Inishowen Rivers Trust

PLANTING TREES & HEDGEROWS:

Selecting, planting & caring for trees in Inishowen

www.inishowenriverstrust.com

INTRODUCTION

A tree once planted, is a lifetime's monument, changing with the years and seasons and giving us a point of reference in time. There are many reasons to plant trees where we can – be it for shade in summer, shelter in winter, a producer of oxygen, a haven for wildlife, to provide soil stability, hold firm a river bank, provide nutrient filtration, carbon capture – the list goes on.

A tree requires sunlight, air, water, and a suitable supply of soil nutrients. Different species require different inputs of these and some species might prosper on one site yet fail on another.

The purpose of this leaflet is to give a brief introduction into what to consider when planting trees, and to offer some advice in successfully establishing them.

Planting trees and watching them develop over time is a very worthy and satisfying pursuit. Any tree is a good tree to plant but by far the best tree to plant is always a native variety, as so many of our native trees support specific native birds, insects, and plant communities.

Positive impacts of planting trees

1. As we increasingly feel the impacts of climate change in our environment, the important role of trees has been identified as essential to reaching our carbon targets. The government aims to increase national forestry cover from 11% to 18% by 2046 (Annual Review 2018, Climate Change Advisory Council) and this will require a considerable effort from everyone including landowners and communities.
2. Planting together shares important skills and knowledge for the future.
3. Trees will help to filter water, improve soil structure, alleviate flooding by slowing the flow, prevent bank erosion and reduce sediment runoff thereby improving water quality.
4. Promoting biodiversity: Trees and corridors of vegetation provide significant habitats for a wide range of species such as many birds, insects and small mammals. In riparian situations vegetation provides a cooling effect on the water which is important for fish and also contributes a food source to the river species with falling insects and leaf litter.

Soil Type and Site

When opting to plant a tree, it is important to ask yourself a number of questions.

What is the soil type?

Soil is the material beneath our feet in the natural environment and is where a tree puts down its roots in search of nutrients and water. It is a very diverse substance and depends upon the underlying rock, environmental processes and human management activities. We have a gradient of soil types in Inishowen, from fertile mineral soils to infertile peat soils. The varying nutrient availabilities of the different soil types and their ability to drain excess water affects the suitability of which species may or may not grow there. Most gardens will tend to have a surface layer of fertile topsoil which is most likely from a brown earth, although the underlying layers may be quite different. Dig a test pit to check your soil.

How exposed is the site?

The aspect of the planting site, its altitude above sea level, and whether or not there are other trees present, affect how exposed trees will be to wind during establishment. Extreme exposure to wind and storms will have a detrimental effect on all types of species' growth and development. Planting trees in groups can help them establish better on exposed sites. Planting species that can better withstand exposure along the exposed edges can work well and allow time for slower growing and more tender species to establish e.g. alder, birch. Note that trees often benefit from some side shelter from other trees/hedging but most of our native species do not grow well under the shade of another tree's canopy.

Do I need permission to plant on this site?

If you are planting a large number of trees (>0.25 acres), you may have opted for a grant scheme through which you will apply for planning permission. For a smaller number of trees you may wish to consider how the planting will affect your neighbours, how close the trees are to buildings, are there any nearby archaeological sites (check www.archaeology.ie), and consider the proximity to electricity poles and wires.

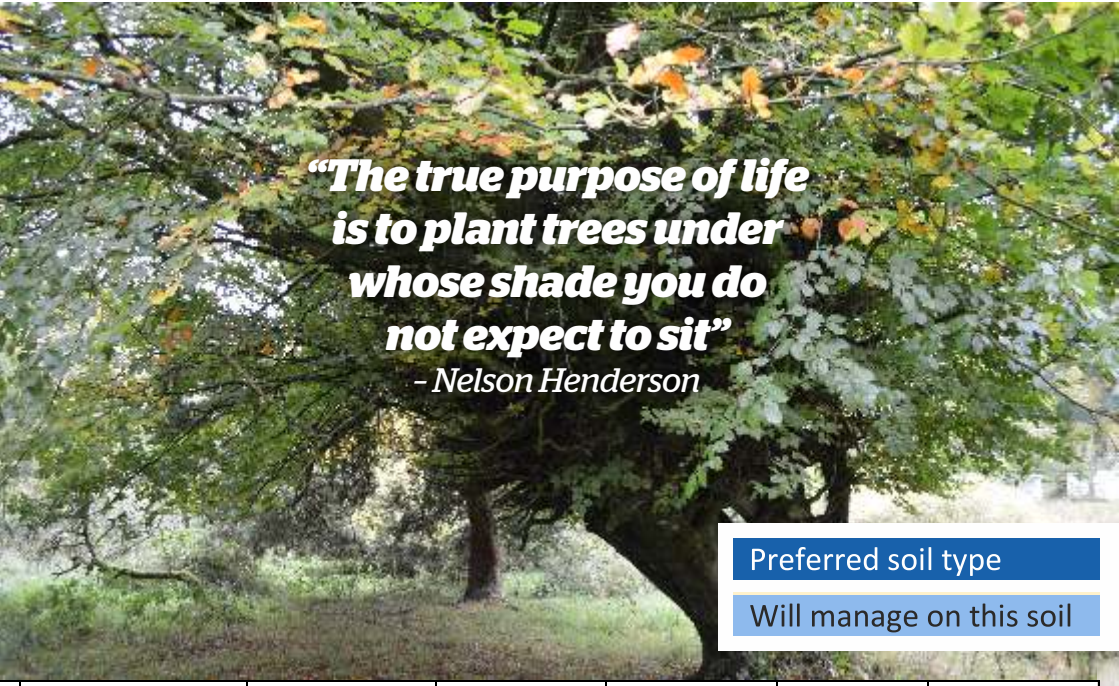
Get to know your Soil

Dig a test pit about 6-8 inches deep and look closely at the soil structure. Take a small sample and roll it into a ball or sausage. If it does not crack and feels dense and slightly sticky, this is a **clay soil**. These soils retain nutrients and moisture well and are good for trees that prefer moderately fertile soils. If you observe a fine sand, this soil is less fertile but drains well. A mix of intermediate particle sizes is a **silt soil** which is fertile, drains well but is easily compacted. **Peat soils** are generally dark, almost black in colour. **Damp soils** feel wet to the touch and **wet soils** will show pooling in your pit. Your soil may be a mixture of clay, sand and silt (**loam**) which are fertile, well-drained and easily worked. In Inishowen many riverbank soils are termed 'alluvial' which are loose soils deposited by surface water (e.g. during flooding). These soils are made up of a variety of materials, including fine particles of silt and clay and larger particles of sand and gravel and are considered very fertile.

Soil Types for Irish Native Tree Species

Irish Native Trees	Latin Name
Sessile oak	*Quercus petraea*
Pedunculate oak	*Quercus robur*
Downy birch	*Betula pubescens*
Silver birch	*Betula pendula*
Common alder	*Alnus glutinosa*
Hawthorn	*Crataegus monogyna*
Hazel	*Corylus avellana*
Holly	*Ilex aquifolium*
Rowan	*Sorbus aucuparia*
Scots pine	*Pinus sylvestrus*
Wild cherry	*Prunus avium*
Common juniper	*Juniperus communis*
Willows	*Salix spp*
Aspen	*Populus tremula*
Yew	*Taxus baccata*
Ash	*Fraxinus excelsoir*
Elder	*Sambucus nigra*
Blackthorn	*Prunus spinosa*

(see National Soil Map of Ireland http://gis.teagasc.ie/soils/map.php)



Preferred soil type

Will manage on this soil

	Moderately fertile soil	Infertile soil	Peat	Damp soil	Wet soil	Exposed site
	■	□		□		□
	□			■		
	■	■	□	■	■	■
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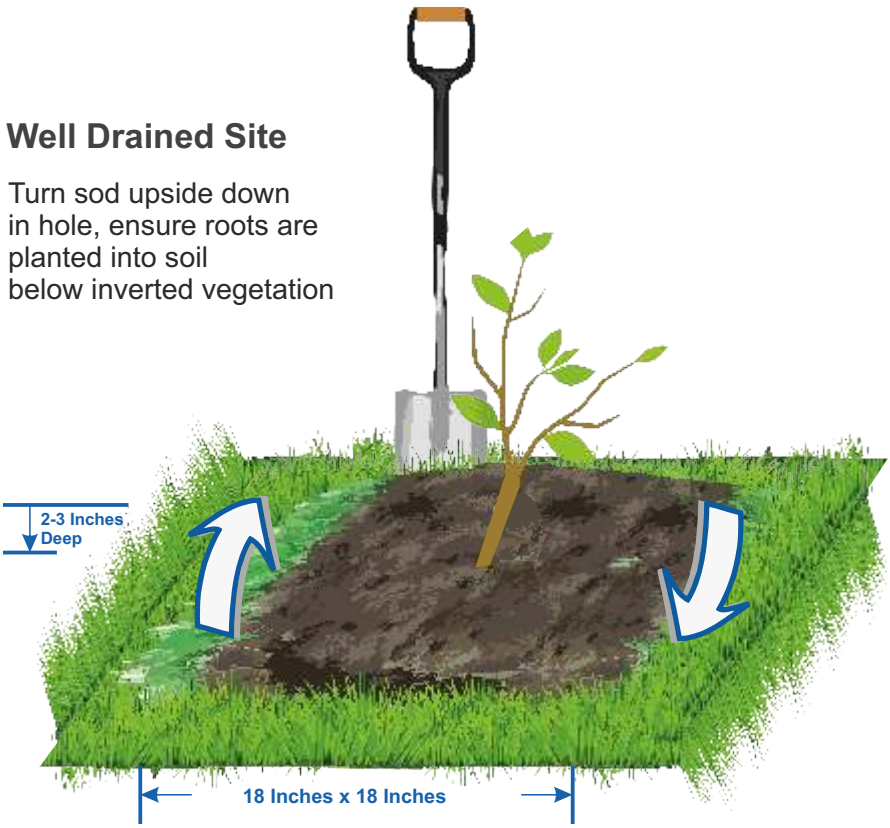
Planting

Trees from nurseries will generally come in pots, bare rooted, or in cells. Bare root trees are suitable for transplanting only during the dormant season i.e. November to April (although this can be extended if plants are from a cold store into June-July). Pot or cell plants can be planted at any time of year. When a suitable site has been located it is necessary to cultivate the site.

An area can be dug using a spade mixing up the soil layers and removing the vegetation on top. Alternatively, a thin square of top sod (18" by 18") can be turned over and the tree planted through it - ensuring the roots of the tree are below the inverted vegetation (as per illustration).

Well Drained Site

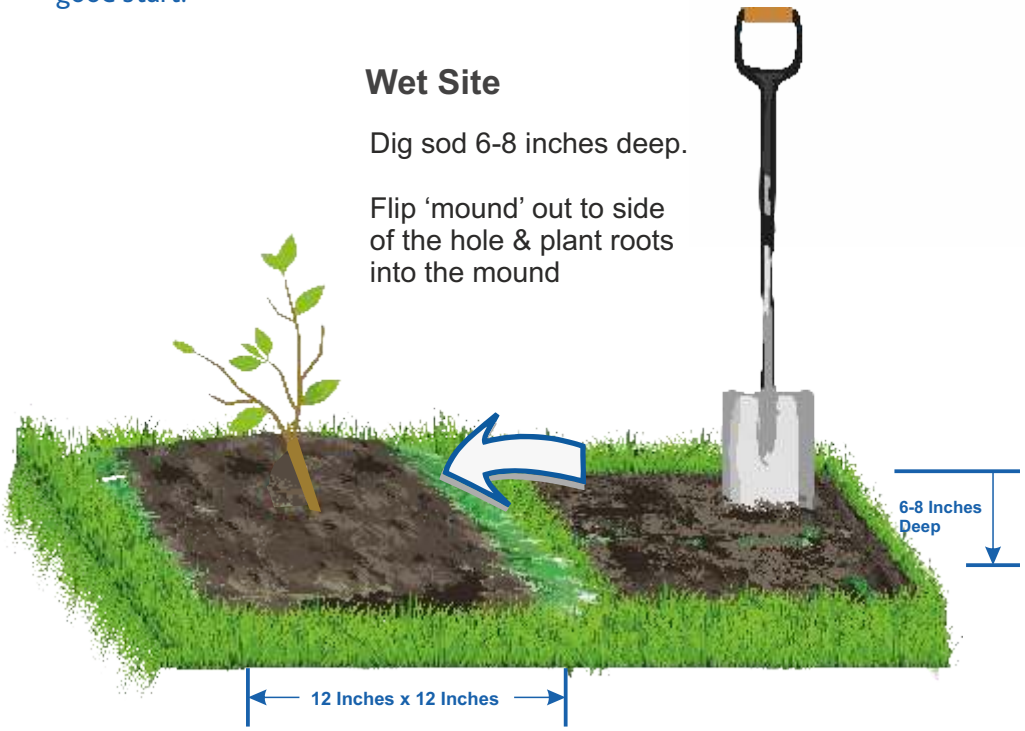
Turn sod upside down in hole, ensure roots are planted into soil below inverted vegetation



On a wet site a deeper sod can be cut, moved out of the hole to one side, turned upside down and planted into. This provides an elevated position for the tree to get established above the water table.

Once a tree has been planted into the planting position the soil around the roots should be stamped into place to ensure the roots are fully surrounded by soil.
If planting during a dry period it is a good idea to pour water on the tree to help it get off to a good start.

Keep the roots of bare rooted trees protected in a bag or bucket to prevent them from drying out during your planting day



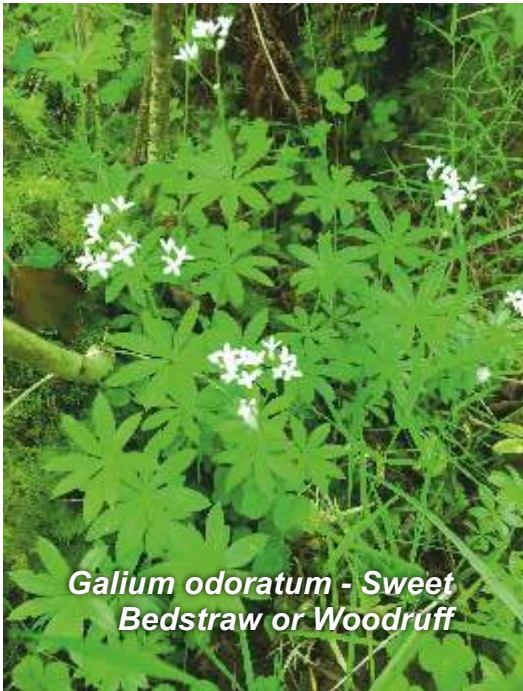
Planting near water

The bank alongside a waterbody is known as the *riparian zone*. The trees and hedging in this zone play an important role in stabilising the banks and preventing erosion. This vegetation also intercepts runoff from the surrounding areas thereby improving water quality and keeping nutrients in the soil. The best type of trees to plant in this area include slower growing or smaller trees such as: alder, grey willow, downy birch and pedunculate oak.

How far back should the trees be planted? Single trees or small irregular groups (5-10 individual plants) should be planted along the banks at least 2-3m back from the water's edge. Larger tree species will need to be planted further back to allow for growth. Check trees every second year and prune back unwanted growth and check bank stability.
Note: If you are planting a large number of trees, you will need to include a water setback of at least 10m (consult DAFM requirements on afforestation schemes).

Understory planting

When planting under trees and hedges it is important to consider soil drainage and the density of the canopy. A healthy hedge should have growth from the base but if any gaps appear these could be replanted or layered. Small native perennials will colonise over time if allowed to do so. Some suitable plants for wet and dry sites are indicated on the next page. Some of these species will survive in both situations.



Galium odoratum - Sweet Bedstraw or Woodruff

DRY Site

- Dandelion
- Clovers
- Bluebell
- Ground Ivy
- (Dog) Violet
- Primrose
- (Tufted) Vetch
- Herb Robert
- Shining Cranesbill
- Garlic Mustard
- Shepherds Purse
- Wood Avens
- Wood Sorrel
- St John's Worts (spp)
- Lords and ladies
- Foxglove
- Climbing ivy, honeysuckle
- Common Valerian
- Toothwort (esp under hazel hedges)

WET Site

- Bulrush
- Yellow flag iris
- Meadowsweet
- Marsh marigold
- Ragged robin
- Purple loosestrife
- Figwort
- Ramsons (wild garlic)
- Sedges/ferns/reeds/rushes
- Marsh woundwort
- Great and marsh willowherbs
- Wood anemone
- Lesser celandine
- Ground ivy
- Bluebell
- Bramble

Protection and Maintenance

Once a tree is planted the roots will begin to develop in its new location, and buds will flush in spring so long as it survives. There are a number of factors which will impact on a trees ability to survive and thrive.

Livestock: Trees are particularly sensitive to being browsed by animals. Sheep, deer, hares, and rabbits are all potential risks to tree establishment. Trees will not survive if they are exposed to heavy browsing, and will need to be protected from attack. They need to be planted in areas that are free of such risks, or where some protection is given until they are tall enough to grow above the source of the threat.

Solution: Fences or individual tree guards are the best options for ensuring tree survival where any of these herbivores are present.

Competition for nutrients: During the establishment period trees are susceptible to being outcompeted for nutrients and water, and being smothered by competing herbaceous vegetation – weeds, grass, bushes etc. The purpose of the cultivation techniques described in this booklet is to provide weed-free growth for the first year or two.

Solution: It is important to monitor weed growth around the tree and where possible remove this as soon as it appears. Tramping down weed growth prevents trees being smothered, or weeds can be cut back with a bill-hook.

Once a tree is free growing above competing vegetation and above the threat of herbivores, the tree should be able to grow on and develop without needing any further input, and will likely outlast you!

Time gone by

In the past Ireland was abundantly wooded and Inishowen was covered in Celtic Rainforest - a special type of temperate forest that occurs along wet and mild Atlantic coastal regions. Today very little of this type of forest exists but where it does it hosts many common and rare species of mosses, liverworts and lichens. Our hedgerows have suffered too and the traditional wide hedgerow with a variety of shrubs and trees are no longer a common sight. It is important for us to keep planting as many native trees as we can. Every tree planted in a situation where it can grow to maturity makes a difference in our landscape and our lives.

Many thanks to the landowners and volunteers who have helped to increase the tree cover of Inishowen for a greener future.

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This project has been funded by a grant from the Community Environment Action Fund 2019 and All Ireland charity Trees on the Land.

Comhairle Contae Dhún na nGall
Donegal County Council

GREEN ECONOMY FOUNDATION
TREES ON THE LAND