also a part of controlling your weeds as these species often create the opportunity for weed establishment or act as a vector for the weeds.

The best approach to managing fox problems is to eliminate or prevent access to things that attract foxes to the area, such as easy sources of food and secure daytime shelter. These measures can be of lasting benefit in reducing fox numbers in the area, especially if they are undertaken in conjunction with neighbouring properties.

Even when a fox is destroyed, another will move into its territory within a relatively short period of time. Consequently, control work needs to be widespread, timely and continuous, particularly if protecting livestock or native species during their vulnerable periods, such as just after their birth. Coordinated control work carried out in conjunction with neighbouring properties can help to provide wider coverage of control.

Timing of control is also an important consideration as foxes are at their most vulnerable during the spring breeding season.

When considering control options, it is advisable to integrate techniques by using as many of the following different methods as possible to maximise the individual benefits of each. For a lasting solution, the aim is to make their territory undesirable from a fox's perspective.

**Fencing and Barriers**

Fox-proof fences and barriers, such as weld-mesh wire, can be used to prevent foxes gaining access to food sources or shelter.

All gaps and openings under or near buildings and sheds which are greater than 10 cm<sup>2</sup> should be blocked to prevent access.

Foxes are accomplished climbers and diggers so fences need to be dug at least 30 cm into the ground with an outward angle. They also need to be at least 2 m high and constructed with an outward floppy overhang at the top to make scaling difficult.

The addition of electric wires to fencing using an energiser and 12-volt system can also be of benefit, but any electrified wires need to be clearly identified.

Pets and domestic animals that are susceptible to fox attack, such as poultry, rabbits, and guinea pigs,



should be housed in a sturdy, roofed enclosure at night or when left unattended during the day. Foxes can be very determined. Cages need to be fully enclosed and made from material that they cannot chew through or dig under. As a general principle, if a cat is able to gain access to an enclosure, then a fox can too.

#### Destroying fox shelters

To deter foxes from establishing areas of shelter, remove or thin out any dense vegetation. Get rid of piles of materials such as timber, bricks and hard rubbish so that they cannot use them to hide in. Low hanging plants should be trimmed to around 50 cm above ground level.

If you find a fox hole or den, fill in the entrance using rocks or wire to make it difficult to reopen.



#### Removing food sources and attractants

Eliminate easy sources of food by ensuring that all domestic rubbish is securely sealed if left outdoors. Avoid plastic rubbish bags as foxes can easily rip these open.

Do not leave any pet food or food scraps lying outside and be sure to clean up fruit from underneath fruit trees. Fruiting pest plants such as blackberries should also be removed.

Non-native mice and rats can attract foxes to your property, so undertake a rodent control program if necessary.

#### Fox Deterrents

Animal repellents are also available through gardening and hardware outlets for application to lawns and garden beds to discourage foxes, but there is little evidence of their effectiveness.

Domestic stock may be protected by the use of a guard or 'companion' animal such as maremma sheepdogs or alpacas. These animals have been bred to live with stock and it is claimed that they will help prevent fox attacks.

Pet dogs, if left outside, may also help deter foxes from entering residential yards.

#### Fumigation

Carbon monoxide gas cartridges may be used to fumigate underground fox dens that are accessible. This method will only control those foxes in the den at the time of fumigation. It is best used during the spring breeding season when there is a likelihood of cubs being in the den.

Fumigation should only be used in situations away from enclosed areas such as domestic buildings and sheds, and should only be carried out by a suitably qualified or experienced person.

#### Trapping

Some local Councils hire out cage traps to residents for the trapping of pest animals. These traps, if large enough, may be suitable to catch foxes using a food lure such as meat. As foxes are wary creatures, the success of this can vary.

Large size cage traps may be purchased through agricultural product retailers or direct from wire-product manufacturers.

Note that the use of steel-jawed traps and snares is prohibited.



Photo courtesy David Peacock

#### Poisoning

Sodium fluoroacetate, commonly called 1080 (ten-eighty), is the only poison registered for fox control in South Australia. Foxes are extremely susceptible to this poison; however, due to the risk of poisoning other animals, such as dogs, its use is highly regulated.

#### Landholders can only access 1080 through local Natural Resources Management Boards.

The poison cannot be used on properties less than 5 ha in size, or in high risk situations such as the



## CONTACT US

### Eastwood

T: 8273 9100  
E: [reception@adelaide.nrm.sa.gov.au](mailto:reception@adelaide.nrm.sa.gov.au)

### Gawler

T: 8523 7700  
E: [gawler.office@adelaide.nrm.sa.gov.au](mailto:gawler.office@adelaide.nrm.sa.gov.au)

### Lobethal

T: 8389 5900  
E: [lobethal.office@adelaide.nrm.sa.gov.au](mailto:lobethal.office@adelaide.nrm.sa.gov.au)

### Willunga

T: 8550 3400  
E: [willunga.office@adelaide.nrm.sa.gov.au](mailto:willunga.office@adelaide.nrm.sa.gov.au)

Natural resources management is: caring for our land, water, plants and animals – balancing people’s needs with those of nature.

metropolitan area and other urban or urban fringe areas.

Coordinated group efforts across a wider area can achieve improved results in some circumstances as foxes do not respect property boundaries.

Board officers can assist in contacting neighbours or offer information on local groups or establishing them.

Spring baiting targets foxes during their reproductive stage when females require more food to sustain them and feed their young, while Autumn baiting targets the young foxes who are actively exploring and searching for new territory.

Long-term bait sites are seen as the best practice method for helping to keep fox numbers low over a long period of time.

## Fox Control Research

The Invasive Animals Cooperative Research Centre has a number of current research projects aimed at developing better and more humane methods of controlling foxes.

To date these projects have been unsuccessful in delivering a means of achieving broad-scale fox population reduction; however, this important work continues.

### More information:

- [www.invasiveanimals.com](http://www.invasiveanimals.com)
- [www.amlrnrm.sa.gov.au](http://www.amlrnrm.sa.gov.au)

Please contact your local Board office for further information, advice and assistance in controlling foxes.

