



## Appropriate tree species for planting in the Borders Countryside

### What trees are we encouraging for planting and which species are classed as natives?

We wish to promote the planting of large native trees such as Oak, or non-natives such as Beech or Sycamore. These trees are long lived and add greatly to the landscape appeal of the countryside. Oak are particularly magnificent as hedgerow trees, parkland trees or in small copses. There are however, many appropriate small and medium sized trees, if planting space is limited. Ash is a common tree of hedgerows but planting of Ash is not recommended presently, due to Ash die back disease. It is largely because we are losing so many Ash trees, that this tree planting grant has been set up.

Native species are plants or animals that colonise an area naturally i.e. without human assistance. Because of their longer lineage, native trees support a much greater diversity of dependant and associated species and are therefore more highly favoured. Many common trees found in the Borders, such as Beech and Sycamore however, were actually brought here by people in Roman times or more recently. The Borders Tree Planting Grant recognises the contribution that the introduced species make to the landscape but recognises also the greater contribution made by native trees.

Scottish Natural Heritage has identified a number of 'Natural Heritage Zones' covering Scotland.

Two of these apply in the Borders; the 'Border Hills' covering the upland areas in the west and south and 'Eastern Lowlands,' which covers the lower Tweed Valley and coastal fringe to the east. The trees and shrubs that are native to these two zones vary in response to the different soil and climatic conditions found in each. Species for planting should be suited to the site conditions. The following list is a general guide to the various species that may be suitable within the two zones. If you are at all unsure about what trees you should be planting, please seek advice from project staff based at Tweed Forum and Borders Forest Trust offices.



## Native tree and shrub species

Border Hills (Uplands)		
Tree Species		
Downy birch	<i>Betula pubescens</i>	
Sessile oak	<i>Quercus petraea</i>	
Ash (Not being planted due to infection)	<i>Fraxinus excelsior</i>	
Rowan	<i>Sorbus aucuparia</i>	
Alder (in river valleys and wet ground)	<i>Alnus glutinosa</i>	
Silver birch	<i>Betula pendula</i>	
Pedunculate oak	<i>Quercus robur</i>	
Scots pine	<i>Pinus sylvestris</i>	
Wych elm (in river valleys)	<i>Ulmus glabra</i>	
Holly	<i>Ilex aquifolium</i>	A
Aspen	<i>Populus tremula</i>	
Bird cherry	<i>Prunus padus</i>	
Goat willow	<i>Salix caprea</i>	
Crack willow (in river valleys)	<i>Salix fragilis</i>	
Shrub species		
Hazel (on better soils)	<i>Corylus avellana</i>	A
Hawthorn (on better soils)	<i>Crataegus monogyna</i>	H
Juniper (in more open areas)	<i>Juniperus communis</i>	
Elder	<i>Sambucus nigra</i>	
Grey willow	<i>Salix cinerea</i>	
Eared willow (on wet ground)	<i>Salix aurita</i>	
Bay willow (on wet ground)	<i>Salix pentandra</i>	
Blackthorn (on better soils)	<i>Prunus spinosa</i>	H

H - denotes species suitable for making hedges

A - denotes species suitable for adding to hedges

\* - denotes species typical of the zone but only native in England and Wales

## Native tree and shrub species

Eastern Lowlands		
Tree Species		
Ash (Not being planted due to infection)	<i>Fraxinus excelsior</i>	
Pedunculate oak	<i>Quercus robur</i>	
Sessile oak	<i>Quercus petraea</i>	
Wych elm (in river valleys)	<i>Ulmus glabra</i>	
Field maple*	<i>Acer campestre</i>	
Downy birch	<i>Betula pubescens</i>	
Silver birch	<i>Betula pendula</i>	
Rowan	<i>Sorbus aucuparia</i>	
Aspen	<i>Populus tremula</i>	
Crab apple	<i>Malus sylvestris</i>	A
Gean (wild cherry)	<i>Prunus avium</i>	
Grey willow	<i>Salix cinerea</i>	
Whitebeam*	<i>Sorbus aria</i>	
Hornbeam*	<i>Carpinus betulus</i>	H
Alder (wet sites in river valleys)	<i>Alnus glutinosa</i>	
Crack willow (wet sites in river valleys)	<i>Salix fragilis</i>	
Goat willow	<i>Salix caprea</i>	
Holly (understorey tree)	<i>Ilex aquifolium</i>	H
Shrub species		
Hazel	<i>Corylus avellana</i>	A
Hawthorn	<i>Crataegus monogyna</i>	H
Blackthorn	<i>Prunus spinosa</i>	H
Elder	<i>Sambucus nigra</i>	
Goat willow	<i>Salix caprea</i>	
Osier willow (wet sites in river valleys)	<i>Salix viminalis</i>	
Purple willow (wet sites in river valleys)	<i>Salix purpurea</i>	

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## Non-native tree and shrub species (most suitable for parkland)

Tree Species - mostly for lowland sites		
Norway maple (shade tolerant)	<i>Acer platanoides</i>	
Sycamore (especially in exposed places)	<i>Acer pseudoplatanus</i>	
Horse chestnut	<i>Aesculus hippocastanum</i>	
Sweet chestnut	<i>Castanea sativa</i>	
Beech (shade tolerant)	<i>Fagus sylvatica</i>	H
White poplar	<i>Populus alba</i>	
Black poplar	<i>Populus nigra</i>	
Pear	<i>Pyrus communis</i>	A
White willow (wet sites in river valleys)	<i>Salix alba</i>	
Yew (understorey tree, poisonous to livestock)	<i>Taxus baccata</i>	H
Small leaved lime	<i>Tilia cordata</i>	
Wellingtonia	<i>Sequoiadendron giganteum</i>	
Douglas fir	<i>Pseudotsuga menziesii</i>	
Grand fir	<i>Abies grandis</i>	
Noble fir	<i>Abies nobilis</i>	
Scots pine	<i>Pinus sylvestris</i>	
Trees most suitable for Hedgerows (depending on site)		
Oak (large tree)		
Beech (large tree)		
Sycamore (large tree)		
Field maple (medium tree)		
Rowan (small tree)		
Crab apple (small tree)		

H - denotes species suitable for making hedges

A - denotes species suitable for adding to hedges

\* - denotes species typical of the zone but only native in England and Wales

## How to select, plant and care for trees

### Important steps to consider for successful tree establishment

#### 1 Assessing the suitability of the site

It is important to check if the site is suitable for planting trees on and what types of trees would grow best. You need to consider ground conditions ie;

- What is under the ground surface? Rocks and shallow soil will restrict tree growth. Trees need a reasonable depth of good soil to establish well.
- Is the site excessively shaded or exposed to the wind? Both of these can restrict tree growth. Is tree protection needed? Is the site affected by salt spray?
- Is the site already important for nature conservation (such as species rich grassland or wetland) and somewhere that tree planting could affect in a negative way. Perhaps you should consider a different site for planting?

#### 2 Pre-planting work and site preparation

Think about where to plant trees within your site. Are there any restrictions on the size of trees once they mature? Consider the proximity to buildings, underground services such as drains, site boundaries, overhead wires and how large different tree species will become.

- Young trees must be protected from competing vegetation. This may be achieved by physical cultivation, hand weeding or by the application of a pre-planting herbicide (always adhere to manufacturers guidelines).
- Deep cultivation of the planting site may be required if the soil is compacted.
- Young trees must be protected from livestock. Where necessary, erect an appropriate stock proof fence or tree guard. Think also about potential risks from rabbits, hares and deer- see section 6.

#### 3 Tree species type and choice

Tree choice is often best decided by looking around at what grows well in the locality. However, you may have a specific purpose in mind; ie Fruit trees within an orchard, hedgerow trees, parkland trees, trees to attract wildlife, trees for autumn colour and berries and trees for landscape appeal. Species choice may be influenced by considering:

- If the trees need to grow quickly or for shelter.
- If there is enough soil moisture for them to grow.
- If the size of the site to be planted is appropriate to species selection.

If you are still in doubt, you should seek further advice and guidance from Tweed Forum or Borders Forest Trust (or a woodland advisor).

#### 4 Selecting the type of planting stock and when to plant

Trees are usually supplied from a nursery as either 'bare rooted stock' or 'cell grown stock'. Both types of stock have benefits. When planting, tree roots should never dry out or be exposed to frost. Trees are best planted on mild, overcast and windless days. Care must be taken if planting on frosty or windy days. Trees should never be planted in prolonged dry or droughty conditions.

- Bare rooted stock can be planted between early October and late March. This can vary by a week or two at the beginning or end of the season depending on weather conditions. Trees come individually packed or bundled together. Trees should be planted when the plants are dormant and before individual leaves start to bud.
- Cell grown stock come in individual root containers or on trays. Because the trees come within their own peat container, planting can be extended by up to 8 weeks at the beginning and end of the season, ie; from early-August to late-May.

## How to select, plant and care for trees (cont.)

- Trees come in a variety of sizes. It is generally considered best to plant trees of 60cm in size. Whips up to 90cm in size can also be suitable. Standard trees (up to 3m in height) can do well in appropriate situations. However, it is a misconception that the taller the tree, the better the chance of survival, as shorter trees often out grow taller (planted) trees in time. The general rule is; the taller the tree, the smaller the chance of survival. Tall trees tend to be very expensive to buy.
- Try and purchase stock from a local nursery that can provide you with a provenance certificate. This will tell you where the tree seeds have come from and whether they are likely to grow well in your locality. Trees that have been grown from seed collected many hundreds of miles away (particularly to the south and east) are much more likely to be less tolerant to disease and suffer higher stress levels due to more challenging growing conditions.

### 5 Planting your trees

When planting into a pit, dig a hole deep enough for the tree to be covered up to the root collar ie; up to where the young tree was originally planted with soil. Gently firm in the plant (with the sole of your boot) to prevent air gaps remaining around the roots. The tree may require watering initially. Notch planting is another method but requires more expertise to ensure the roots are properly covered. To notch plant, use a spade to cut a 'T' or 'L' shaped slot at the depth required to cover the roots. Using a spade, open up the slot so that the roots can be inserted. Once the tree has been positioned in the slot, the spade can be removed and the soil firmed gently around the tree to prevent air gaps remaining around the roots. If the root system is too big to be notch planted it should be pit planted as described above. It is important to remember the following at all times:

- Never leave tree roots exposed to air when planting, as they will dry out very quickly.
- Prepare a hole big enough to take all of the root ball.
- Take steps to prevent compaction when planting in clay or wet soils.
- Keep the plant upright.
- Ensure the roots are covered by at least 3cm of soil to prevent the young tree roots from drying out.
- Control weeds and grass growth within 1m of the tree.

### 6 Protection of young trees

Trees and shrubs must be protected from browsing animals including farm livestock, horses, deer, rabbits and hares. On some sites, mice, voles and weevils can also be a problem. It is also necessary to protect newly planted stock from cold and drying winds which can cause severe damage. Tree protection can be ensured in the following ways:

- Against livestock- Ensure stock fences are of sufficient standard and height to prevent animals leaning over. Depending on the tree being planted and fence type, the distance required can vary from between 1m and 2m (ie hedgerow trees) to 3m (ie parkland trees).
- Deer- Fencing at 1.5m or 1.8m or staked tree shelters at 1.2m or 1.5m high.
- Rabbits & Hares- Rabbit netting on fencing 0.9m high with 150mm dug into ground or staked trees shelters 0.6m or 0.75m high.
- Mice & Voles- Use vole guards (25cm) around base of tree or firmly installed tree shelters (to ground). Chemical deterrents available.
- Against weather- Wind netting to protect trees in extremely exposed sites. Tree shelters are the norm. Cold and drying winds kill many young trees.
- In most typical Borders situations, a combination of stock proof fencing with trees planted in tree shelters with good weed control will yield the best results. Beware that some trees such as Beech and Holly prefer open mesh trees shelters. The humid atmosphere within plastic shelters can cause mildew attacks on plants.

## How to select, plant and care for trees (cont.)

### 7 Aftercare & Maintenance (especially weed control)

One of the main causes of tree failure in the first years is through competition from weeds and grasses. It is essential that newly planted trees and shrubs are kept free from weeds and grasses for the first 3 years if they are to establish successfully. Ideally a 1m radius circle should be kept weed free around each tree. If a tree dies, replace it the following planting season. Methods of weed control include:

**Herbicides-** In most circumstances, grass and other weeds can be controlled by a spot treatment with a translocated herbicide such as glyphosate. This method is quick and inexpensive and is usually done in spring. **Care must be taken to avoid contact with the tree or shrub.** One benefit of tree shelters is that they protect trees from incidental herbicide damage. Take advice from a chemical specialist on products and methods of application. Post planting, any winter weed control should be of a granular type herbicide. Effective weed control is essential for successful tree establishment.

- **Mulching:** Mulching can suppress weeds around trees and also has the added benefit of keeping the ground surface moist. There are a number of types of mulch mat or sheeting available from plastic to biodegradable. More organic forms such as chopped straw or wood chips are also effective. Squares of hessian backed carpet is also used.
- **Hand weeding:** This involves removal by hand of all weeds and weed roots from around the base of the planted tree. This is usually only possible on very small sites.
- **Mechanical weed control:** Strimming or mowing is not recommended, as trees can be easily damaged. Mowing can actually increase the competition for nutrients and water as cutting stimulates grass growth.
- **During the first year,** regularly check that the tree is still firm in the ground. Windblow can create a hollow around the base of the tree trunk, leaving it poorly supported. Frost action or moles can also disturb the ground, loosening the roots. Tread around the loose stems to firm the tree into the ground and re-stake the tree if required. After three to four years the trees may need thinning or branches removing.
- **Remove tree shelters, ties and stakes after 5 years (or earlier, if the tree has filled the width of the tube.)**

## Example Costs

<b>BORDERS TREE PLANTING GRANT</b> Example costs for capital expenditure for tree planting and establishment	<b>Price Range</b>
<b>1 Herbicide application:</b> Pre -planting spot treatment for trees	Up to 10p per m2
<b>2 Erection of</b> a Stock fence b Wooden swing gate and gate posts/water gate c Flake gate d Single stile e Convert stock fence to deer fence f Scare wire, temporary/electric or rabbit fence g Deer fence h Post and rail for guarding trees etc	£5.50/m (incl. labour) £25.00/m £9.00/m £25.00/ea £2.50/m £2.50/m £8.50/m (incl. labour) £9.00/m
<b>3 Mulch material</b> (ie mulch mat for trees/ wood chip)	50p ea
<b>4 Native-species tree planting</b> (bare root or cell grown)	£1.50 ea (small ie 60cm) £10 - £20.00 ea (standard ie 2m-3m)
<b>5 Tree guard and stake</b> (ie 0.6m or 1.2m tree shelters)	£1.50 - £3.00 ea £0.20 ea
<b>6 Vole guards</b>	£0.20 ea
<b>7 Parkland tree planting -Amenity trees</b> (native/exotic tree standards)	£10- £20.00/ea
<b>8 Parkland tree protection- Post and rail fencing</b> to protect from livestock/ horses.	£9.00/m (£80 per box)
<b>9 Maintenance of trees</b> - ie replacing dead trees & weed control etc, (to be undertaken in the year following planting ). Removal of tree guards (after 5 years).	Applicants expense

### Contact details for further advice:

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