



## Preventing and controlling damage by pest animals in Western Australia



## Possums

The Common Brushtail Possum, (*Trichosurus vulpecular*) and Western Ringtail Possum (*Pseudocheirus occidentalis*) occur in forests and woodlands, where they mostly nest in tree hollows. They have adapted to living in areas populated by humans, where they can cause damage in the form of noise, fouling and damage to backyard food crops and ornamental gardens.

Possums can be excluded from buildings by blocking entry points, after they leave at dusk, and by modifying the surrounding habitat. Repellents may be effective in some circumstances.



### Identification and distribution

Two species of possum occur in south-west Western Australia. The Common Brushtail Possum, *Trichosurus vulpecula* is 35 – 55 cm in body length and 1.2 – 4.5 kg in weight (Strahan 1995). It is characterised by large pointed ears, grey fur and a bushy tail with a black or white tip (Figure 1).

The Western Ringtail Possum *Pseudocheirus occidentalis* is 30 – 40 cm in body length and 900 – 1100 g in weight (Strahan 1995). It is about half the size of a Brushtail possum. Ringtail possums have round ears, a grey back with rust coloured sides and a curled tail with a white tip (Figure 2).

Common Brushtail Possums are highly adaptable to a wide range of environments and occur throughout most of Australia (Strahan 1995).

The Western Ringtail Possum is endemic to the south-west of Western Australia (Strahan 1995). It has declined in distribution and is now is mostly restricted to coastal areas between Bunbury and Albany (Jones 2004).



Figure 1 Common Brushtail Possum (Photo: © DEC).

### Biology

Possums are largely nocturnal, spending the majority of the daytime asleep in hollows and similar refuges and emerging after sunset to feed (Strahan 1995).

They are arboreal (tree-living) species that are well adapted for climbing with sharp claws; hand-like back feet; and strong flexible tails. Common Brushtail Possums spend some of their time on the ground foraging, but Western Ringtail Possums rarely go to ground (Strahan 1995).

The natural and preferred habitat of possums is forests and woodlands, where they nest in tree hollows (Strahan 1995). Possums are a part of suburban living and they are the only marsupials that have been able to adapt to living with humans (Parks and Wildlife Service Tasmania 2006). They seek shelter and food in gardens and buildings and provide a rare opportunity to see wildlife in the suburbs (DSE Victoria 2004). However, possums can get into roof and wall cavities and can also damage gardens including fruit crops, exotic plants and native plants (Parks and Wildlife Service Tasmania 2006).

Possums are mostly herbivorous feeding on leaves, flowers and fruits. Western Ringtail Possums feed mostly on the foliage of trees such as Weeping Peppermint *Agonis flexuosa*, Jarrah *Eucalyptus marginata* and Marri *Corymbia calophylla* (Jones et al. 1994a). The diet of the Common Brushtail Possum is broader and includes

leaves, flowers, fruits, buds, shoots, fruits and fungi (Strahan 1995; Kerle 2001). They may also consume animal matter (Strahan 1995) such as the eggs and nestlings of birds and roadkill.



Figure 2 Western Ringtail Possum (photo from Jones 2004, pg 149).

## Habits

Possums are territorial and males defend their home ranges using scent glands on their chin, chest and anus (Strahan 1995). They may also fight and use guttural noises while defending their home range (Strahan 1995). The size of the home range varies with the availability of resources such as food, hollows and leafy nests, which are called dreys (Dunnet 1956; 1964; How 1972; Jones et al. 1994a). Common Brushtail Possums are solitary, but pairs may be seen during the breeding season (Strahan 1995). Groups of possums may also congregate in urban parks and garden when feeding on food scraps. Western Ringtail Possums, however, are social and up to 11 may occur in a home range that can overlap with the home range of other possums (Jones et al. 1994b; 1994a).

Breeding usually takes place once a year at the end of autumn, but Common Brushtail Possums can also have a minor, secondary breeding event in spring (Strahan 1995). Males actively search for mates around April (Strahan 1995) and it is at this time that numbers of possums are seen killed on the side of the road.

Females produce one young or sometimes twins after a gestation period of about three weeks. The young possum remains in the pouch for about five months and then rides on the mother's back for a further two months until it is weaned. After this time, the young possum leaves its mother to find its own territory (Dunnet 1956; 1964; How 1972).

## Damage

Possums can be a nuisance to residents in a range of ways and can damage buildings and plants.

## Nuisance

Possums frequently cross roofs while moving between feeding areas. This activity can result in heavy thumping noises that awaken some people while they are trying to sleep. Possums can also fight on the roof, disturbing people with thumping noises and loud squealing.

Dogs sometimes bark at possums during the night, disturbing their owners and their neighbours.

## Fouling

Possums frequently spend the day in the roof cavity of houses where they can damage plaster with urine and they may also chew and damage electrical wiring.

The droppings of possums can accumulate on paved areas, such as driveways, paths and patios, that are below trees or other overhanging plants.

## Health

Possums can carry diseases and parasites and should only be handled by trained personnel. They can also bite and scratch, resulting in infections.

## Biodiversity

Possums have no large effect on biodiversity, but in agricultural areas, numbers can increase, threatening hollow nesting birds. For example, prior to protection of nest trees, possums caused breeding failure in the endangered Glossy Black-Cockatoo *Calyptorhynchus lathami* on Kangaroo Island, South Australia by feeding on eggs and nestlings (Garnett et al. 1999). However, little is known about the effects of possum predation on hollow nesting birds in Western Australia at present.

## Primary production

Primarily herbivorous species, possums feed on leaves, buds, flowers and fruits. In urban areas they can concentrate their feeding on certain plants for many days or weeks. This can result in severe damage and even death of plants. In some areas, certain plants cannot be grown unless they can be protected from possums via a physical barrier such as wire fencing.

## Environmental law

### Commonwealth

Common Brushtail Possums have no special protection under commonwealth legislation. The Western Ringtail Possum is listed as vulnerable under the provisions of the *Environment Protection and Biodiversity Act 1999*.

### State

Common Brushtail Possums and Western Ringtail Possums are indigenous to Western Australia and as such are protected under the provisions of the *Wildlife Conservation Act 1950*. They may be taken only with a licence issued by the Department of Environment and Conservation. Licences to take are generally issued only after other methods have been employed as part of a co-ordinated management program.

## Damage prevention and control

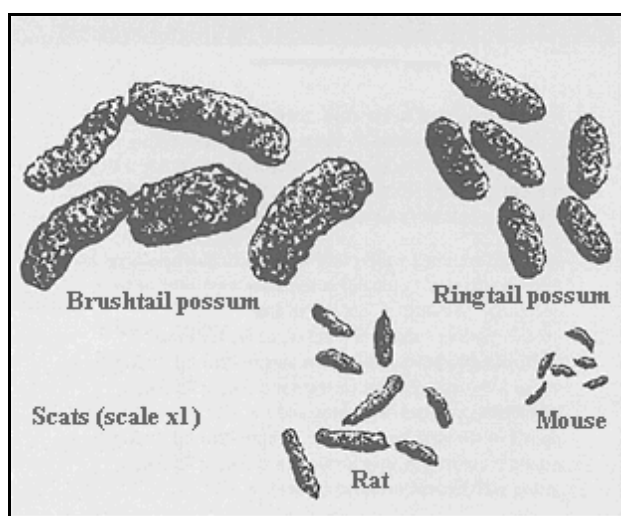
The first step in prevention and control of damage by possums is to determine if a possum is responsible for the problem (Bramwell et al. 2005). Rats and mice also live in roof cavities and can cause

disturbances, especially during winter. Rats are often mistaken for possums.

Rats, mice, some reptiles and native mammals, such as Phascogales, make scratching, chewing and skittering noises. They have distinctive droppings, do not defecate where they nest and are more likely to chew electrical wiring than possums (Bramwell et al. 2005).

Rats are often active during the day as well as at night, while possums tend to be quiet during the day and become active shortly after sunset. Possums leave a smell similar to sheep manure while rats and mice leave a strong urine smell (Bramwell et al. 2005).

If the roof cavity is accessible, you can distinguish possums from rats by their droppings (Bramwell et al. 2005). Possum droppings are the largest, about 2cm x 1cm, compared to the scats of rats, about 1.5cm x 0.5cm (Figure 3).



**Figure 3 Comparison of possum, mouse and rat scats (modified from Bramwell et al. 2005).**

If the problem appears to be rats or mice rather than possums, rodent baits, available from the supermarket / hardware stores, can be used as directed to control them.

If possums are also thought to be present, the poison bait could pose a hazard, so possums must be excluded from accessing the bait. One method is to place the baits inside poly pipe secured to a beam in the roof space. The pipe should be about 1 m long to prevent possums from reaching in to the bait and no more than 50 mm in diameter. Using a half-pipe or covering half the ends of the pipe will limit access to the bait by possums.

For more information on rats and environmental health, see the Facts on Rats information on the Department of Health, Western Australia website.

## Exclusion

By close observation just after dusk, it should be possible to determine how the possums gain entry into the building. These entry points, which can be quite small, may also be visible from inside the roof during the day. This is best done on a fine night because possums may be reluctant to go out in wet, windy weather (Parks and Wildlife Service Tasmania 2006).

All access points, except for the entry point the possum was observed using must be blocked. Material such as sheet metal, wood and wire (mesh size < 20mm) should be fitted securely to prevent the possum from removing the cover (Bramwell et al. 2005). The use of bricks is not recommended as possums are strong and can loosen mortar and bricks aside, which could be hazardous to humans and pets. If the roof is tiled, it should be checked for loose tiles because possums are able to lift loose tiles and squeeze through into the roof cavity.

After sunset, the possum will leave the roof to forage for food and it is at this stage that the last remaining entry point must be blocked (Bramwell et al. 2005). Permanent repairs can be made during daylight hours after it is clear that the possums have not returned and will not be trapped inside. The repairs must be sound because brushtail possums in particular are very strong and persistent when attempting to re-enter the shelter site. Over the following few days, it will become clear if a possum is trapped by its noisy attempts to escape.

Establishing a temporary feeding platform in advance may make it easier to observe the possum when it leaves the roof cavity at night. This will help to confirm that it has left before blocking off the remaining entry point. Pieces of fruit can be provided sparingly, but feeding should stop as soon as the possum has been evicted from the building.

An alternative method is to fit a one-way flap over the last entry point to allow the possum to get out but not return. The flap must be constructed so that the possum cannot grip it from the outside and pull it open to enter the roof space. The flap can be permanently closed or replaced with a permanent obstruction once it is clear that the possum is no longer getting into the roof cavity.

Once the possums have been excluded from the building, the entry sites should be thoroughly washed with a strong smelling detergent or bleach solution and camphor or naphthalene can be used to disguise scent trails (Parks and Wildlife Service Tasmania 2006).

If possums are causing damage to ornamental plants or fruit in gardens they can be excluded by construction of a floppy fence (Figure 4). High tensile wire is used to support a floppy mesh netting (e.g. chicken wire) top and the instability prevents possums from climbing over (Figure 4).

Possums are strong climbers but can only jump about 1 m vertically and can be excluded via the construction of a well made fence (Parks and Wildlife Service Tasmania 2006). A tin or paling fence (with the frame on the inside with the palings butted but not overlapped) about 1.5 m high will exclude possums (Parks and Wildlife Service Tasmania 2006). Wooden fences should be fitted with a tin section at least 33 cm wide and 80 cm from the ground extending around the corners (Parks and Wildlife Service Tasmania 2006).

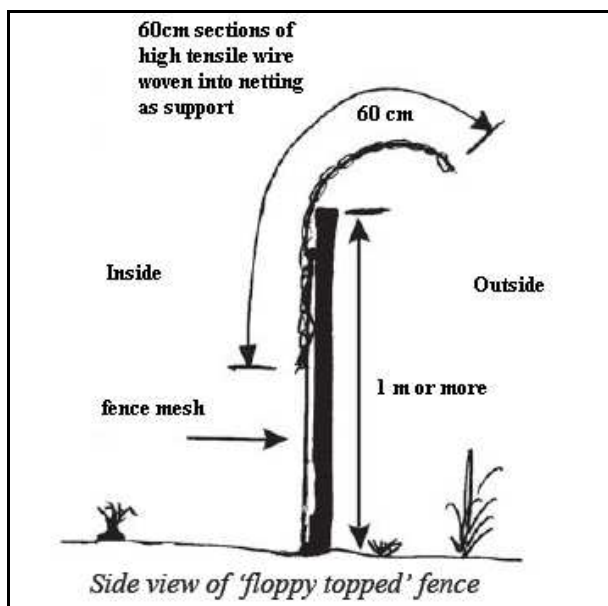
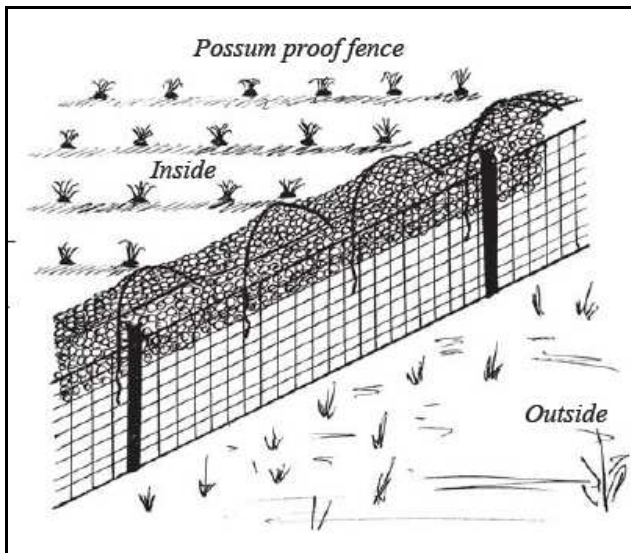


Figure 4 Possum proof fence (modified from Parks and Wildlife Service Tasmania 2006).

## Habitat Modification

Preventative measures can prevent access to buildings by possums. Trees that allow the possums to climb up to the roof must be cut back to prevent access and/or fitted with sheet metal collars 60cm wide at a height of 60cm above ground to prevent possums from climbing them to access entry points. Removal of overhanging branches from over rooves and vehicles can also prevent fouling with possum droppings.

Possums may be attracted by open compost bins or pet food (Parks and Wildlife Service Tasmania 2006), so it is prudent to ensure that possums do not have access to these food sources.

Planting species that are unpalatable to possums or prickly can make gardens less attractive. Suitable species for this purpose include prickly and spiny grevilleas, hakeas, banksias, melaleucas and plants with strong odours such as chrysanthemums, mint bushes, geraniums and daisies.

## Behaviour modification

Providing an alternative site to nest can allow possums to remain in the area without damaging buildings. Suitable nest sites include a hollow log blocked at one end or a home-made possum box (Figure 5). There are a range of websites on building nestboxes on the internet e.g. Nestboxes for Wildlife.

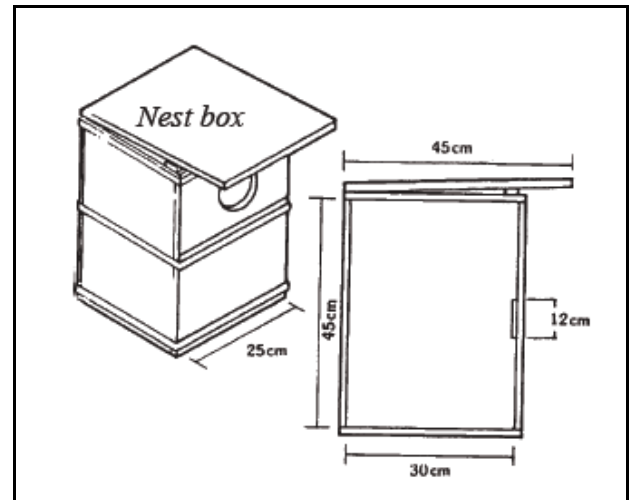


Figure 5 Plans for a possum box (Parks and Wildlife Service Tasmania 2006).

The possum box must be waterproof and should be placed 4-5 metres above the ground, facing south away from the sun. The entry hole should be located under a hinged overhanging lid and does not have to be circular. Drainage holes less than 10 mm in diameter should be drilled near each corner of the floor and some nesting material, such as leaves and wood shaving should be placed inside (Parks and Wildlife Service Tasmania 2006). Chipboard is not a suitable material for nest boxes because it disintegrates rapidly in the weather.

## Scaring/Repelling

Scaring techniques are not effective for possums.

Repellents can exclude possums via smell, taste or feel. A variety of substances have been used to repel possums with varying success, but none have been found to be universally effective (DSE Victoria 2004). In addition, those substances that are removed by rain have to be re-applied regularly.

There are also other commercial possum repellent products available on the market at garden centres and hardware stores.

## Shooting

Shooting of possums is not permitted.

## Population control

Possum populations are limited by the availability of resources in their environment. If shelter sites and food are plentiful, the area will support more possums than an area scarce in these resources. Removal of a possum without changing the other factors that support them seldom solves the problem as the vacant territory is quickly filled by another animal (DSE Victoria 2004).

Possums must only be trapped and relocated as a last resort after the property owner has demonstrated that all other means of managing the problem have been exhausted.

## Trapping

Trapping must only be conducted by a licenced trapper, under the conditions of a Regulation 15 Licence obtained from the Nature Protection Branch of the Department of Environment and Conservation. Trapping a possum without a licence is illegal and may be subject to penalties.

Allowing members of the public to trap and relocate possums is not permitted in Western Australia. This is because it can lead to a range of undesirable outcomes, such as dumping of possums onto other properties, which simply moves the problem from one location to another.

Using the trapping method described below, the trapper should not have to handle the possum. However, if the possum must be handled, it should be kept in mind that they are wild animals. Although they appear soft and docile, they can bite and scratch severely. Protective gloves must be worn or the animal should be restrained in a blanket or towel.

In Western Australia, the *Animal Welfare Act 2002* stipulates that the individual is responsible for the welfare of any animal trapped. Thus, the individual setting and operating the trap has the responsibility to ensure the animal does not suffer unnecessary harm during trapping, transport and release.

It is uncommon for juvenile possums to become separated from their mothers as they are usually in the pouch or on the mother's back (DSE Victoria 2004). Thus, it is unlikely that trapping a mother possum would result in leaving the baby in the roof cavity (DSE Victoria 2004). However, if an injured or orphaned possum is found, it should be passed on to a wildlife carer. Call the Wildcare hotline on 9474 9055.

Trapping involves enticing the possum into a cage with food. The possum is then held until dusk and released elsewhere on the same property. Releasing the possum at a different property is not permitted, because the majority of re-located possums die within a short time as a result of predation and stress.

A study conducted at Deakin University (Pietsch 1994) demonstrated that the long-term outcomes for re-located possums are poor. Around 70% of the possums monitored were found to have died within a week of release. This is why re-location of possums is not considered a humane means of damage control.

The recommended trap type for trapping possums is the Small Animal Cage Trap as used by DEC for general fauna surveys and monitoring (Figure 6). Similar traps may be used as long as they have the following features:

- Minimum-maximum dimensions 20-30 cm x 20-30 cm x 56-65 cm
- Wire mesh with less than 19 mm squares – possums can seriously damage their noses by trying to push through larger mesh
- Treadle plate triggering mechanism and preferably no bait hook



**Figure 6 Sliding door cage trap used to capture possums for release without harm (Photo from [www.traps.com.au](http://www.traps.com.au)).**

Some DEC Offices and hardware stores in areas where possums are a common problem hire out cage traps.

The trap must be placed in a level, stable position where it is protected from dogs, cats, foxes, wind, rain and direct sunlight and with the rear two thirds of the trap covered with a hessian bag. Effective bait includes apple or wholemeal / multigrain bread or a universal bait made of a mixture of peanut butter and rolled oats.

All traps must be checked the following morning, no more than two hours after sunrise. Trapped possums must be kept within the trap, covered by a hessian bag, in a quiet place that is protected from the elements.

Possums must be released at sunset, on the same property, on the same day as capture. Releasing possums during the day only adds to their stress and puts them at risk of being attacked and injured.

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## Further Information

Contact your local office of the Department of Environment and Conservation.

See the Department's website for the latest information: [www.dec.wa.gov.au](http://www.dec.wa.gov.au).



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