

What 'wood' you do?

Mark Gordon answers the top ten questions about tree and woodland management asked by greenkeepers and Course Managers.

When you visit golf courses on a regular basis to advise, certain questions tend to crop up again and again. This article seeks to answer the top ten questions asked by greenkeepers and course managers about tree and woodland management.

1. What fast growing trees can I plant?

It is true that certain species grow faster than others, but the thing that is frequently overlooked is that maintenance has a far bigger impact on tree growth than species choice. A tree, where the weed competition is controlled by herbicide, will grow up to five times faster than an untreated tree. The first point I would make is, plan to maintain the trees you plant to achieve the fastest growth, rather than relying on the type of tree you plant.

Secondly, faster growing species can often have other drawbacks. For example poplar was commonly planted in the past to create "quick growing screens". Unfortunately, this vigorous pioneer species has left a legacy of problems for today's

greenkeepers. It has a low lignin content, thus making it prone to branch breakage and windsnap.

This results in branches being liberally and repeatedly scattered over fairways and greens. A tendency for branch breakage means that poplars pose a significant safety risk when situated near paths, car parks or buildings.

Poplar, along with willow species, have extremely vigorous rooting systems that can quickly penetrate underground pipes and cause problems for tees and greens with their shallow rooting.

In recent years the fashion has been for leylandii planting. This tree does grow quickly on a variety of soils, however they often look out of place within the surrounding landscape.

They are typically planted in rows beside tees, see photo one, or along boundaries. They tend to be short-lived and when they fail the club is then faced with the problem of replacing them while trying to maintain a viable screen.

I have recently seen an example where leylandii, in warm dry weather, were set alight by vandals. The high resin content and dense foliage means they can be quickly and easily turned into flaming torches!



1. Leylandii planted to screen tees are out of keeping with surrounding woodland landscape.



2. Mature beech trees established many years before the greens construction.

The best way to achieve fast growing trees is to plant small trees (less than 1m high), suitable for the site and control the weed competition.

2. Should we move this tree?

Trees do not move around. This is an obvious fact, but probably so obvious that people forget about it and think that the tree won't mind being shifted from A to B.

Lets go back to basics. The root system of a tree is typically 2 – 2½ times wider than the crown of the tree. With a tree crown of even just

1m wide you would need to move a rootball 5m³ to get the entire root system.

It is not difficult to see that when moving even a moderately sized tree a large proportion of the root system is going to be lost. The tree is then placed in a new hole and expected not only to survive but also to grow happily!

Yes, the tree may survive. Like all living things there is a will to live and the tree will use the reserves it has built up to produce more fine roots. However, while it is doing this, shoot growth will be impeded and the foliage often dies back.

The tree is seeking to survive by reducing the demand on the root system. It is common for new - coppice - shoots to appear at the base and the remainder of the tree to die. A tree will often focus its efforts on producing seed, so a recently moved tree may have a spectacular blossom display, its last gasp effort to reproduce itself before it turns up its toes!

3. Where should we plant?

The golden rule to remember is that trees and golf do not mix! Therefore the majority of all tree

planting should be kept away from active areas of play. Frequently key trees were established and reached maturity many years before the golf course appeared.

It is said of an oak tree that it spends 200 years growing, 200 years living and 200 years dying. So even if your club has recently celebrated its centenary, to many of your trees you are only a recent phenomena.

Therefore placing a new tree where a previous veteran stood is often unsuccessful as the golf ball damage and mowing pressure is too high for the young tree to survive, see photo two.

The best place to plant is well away from the golf holes. In practical terms this means identifying areas of "dead" ground. If, when choosing your

planting areas, a committee member says, "I have never been on this part of the course", then you are on the right track!

Aim to link planting to existing woodland or scattered trees as this produces a cohesive landscape, see photo three. Scallop planting back from landing areas and bunkers. Maintain a strip of rough from fairway to the planting area and increase the width when the land falls away towards the planting.

4. Why plant new trees so close?

When planting to create a woodland the trees are usually between 2 - 3m apart. This often appears too dense, especially to green staff when they are mowing between the trees.

However, there is reason behind our madness. Naturally trees produce millions of seeds and tens of thousands of seedlings per hectare, so the aim of new planting is to economically reflect this natural pattern.

The first objective is to close a woodland canopy, so that the trees shade out the weed competition and the closer together the trees are the quicker this objective is achieved, see photo four.

Secondly, the trees provide mutual protection from exposed conditions and golf balls, improving the overall survival and growth rates. Thirdly, widely spaced trees tend to grow outwards rather than upwards resulting in a scrubby form. Closer spacing forces the trees to compete for the light, producing trees with clear, straight stems that form more attractive trees in the long term.

5. Should we mow between young trees?

To mow or not to mow, this is a question that recurs time and again on different courses. For young trees the answer is generally yes, at least for a short while, then NO. The factors that have to be borne in mind are:

For:

- Grass is maintained as the dominant "weed", reducing the invasion by noxious weeds such as nettle, thistle and ragwort.

- Golfers can find lost balls more quickly and this reduces slow play.

- Easier access for other maintenance operations, such as spot weeding.

Against:

- Mown grass is more competitive for moisture and nutrients, thus slowing tree growth.

- Inter-tree mowing is time-consuming and therefore costly.

- Increased risk of damage to trees from cutting machinery.

On balance I tend to recommend inter-tree mowing a couple of times per year for the first few years - up to five - then phasing out to allow the woodland understorey to develop. As the woodland canopy closes, grass growth is increasingly suppressed by the reduced light.

The mowing should be focused to where it is most needed, specifically within the first 5-10m of the edge and in places that receive a high proportion of golf balls, see photo five. Where tree shelters have been used to protect the trees from animal browsing, they provide additional benefit of increased protection from mowing.

Where the planting is more parkland in character mowing may want to continue for aesthetic reasons, but from the trees' point of view uncut is better. It can often be worthwhile weeding around mature trees to reduce the risk of mower damage to the base of the trunk.

6. Is this tree dangerous?

Or the other favourite variation is "Why is this tree dead?" Both these questions are specific to the site, and the actual tree. However, some general observations can be made.

A tree may be subject to the following pressures: old age, rot infection, squirrel bark stripping, golf ball damage, strimmer blight and drought or waterlogged soil.

Normally a mature tree is not killed by one specific factor but rather a combination, with one factor proving to be "the straw that broke the camel's back."

Trees live symbiotically with a wide variety of organisms from tiny beetles to red deer, aphids to golfers. The problem occurs when one or more of these pressures exceed the trees' own resources. A larger mature tree will have more resources than a one-year old seedling, hence the reason why newly planted trees are at greater risk.

The other major consideration is who or what is the tree a danger to? An old rotten beech tree in the middle of a wood is completely different to one



3. Extending an existing wood into 'dead' ground to separate holes.



4. Close planting causes trees to begin to close the canopy after five years.



5. Inter-tree mowing focused on the edge of the tree planting block.



6. A mature oak clinging on to life on the edge of a fairway.

next to the captain's car parking space!

When assessing if a tree is dangerous you have to take account of both how likely it is to fall and what, or whom, it would damage if it did fall. Golf clubs have a legal responsibility to take reasonable precautions for tree safety on their course.

7. Do we need permission to fell these trees?

Yes and no. The Forestry Act requires that you obtain permission in the form of a felling licence before you undertake any tree felling, unless:

- The tree is dead, dying or dangerous. The onerous will be on you to prove the state of the tree prior to felling.
- The timber volume is less than $5m^3$, or $3m^3$ if the timber is to be sold, per quarter. This is a relatively low threshold and may be exceeded by two or three large trees.
- The felling is part of a planning approval.

If the tree is covered by a Tree Preservation Order (TPO) or within a conservation area you will require permission from the local council for any tree works, from pruning to felling.

In fact, any operation that might impinge on the health of the tree, such as tee extensions, will require permission from the council tree officer. Photograph seven shows the woodland at Oakmere Park golf course before the creation of three new golf holes that required planning approval before the trees could be felled.

8. Can we get a grant for our woodlands?

Again the answer is yes and no. Over the years it has become increasingly difficult to source funding for woodland work on golf courses. This is due to the government focusing money toward priorities that do not favour golf courses, such as public access, larger woods and agricultural diversification. Photograph eight shows a new planting block of over $\frac{1}{4}$ hectare, the minimum area permitted, at Ashton-in-Makerfield golf course.

The main source of funding for woodland operations comes from the Forestry Commission. The current trend is for regional targets and this has started with separate grant schemes for England, Scotland and Wales.

Funding is readily available within Wales and Scotland, however the grant scheme in England has recently been closed to most new applications due to a shortage of money.

The new English WGS, due to be launched in April 2005, appears to provide good opportunities, with new grants toward management plans and increased levels for restocking and existing woodland work. But serious concerns remain about the level of overall funding available for the next few years.

9. What's the best way to deal with tree stumps?

If by best you mean cheapest then the answer is to "do nothing", the stump and roots will eventually rot away. Generally, felling trees at ground level is the best option to minimise stump size. However, in areas of long rough it can be beneficial to have higher stumps, so they are obvious to machine operators.

Most broadleaf trees have the capacity to regenerate by producing new

coppice shoots from the stump. The amount of coppice growth depends on the species and age of the tree.

Species that will readily coppice include: willow, poplar, ash, elm, and younger trees, which produce more vigorous growth. This survival mechanism can be exploited to produce usable timber products, such as sweet chestnut coppice, or to rejuvenate an old hedgerow.

Where new growth is not desired the best option is to treat the stump with an approved herbicide immediately after felling. The aim is to kill the cambial layer, the outer dividing layer of the tree, which produces the coppice shoots.

Where coppice shoots do occur they can then be treated with a translocated herbicide, e.g. Roundup, to kill the root system and prevent further growth. With young vigorous species, such as poplar, several applications may be required.

The most expensive option is stump grinding and this is usually only considered where the stumps are considered unsightly or pose a risk to mowing equipment. The stump is ground into chips that can be disposed of

in and around the hole created. It is most cost-effective to identify several stumps for removal around the course.

10. How can we screen effectively?

An effective screen requires ground to tree top vegetation and this can be best achieved by planting a mixture of species in a graded edge.

The core area contains the climax species such as oak, lime and evergreens like Scot's pine. Pioneer species like ash, birch and rowan form the next layer and produce the faster growth.

Then the edge will contain shrub species such as dogwood, field maple and spindle.

A graded edge has several advantages including: reduced shading of tees and greens, a long-term sustainable screen, variety of wildlife habitats, and year-round colour and interest, see photo nine.

The commonest problem with screens is a lack of space. Frequently a narrow strip is all that is available and this leads to planting of a single species in a line, such as leylandii.

Firstly, this can look very artificial and out of keeping with the overall landscape. Secondly, and more importantly, all the trees begin to decline and fail at a similar time.

The club then faces the even harder problem of replacing a mature screen with young trees.

In these situations a phased removal, normally a third of the trees at a time, over several years tends to be the best option. The gaps created can be filled with new planting that becomes established before the next phase.

Trees and woodland create beautiful and secluded landscapes that are enjoyed and appreciated by golfers and greenkeepers alike. The problems faced by greenkeepers are common across the country and lessons can be learned from others experience. Hopefully, this article has gone some way to answering your tree queries.

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7. Mature woodland at Oakmere Park course before the creation of three new golf holes.



8. Tree planting done with grant aid at Ashton-in-Makerfield golf course.



9. Graded woodland edge on the right and commercial plantation on the left.