the ABC of planting trees

Agriculture and Food Development Authority
www.teagasc.ie

An Chomhairle Oidhreachta
The Heritage Council

Crann
...giving trees a voice

a CRANN publication

CRANN was formed in 1986 with the aim of “Releafing Ireland”. CRANN has become Ireland’s leading voluntary tree organisation dedicated to the promotion and protection of our trees, hedgerows and woodlands. It is a membership-based, non-profit registered charity uniting people with a love for trees.

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Chapter 7:

Why it is important to plant trees!

Trees offer a surprisingly wide but often under-appreciated range of advantages. For instance, one single tree will absorb more carbon dioxide per year than one car travelling from Dublin to Beijing and back again! This chapter will show you many other reasons to plant trees.

Chapter 1

Think before you begin

- *Consider what you want from the trees*
- *Dig a test hole checking soil and water table*
- *Plan access to and among the trees*
- *Take present ecological value into account*

One Saturday morning -especially in spring when we all get itchy fingers- you think to yourself: “wouldn’t it be nice to plant some trees?”. You jump in the car, drive to the nearest garden centre and come home with a boot-full of -expensive- trees. Monday morning -and a broken back later- you stand back and think to yourself: “I wonder how tall those oaks will grow, planted underneath my telephone line?” ... So, before you buy your trees, put your wellies on and go for a walk…

Try to answer the following -and most- important question: why do you want to plant trees? Is it because you quite like the idea of going for a walk in your own small woodland, because you want to create a wildlife haven or maybe because you’re interested in producing high quality Irish hardwood timber? Or is that you don’t want to look at your neighbours anymore, maybe you would like a bit more shelter around the house or maybe just because you like trees. Why not? You can combine several of these objectives with careful planning. Keep in mind that you may be eligible for grant aid if the area you consider planting is larger than 35 metres by 35 metres. Check with your local Teagasc Forestry Adviser.

Work with what is present already rather than removing trees, they will provide great shelter and may have ecological value

Digging a test hole will tell you a lot about the soil you have

If your neighbours find you planting trees one early winter morning, they may wonder what you're doing. Why not discuss your plans beforehand with your neighbours, hopefully they think it's a great idea and may lend you a hand planting the trees!

If you are considering planting trees in an area covered in "scrub", you may wish to work with what you have already rather than ripping out all that "useless scrub". There is no point in destroying a habitat of higher ecological value. For instance, an area with a lot of willow or hazel may be enriched by clearing small areas where appropriate tree species can be planted. You'll find that most of the newly planted trees will benefit greatly from the shelter provided by the more mature trees.

Soil knowledge is vital for successful tree growth. To find out, dig a small test hole using a spade. The uppermost (and nutrient-rich) darker layer will be hopefully over 30 cm in depth. Soil can vary from heavy clay (sticky soil that if rolled between your fingers will form a little sausage) to very sandy causing water to drain quickly. Soil can also be peaty: very black and spongy. Which trees will suit which soil will be discussed in the next chapter.

It is very important to check carefully if water will soak reasonably quickly from the test hole because tree roots will not grow in water. Pour a bucket of water in the test hole. Additional drainage may be required if it takes 24 hours for the water to drain away. A wet area can also be ecologically rich and rather than drying out the area extensively, you could consider growing trees that thrive in those conditions such as willow, alder and so on…

One of the most important -and often overlooked- aspects when planting trees is providing adequate access into and through the trees. Consider where the access to your wood will be and to have at least one dedicated -and maintained- path meandering among the trees. To be able to walk in comfort amongst your own trees is very special and handy too.

You can see that all these arrangements shouldn't be made on that lovely Spring Saturday morning: planning and preparation requires time. So, why not get your wellies on, go for a walk and have fun!

A path through a woodland is both practical and magical

Chapter 2

The right tree in the right place

- *Choose the right tree for the right place and purpose*
- *The table on page 26 will help you make the decision*

Over 500 tree species grow happily in Ireland: picking the right one isn't easy. The table on page 26 shows a selection of trees, easily available from nurseries and garden centres. The table shows which trees prefer dry or wet, heavy or light, acid or alkaline soil. Alder and willow do better in damper soil whereas beech prefers to keep its feet dry. Keep in mind that most trees prefer plenty of light to grow well, only a few will tolerate shade. Holly, blackthorn and beech can withstand some shade.

People may wish to commemorate special occasions such as the birth of a child by planting a tree: as the child grows so does the tree! Choose carefully, the tiny sapling planted close to the house, may eventually dominate and create a risk to the house. Choose a small tree or plant further away from the house. The adjoining table indicates the size trees may grow to.

It is advisable to go for a faster growing tree such as alder, birch or wild cherry if shelter, screening or immediate impact is required. Yew on the other hand, is one of our slowest growing trees: it will be a looooong time before making any impact. Yew will outlast any other tree as it can become extremely old, much older than oak or even lime. Avoid short-lived trees such as poplar, elder or birch if you wish your tree to last for generations. The table also indicates which trees are suitable for coastal and/or exposed areas.

Birch is a typical pioneer species: prolific self-seeder, strong light demander, fast growth, able to colonise adverse areas, short lived

The table can also help you choose trees that are ecologically valuable. You can improve this by choosing a tree native to Ireland supporting many birds and insects (of the 100,000 tree species known worldwide, only 25 are native to Ireland). Native trees grown from local seed are even more

valuable as they have adapted to the local bird, insect, fungi and bacteria populations through many generations of selection. Look around you to see what is growing well spontaneously and then mimic what is happening naturally. Rather than planting a single tree, try to plant clumps of native trees and to connect them to adjoining woodlands, hedgerows, rivers, etc.

Certain tree species live together well, typical Irish ecologically valid mixtures are as follows:

- Oak with hazel (the upper canopy is made up of oak with hazel underneath)
- Oak, birch with holly, rowan
- Oak, ash with hazel, hawthorn, holly, spindle
- Oak, ash, alder with willow, hazel, holly
- Alder with willow
- Birch with holly, rowan
- Scots pine with willow, rowan

While you are enjoying a nice glass of wine in front of the fire, have a look at the table to see which trees make good firewood. Some trees, if they're cut down at ground level, will resprout from the stump. This is called coppicing and terribly handy for growing firewood. The new shoots are let to grow for 7 to 30 years (depending on the species) and cut when the diameter is slightly over 5cm (2"). The Irish firewood and coppicing champion must be ash: it coppices prolifically producing excellent firewood.

Above: These huge lime trees were already mature at the time of the French Revolution. Right: Spindle is a striking tree native to Ireland that will do well on more alkaline soils

High quality, high value timber is produced by letting well-nurtured trees grow to larger diameters.

Join one of Crann's Tree Identification Walks organised throughout the country to enable you to recognise trees. Your local library will also have a selection of tree identification books. Here are some useful titles:

- Trees in Britain, Europe and North America; Roger Phillips, MacMillan
- Trees of Britain and Europe; G. Aas, A. Riedmiller, Collins Nature Guides, HarperCollins
- A Field Guide to the Trees of Britain and Northern Europe; Alan Mitchell, Collins

This is one of the two famous Crom yews. Most believe it to be over four hundred years old. Some believe it is more than one thousand years old

For those of you thinking about planting a single, really attractive tree in the garden, then have a look at John Cushnie's excellent book with great photographs. It is called "trees for the garden" and published by Kyle Cathie, 2002. Essential reading!

Although Ireland has only about 25 native tree species (blame the ending of the last ice age for that one), there are many more thousand species to choose from. Soil, shade, height, fast growth, exposure, coastal areas, ecological value, timber, firewood and potential age all play a role in deciding what trees to plant.

Give your local Teagasc Forestry Adviser a ring for more detailed information on the different types of trees. S/he will be able to tell you much more about many different trees, their likes and dislikes.

These crack willows have a very high ecological value

Chapter 3

Where to plant trees?

- *Consider different locations to plant trees*

No garden or home is complete without trees. They provide a magnificent backdrop for your shrubs and lawn. They will also give your garden shelter and privacy and according to estate agents, your property will increase in value. If you don't have a garden then a balcony is just the spot for a nice potted Japanese maple. Keep last chapter's points in mind though: it wouldn't do to plant an oak tree too close to your home. This chapter will give you ideas where it is suitable to consider planting trees and what to watch out for.

Laneway trees become beautiful landscape features

Along lanes and roadsides

Trees along driveways must be chosen for their colour, appropriate size/diameter and shape. They should provide year-round interest. Don't plant too close to the road (or fence), as they'll expand in height and girth. Cherry tree roots in particular can lift road surfaces if planted too close. If space is limited, then a clump of distinctive trees at the entrance such as rowan can make a fantastic impact. Use the tree species table on page 26 to help you choose the right tree(s).

Around the house or farmyard

Trees have an amazing knack to make houses - both new and old - blend into the countryside. Every planning permission should come with an approved and monitored tree planting programme. Do keep a few things in mind when planting trees: don't plant too close to houses. The distance to any building (yours or your neighbour's house) should not be less than the eventual average height of your tree. Keep any future extensions such as a granny flat in mind. Avoid planting trees in lines, go for clumps. Avoid poplar, they can block drains and even undermine foundations!

Trees help houses blend into the landscape: note smaller trees near the house, taller trees away from the house

Trees can be easily introduced into hedgerows

In hedgerows

If you're lucky enough to be the proud owner of some hedgerows, then this is your chance to introduce more attractive trees. The easiest way to do this is by identifying a suitable tree shoot (e.g.: holly) within the hedge and avoid trimming it. Within 3 to 4 years, a nice little tree will have grown up.

You can also plant saplings in a gap in the hedge or make a gap by using a saw (be careful: very dangerous!) and cutting branches left and right of your chosen spot. Such saplings will need a lot of TLC: they'll need feeding, weeding and watering for the first couple of years. Loosen the soil before planting to give the trees a good start. Promote trees such as rowan, cherry, crab apple, oak (or willow, alder and birch in damper places) but avoid beech, chestnut and sycamore.

Along streams and riverbanks

Streams and riverbanks are very important biodiversity corridors through the landscape. Planting and encouraging trees along riverbanks can enhance this interconnectivity greatly. Common alder is an excellent choice as it will stabilise riverbanks, fix nitrogen and can take damp conditions. Also include willow, hawthorn, blackthorn, hazel,… Tree cover along rivers and streams will safeguard against temperature extremes. For this to be effective, leave open sections so that aquatic life have a combination of sunlight and shade. Avoid planting opposite sides if access is required.

Trees stabilise riverbanks and help control water temperature

Underused corners can be developed into something much more valuable using trees

In field corners

Field corners are often under-utilised areas. They often develop into small ecologically rich areas through the development of native flora. Planting native trees such as oak, rowan, cherry, alder, willow and birch can speed this process up immensely. Smaller trees and shrubs such as hazel, hawthorn, blackthorn, etc. can be mixed in, creating a shrub layer. This will develop into a small rich woodland habitat, especially if four adjoining corners are connected to existing hedgerows (biodiversity corridors). Silage fields can do with a bit more nature!

In a parkland setting

Some parkland landscapes still have majestic trees, just check Thomas Pakenham's excellent book "Meetings with Remarkable Trees". One example is the 600-year old (yes, six hundred!) oak in Charleville, Co. Offaly. Regrettably, due to their age (and incessant development) numbers are

Individual specimen trees look very impressive

dwindling. Choose a tree for its longevity, shape and colour. When planting these individual trees, consider planting 'standard trees' (approx. 2m tall) for immediate impact. Provide sturdy fencing at least 1.5m from the tree. Oak or copper beech is a good choice to commemorate the birth of a child. Lime, horse chestnut or even sycamore are faster growing alternatives.

Trees provide fantastic shelter: note the incremental shelter the trees receive and provide (left to right)

As a shelterbelt

Trees create fantastic shelter resulting in a much improved microclimate. They are especially useful in coastal, exposed and upland areas. It is generally advisable to plant from a NW to a SE direction and the wider this shelterbelt, the more effective it will be. Do not consider planting green concrete (leylandii for you and me): they are short-lived, create wind turbulence and look awful. Go for a mix of tall and small trees that will slow down wind without blocking it.

Near ponds

The presence of trees near water can play an important role in attracting waterfowl. Trees provide food, shelter, screening and nesting areas. As with shelterbelts, field corners and so on, try to connect these trees to existing woodlands and hedgerows. Only work with appropriate native trees such as willow, alder, hawthorn, blackthorn, hazel, etc. and avoid ornamental garden plants. Most trees should be kept 15m from the water's edge. Smaller trees, alder and willow can be planted much closer. Plant most trees on the northern and western side of the water and smaller clumps of trees on the other sides depending on the size of the pond.

I hope that the above suggestions illustrate that we all have suitable locations for planting some trees, either on the farm, in a garden or even on a balcony!

Trees provide all-important shelter, screening, food and nesting places near ponds

Chapter 4

The importance of good planting: *a good start is half the work*

- *Buy good quality trees of the right size*
- *Care for your recently bought trees*
- *Plant your trees well*

Now is the time to go shopping! When shopping, remember that knowledge is power. It is important to be able to recognise a good quality tree because poor trees will never grow up to be tall and healthy.

Trees can be bought from a nursery, in a local garden centre or by mail order. They can be bought as bare-root trees in winter, as cell grown (plug) trees or as potted trees. You'll also notice that prices can vary amazingly! Trees of true native Irish seed origin tend to be difficult to find and more expensive.

It is useful to check the quality of the trees before buying. The very first thing to look out for is to see how they are looked after. Bare-rooted trees should be left in the soil as long as possible. Once they have been taken out of the nursery soil, they should be kept in heavy plastic bags, stored side by side in a cool, dark, frost-free, dry place for a few weeks max. I was recently in a garden centre where bare-rooted trees were lying around with their roots exposed: I didn't buy any trees there!

Tree roots: check tree roots before buying your trees

Ask to have a look at some of the trees. A good quality tree will have compact and bushy roots. The root collar (where roots become stem) should be preferably over 10 millimetres (2/5") thick (that's thicker than a biro). The stem is straight and the top should be intact, not broken off. A good tree size to buy is a height of 45 to 100 centimetres (1 1/2'- 3 1/2'). The more sheltered the planting area, the taller the trees that can be considered. Planting tall trees in exposed locations will invariably result in trees that will gradually "shrink".

Trees can also be bought by mail order (websites, newspapers,…). Make sure to buy from a reputable outfit only as you can't check tree quality before buying. Ask around whom they would recommend.

Frost damage: seed from different climatic conditions may result in repeated frost damage

It is important that tree seed comes from an equal climatic region: that's why a local seed source is often preferable. Spring comes to Cork one month earlier than to Donegal. An oak tree in Donegal grown from a Cork acorn may well be stunted and small due to repeated spring frost damage. Good quality trees will never grow from seed from genetically inferior trees.

Bare-rooted broadleaf trees can be planted from the beginning of December to the end of March. Conifers can be planted in April too.

Trees should be planted as soon as possible after buying. Avoid exposing the roots to the air, not even for a few minutes. Soak bare-rooted tree roots for an hour in water just before planting. Take the trees from the bucket of water and place in a strong plastic bag. Plant directly from the bag one tree at a time, thus minimising root exposure to the air. Do not plant in very wet, windy or frosty conditions.

The best way to plant trees is by digging a hole, putting the topsoil to one side and placing the tree in the planting hole with the roots spread out evenly. Planting depth is indicated by the soil on the root collar: planting too deeply may result in the tree rotting away while planting too shallowly will result in the tree drying out. Replace the soil over the roots ensuring that no roots or bark are damaged. Firm soil around the roots carefully. Another tree planting method is demonstrated on page 28.

Trees are also available as CGP's (cell-grown plants or plug trees). They are more expensive than bare-rooted trees but can be planted over a much extended planting season. Avoid buying any trees with pot-bound roots. Potted trees should only be planted by digging a large hole and placing the tree in it (after removing the pot and without disturbing the root ball). Soil is then carefully replaced around the root ball. These trees may also require some staking. The smaller plug trees also have the advantage of easier planting. The handiest way to plant CGP's is described on page 28.

Plug tree: plug trees may have many advantages albeit more expensive

Newly planted trees will not need any fertiliser in good quality soil. If any fertiliser is required, use some chicken manure pellets, rock phosphate or well-rotted farmyard manure mixed in through the soil. Watering during a dry spell following planting is very important to prevent newly planted trees from drying out.

Left: Wrong stake: these ties are placed too high up the stem and will result in a weak stem that is easily broken. Above: Correct stake: these trees are staked correctly at approx. 1/3 of the tree height

Trees that are two or even three metres tall can be considered where immediate impact is required. These trees are very expensive and need a lot of tender loving care to survive. Diligent watering and feeding is essential. They also require sturdy staking.

Planting such trees requires a lot of preparation. This work needs to be carried out by two people. The planting hole has to be very large (1 metre across) and improved with fertiliser. Stake(s) are knocked into place after which the tree will be planted fairly close to the stake. While one person is holding the tree, the other person replaces and firms the soil carefully. A rubber tie is used to tie the tree to the stake(s) ensuring that the tie crosses between the stem and the stake to avoid chafing damage to the bark. The appropriate height for the tie is roughly one third of the tree height. Trees tied any higher will result in weak stems. The reason for staking is to stabilise the roots rather than immobilising the stem from swaying in the wind. Ties need to be checked regularly to avoid strangulation.

All this may sound like a lot of hassle but planting good quality trees well now, will result in much healthier, better growing trees later on: your arduous efforts will be rewarded in many years to come!

Avoid strangling your tree: check tree ties regularly

Chapter 5

Good aftercare:

the difference between success and failure

- *Control grass and weeds around newly planted trees*
- *Protect trees from animals*
- *Check your trees regularly*

Trees need all the help they can get to establish in their new surroundings. Grass and weeds compete very aggressively with young trees for light, water and nutrients; taking these away from the young trees for their own use. Well-weeded trees will grow much more quickly. Trees grow better in fertile areas but so will grass and weeds!

Trees will start to grow in earnest by April so at that time grass and weeds should be under control. There are several ways to do this.

Organic mulches control weeds while enriching the soil

Organic mulches (bark or wood chips, straw, old hay, grass, well-rotted manure, cocoa shells, rushes, spent compost,...) will control grass and weeds while at the same time enriching the soil with nutrients. After planting, apply a thick layer of an organic mulch. Top up and rake this layer regularly to prevent it from becoming a medium for weed growth. Weeds need to be killed prior to planting for this layer to be effective.

Black polythene is a very effective weed barrier. Cover fully with gravel

Sheet mulches such as black polythene, geotextiles,… are very effective weed barriers but will not enrich the soil. Cut a 1m^2 piece of plastic and make a small slit or cross in the centre. Put the tree carefully (without breaking any branches)

Herbicides can kill weeds and trees very efficiently. This little oak tree was seriously damaged by glyphosate.

through the hole in the plastic and cover the plastic fully with a 2cm (1") layer of gravel or building sand to keep it in place. Damp newspapers also suppress grass and weeds well around newly planted trees.

These mulches can give very satisfactory results though may only be suited to a few trees as it is very labour intensive.

Grass and weeds can also be controlled efficiently with herbicides. There are many different herbicides available on the market. Before applying any of them, it is a good idea to talk to your local Teagasc forestry adviser regarding types, application rates, precautions, application period, etc. Some herbicides do not only kill grass and weeds but also trees. Consider carefully as herbicides are expensive and may have detrimental environmental effects. Safety first: read instructions before use!

If all this sounds like a lot of bother, regular trampling of grass and weeds around young trees can also be satisfactory – say 3 or 4 times over the summer. Do not let the surrounding vegetation get out of hand and smother the young trees: it will not only slow down tree growth, it will also make it much more difficult to find the little tree again!

Avoid cutting grass and weeds because cut weeds require more nutrients and water to regrow, placing trees under additional stress. Another reason is that too often trees are cut too! Teagasc runs short, practical vegetation control courses throughout Ireland in conjunction with the Forest Service. Contact your local forestry adviser for more information.

Above: Do not cut grass and weeds around trees: too often trees are cut too! Left: Grass and weeds around this tree need to be trampled urgently

Livestock, hares and rabbits love to nibble trees if they get half a chance. Did you know that animals would strip the bark of willow if they had a hangover? Willow bark contains "aspirin" and would relieve their headache! Bark is the tree's lifeline: once damaged the whole way round the base of the tree, it will die.

This sturdy fence will protect trees from livestock. Note the rabbit wire buried and bent outwards

A sturdy fence is required to keep out livestock. Four strands of barbed wire will keep cattle away. To keep out sheep, sheep wire with one or two strands of barbed wire on top is required. Sturdy stakes should be spaced 4m apart. The fence needs to be at least one metre from the trees to protect from sheep. Horses must be kept over two metres away. To keep trees safe from rabbits and hares, rabbit wire is required and must be dug in and bent outwards to prevent burrowing underneath. Tree guards or spirals may also provide some level of protection against rabbits and hares.

Protection from animals needs to be in place when trees are being planted. I remember a person telling me that he planted trees on a Friday and planned to do the fence the next day. Saturday morning, he wondered who had been around cutting trees. Rabbits had already paid him a visit…

One of the great joys in life, is to walk among the trees you have planted and to see them grow. The more you do this, the more you'll understand what trees need. By keeping an eye on them, you can ensure no animals are nibbling at the trees, that grass is not smothering your trees, that all drains are working and that the trees are looking healthy.

Go on, treat yourself and go for a walk among your trees!

Animals and trees do not mix

Chapter 6

How to turn your woodland into a haven for wildlife

• *Consider ways to enrich the wildlife value of your trees*

No home -large or small- is complete without trees. Regardless of the reason for planting trees, they will always be of immense benefit to wildlife. Many plants and animals depend on trees for survival. Trees provide food, cover, shelter and nesting sites. Trees create a more pleasant habitat where other plants and animals thrive. All these important functions can be enhanced greatly by keeping the following simple guidelines in mind.

The simplest way to create a rich woodland is by fencing out browsing animals

The very first and most important intervention required is to put a sturdy fence around the trees to keep out animals. Cattle, sheep, horses, goats, rabbits, hares, etc. will all cause a lot of damage to the trees by stripping bark, eating seedlings, compacting soil and by impeding drainage. Restricting their access will very quickly turn your clump of trees into rich woodland.

Use the tree species table on page 26 to choose ecologically more valuable trees. A tree native to Ireland usually supports more birds and insects than a non-native species. Willows are particularly valuable for insects and birds while oaks support amazingly large insect, fungi and lichen populations. Both also provide great nesting cover. Consider also planting trees that bear loads of berries such as rowan or elder: many birds depend on these berries as a food source. Native trees grown from local seed are even more valuable as they have adapted to the local bird, insect, fungi and bacteria populations through many generations of selection. Look around you to see what is

The bark of this ash tree has been eaten by sheep

Some trees are ecologically more valuable and attractive too

growing well spontaneously and then mimic what is happening naturally. Rather than planting a single tree, try to plant clumps of trees.

Ireland has the fewest trees in the whole of Europe and most of our flora and fauna depend on individual trees, hedgerows and linear woodlands to survive and move across the landscape. Removal of hedgerows by enlarging fields, building new houses in the countryside, etc. is an ecological time bomb. Where you can, try to (re-)connect habitats such as existing scrub woodlands or small tree groups (in field corners for instance) by linking into existing hedgerows or riverbanks. Or maybe even consider planting such a wildlife corridor yourself!

Woodlands don't have to be large. Why not turn unused field corners or part of a huge lawn into a small, attractive woodland? Consider planting different tree species and of different ages. First, plant the tree layer with medium to large trees (see table) by putting clumps of the same species together. For instance, a clump of oak, of ash, of Scots pine, etc. This is followed by planting suitable smaller trees in between. They won't grow as tall and will eventually form the shrub layer underneath the upper canopy. Suitable trees include: hazel, holly, hawthorn, etc. A woodland herb layer (wood anemones, bluebells, etc.) will gradually replace grasses, nettles, etc.

Plant berry trees near the edge of your woodland to attract birds

The large-scale removal of hedgerows throughout Ireland is an ecological time bomb.

The next step to consider is to provide open space in or near this woodland. Hedgehogs, bats, butterflies and many birds depend on flowers and grasses that will thrive in those sunny spots. Birds will use this sheltered area as a feeding and sunning site. Barn owls, sparrow hawks and others will use the open space for hunting. The neighbouring woodland will provide shelter, nesting sites and lookout posts in return. This woodland edge can be improved by encouraging smaller, low-growing shrubs and trees: they will attract even more wildlife, provide better shelter and result in more nesting sites for certain bird species.

These oaks have been ringbarked to create standing deadwood, a vital element in any woodland ecosystem

Trees not only provide many different functions when alive, they continue to do so when dead. Many fungi, bacteria, lichens, mosses, insects (e.g.: beetles) and birds (e.g.: owls) depend on dead trees as a very important source of food, shelter and nesting sites. The not-so-impressive fungi and bacteria fulfil an extremely important role in every woodland by recycling nutrients, enriching soils, etc. Both standing and lying dead trees are essential links in any healthy woodland ecosystem cycle. If no dead trees are present, consider cutting down a few mature trees to create lying deadwood. Standing deadwood is achieved by ring-barking a tree.

These trees were planted at the back of a garden, providing shelter for wildlife and open space nearby, the trees have been linked to a rich hedgerow

An ecologically rich woodland is a haven for wildlife where "weeds" are welcomed and needed. These "trivial" plants contribute greatly to the woodland's biodiversity. Nettles support fifteen different moth species and provide food for butterflies. Briars offer food to forty different species of butterfly and moth. They are valuable groundcover and food to many birds. Elder provides early cover for birds because it comes into leaf very early in spring, while its berries are an important food source for birds in autumn. Ivy plays a very important role in wooded ecosystems too and should be retained as a valuable food source for bees in late summer (flowers) and for birds in late winter (berries) when very few other food sources are available. Removal of ivy should only be considered for safety reasons where ivy is free flowering in roadside tree crowns. This will lead to top-heavy trees. A handy rule of thumb for dealing with ivy on roadside trees is that it should be removed for safety reasons when reaching the crown branches.

The above ideas can be of use if you're creating a new woodland or if you are looking after an existing one. Either way, they will help create a natural richness beyond your wildest dreams!

Allow ivy and other 'weeds' to develop

Chapter 7

Why it is important to plant trees

- Reflect on the many advantages that trees can give you and your community

Trees offer a surprisingly wide but often under-appreciated range of advantages. Appropriate planning and management gives the best chance of success. This is true when establishing a woodland -large or small-, hedgerows or even a few trees at the back of the garden.

Timber is a green, carbon-neutral and renewable source of building material.

Trees are a sound financial proposition if well managed. Trees provide timber and firewood either for use at home or for sale. Well-managed forests are safe tax-free long-term investments because of the steady returns and favourable tax rules.

Timber is a green, carbon-neutral and renewable source of building material, heat and electricity, providing employment in rural areas. Trees play a critical role in preventing global warming by absorbing greenhouse gases. One single tree will absorb more carbon dioxide per year than one car travelling from Dublin to Beijing and back again!

Trees and hedgerows give form and character to our rural and urban areas. They help ensure that new developments blend into the landscape. The sheltering effect of trees and hedgerows surrounding houses also results in lower heating bills. They provide protection against climatic excesses resulting in less storm damage. The resale

Trees help ensure that new developments blend into the countryside

value of properties surrounded by trees tends to be 18% higher because of the greatly improved visual appearance.

Trees have immense ecological importance. Their high biodiversity value assists in retaining ecological balance. In particularly, trees in a wide, tall and diverse hedge are very valuable as a habitat and for interconnecting different habitats. They are an important seed source for native tree species. Groundwater quality is better in areas with high levels of trees because of the filtering activity of the roots, which also minimises pesticides entering waterways. Soil erosion can be severe: woodlands along rivers will prevent riverbank erosion while trees and hedgerows help to prevent erosion caused by rain and wind.

Tree roots will help prevent pesticides and fertiliser polluting our rivers

Trees have an immense ecological importance

Wire fences on the farm - or block walls around gardens - will control livestock but offer few additional benefits. Hedgerows and trees are a cheaper and more environment-friendly alternative than short-lived wire fences. In addition to being stockproof they also provide shelter and shade for livestock. Trees act as windbreaks and lead to 30-50% lower wind speeds. Evaporation drops by 20-30%. Research found that a high presence of trees and hedgerows on the farm leads to lower veterinary bills because animals require fewer calories to retain a healthy body temperature. Linear woodlands also assist in disease control between farms (e.g. TB, brucellosis).

Trees provide much sought shelter for livestock

Trees provide valuable recreational opportunities

Garden shrubs and agricultural crops germinate earlier because of higher soil and air temperatures (1-2° and 4-5° respectively) improving growth by 10-15%. Crops and gardens surrounded by trees and hedgerows will be healthier and require fewer insecticide applications because trees sustain large populations of birds and other animals eating crop disease carriers: insects. Birds and bats can eat up to 3500 midges in two hours.

Some trees may have special historical, religious or ecological value, indicating ancient

It is important to protect historically important trees

townland boundaries or remnants of native woodlands. Other trees may have been managed over centuries as coppice or pollards. Some trees also play an important religious role even dating back to pre-Christian times. It is important that these trees are preserved.

Trees play an important role in our lives: so many wedding photographs show the happy couple smiling at the camera with beautiful trees as a backdrop. Forests also provide fantastic recreational opportunities throughout Ireland: many people enjoy a walk in their local forest. Trees certainly add to Ireland's green tourism image.

Research found that a single tree living for fifty years contributes approx. €250,000 to the community during its lifetime! This includes in addition to the above-mentioned benefits: providing oxygen, recycling water and regulating humidity, controlling air pollution, producing protein and fertilising the soil. Trees are a valuable Irish resource.

Ireland has the dubious honour of being the least wooded country in Europe: so all trees deserve our care and protection. I believe it is very special to leave something behind for the next generation by planting little saplings now. A few thousand years ago, a wise man in Greece said:

A society grows great when men plant trees
whose shade they know they shall never sit in.

Join Crann in planting trees to make Ireland a better place for our children.

Hedgerows give form and character to our countryside

Tree Selector

species	soil preferences			height	growth rate	tolerance	biodiversity	uses	tree age	attractive features
	moisture	texture	acidity							
alder, common *	1	23	23	2	1		1234	123	2	3
alder, grey	123	2	23	2	1			123	2	3
ash *	2	2	23	3	2	23	134	123	3	
beech	3	12	23	3	2	123	24	125	2	34
birch, downy *	1	23	12	23	12	3	123456	1	1	14
birch, silver *	3	12	12	23	12		123456	1	1	14
blackthorn/sloe *	2	123	123	12	2	23	12	345	2	12
buckthorn, alder *	1	2	1	1	2		12	23	1	124
buckthorn, purging *	12	2	3	1	2		12		1	2
cherry, bird *	12	12	12	12	2		12	123	3	124
cherry, wild *	23	123	23	2	12		12	123	3	124
chestnut, horse	12	23	12	3	12	3	56	3	2	134
chestnut, sweet	2	12	2	3	12		1	123	2	34
crab apple *	2	23	23	12	3		12	23	2	124
elder *	123	123	23	1	1		12	3	1	12
elm, wych *	12	23	23	3	2	23	2346	13	3	4
guelder rose *	12	23	23	1	2		12	5	1	124
hawthorn *	23	123	23	12	12	23	12	345	2	12
hazel *	23	23	23	12	12	1	1234	135	1	13
holly *	23	2	12	12	23	13	124	2345	2	125
hornbeam	12	3	23	23	2	1	1	1235	2	4
juniper *	23	1	23	1	3	3		4	3	25
larch, european	2	2	2	3	2			1	1	34
larch, japanese	12	12	2	3	12	23		1	1	34
limes	2	23	23	3	2		24	3	4	4
maple, field	23	23	23	1	2	1	24	35	1	4
maple, norway	23	123	23	3	12	2		13	2	4
oak, pedunculate *	12	23	2	3	2	3	12456	123	3	34
oak, red	23	123	12	3	12			123	2	34
oak, sessile *	2	12	12	3	2	3	12456	123	3	34
pine, lodgepole	13	13	12	3	12	23		12	1	35
pine, scots *	3	1	12	3	2	3	1234	12	3	35
poplars	1	23	2	3	1		2	3	1	
rowan *	23	12	12	12	1	23	124	3	2	124
spindle *	12	23	23	1	2		2		2	24
spruce, norway	12	23	12	3	12			12	1	35
spruce, sitka	12	23	12	3	1	23		12	1	35
sycamore	12	23	23	3	12	23	14	13	2	4
whitebeam *	123	123	23	12	2	12	12	3	2	12
willows *	12	23	23	2	1	23	12456	3	3	14
yew *	23	12	23	2	3	13	1	35	4	25

Legend

** tree native to Ireland*

soil preferences:

soil moisture

1. damp 2. average 3. dry

soil texture

1. light 2. medium 3. heavy

acidity vs. alkalinity

1. acid 2. medium 3. alkaline

height (in metres)

1. small (-5) 2. medium (5-15) 3. large (+15)

growth rate

1. fast 2. medium 3. slow

tolerant of

1. shade 2. coastal sites 3. exposed sites

biodiversity value

1. birds/bats 2. insects 3. red squirrels
4. lichens 5. fungi 6. deadwood

uses/suitable for

1. timber/stakes/etc. 2. firewood
3. coppicing 4. prickly deterrent
5. hedging

tree age (years)

1. 40-70 2. 100-150 3. 200-250 4. 500 +

attractive features

1. flowers/catkins 2. berries
3. nuts/cones 4. autumn colour
5. evergreen

Native and non-native trees in Ireland

native trees	alder, ash, aspen, downy birch, silver birch, bird cherry, wild cherry, crab apple, wych elm, hazel, holly, pedunculate oak, sessile oak, rowan, scots pine, whitebeams, willows, yew
native shrubs	blackthorn, broom, purging buckthorn, alder buckthorn, dog rose, elder, gorse, guelder rose, hawthorn, juniper, spindle, privet
introduced species	beech, douglas fir, field maple, hornbeams, horse chestnut, larch, limes, lodgepole pine, norway spruce, poplars, sitka spruce, sweet chestnut, sycamore,...

In addition, consider some of the following shrubs for your garden, attracting an abundance of bees, butterflies and birds:
Aucuba, Berberis (barberry), Buddleia (butterfly bush), Ceanothus, Chaenomeles (Japanese quince), Cistus, Cotoneaster, Escallonia, Fuchsia, Hebe, Hypericum, Mahonia, Olearia, Philadelphus (mock orange), Potentilla, Pyracantha (firethorn), Ribes sanguineum (flowering currant), Rosa canina/rugosa (dog/ramanas rose), Skimmia, Spiraea, Syringa (lilac), Viburnum and Weigela.

How to plant a tree

Insert the blade of the spade vertically to make the vertical leg of the “T”.

Re-insert the spade to make the horizontal bar of the “T”.

By levering the spade handle down, the blade will push up and open the sides of the (first) vertical cut.

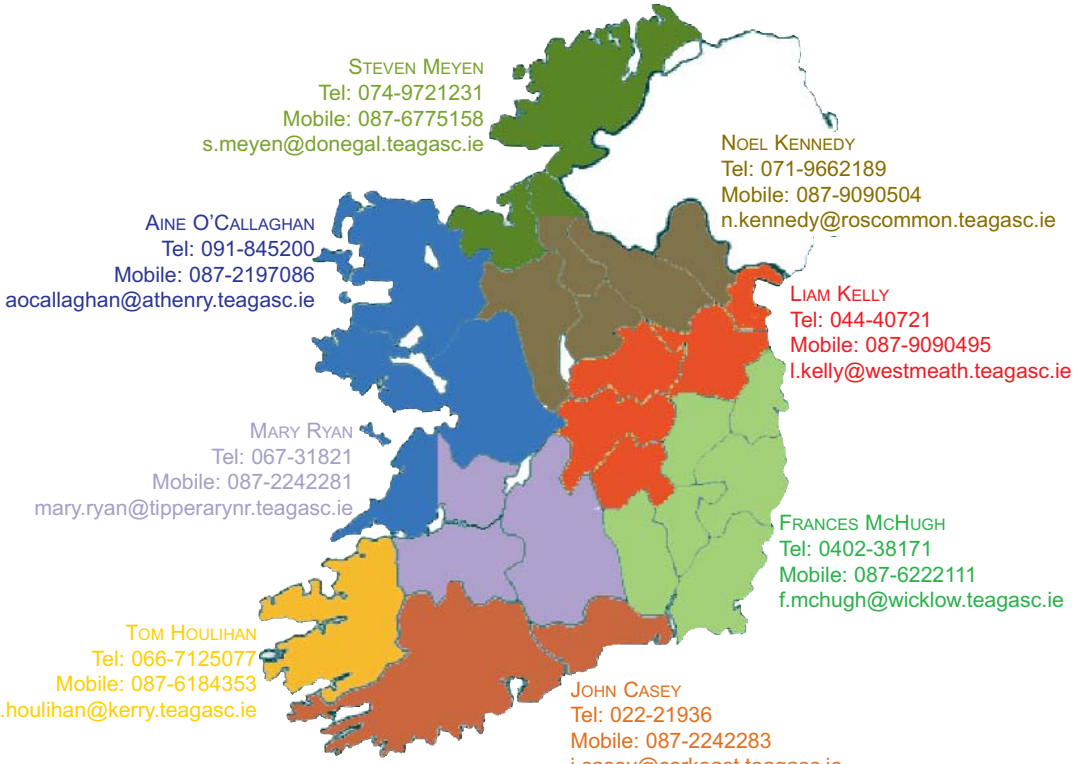
Insert the tree ensuring that all roots are covered by soil and are pointing downwards.

By bringing the spade handle back up again, the sides will close and the tree is “dragged” into place.

Firm gently with your boot and your tree is planted!

Do you have any questions about trees, hedgerows or woodlands?

Contact your local Teagasc Forestry Adviser:



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Teagasc
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Forest Service

NDP
National Development Plan

The Department of Agriculture & Food
An Roinn Talmhaíochta Agus Bia

www.teagasc.ie/forestry