An Introduction to Pollarding

As a group of volunteers from a variety of different backgrounds, we set off to Belgium in October 2009 with EuCAN Orchard Leaders Mel Jones and Sarah Roger. We met with the Nationale Boomgaardenstichting over the two weeks to learn about and get involved with traditional orchards. Orchards were not the only items on the agenda however and we were soon involved in several practical pollarding activities, all on willow trees of varying ages. The first willows we pollarded were young and small, with the tops of the trunks reaching about head height. Secondly, we pollarded larger willows that required the use of a ladder and a bit more teamwork. Lastly, and our most challenging, we pollarded older willow trees, many of which had significant amounts of dead wood and had formed into intriguing shapes which were full of character.

Before, small willows
Pollarding the small willows

After pollarding the small willows
Progress of pollarding the intermediate-sized willows
Pollarding is a form of pruning designed to remove the entire crown of a tree as often as every year, depending on the speed of growth of the species. It is a similar technique to coppicing except that it is carried out two or three meters above ground level, traditionally to prevent livestock and deer from eating the re-growth. Pollarding encourages growth of multiple lateral branches and can extend the lifespan of a tree considerably.

By definition, *pollarding* is the removal of the crown of a maiden tree (one that has not been pollarded before). The main stem is cut through and is then cut on a regular basis thereafter. This is usually introduced to young trees, but can be introduced to older trees, which may not respond as well however. Regular *pollarding*, or *repollarding*, refers to the continuation of the pollarding cycle and for trees that have not long been out of this cycle. When trees that have been pollarded before are pollarded again, the crown is removed just above the height of the previous cut. A swollen knuckle of tissue forms on top of a tree trunk that has been regularly pollarded. This is called the *pollard head*. The pollarded tree trunk is called the *bolling*. *Restorative pollarding* is the re-establishment of pollarding for trees that are long outside of the pollarding cycle. Branches are selectively removed or reduced, rather than the whole crown. Willow and poplar recover better from restorative pollarding and the entire crown may still be removed. Specialist advice should be sought before restorative pollarding is carried out. It may result in death of the tree.

Pollarding is best carried out in late winter or early spring, but this may vary from species to species. The least opportune time to pollard is autumn when cut and exposed branches are at risk from decay fungi. Furthermore, pollarding should not be carried out during the bird nesting season between March and August. It is also a risk to pollard during drought, frost or when the tree is exposed to strong sunlight as these conditions place the tree under further stress because of pressure on water availability. There are a number of broadleaf species groups that are suitable for pollarding including ash, beech, elder, elm, hornbeam, horse chestnut, limes, maple, oak, planes and willow. Some conifers will also respond well to pollarding such as yew.

Traditionally, pollarding would have formed part of the management of woodland and the countryside. The aim would have been to produce sustainable and useful products
such as firewood, timber, animal feed or winter fodder and to make charcoal. Pollarded wood would have also been used to make tools like handles, wheels, fencing hurdles and baskets.

In addition to these traditional uses, there are many modern uses both of pollarded trees and the wood they produce. For arboriculture, the life of a pollarded tree is greatly extended by the re-setting of the trees’ biological clock when it is pruned. The tree grows more slowly and regular cutting reduces the risk of damage to the tree from wind and storm by reducing the volume of the crown, wind resistance and lowering the centre of gravity. Pollarding is a useful woodland management technique to allow light through the canopy to encourage growth of the woodland under storey. However, conversely, if the pollarding cycle is neglected, pollard crowns can become dense with thick foliage, therefore shading out more light than before. In an urban environment, pollarding is useful to manage the size of trees in limited spaces and helps to maintain a tree safely. Over-hanging, dead or diseased branches may be removed. Pollarded trees may be aesthetically pleasing in shape and size and by the shade they cast from a dense, compacted crown. On a landscape scale, pollarded trees may be especially important in keeping with the local character of an area, particularly in historic parklands by adding a formal look to an area.

Pollarded trees have significant biodiversity and conservation value. In older pollards, the bolling will often become hollow. This wood, both dead and alive, forms a refuge for many invertebrates, bryophytes, fungi and lichen. These species may not be found in a coppice stool which lacks mature stems. Resource partitioning within a tree over time has allowed species to evolve a high degree of specialisation among deadwood-inhabiting *saproxylic* invertebrates. Saproxylic invertebrates eat dead and decaying wood, eat the fungi that live within dead wood, predate or parasitize on invertebrates that eat dead wood, or use burrows in the dead wood to nest in. An uneven structure in a pollarded crown increases water retention on a tree which leads to the development of rot holes and heart decay within the tree. A bolling may eventually contain a significant proportion of dead wood within the heart of the tree, whilst the tree is still able to maintain new growth. The two groups of invertebrates that specialise most on dead wood are beetles and flies. When managing a pollarded tree that is important for saproxylic invertebrates, decaying limbs should not be cut back to ‘good’ wood. Furthermore, cavities should not be drained, filled or sealed. A tree may take up to 400 years to reach a suitable stage of decay for dead wood invertebrates. A balance would have to be sought between active management of the tree whilst maintaining a sufficient proportion of dead wood so as not to affect the invertebrate population.

Pollarding can be an expensive process, especially if planning to restore an old pollard. It may require expert practitioner input. Before planting a tree, it should be considered how the tree will be managed in the long term, how large it will grow, what shading impact it will have and what the purpose of planting the tree is. Once begun, it is important that pollarding is maintained. If pollarding should discontinue, crowns may become thick, heavy and prone to weakness, breakages and splitting. A negative public opinion may result where a pollard has become neglected and is seen as a safety issue. Many pollards are removed from the natural environment to create room for arable land or building development. In the light of pollard removal, new
pollards should be created to maintain succession and a varied tree age structure within the natural environment.

Completing the task of pollarding an old willow all by his self was something to be proud of!

Tim Scott-Ellis

By Jodene Williams