



Mammal Damage to trees and shrubs in gardens

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Why the damage?

Many wild mammals rely upon trees and shrubs for their existence. The trees and shrubs provide food and shelter, the two essential requirements for survival. Therefore, planting trees and shrubs in a garden in and around flower beds, borders and vegetable plots creates 'honey pot' conditions that may entice a particular wild mammal species to visit regularly or even set up residence. The favourable habitat conditions created may allow the population of a species to increase dramatically either by migration into the area or as a result of increased reproduction. The consequence of these occurrences is more demand for food and thus more damage to the trees, shrubs and other garden plants including bulbs and soft fruit crops. It is also likely that under such conditions damage will occur to plant species that may otherwise be considered to be damage resistant. Therefore gardeners should be mindful of the potential for damage and should be keeping a watching brief over their treasured plants with a view to giving protection when necessary.

Types of damage

Mammals damage trees and shrubs either by browsing, that is feeding on buds, leaves and shoots or the removal of bark from main stems or branches. The latter may be either stripping as a result of gnawing or rubbing (fraying). Fraying is specific to male deer and occurs either when they remove velvet from newly grown antlers or when marking territory. In the latter situation trees around the perimeter of the garden are often targeted.

Browsing, which is usually restricted in its duration, rarely kills a woody plant even when damage is repeated over a number of years although, if a plant is struggling to survive because of other debilitating factors (e.g. poor site condition) mammal damage can be the last straw. Removal of the leading shoot of a tree is more damaging than the removal of side shoots because the result is delayed height growth and often multiple stems and future structural weaknesses. However, bark stripping is more serious. Fresh wound parasites (e.g. Coral spot fungus) can gain entry and extend the wound by killing the cambium, while wood rotting organisms may attack the exposed wood.



Browsing by Roe Deer

These pathogens together with the abnormal growth that is produced as the wound tries to callus over causes structural weaknesses. Wind snap may occur. The complete removal of bark from around the main stem (girdling) will kill a tree above the girdle¹, but this is only usually found on a small proportion of damaged trees.

¹ Arboricultural Practice Note 13 *Girdling, Constriction and Ring Barking*.

The guilty parties

Rabbits, hares, squirrels, voles and most species of deer will damage trees and more than one may browse or strip bark on a particular tree. In addition garden crops may be targeted. Roe deer favour flowers and leaves of roses and runner bean leaves where as Grey squirrels will often strip the fruit from an apple tree when the apples are only the size of marbles. It is



unlikely that anyone will be fortunate enough to actually observe the damage being inflicted. The culprits can only be determined by searching the damaged trees and their surroundings for the necessary evidence. The most important features to look for are:

- The type of damage (is it browsing, gnawing or fraying?);
- The position of damage on the tree (e.g. height above ground level.);
- The time of year when the damage occurred;
- The presence and size of tooth marks in and particularly around the edges of a wound; and
- Signs of animal presence (droppings, footprints, runs, scrapes or burrows) and their abundance.

Bark stripping by rabbits

Inspection

All vulnerable trees and shrubs should be inspected regularly and particularly at the times of year that damage is most likely. It is, of course, important that any inspection of damage carried out is thorough. Identification of a cause of damage becomes more difficult with increasing time from the damaging event because the evidence will fade or even disappear. When the search is complete and before leaving the site check to make sure that nothing important has been overlooked. There may be less obvious signs. For example, a deer on the higher side of a slope will be able to browse higher than normal; a deep snowdrift against a tree will enable a rabbit to damage a tree much higher than normal. The evidence collected can be used to determine the cause of the damage with the aid of Chart 1 (*What's causing damage?*). It is only when the cause has been established that consideration can be given realistically to the need for and type of remedial action that is appropriate.

Protection

Protection for trees and shrubs can be categorised under three headings:

- Physical barriers (surrounding trees and shrubs individually with guards or chemical repellents or enclosing the whole or parts of a garden with fencing);
- Control of animal numbers either by shooting, trapping, poisoning or biological control although the amateur gardener is only likely to use trapping and perhaps shooting; and
- Habitat management that includes, for example, choice of damage resistant species and the management of ground cover.

It may be necessary to employ one or more of the techniques to achieve the desired level of protection. The choice of what to use will depend on many factors and can be made with the aid of the Chart 2 (*Damage Prevention*). However, it should be understood that discovery of damage or the signs of damaging mammals, does not necessarily mean that protective measures must be taken. Always consider the economic and ecological costs and compare the effects of the option of doing nothing with the expected effects of any chosen protection program!

Barriers

Barriers are the most gardener friendly option. They are easy to apply and give the most reliable protection, but they are the least visually pleasing.

Tree guards, individual tree protection², are available in a range of sizes, shapes and materials. They are most suited to areas where the trees and shrubs that are vulnerable to damage are few in number or have a scattered distribution. Guards require regular inspection and maintenance to ensure they remain effective. Once they are no longer required they must be removed to prevent them damaging the tree they were intended to protect.



0.6m high rabbit guard and 1.2m high Roe deer guard



Permanent rabbit fence around new border planting

Temporary fencing around beds and borders can be very cost effective.

Permanent fencing³ is effective if specified and installed correctly, but it can be expensive and particularly so when it is required to enclose a relatively small area of garden. Generally the larger the area and the straighter the fence lines the lower the cost per unit area enclosed.

Fencing across well-used driveways and access points requires gates and should be avoided if at all possible. Gates are inevitably left open at times and deer and rabbits that find their way into a fenced garden can be very difficult to remove. For this reason fencing the perimeter of

² *Plastic Mesh Tree Guards*

³ *Garden Fences*

suburban gardens against rabbits and deer is rarely done. This situation may change if the use of chemicals and the control of animals become less acceptable.

Chemical repellents have only a very limited value, as they are generally less effective than either fencing or guards. They are probably best used, if at all, as an emergency 'fire brigade' action in response to damage occurring to give time to consider if more permanent protection is practical. The chemical repellents currently available for use in gardens (see current Pesticides Regulations) only offer a limited duration of protection. They do not protect new growth that develops after treatment. New growth may be damaged by chemical applied to it.

Scaring devices that rely on sound⁴ or vision are at best only effective against wild mammals and birds for a short time. Therefore, any device needs to be replaced by one having a different scaring action before the animals become accustomed to its presence.

Management of the animals

The control of animal numbers and the management of habitat have to extend over reasonably large areas if they are to be effective. Failure to achieve co-operation between adjacent homeowners can lead to increasing incidents of damage. However, collaborating with neighbours in the urban situation where gardens are few and neighbours numerous can be difficult. The presence of wild animals in a garden may be cherished by the family in No 23 and the number one enemy of those in No 24. One gardener working alone is unlikely to have a lasting impact on the local population because any animal removed is likely to be replaced by another moving in from surrounding gardens. In rural areas cooperation is more easily achieved and working through the local Deer Management group, for example, is the best way of achieving effective deer control.

The co-operative approach may also be necessary for Grey squirrel control⁵, but the efficacy of these efforts is dependent on having access to the more mature woodlands that make up areas holding resident squirrel populations. The co-operative control of rabbits has been made more difficult to achieve as a result of the decline of rabbit control societies. It is important to remember when considering the options for control of wild mammals that all of the available methods are regulated by law and in most situations the regulations specify the materials and equipment that may be used.

Habitat management

Habitat management as a protection measure is principally a means to reduce the risk of damage occurring. Selecting a shrub or tree species that is less vulnerable to damage or choosing a planting site that is not immediately adjacent to favourable habitat of a damaging animal are worth considering. The removal of vegetation that is providing unnecessary cover may be an option, but that may conflict with attempts to leave 'wild areas' to increase the presence and diversity of wildlife in the garden. However, habitat management is largely theoretical and therefore untried at present and will generally be used in conjunction with other plant protection methods. Indeed it is unlikely that any garden problem will rely on a single protection method. Guards and fencing are likely to be the most useful techniques, but they may be used in conjunction with either occasional or seasonal population control. Remember that wild mammal populations fluctuate from year to year and even at times from season to season so the threat of damage may change and thus the protection needed. Regular inspections remain the first line of action to identify damage and its cause early so that successful steps may be implemented to protect garden plants.

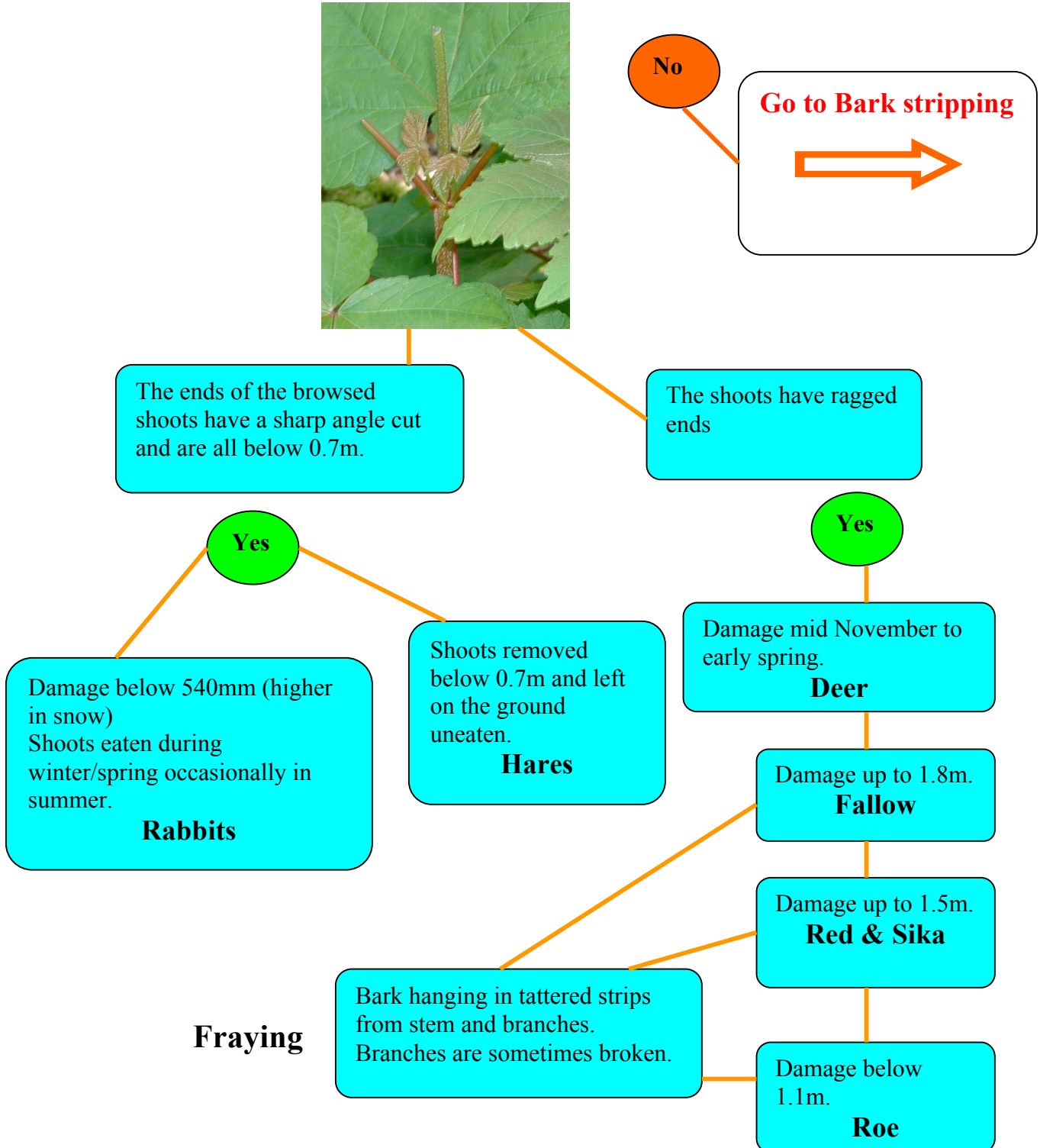
⁴ Arboricultural Research and Information Note 149/99 *A Sound Deterrent for Mammals?*

⁵ Arboricultural Practice Note 7 *Grey Squirrels in Parks, Urban Woodlands and Amenity Plantings*



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Chart 1 What's causing damage Browsing



Bark stripping

