MANAGING THE THREAT OF MAMMALS TO IRELAND'S NATIVE WOODLANDS

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Abstract

Traditionally shooting was the accepted method of dealing with threats of damage by mammals to agricultural and forest crops. This remains the most cost effective method of management. As an alternative to shooting, adequate fencing and the use of tree shelters offer effective but costly methods of protection. Chemical deterrents are expensive to apply and, may only last a few months.

The most severe damage to woodlands can arise from the activities of deer and goats.

Squirrels, both grey and red, can also cause significant damage. Hares and rabbits may be a problem in the early years of tree establishment.

Introduction

All trees, whether native or exotic, are subject to damage from a wide range of herbivores. These may range in size from, aphids and caterpillars feeding on individual leaves or needles, to rabbits, hares and squirrels taking buds, young shoots, fruits and bark. In addition goats and deer, which feed on tree foliage and bark, may cause severe physical damage to the stem of the tree. With a little experience, it is usually possible to identify which mammal is causing the problem without actually seeing the damage taking place.

The type of damage will vary according to the season of the year.

The threat posed to younger plantations by an over population of the larger mammals can be enormous.

Types of Damage

Browsing

This is the nibbling of buds and shoots of newly planted and young trees. The peak period of this type of damage is from January to May, when other food is scarce and growing shoots are most tender. It can continue however throughout the growing season. Trees that have been continuously browsed will develop multiple leaders and in severe cases end up like topiary specimens.

Fraying

This type of damage is solely attributable to deer. It is caused by male deer rubbing and thrashing their antlers against pliable stems or branches. It usually occurs in August when the deer are removing the dead velvet from their newly grown antlers. Fraying will again become prevalent as the deer begin to mark their territories at the onset of the rut in late September and October.

Bark Gnawing and Stripping

This is the chewing or tearing of areas of bark from the tree and occurs at the buttresses or higher up the stem. It will occur in late winter and early spring as the sap rises. Smooth barked species are most vulnerable. Complete removal of bark from around the stem will result in the death of the tree above the girdling.

Mammals Causing Damage

Both rabbits and hares will browse young foliage and will often stand on their hind legs to reach any higher tender shoots. Periods of deep snow enable them to reach higher to gnaw leading shoots and buds. As rodents are equipped with front teeth on both jaws, buds, leaves and shoots will be nipped off cleanly.

Goats and deer can obviously browse to a much higher level. Where deer have constant access to broadleaf woodland, such as in a deer park, and in woodlands with a high deer density, a distinct browse line, perhaps in excess of two metres from the ground, can be easily seen. As deer have no teeth at the front of the upper jaw, shoots browsed by deer will be partially torn off rather than cleanly severed.

While fraying is attributed mainly to deer, goats can cause the most obvious and severe type of damage to a wide range of tree species by extensive bark stripping. Smooth barked trees are at risk with ash, elm and oak being the most palatable and preferred in that order. Smooth barked spruces and young pines are also at risk Squirrels, both red and grey, will also bark strip and can cause serious damage to young broadleaves at pole stage.

Management

The objectives of management must be prevention and curtailment. There are several methods of preventing, or at least limiting, the damage. The choice will be influenced by such factors as the area of woodland to be protected, the development stage of the forest crop, the value of the trees and the cost of protection.

The traditional method of dealing with mammal damage, particularly large mammals, to agricultural or forest crops was shooting. When carried out by well-trained experienced recreational hunters, it remains the most efficient and cost effective option. Even when carried out by professional hunters it is still a cost effective option. Material costs associated with shooting are low, simply the cost of the ammunition, which in the case of deer and goat control is around 1.50 per bullet. It is essential to ensure that proper weapons are employed and that the hunters conform to the requirements of the Wildlife Act of 1976 (in the Republic of Ireland) and the Wildlife (N I) Order 1985 (in Northern Ireland).

In comparison with this, rabbit proof fencing will cost €5- 6 per metre and rises to €10 – 12 per metre if deer are to be excluded. In addition, fences require regular checking, particularly after storms and during the rut. Such fences need to be maintained to a high standard.

Tree shelters are extremely expensive, working out at between €3,000 - €4,500 per hectare depending on the stocking density of the trees being protected and the height of the shelters required. To protect against rabbits and hares, shelters should be 0.75m high rising to 1.8m high for deer. It can be seen that this option should only be used for areas of woodland of less than 0.5 ha or to protect individual specimen trees.

Chemical repellents are most effective in protecting trees and shrubs from winter browsing by rabbits, hares and deer. However they are time consuming to apply while their effectiveness is reduced by prolonged rainfall. They are really only an option in very small areas and small trees.

With regard to grey squirrels, cage trapping, drey poking and shooting are suitable methods of reducing a population and are most effective in early spring. However the vacuum created will soon be colonised from adjacent areas. Red squirrels are of course fully protected.

Long term solutions to curtail the threat from mammals should include the initial design of the woodland. Leaving plenty of open spaces along stream sides, creating deer lawns and feeding habitats enables the wildlife population to be seen, assessed and managed. Open woodland will encourage the growth of a good herb and shrub layer. Non-commercial species such as bramble, ivy, willow and holly will be readily browsed and absorb much potential damage.

The choice of species will also assist. The most palatable and vulnerable trees have already been mentioned. Birch and alder are much less attractive to deer, posing the question as to whether they possess some in built biochemical component, which affords a level of protection to these pioneer species.

A wildlife population, which exceeds the carrying capacity of its habitat, will pose a threat and cause damage to its environment. If a stocking density of five deer per hundred hectares can be achieved, damage will be reduced to an acceptable level. Culling a ratio of two females to one male will be the first step towards achieving this.

Conclusion

It is not possible to eliminate the threat of damage by mammals to woodlands. Even in a well designed and managed wood there will be some element of damage. The techniques described in this paper offer the opportunity to reduce damage to an acceptable level where both woodlands and wildlife can exist together.