COUNTY DURHAM

LANDSCAPE GUIDELINES

Trees

Making a difference where you live

DURHAM COUNTY COUNCIL

Adult and Community Services • **Environment** • Children and Young People's Services • Chief Executive's Office • County Treasurer • Corporate Services • Service Direct

Contents

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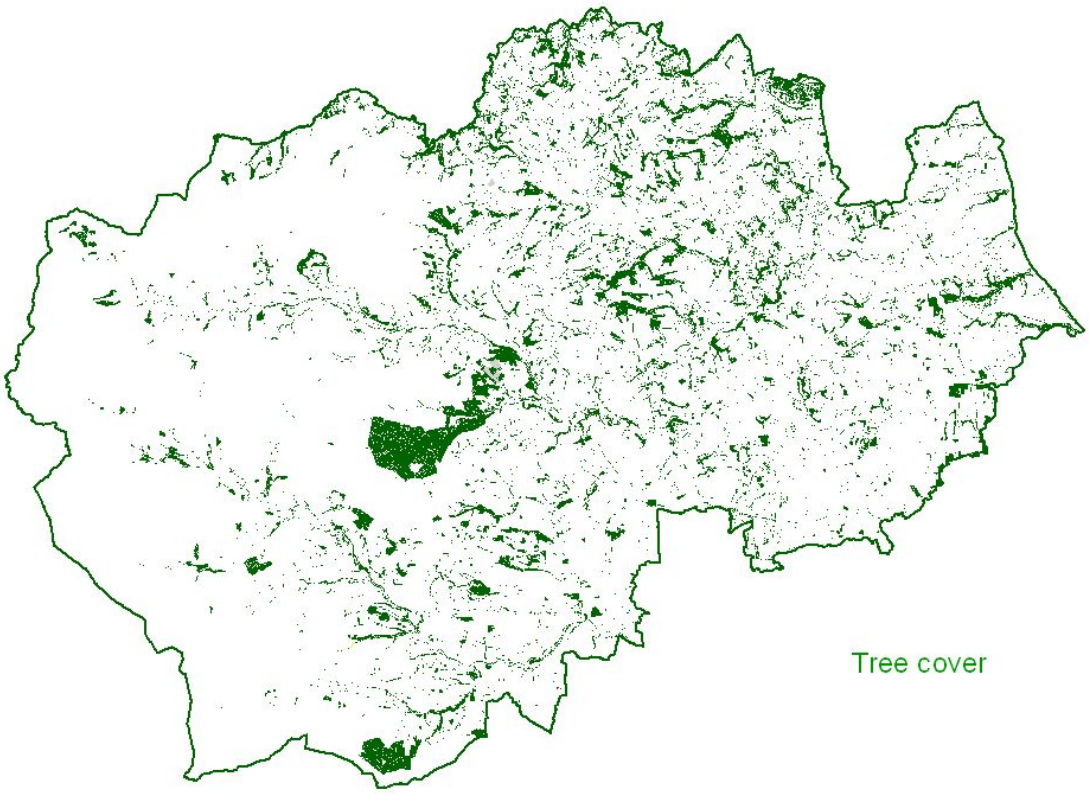
Trees in County Durham

Tree cover



The majority of trees in County Durham are found in woodlands – either ancient or secondary semi-natural woods made up largely of native species, or plantations, made up largely on non-natives. The remainder occur as hedgerow, field, parkland or urban trees.

Trees in native woodlands

The following common trees and shrubs are generally considered to be native to County Durham.

Ash
Birch, Downy
Birch, Silver
Blackberry
Blackthorn
Broom
Cherry, Bird
Cherry, Wild
Common Alder
Crab Apple
Dogwood
Elder
Field Maple
Gooseberry
Gorse
Guelder Rose
Hawthorn
Hazel
Holly
Honeysuckle
Ivy
Juniper
Oak, Common
Oak, Sessile
Aspen
Black Poplar
Raspberry
Rose, Burnet
Rose, Dog
Rose, Field
Rose, Hairy Dogrose
Rose, Northern Dogrose
Rose, Sherard's Downy
Rose, Soft Downy
Rose, Sweet Briar
Rowan
Small Leaved Lime
Spindle
Spurge Laurel
Wild Privet
Willow, Almond
Willow, Bay
Willow, Crack
Willow, Creeping
Willow, Dark Leaved
Willow, Eared Sallow
Willow, Goat
Willow, Grey
Willow, Osier
Willow, Purple
Willow, Tea Leaved
Willow, White
Wych Elm
Yew

These species occur in a range of woodland plant communities which reflect variations in geology, soils, climate and the history of human activity. Some woodland types are closely associated with one landscape

type; others are more widespread in their distribution and show little change in their composition over a broad geographical range. Some, like wet woodlands, are associated with very localised conditions which may occur across a range of landscape types.

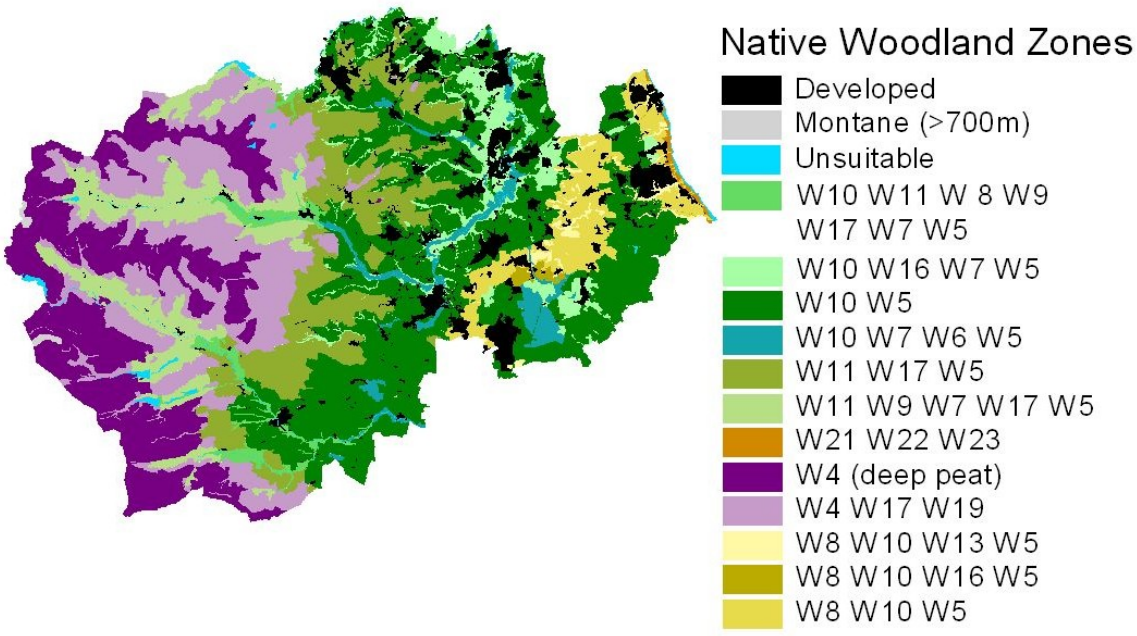
The base-poor soils which cover much of the county generally support woodlands dominated by oak. More diverse woods on the fertile soils of the lowlands give way to species-poor oak and oak-birch woods on the thinner, more acidic, or less fertile soils of the uplands. Oak-birch woods are also found locally in the lowlands on thin acidic soils over coal measures outcrops, and on pockets of free- draining glacial sands and gravels. Lowland Ash woodlands are found on the base rich soils of the limestone denes and escarpment, and upland Ash woods in the gorges, ravines and gills of the Pennines. Wet woodland communities occur across the county on wet or waterlogged soils. They are particularly characteristic of floodplains and valley floors, and the flat carrs of the lowlands, but also occur on wet flushes in drier woodlands and on the peaty soils in the uplands.

Native woodland types, classified using the National Vegetation Classification System (NVC), found in County Durham include:

- Lowland Ash Woodland (W8)
- Upland Ash Woodland (W9)
- Lowland Oak Woodland (W10)
- Lowland Oak Birch Woodland (W16)
- Upland Oak Birch Woodland (W11)
- Upland Oak Birch Woodland (W17)
- Birch Woodland (W4)
- Bay Willow Woodland (W3)
- Alder Carr Woodland (W5)
- Valley Fen Alder Woodland (W6)
- Alder Ash Woodland (W7)
- Yew Woodland (W13)
- Juniper Woodland (W19)
- Hawthorn Scrub (W21)
- Blackthorn Scrub (W22)
- Gorse Scrub (W23)
- Bramble Scrub (W24/25)

Plant communities can vary within a few metres in a semi-natural woodland in response to changes in conditions and some woodlands may contain a number of different woodland 'types'. A typical upland gill in the Durham Dales will cut down through sequences of limestones, sandstones and shales. A gill woodland may contain areas of ash woodland on base rich soils, alder-ash communities on flushed slopes, and areas of oak-birch woodland on acidic soils. Most of the county's ancient semi-natural woodlands are in gills, denes & gorges, and many of these lie on the variable and thinly bedded strata of the carboniferous period. Where the solid geology is more massive or masked by relatively homogenous drift, the composition of the woodland flora may be more uniform.

The map below shows the distribution of native woodland types in the county in the form of broad zones where particular combinations of woodland types may be found depending on localised ground conditions. You can view this as an interactive map on the **Durham Landscape** website.



Existing plant communities are also heavily influenced by management - by grazing, coppicing, selective felling or planting. Upland oak-birch woodlands may be dominated by oak where they have been regularly coppiced in the past, or by birch if they have been clear felled at some stage. In grazed woods and wood pasture, past and present grazing pressures will heavily influence the ground flora. Many semi-natural woodlands have been modified by planting – either of native species or of commercial or exotic species – and this can mask their underlying type.

Trees in planted woodlands

Many of the county's woodlands are plantations. They vary from large forests and plantations established for timber production in the C19th and C20th centuries to smaller mixed or broadleaved woodlands planted for shelter, farm timber, or game, or as part of ornamental parklands and estates. Many older plantations were planted with broadleaved trees - either local natives or introduced species like beech and sycamore. The planting of conifers like Scots Pine and Larch for pit wood and farm timber became widespread in the 19th century and continued into the C20th with the development of large Forestry Commission woodlands including Hamsterley Forest and The Stang in the upland fringes where sitka spruce is now the most important commercial species.

Hedgerow and field trees

The occurrence of hedgerow and field trees varies considerably across the county. They tend to be more frequent in pastoral landscapes of early enclosure and less frequent in the later parliamentary enclosures or in intensively managed arable landscapes. Local variation is considerable and strongly influenced by the management decisions of individual landowners or estates.

The commonest hedgerow tree is ash (60%) with sycamore (15%) and oak (12%) in smaller numbers although either may be characteristic of a particular locality. The predominance of ash stems from its usefulness to farmers – both for making agricultural implements and as firewood and fodder – and the fact that it casts a light shade which makes it suitable for planting in hedges. Oak was also a favourite hedgerow tree due to the usefulness of its timber in construction. In places Wych elm was once relatively common, although much reduced in recent years by disease, and English elm was present locally in small numbers with a scattered lowland distribution. Beech is also found in small numbers, usually planted as an ornamental species in parklands and estate farmland as is, less frequently, common lime. Many of these ornamental species, along with sycamore which readily colonises gaps in hedges, have not proved particularly practical as hedgerow trees due to the dense shade they cast which suppresses the hedge. Other trees found in hedges include holly, rowan, birch, aspen, cherry, alder, crab apple, and crack willow. These species have generally colonised hedgerows naturally.

Oak, ash, elm and sycamore are also found as field trees in the walled landscapes of the upland dales. Sycamore in particular was often planted as a shelter tree close to buildings and is highly characteristic of exposed sites in the uplands and upland fringes. A wider range of native and exotic species are found in historic parks and gardens reflecting the planting fashions of the day and the interest in both the botanical and picturesque qualities of species from around the world.

Veteran trees

Individual trees may be considered 'veterans' because of their great age, the fact that they are in a very advanced stage in their natural life cycle, or because of their intrinsic aesthetic, biological or cultural interest. Veteran trees are an important part of our cultural heritage and are often also of considerable ecological and amenity value. Veteran trees can be found in lots of different situations across the county, including ancient deer parks, ornamental parks and gardens, wooded estate farmland, ancient woods and wood pastures, village greens, urban gardens, and areas of early enclosure with old field boundaries.

Valuable information on veterans in the County can be found in Trees of County Durham by John McBain which can be downloaded from the Durham County Council website.

Further information

Further information on veteran trees, their distribution, their care and management, and how to get involved in recording them, can be found on the Ancient Tree Forum website.

Useful publications include the Veteran Trees Management Handbook which can be downloaded free from the Natural England website, and Ancient Tree Guides No.1: Trees and Farming which can be downloaded from The Ancient Tree Forum website.

Trees and the law

Trees are an important part of our urban and rural environment, providing oxygen, removing dust and pollutants, filtering noise, providing habitats for wildlife and bringing natural beauty to the scene throughout the seasons.

Trees are also long-lived, and have often survived many changes in the environment around them. Unfortunately they are also easily damaged. It takes little time to destroy a tree that may have been an important landmark for decades or centuries.

Tree Preservation Orders

In order to protect individual trees or groups of trees that are of value to the community, the local planning authority may create a Tree Preservation Order (TPO).

A TPO in general makes it a criminal offence to fell, lop, top, uproot or otherwise wilfully damage a protected tree without the permission of the local planning authority. There is a fine of up to £20,000 per tree, if convicted in a Magistrates Court. For other offences there is a fine of up to £2500. If convicted, a replacement tree will also normally need to be planted on or near the place where the tree was destroyed.

You will also need to apply for planning consent to do works such as pruning to a protected tree. This is to ensure that the proposed works are conducted to the correct standard. Your district council will be able to provide advice on acceptable solutions to any problems caused by the tree and advice on how to fill in the application forms.

You can find out if a tree is protected by contacting your local Tree Officer. Copies of TPO are available for inspection at the Council Offices.

If you feel a tree needs protecting by a TPO you should inform your local Tree Officer and usually the planning department will assess the tree using a systematic scoring system.

If you see any work being carried out to a protected tree you should also contact your local Tree Officer who will determine whether the owner has permission and will take any action necessary.

Conservation Areas

Trees lying within Conservation Areas are also protected by legislation. The Local Planning Authority must be notified in writing, 6 weeks prior to any works being carried out to a tree within a conservation area.

Planning Conditions

Trees on Development Sites may be protected by a planning condition that is usually in force both during the construction phase and afterwards. The planning condition may bind future occupiers not to remove or damage trees and give the local authority the power to enforce replanting should any loss or damage occur.

Felling Licences

The felling of over a certain volume of timber requires a Felling Licence which can be obtained from the Forestry Commission.

Further Information

To find out if a tree is protected by a TPO, planning condition, or for advice on the management of protected trees, contact your local Tree Officer in the Natural Environment Section, Regeneration and Economic Development, Durham County Council, County Hall, Durham, DH1 5UQ. Tel 0191 3833426.

To find out if a tree is in a conservation area you can view a map of Conservation Areas on the Durham County Council website online Geographical Information System. If you are in any doubt as to whether a tree is in a Conservation Area, check with your local planning department.

To find out more information about tree protection, visit the Communities and Local Government website where you can view and/or download guidance on protected trees.

Trees and buildings

Introduction

Tree planting can add considerably to the quality and 'liveability' of new development, creating shade and shelter while providing attractive natural features which complement, soften, assimilate or screen the built form. However, careful consideration needs to be given to the effect of new trees, not only on the development itself, but also on surrounding buildings and spaces. This guidance has been produced to assist those involved in the development process in planting trees in the right locations which in maturity will not create structural or amenity problems to adjacent properties, obstruct important views, or have a detrimental effect on the safety of traffic or pedestrians.

For large or complex landscaping or tree planting schemes, a landscape architect should be consulted. They can give advice on every aspect of planting design, implementation and aftercare.

Planning Permission

The Planning Authority may require details of planting proposals to be submitted, either as part of the planning application or at some later date determined by a planning condition. These details will normally include species, sizes of planting stock, numbers, locations, and planting densities. Information may also be required on soil profiles, cultivations and planting methods, plant protection, maintenance and aftercare. As part of the planning application the authority will expect to see good quality site survey information showing details of existing vegetation, soils, contours, the position of underground and overhead services, and any other factors that might influence planting design.

Site Selection

Selecting the correct site for planting is critical, in order that new trees do not grow to such a size that they interfere with buildings to the extent that their removal becomes necessary, the following considerations should be taken into account:

- The ultimate size of the tree.
- The proximity of buildings, other structures and any underground or over ground services such as telephone and electricity supply cables.
- The potential to obscure any road sightlines or road signs. This can prove hazardous to road users and pedestrians.

Also beware that:

- Trees with heavy leaf fall, such as horse chestnuts, should avoid being located near roads, car parks and footpaths where slippery conditions could be dangerous. These trees should also be kept away from gutters and drains.
- Trees such as limes and sycamores which are affected by the sugar secreting aphid should also be avoided in car parks or near seating areas.

Distances between trees and buildings

Trees grow and obstruct daylight. Choose species carefully and do not plant in close proximity to windows.

Trees can cause structural damage to buildings when trees are blown over, most structural damage being caused by the heavier lower limbs and trunks. To avoid concern, trees should be planted no nearer to a dwelling than two thirds of their mature height. However, the limiting factor is more likely to be dictated by the behaviour of tree roots.

Roots

Most tree roots grow in the top 60cm (2 ft) of the ground. The pattern of root development varies greatly between species. As a general rule, roots will spread considerably further than the canopy will extend.

Tree root growth is only capable of exerting a comparably small force, however may cause small structures with no foundations e.g. drives, paths, patios and garden walls to be moved or distorted. Roots are opportunistic and will grow to exploit moisture and nutrients. Fine roots can penetrate minute cracks and joints in drains. Once a small root has entered a drain it can develop a mass of roots, eventually leading to blockage and fracturing of the pipe.

Some species are intrinsically unsuitable for planting close to typical domestic buildings because of the invasive, shallow, or long-reaching characteristics of their root systems. Varieties of willow, apple, cherry, plum, poplar and large coniferous varieties such as leylandii should be used with caution. As a simple rule, they should be planted no nearer than one and a half times their potential height from drains or walls.

Shrinkable Clays

When clay soils are subjected to changes in moisture content, there is likely to be a change in the volume of clay. Tree roots that penetrate such soils can cause the clay to dry out and shrink. Such changes in clay below foundations may cause them to move with resultant damage to the building structure. Conversely the removal of an existing tree may cause the soil to swell when there is an increase in moisture and cause the clay to heave the foundations.

Shrinkable clays are not common in County Durham, but where they are found, expert advice should be sought before planting is carried out. Developers will be required to provide suitably deep foundations and appropriately protected drains to minimise the risk of annual shrinkage and heave. High shrinkage clays will affect the recommended planting distances of trees, and the advice of a qualified arboriculturalist or landscape architect should be taken.

Choice of Species

The choice of tree should depend upon:

- The physical conditions at the site: soil type, drainage and exposure.
- The space available for the trees eventual height, crown size and root spread.
- The suitability of the species in the landscape.

Always allow sufficient space for growth and root development.

Native Species

Where possible, and particularly in rural locations or settlement edges, native tree species should be used. These are likely to have greater value for wildlife as well as helping to assimilate the development into the wider landscape.

Conifers

The temptation to choose quick growing evergreens is strong where screening or shelter are major considerations. However, growth may quickly exceed requirements; creating dark conditions and effectively sterilising the ground around the trees or hedging. Relations with neighbours may become strained; particularly if the evergreens are situated to their south or west. Their mature presence may in the future contravene legislation which aims to limit high hedges that block out light or access to a neighbours' property.

Mature Height of Trees

The table on page **7** may assist you in choosing suitable trees. Poor soil conditions, extreme exposure or waterlogged conditions will affect growth rates, and further advice or information should be sought, as not all listed below will flourish in every situation, and varieties vary considerably.

High and Low Water Demanding Species

Not all species or varieties of species listed below are hardy enough for growing locally. The tables on page **8** show species water demand in relation to expanse of roots. Those to the left having the 'Highest water demand with furthest reaching roots' and those to the right having the 'Lowest water demands with least extending roots'.

Further Information

BS. 5837:2005 - Trees in Relation to Construction can be obtained from British Standards Online

Mature Height of Trees

Small trees (under 15m)

Species	Variety	Native / non-native	Average max. height
Apple	Crab	native	9m
Cherry	Japanese	non-native	various
Hawthorn		some native	10m
Judas tree	(Cercis siliquastrum)	non-native	10m
Laburnum		non-native	7m
Maple	Field	native	15m
Maple	Silver	non-native	10m
Maple	Red	non-native	8m
Maple	Japanese	non-native	various
Plum	Cherry	non-native	8m
Sorbus	Mountain Ash (Rowan)	native	15m
Sorbus	hupehensis	non-native	7m
Sorbus	Swedish	non-native	7m
Yew	Common	native	15m
Whitebeam	Common	non-native (Durham)	8m
Whitebeam	Varieties	non-native	12m

Larger trees (over 15m)

Species	Variety	Native / non-native	Average max. height
Alder	Common	native	20m
Ash	Common	native	28m
Aspen	*(Populus Tremula)*	native	15m
Beech		non-native (Durham)	25m
Birch		native	18m
Cedar	Lebanon	non-native	30m
Cherry	Wild	native	18m
Chesnut	Horse	non-native	28m
Cypress	Lawson	non-native	25m
Hornbeam		non-native (Durham)	18m
Larch		non-native	30m
Lime	Common	non-native	30m
Lime	Small Leaved	native	22m
Maple	Norway	non-native	18m
Oak	Various	some native	23-30m
Pine	Scots	non-native (Durham)	25m
Poplar	Black	native	25m
Poplar	White	non-native	16m
Robinia		non-native	18m
Sycamore		non-native	28m
Willow	Crack	native	18m
Willow	Weeping	non-native	20m
Willow	White	native	28m

High and Low Water Demanding Species

Broadleaves

Highest			↔		**Lowest**
Eucalyptus	Crataegus	Aesculus	Acer	Ailanthus	Catalpa
Populus	Salix	Fraxinus	Castanea	Alnus	Corylus
Quercus	Sorbus (simple leaf)	Platanus	Fagus	Betula	Ficus
	Ulmus	Tilia	Malus	Carpinus	Liquidambar
			Prunus	Gleditsia	Lirodendron
			Pyrus	Ilex	Magnolia
			Robinia	Juglans	Morus
			Sorbus (compound Leaf)	Laburnum	Sambucus

Conifers

Highest			↔		**Lowest**
Cupressus	Chamaecyparis	Sequoiadendron	Cedrus	Juniperus	Abies
			Thuja	Taxus	Araucaria
				Tsuga	Ginkgo
					Larix
					Picea
					Pinus

Trees on Development Sites

Introduction

Existing trees and shrubs on a development site should not be ignored or regarded as obstacles. They can be valuable assets, allowing the new building to blend into its surroundings, giving maturity and continuity to the site while new planting becomes established. If they are carefully protected during the building process they will enhance the site. If they are neglected or damaged they may blight it or cause problems in the future.

The purpose of this guide is to describe the survey and planning required as part of the design process, explore some of the problems that can occur on site, and describe the precautions that should be taken.

The Law Relating to Trees

Check with your local Planning Office before starting on any design work. Is the site in a Conservation Areas? Are any trees covered by Tree Preservation Orders? Are any conditions attached to any current planning consent? Are there any restrictive covenants?

It is a criminal offence to cut down, uproot or wilfully damage a protected tree. Damage includes the cutting of branches and roots. The latter are usually closer to the surface, and spread considerably further, than most people think. The fine on summary conviction may be up to £20,000, or an unlimited fine on indictment. Local Authority Planning teams are always happy to give advice on any proposals relating to protected trees.

National Guidance

The British Standard BS. 5837:2005: Trees in Relation to Construction gives recommendations and guidance on the principles to be applied to achieve a satisfactory juxtaposition of trees, including shrubs, hedges and hedgerows, with structures. It follows, in sequence, the stages of planning and implementing the provisions which are essential to allow development to be integrated with trees. The standard recognizes that there can be problems of development close to existing trees which are to be retained, and of planting trees close to existing structures. It is written to assist those concerned with trees in relation to construction to form balanced judgements and provides guidance on how to decide which trees are appropriate for retention, on the means of protecting these trees during development, including demolition and construction work, and on the means of incorporating trees into the developed landscape. Some key elements in this process are outlined below.

Site Survey, Analysis and Design

Before design work begins, a detailed survey must be carried out. The survey should show the exact location of all trees, hedges and shrubs. Details recorded in the survey should include species, height and spread, girth, physical condition and existing ground levels.

A Tree Constraints Plan (TCP), based on the tree survey should be prepared as a design tool. This will show the growth potential of individual trees, plus any above and below ground constraints. The plan should also show root protection areas (RPAs). These are equivalent in size to a circle with a radius 12 times the stem diameter of those single stem trees that are scheduled for retention. They should extend at least as far as the crown spread. As a rule of thumb, an estimate of the extent of significant root spread can be made by calculating half the height of the tree in question.

The TCP should inform the design process. The aim should be to retain as much healthy mature vegetation as possible, and in such a way as to accommodate its future growth and management. Once the layout proposals have been finalized, a Tree Protection Plan (TPP) should be produced which shows which vegetation is scheduled for retention and removal, and the precise location of temporary protective fencing - within which digging, tipping, site storage or vehicles will not be permitted.

You may need to engage a landscape architect or arboriculturalist to assist in this process. Local Authority Planning teams can also offer advice. Your detailed survey, TCP and TPP should accompany your Outline Planning Application.

Always consider the proximity of existing trees to any proposed development with the user in mind. The temptation to site dwellings too near to trees scheduled to be retained should be resisted. Future applications to fell TPO protected trees that shade the garden, drop untidy leaves or create concern on stormy nights, may be rejected by the Planning Authority. A rule of thumb suggests that dwellings should be sited no nearer than a distance equal to two thirds of the predicted mature height of the tree; on the assumption that most structural damage is caused by lower major limbs and trunk. However the rooting characteristics of trees will

probably dictate that a greater distance should be maintained. Roots extend well beyond the canopy. This has serious implications for both trees and development.

Design of Foundations, Drains and Other Services

Building inspectors will expect that the proximity of trees and their existing and future rooting zones will be taken into account in the design of foundations, and in the provision of root barriers for the protection of drains. Similarly the 'shrinkability' of any clay soils should be taken into account as a design factor. This will avoid the unnecessary sacrifice of valuable trees and/or underpinning of foundations and the replacement of drains in years to come. Services should be grouped and restricted to passing existing trees on one side only. Consider allowing for ducting with draw strings to accommodate future expansion without more disturbance.

Site levels and Changes to the Water Table

Most tree roots are within 600mm of ground level. Any change in ground levels can kill trees by cutting or burying roots, reducing oxygen levels in the soils, or altering the level of the water table and 'drowning' roots. Mature trees are particularly susceptible. A tree may take several years to succumb. Covering the roots with an impervious driveway or path upsets the root systems and can have a similar fatal effect.

Compaction

Trees need well drained, aerated top soil within which to develop healthy roots. Compaction caused by heavy machinery cuts off oxygen and causes a build up of toxic carbon dioxide. This is one of the greatest dangers to a tree's continued well-being.

Exposure

The removal of individual trees within a group can result in exposure to direct sunlight and cause the scorching of foliage or bark split. Wind-throw and root destabilisation is a more common result. Reducing the canopy of the tree, to an agreed schedule, can sometimes improve its long-term prospects.

Pruning and Felling

Having obtained Detailed Planning Permission, and before building work starts, a qualified tree surgeon, holding adequate professional indemnity insurance, should be employed to carry out the agreed work. The extent of this work must be strictly in accordance with the terms of the permission. The Local Authority planning team should be contacted so that arrangements can be made to agree the detailed extent of any tree surgery on site.

Protective Fencing

Before any plant or machinery is allowed on site, or any demolition is started, trees and hedges to be retained should be protected behind stout fencing, at least 1.5m high to an approved detail. This should be erected in accordance with the TPP. No site traffic, site cabins, temporary latrines or their drains, concrete mixing, stored building materials, chemicals including diesel, oil, petrol or creosote should be allowed within the protected zone. Burning of paint tins, washing out and draining of engine oil must be avoided in the vicinity. Notices and cables should not be attached to trees, nor should a tree be used as an anchorage point for equipment. Where vehicle tracking is agreed as being unavoidable, roots should be bridged over using heavy timbers. Any damage to the fencing should be quickly repaired.

Trench Excavations for Services

Where the exact route of trenching work within the curtilage of root systems containing roots over 50mm in diameter has been agreed, excavations should be by hand digging. Tables 1 - 3 show minimum distances between tree and excavation. Where possible, roots should be left intact and protected against desiccation by immediate wrapping or sheeting.

Backfilling should be carefully undertaken as soon as possible to avoid drying out or flooding. Sharp sand should be carefully compacted around the roots and trenches backfilled by hand with topsoil which had been previously separately excavated and heaped. This work should be undertaken during the dormant period and not during wet weather. Damaged roots or those requiring pruning should be cleanly cut and treated with a fungicidal sealant and surrounded by top soil enriched with a phosphate fertilizer (BS. 3998:1989). Roots left exposed in trenches to be filled with concrete should be protected with several layers of hessian.

How to work out Tree Size Class

Convert girth, height and spread into points using the following tables:

Stem Circumference		Tree Height		Crown Diameter	
cm	Points	(m)	Points	(m)	Points
0 - 30	1	0 - 5	1	0 - 4	1
31 - 60	2	5 - 7	2	4 - 7	2
61 - 100	3	7 - 10	3	7 - 10	3
101 - 160	4	10 - 14	4	10 - 13	4
161 - 220	5	14 - 17	5	13 - 16	5
221 - 300	6	17 - 21	6	16 - 19	6
over 300	7	over 21	7	Over 19	7

Add up the points for girth, height and spread to give the Tree Size Class:

Total points	Tree Size Class
3 - 6	1
7 - 9	2
10 - 14	3
15 - 17	4
18 - 20	5
21 +	6

Minimum distances between tree and excavations for services (one side of tree only)

Tree Size Classes	Oak and Beech	Other species
1	1.2m	1.2m
2	2.5m	2.0m
3	4.0m	3.0m
4	5.0m	4.0m
5	6.0m	5.0m
6	7.0m	6.0m

Tables developed by Norwich City Council and reproduced with their permission.

Further Information

- BS. 5837:2005 Trees in Relation to Construction can be obtained from British Standards Online

Tree planting

Tree planting is a simple operation but many schemes end in failure due to poor plant handling and aftercare. Following these guidelines will make sure your trees get off to the best possible start.

Choice of species

It is important to select species appropriate to the site and the purpose of the planting. For woodland planting these is detailed guidance on species selection and native woodlands in the Woodlands and Forestry Guidelines which can be downloaded from the Durham County Council website. When planting close to buildings or services follow the advice on species selection given in the *Trees and buildings* section above. in many situations native trees have the greatest landscape and ecological value and there is always a native tree suited to the site in terms of its size, growth habit and soil requirements. For information on individual species see the sections below on native and non-native species.

Choice of plant stock

For most tree planting schemes, bare-rooted stock in the size range 25-40cm or 40-60cm will give the best results (see Fig 4 overleaf). Plants of this size are cheap to buy, easy to plant and establish well in most conditions. Cell-grown plants (Fig 1) grown individually in small containers are more expensive but are easy to store and handle. Larger plants may be appropriate when an immediate impact is desirable but they are considerably more expensive, require far more work during planting and can be difficult to establish. It is worth noting that small stock which are well maintained will outgrow larger plants (1.5m+) within 3-5 years.

The range of tree sizes available from nurseries is shown below. Larger plants will often be supplied as root balled stock. These are normally provided with a hessian wrapping to hold the soil in place. Planting larger trees is heavy work and it is recommended that schools and volunteer groups do not attempt to plant trees over two metres in height.

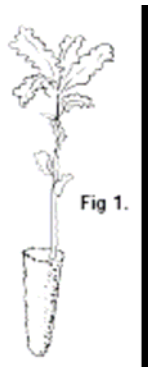


Fig 1.

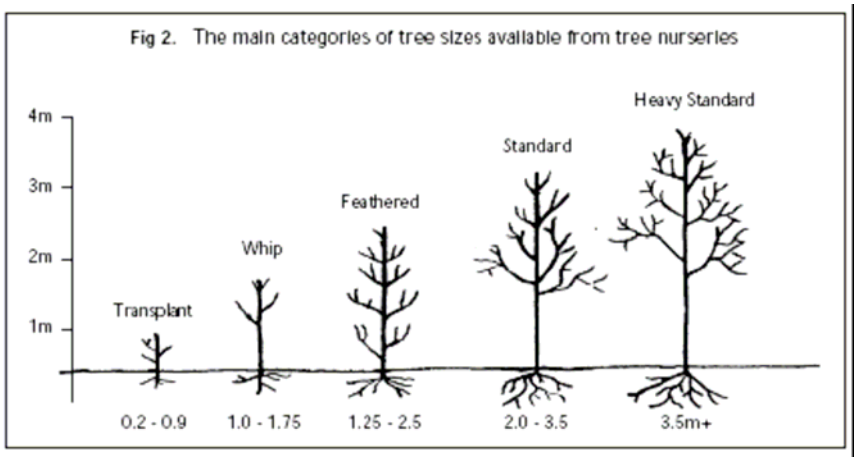


Fig 2. The main categories of tree sizes available from tree nurseries

Ground preparation

You must suppress any existing vegetation to reduce competition for water and nutrients. A transplant or cell grown plant will require an area of at least 1m2 to be cleared. Herbicides can be used in the late summer prior to planting otherwise some form of cultivation will be necessary. Screefing (the process of shaving vegetation off the soil surface), is a useful approach for small schemes (see Fig.3).

When to plant

Plant bare root stock between November and the end of March. Cell grown stock may be planted between September and May. Technically root balled plants may be planted all year round, but success is more likely during the dormant season November-March. Early season planting (pre- Christmas) is preferable for all stock types. The soil is warmer which encourages root growth, and plants are afforded a longer period of time to establish new root networks before the advent of spring. Where possible avoid planting in sunny, windy, drying weather. Never plant when snow is on the ground or during periods of hard frost.

Stock assessment

The conditions of plants should be checked on arrival. You should reject spindly plants and those showing evidence of physical damage, desiccation or disease. For small plants (30- 60cm) the diameter of the root

collar (see Fig 4) can be a useful indicator of vigour. Such plants should have a minimum root collar diameter of 5mm. The position of the root collar is indicated by a marked change in stem colour. If desiccation is suspected carefully 'nick' the bark of the plant stem, there should be a layer of fresh green material (the cambium layer) just below the bark. Bare root stock (of all sizes) should have a compact fibrous root system with a good root/shoot ratio (see Fig 4).

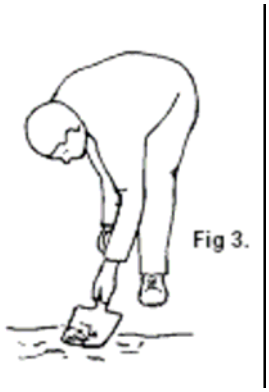


Fig 3.

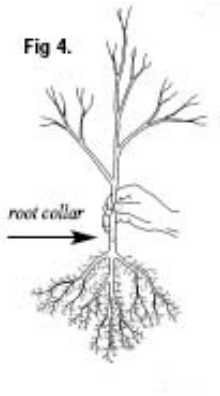


Fig 4.

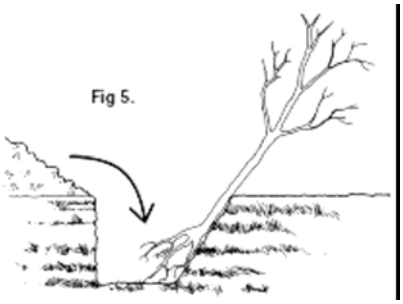


Fig 5.

Plant handling and storage

Handle with care! Avoid causing physical damage to the plants. Ensure that the roots are protected from drying out. Bare root stock should be supplied in polythene bags. Stock should be kept in the bags until planting. In the short term they may be stored in a cool frost free shed or similar. The roots should be regularly watered to prevent them drying out. If plants are to be stored for longer than a week they should be heeled in (Fig 5). Dig a trench cutting one side at an angle whilst casting the spoil onto the opposite side. Space the plants tightly along the angled side of the trench then cast the spoil back over the roots and lightly firm it in. Plants can be stored for several months by this method.

Cell grown stock can be stored in their containers for several months provided the roots are kept moist and protected from frost. Root-balled stock should be supplied with a hessian wrapping to hold the soil in place and help prevent root desiccation. It should be planted as soon as possible. If plants are to be stored the root ball must be kept damp.

When planting, keep plants bagged up to prevent the roots drying out, they should only be removed from the bag when you are about to plant them. If you must plant in adverse conditions, try to keep the bagged plants sheltered from the sun and the wind.

Planting methods

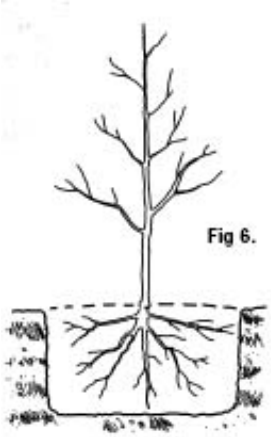


Fig 6.

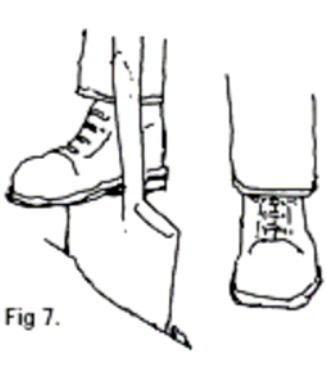


Fig 7.

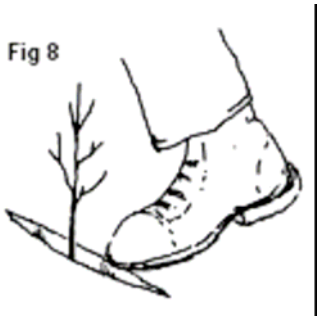


Fig 8

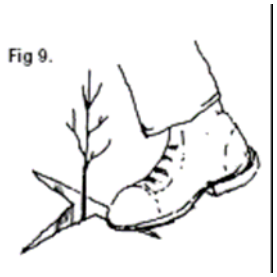
Pit planting

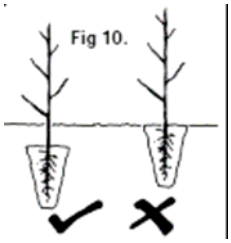
Suitable for all stock types and necessary for container grown stock and plants over 90cm. Excavate a pit sufficiently large to freely accommodate the roots without constraint. Remove the plant from the bag and hold it in the centre of the pit with the root collar just below ground level. Scoop the earth back into the pit crumbling any large clumps and removing large stones. Gently pull the plant to allow the earth to settle

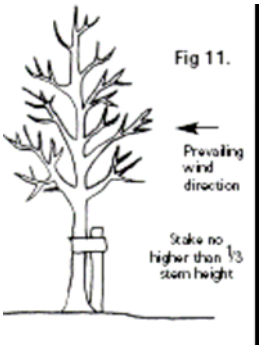
around the roots. Use the ball of the foot to firm the loose earth back into the pit. Take care not to scrape the bark of the plant. Ensure the root collar finishes at ground level. (Fig 6)

Slit or Notch planting

Suitable for small bare root and cell grown plants. This is best undertaken where the ground has been cultivated. Do not use on heavy clay soils. Insert a spade into the earth to the desired depth, move forwards and backwards to open up the notch (Fig 7). Sweep the plant into the hole from the side ensuring the roots are not constrained. Using the ball of the foot, press the edges of the notch together taking care not to scrape the bark (Fig 8). Ensure the root collar finishes level with the ground and that the plant finishes upright. Sometimes it may be necessary to create a larger notch by cutting at right angles to the first slit to open up a T or L shaped notch (Fig 9).







When planting cell grown stock, the plant root plug should be covered by at least 1" (25mm) of soil to prevent it drying out and becoming loose in the planting hole (Fig 10).

Use of stakes and ties

Plants larger than 1.5m will need the support of a stake until the root system is established. These should be placed prior to planting to avoid damaging the trees root system. Where there is a prevailing wind the stake should be positioned upwind of the tree. It should finish no higher than a third of the height of the tree (Fig 11). A tie will be required to attach the tree to the stake, these come in a variety of forms. Whatever type is used it is important that the stake and the tree stem are separated by a soft buffer to prevent damage to the stem (Fig 12).

Application of mulches

Some form of weed control is essential if newly planted trees are to flourish. If properly applied and maintained, mulches can be effective at suppressing weeds. Loose organic mulches such as woodchip or well rotted manure are commonly used and widely available materials. To be effective, the existing ground vegetation must be destroyed prior to application. This can be achieved through the use of a herbicide or screefing. The mulch should be applied to a minimum depth of 100mm covering an area of at least 1m2 around the tree. Mulch mats may be obtained from most tree nurseries, they are easily fitted and may be secured either by the use of pegs or by forcing the edges of the mat into the earth with the edge of a spade (Fig 13). They are generally more effective than loose mulches but are more susceptible to vandalism.

Use of tree guards and shelters

Where plants may be subject to damage by animals, they will require some form of protection. Fencing will be required to prevent plants from being trampled or eaten by large animals such as sheep, horses and cattle. Rabbits are perhaps the most common problem and in this instance, guards are often the cheapest option. The most commonly available types are shown above (Fig14). Where possible, use the smaller size shelter (up to 600mm). Net guards incorporate a herbicide shield at the base of the guard. Some shelters have a flared end at the top of the shelter to reduce friction damage when the tree grows above the height of the shelter. Most shelters require the use of a cane or a small stake for support. Staples or ties should be used to attach the guard to the support. The base of the guard should be pushed 50mm into the ground. New to the market are mesh wraps, which expand with the growth of the tree and require no support. Larger types of shelter are sometimes used to protect plants from deer (Fig 15.) They need to be used with a stake to provide support. This should be positioned prior to planting to avoid damaging the roots.

Fig 13.

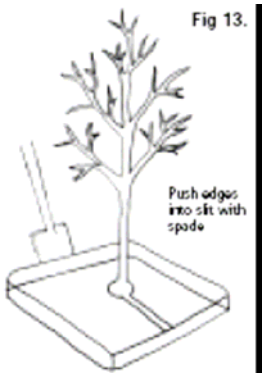
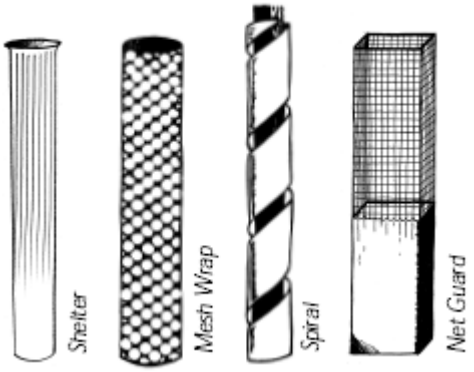


Fig 14.



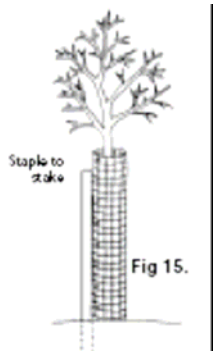


Fig 15.

Aftercare

Aftercare is the most neglected aspect of tree establishment, and the most common cause of plant failure. Weed control, either through the use of mulches, herbicide or hand weeding must be undertaken for at least the first three years after planting. Strimmers should not be used in tree maintenance. Cutting grass stimulates it to compete for water and nutrients and careless use of the strimmer can kill or damage new trees.

Trees should be checked in the first weeks after planting particularly after storms or hard frosts. Frosts can cause the ground to heave, loosening the roots. Trees planted late in the season may require watering in a dry spring. Tree ties should be loosened over time to prevent constriction of the tree stem. Stakes should no longer be required after the second growing season and should be removed to prevent the tree from becoming over dependent upon their support. Regulations have been brought in concerning the use and storage of pesticides. Certificates of competence are required by any contractor who uses pesticides. Volunteer groups are classed as contractors and need to meet these requirements.

Key Points

- Ensure that you order planting stock of the appropriate size and species
- Inspect the condition of stock upon receipt, reject damaged or unhealthy plants
- Ensure stock is handled and stored correctly, i.e. keep plants bagged up to prevent roots drying out.
- Suppress existing ground vegetation
- The planting season runs from October to the end of March. Early winter plantings are often more successful. Whatever the season avoid periods of hard frost, snow and windy, sunny weather.
- Pit planting is the most successful method and it should always be used on heavy clay soils. Ground frost can cause notches to open up.
- The importance of aftercare cannot be over emphasised, effective weed control is essential if a scheme is to be successful.
- Strimming around new plants is not an appropriate method of weed control.
- Ensure new plants are protected from animal damage.

Useful references

1. Tree Planting and Aftercare. BTCV 1996.

2. Tree Warden Action Pack, Tree Council 1997.

Useful contacts

1. Durham County Council, Tree Officer, advice on grants, good practice and training Tel: 0191 383 3426.

2. Durham County Council, Volunteer Co-ordinator, contact for local tree wardens. Tel: 0191 383 4087.

3. Schools Grounds Project Officer, can provide advice and assistance with environmental improvements in school grounds. Tel: 01740 656210.

4. BTCV, (British Trust for Conservation Volunteers), can provide advice and assistance with tree planting. Tel: 0191 383 2121.

5. The Tree Council, 51 Catherine Place, London, SW1E 6DY. Information and written materials concerning the tree warden scheme. Tel: 0171 828 9928.

6. BTCV Enterprises can supply tools and handbooks. Tel: 01302 859 522

Species native to County Durham

The following common trees and shrubs are generally considered to be native to County Durham.

Ash	Holly	Small Leaved Lime
Birch, Downy	Honeysuckle	Spindle
Birch, Silver	Ivy	Spurge Laurel
Blackberry	Juniper	Wild Privet
Blackthorn	Oak, Common	Willow, Almond
Broom	Oak, Sessile	Willow, Bay
Cherry, Bird	Aspen	Willow, Crack
Cherry, Wild	Black Poplar	Willow, Creeping
Common Alder	Raspberry	Willow, Dark Leaved
Crab Apple	Rose, Burnet	Willow, Eared Sallow
Dogwood	Rose, Dog	Willow, Goat
Elder	Rose, Field	Willow, Grey
Field Maple	Rose, Hairy Dogrose	Willow, Osier
Gooseberry	Rose, Northern Dogrose	Willow, Purple
Gorse	Rose, Sherard's Downy	Willow, Tea Leaved
Guelder Rose	Rose, Soft Downy	Willow, White
Hawthorn	Rose, Sweet Briar	Wych Elm
Hazel	Rowan	Yew

Other woody species native to the county, including dwarf shrubs and very rare species, include:

Bearberry	Cranberry	Gorse: Western
Bell Heather	Cross-leaved Heath	Heather
Bilberry	Crowberry	Rock Rose: Common
Bilberry: Bog	Currant: Downy	Rose: Harsh downy
Birch: Dwarf	Currant: Mountain	Shrubby Cinquefoil
Bramble: Stone	Currant: Red	Whin: Petty
Cloudberry	Dewberry	Whitebeam: Rock
Cowberry	Dyers Greenweed	

Ash Fraxinus excelsior

Status Native

Distribution Widespread

Habitats Woodlands, hedgerows, road verges, railway banks. An important component of many semi-natural woodlands in the county and particularly characteristic of those on base rich soils. The commonest hedgerow tree across much of Durham.

Requirements Will grow on a broad range of sites, although preferring neutral to alkaline soils. Tolerates some exposure. Light demanding. For timber production well drained fertile soils and sheltered sites are required.

Recommendations A useful forest tree capable of producing versatile good quality timber on better sites. Suitable for general planting throughout the county as a woodland and hedgerow tree, particularly on base rich soils.

Origins/provenance Existing populations are largely wild. Has been widely planted in the past as a timber and field tree but probably often with local plant material. Use plants of local provenance or FC seed zones 302 & 204. Where the production of quality timber is an aim use plants of FC certified stock.

Birch (Downy) Betula pubescens

Status ***Native***

Distribution Widespread with a western emphasis. Particularly characteristic of the North Pennines and West Durham Coalfield.

Habitats Damp & waterlogged woodland, carr & scrub, watercourses, heathland, road verges, railway banks. A component of many semi-natural woodlands in the county in association with oak, particularly on wetter acidic soils.

Requirements Will grow on most soils. Tolerant of wet, exposed & infertile sites. Light demanding.

Recommendations A useful pioneer species on poorly drained or otherwise difficult sites producing strong and light but small dimension timber. Suitable as a woodland fringe and nurse species for general planting, particularly in the uplands and upland fringes.

Origins/provenance Existing populations are predominantly wild. Both pollen and seed carry considerable distances. Use plants of local provenance or FC seed zones 302 & 204.

Notes Birch hybridises freely and so individual trees found in the field may be intermediate in type, or hybrids, between Downy Birch and Silver Birch.

Birch (Silver) Betula pendula

Status Native.

Distribution Widespread.

Habitats Woodland, heathland, scrub, road verges, railway banks. A component of many and light but small dimension timber. Suitable as a woodland fringe and nurse species for general planting semi-natural woodlands in the county in association with oak, particularly on drier & infertile acidic soils.

Requirements Will grow on most soils, tolerating both very acid and strongly alkaline conditions. Tolerant of dry, exposed & infertile sites. Light demanding.

Recommendations A useful pioneer species on difficult sites producing strong throughout the county.

Origins/provenance Existing populations are largely wild although commonly planted as an ornamental or landscaping tree in recent years. Both pollen and seed carry considerable distances. Use plants of local provenance or FC seed zones 302 & 204.

Notes Birch hybridises freely and so individual trees found in the field may be intermediate in type, or hybrids, between Silver Birch and Downy Birch.

Blackthorn, Sloe Prunus spinosa

Status Native.

Distribution Widespread but relatively sparse.

Habitats Deciduous woodland, scrub, hedgerows, road verges.

Requirements Will grow in most soils & situations. Light demanding.

Recommendations A fast growing small tree bearing flowers and fruit (sloes). Suitable for general planting as a woodland fringe species and as a hedgerow shrub.

Origins/provenance Blackthorn has been planted as a hedgerow species in the past but truly wild populations are also common. Use plants of local provenance or FC seed zones 302 & 204.

Blackberry, Bramble Rubus fruticosus L. agg.

Status Native.

Distribution Widespread.

Habitats Woodland, hedgerows, scrub, heath, waste ground, quarries, railway lines, road verges.

Requirements Tolerates a wide range of conditions.

Recommendations A fast growing sprawling shrub bearing flowers and edible fruit. While it may be suitable for planting as a shrub in woodland margins & open glades, its vigour can be a problem in new planting. It can be expected to colonise suitable sites through natural colonisation.

Origins/provenance Bramble has not been widely planted in the past other than in the form of domestic fruit cultivars which interbreed and hybridise with wild species. Use plants of local or regional provenance. Avoid fruit cultivars.

Notes There are a number of Rubus species found in the county, both native and introduced, the most widespread and abundant being the Woodland Bramble (R.dasyphyllus) and the Hazel-leaved Bramble (R. corylifolius), the latter being more common on the Magnesian Limestone & coast. These species are not generally commercially available.

Broom (Whin) Cytisus scoparius

Status Native.

Distribution Common on the coal measures of the West Durham Coalfield and Wear Lowlands, sparse elsewhere. Absent above 300m AOD.

Habitats Heath, railway banks, road verges, waste ground, river banks.

Requirements Free draining acidic soils. Light demanding.

Recommendations An attractive flowering evergreen shrub, fast growing but short lived. Suitable as a woodland fringe & scrub species on free draining, infertile and acidic soils. Will colonise suitable sites naturally if local seed sources are available.

Origins/provenance The existing population is predominantly wild although occasionally planted as a landscaping shrub. Use plants of local provenance or FC seed zones 302 & 204.

Cherry (Wild), Gean Prunus avium

Status Native.

Distribution Widely but sparsely distributed. Most common in the West Durham Coalfield, Wear Lowlands and Dales Fringe.

Habitats Broadleaved woodland, hedgerows, scrub, road verges.

Requirements Will grow on a range of heavier soils from moderately acidic to moderately calcareous. Light demanding.

Recommendations An attractive fast growing flowering tree capable of producing high quality timber on better sites. Suitable for general planting as a woodland fringe species.

Origins/provenance Existing populations are largely wild, though both it and its cultivars have been widely planted as an ornamental. Use plants of local provenance or FC seed zones 302 & 204.

Cherry (Bird) Prunus padus

Status Native.

Distribution Frequent in the uplands and upland fringes - the North Pennines, West Durham Coalfield and Dales Fringe.

Habitats Broadleaved woodland, river & stream banks, rocky gorges.

Requirements Will grow on a wide range of damper soils. Light demanding.

Recommendations A small fast growing tree suitable for planting as an understorey and woodland fringe species on riparian & valley sites, particularly in the uplands and upland fringes.

Origins/provenance The existing population is wild. Use plants of local provenance or FC seed zone 302.

Common Alder Alnus glutinosa

Status Native.

Distribution Widespread; closely associated with wetlands, rivers and streams.

Habitats Watercourses, wet & waterlogged woodland & carr.

Requirements Will grow in most soils and situations, including waterlogged sites. Light demanding.

Recommendations A useful fast growing pioneer species on wet or infertile sites. Suitable as a woodland species on wetter ground, and as a nitrogen fixing nurse on infertile or reclaimed sites. Coppices well.

Origins/provenance The existing population is largely wild although commonly planted in land reclamation schemes. Use plants of local or regional provenance. Use plants of local provenance or FC seed zones 302 & 204. Source only from nurseries in northern catchments free from Phytopthera disease.

Crab Apple Malus sylvestris

Status Native.

Distribution Widespread but sparse.

Habitats Hedgerows and woodland margins (particularly older woods) as an individual tree or in small numbers.

Requirements Will grow on a range of soils preferring neutral to alkaline. Light demanding.

Recommendations An attractive small flowering & fruiting tree. Suitable as a hedgerow and woodland fringe species in small numbers.

Origins/provenance Crab apple has been widely planted in the past although probably on a relatively small scale using local plant material. Use plants of local provenance or FC seed zones 302 & 204 and avoid ornamental cultivars.

Notes See also Apple (Malus domesticus)

Dogwood Cornus sanguinea

Status Native & planted.

Distribution Thinly scattered distribution on limestone & base rich soils in the lower reaches of the major river valleys

Habitats Hedges and woodland margins.

Requirements Prefers well-drained calcareous or neutral soils.

Recommendations A species on the edge of its natural range in Durham and not particularly characteristic of the local flora. May be suitable as a hedgerow or woodland fringe species in small numbers in areas where it occurs naturally

Origins/provenance The existing population is predominantly wild, though it is also commonly planted as a garden & landscaping shrub. Use plants of local provenance or FC seed zones 302 & 204 and avoid ornamental cultivars.

Elder Sambucus nigra

Status Native.

Distribution Widespread.

Habitats Woodland, scrub, hedges, railway banks, road verges, waste ground.

Requirements Will grow in most situations but prefers fertile base rich soils. Shade tolerant.

Recommendations A fast growing shrub with conspicuous flowers and berries. May be suitable as an understorey or woodland fringe species on fertile soils. Not suitable as a shrub for stock hedges due to its open habit and competitive nature.

Origins/provenance Existing populations are wild. Dispersed widely in the droppings of birds. Use plants of local provenance or FC seed zones 302 & 204 and avoid ornamental cultivars.

Field Maple Acer campestre

Status Native.

Distribution Strong bias towards the south east of the county, scattered & rare elsewhere.

Habitats Hedgerows & woodland margins.

Requirements Will tolerate shallow and basic soils. Light demanding.

Recommendations An attractive small tree with strong autumn colour. On the edge of its natural range in Durham and not characteristic of its flora other than in parts of the southeast. Not suitable for widespread planting but may be used as a woodland fringe or under storey species or as a hedgerow shrub/tree in the south and east of the County on base rich soils.

Origins/provenance Existing populations are wild. Use plants of local provenance or FC seed zone 204.

Gooseberry Ribes uva-crispa

Status Native & introduced.

Distribution Widespread with a bias towards the south of the County.

Habitats Diverse: woodland, scrub, road verges & waste ground.

Requirements Will grow on a broad range of soils. Light demanding.

Recommendations A small, thorny, fruit-bearing shrub. Suitable for planting in small numbers in woodland margins and hedgerows.

Origins/provenance Unlikely to have been widely planted in the past other than on a very local scale using local plant material or fruit cultivars. Use plants of local provenance or FC seed zones 302 & 204 and avoid garden varieties.

Guelder Rose Viburnum opulus

Status Native.

Distribution Widespread in the lowlands, the east, and valleys of the Pennine fringe.

Habitats Woodland, scrub, hedgerows, banks of streams & ponds.

Requirements Typical of damp/heavy neutral or calcareous soils: tolerates a broader range.

Recommendations An attractive shrub bearing conspicuous flowers and berries. Suitable for planting as a woodland fringe or hedgerow species, particularly in lowland & valley situations and on damper sites.

Origins/provenance Existing populations are wild. Dispersed widely in the droppings of birds. Use plants of local provenance or FC seed zones 302 & 204.

Notes The related Wayfaring Tree Viburnum lantana is not considered to be a county native.

Hawthorn, May Crateagus monogyna

Status Native.

Distribution Widespread.

Habitats Hedgerows, woodland, scrub, road verges, railway banks, waste ground.

Requirements Will grow on most soils. Tolerates exposure.

Recommendations A small fast growing thorny tree bearing flowers and fruit. Suitable for general planting as a woodland under storey & fringe species, and as the major component of most hedgerows. A pioneer species on difficult or exposed sites.

Origins/provenance Hawthorn has been very widely planted as a hedgerow shrub although there area also wild populations in semi-natural woodlands. Use plants of northern & easterly UK provenance. Flowering times of regional genotypes may have significance for invertebrates: avoid European sources.

Hazel Corylus avellana

Status Native.

Distribution Widespread.

Habitats Deciduous woodland, hedges, scrub on limestones.

Requirements Will grow on most soils although avoiding infertile acidic sites. Shade tolerant.

Recommendations A fast growing small tree. Suitable for general planting as a woodland under storey and fringe species and as a component of hedgerows & scrub. A good coppice tree producing small dimension round wood for traditional crafts.

Origins/provenance Existing populations are wild. Has been planted in the past as a coppice species although often in very localised situations and probably using local plant material. Widely present in semi-natural woodlands. Relatively localised dispersal strategy. Use plants of local provenance or FC seed zones 302 & 204.

Holly Ilex aquifolium

Status Native.

Distribution Widespread although sparse on the Magnesian Limestone.

Habitats Deciduous woodland, hedges.

Requirements Will grow on a broad range soils, avoiding only very dry or wet conditions. Tolerates shade & pollution, and exposure when established.

Recommendations An attractive slow growing evergreen tree. Suitable for general planting as a woodland under storey & fringe species and as a hedgerow shrub.

Origins/provenance Existing populations are largely wild. Has been widely planted in the past as an ornamental & hedgerow species. Dispersed widely in the droppings of birds. Use plants of local provenance or FC seed zones 302 & 204..

Honeysuckle, Woodbine Lonicera periclymenum

Status Native

Distribution Well distributed on the Coal Measures, thinner elsewhere.

Habitats Woodland margins, hedgerows and scrub.

Requirements Damper soils.

Recommendations An attractive climbing flowering shrub. Not generally appropriate for new planting due to its climbing habit. Can be expected to colonise suitable sites naturally in time.

Origins/provenance Existing populations are predominantly wild although commonly planted as a garden plant. Dispersed widely in the droppings of birds. Use plants of local provenance or FC seed zones 302 & 204. Avoid ornamental varieties when planting in a natural context.

Ivy Hedera helix

Status Native.

Distribution Widespread.

Habitats As a climber and ground layer species in woodland & hedgerow and on walls, cliffs and field trees.

Requirements Broadly tolerant.

Recommendations Evergreen climbing and ground layer shrub. Not generally appropriate for new planting due to its climbing habit. It can be expected to colonise suitable sites naturally in time.

Origins/provenance Use plant material of local provenance – and particularly from cuttings - or FC seed zones 302 & 204. Avoid ornamental varieties when planting in a natural context.

Juniper Juniperus communis

Status Native.

Distribution Scattered in moorland margins and upland valleys in the west. Localised in coastal denes and magnesian limestone cliffs in the east. Rare elsewhere.

Habitats Scrub on rocky & well-drained moorland margins & gullies. Open birch woodland. Scrub and open woodland in coastal denes and magnesian limestone cliffs.

Requirements Infertile freely drained sites. Light demanding. Tolerance of highly calcareous and acidic soils appears to be related to local genotype.

Recommendations A slow growing evergreen shrub. Planting should be limited to areas where it occurs naturally – upland and lowland heaths and coastal gills and grasslands – using local plant material.

Origins/provenance Existing populations are wild and often isolated. There may be variation between upland and lowland genotypes. Use plants of local provenance.

Oak (Common), English Oak, Pedunculate Oak Quercus robur

Status Native.

Distribution Widespread

Habitats Mixed deciduous woodland, hedgerows, parkland. Together with Sessile Oak a major component of many semi-natural woodlands in the county.

Requirements Will grow in a wide range of soils and situations. More tolerant than Sessile Oak of wetter ground. For timber production heavier fertile soils and sheltered sites are required.

Recommendations A slow growing forest tree capable of producing versatile high quality timber on better sites. Suitable for general planting as a woodland, hedgerow & parkland tree.

Origins/provenance Has been widely planted in the past although also a very common wild species. Use plants of local provenance or FC seed zones 302 & 204. When timber quality is an aim use plants of FC certified stock.

Notes Oak hybridises relatively freely and individual trees found in the field may be intermediate in type, or hybrids Quercus x rosacea, between Common Oak and Sessile Oak

Oak (Sessile), Durmast Oak Quercus petraea

Status Native.

Distribution Widespread, being most common in the Pennines & Pennine Fringe and particularly the Coal Measures.

Habitats Mixed deciduous woodland, hedgerows. Together with Common Oak a major component of many semi-natural woodlands in the county, particularly in association with Birch on acidic, leached & infertile soils.

Requirements Will grow in a wide range of soils and situations. More tolerant than Common Oak of drier & less fertile sites. For timber production well drained fertile soils and sheltered sites are required.

Recommendations A slow growing forest tree capable of producing versatile high quality timber. Suitable for general planting as a woodland and hedgerow tree, particularly in the Pennines and Pennine fringe.

Origins/provenance Has been widely planted in the past although also a very common wild species. Use plants of local provenance or FC seed zones 302 & 204. When timber quality is an aim use plants of FC certified stock.

Notes Oak hybridises relatively freely and individual trees found in the field may be intermediate in type, or hybrids (Quercus x rosacea), between Sessile Oak and Common Oak.

Poplar (Aspen) Populus tremula

Status Native

Distribution Widespread but sparse, though may be locally abundant.

Habitats Woodland, scrub, hedges, plantations, watercourses, roadsides & railway banks.

Requirements Will grow on most soils. Light demanding. Tolerates exposure.

Recommendations A fast growing tree suitable for planting as a woodland fringe species, particularly on poor or exposed sites and along natural watercourses. Coppices well though producing low value timber.

Origins/provenance Existing populations are wild. Occasionally planted as a landscaping tree. Use plants of local provenance or FC seed zones 302 & 204

Black Poplar Populus nigra var. betulifolia

Status Re-Introduced - formerly native

Distribution Very rare - a few individual specimens.

Habitats River flood plains, hedgerows, carr.

Requirements Deeper & heavier damp neutral or alkaline soils. Alluvial soils.

Recommendations A large fast growing tree on the limit of its natural range in County Durham. There may be merit in reintroducing it to areas from which it may have disappeared such as the carrs and flats of the Tees Lowlands and on lowland river floodplains elsewhere.

Origins/provenance An ancient introduction. All existing plants are male and have been planted. Use plants of local provenance where available. There may be merit in using material from FC seed zones 302 & 401 to widen the genetic base.

Raspberry Rubus idaeus

Status Native & introduced.

Distribution Widespread though more common in the Pennine Fringe & lowland valleys.

Habitats Woodland, scrub, hedge banks, road verges, railway lines.

Requirements Prefers damp sheltered sites & acidic soils.

Recommendations Not particularly suited to new planting.

Origins/provenance Existing populations are wild. Not widely planted in the past other than domestic fruit cultivars which interbreed with the wild type. Use plants of local provenance or FC seed zones 302 & 204 and avoid fruit cultivars.

Rose (Burnet) Rosa pimpinellifolia

Status Native.

Distribution The coast, magnesian limestones & occasionally on upland limestone sites.

Habitats Scrub, waste ground, old quarries.

Requirements Free draining base rich soils. Light demanding.

Recommendations Suckering species suitable for planting in hedgerows & scrub on free draining sites, and particularly on limestones and the coast

Origins/provenance Existing populations are wild. Use plants of local provenance or FC seed zones 302 & 204.

Rose (Dog) Rosa canina

Status Native.

Distribution Widespread.

Habitats Woodland, scrub, hedges, road verges.

Requirements Broad tolerance. Light demanding.

Recommendations A suitable species for general planting as a shrub in woodland margins, and scrub. Commonly found in hedgerows although not always well regarded by farmers and hedge cutters.

Origins/provenance Existing populations are largely wild although increasingly used in recent years as a landscaping shrub. Use plants of local provenance or FC seed zones 302 & 204.

Rose (Field) Rosa arvensis

Status ***Native.***

Distribution ***Rare and localised.***

Habitats ***Open woodland.***

Requirements ***Broad tolerance.***

Recommendations A rare species in County Durham where it is on the edge of its range. It is not recommended for general planting.

Origins/provenance Existing populations are wild. Use plants of local provenance.

Rose (Northern Dog-rose), Glaucous Dog-rose Rosa afzeliana

Status Native.

Distribution Widespread but more common in the west.

Habitats Woodland margins, hedgerows, quarries, railway banks and upland road verges.

Requirements Broad tolerance.

Recommendations An alternative to Dog-rose but difficult to obtain commercially.

Origins/provenance Existing populations are wild. Use plants of local provenance. Allowing natural colonisation may be the preferred option.

Rose (Hairy Dog-rose), Leathery-leaved Rose Rosa coriifolia

Status Native.

Distribution Widespread but more common in the east.

Habitats Magnesian Limestone scrub, quarries, hedges, woodland margins.

Requirements Broad tolerance.

Recommendations An alternative to Dog rose but difficult to obtain commercially.

Origins/provenance Existing populations are wild. Use plants of local provenance. Allowing natural colonisation may be the preferred option.

Sherard's Downy Rose Rosa sherardii

Status Native.

Distribution Widespread but sparse.

Habitats Hedges, scrub, road verges.

Requirements Broad tolerance.

Recommendations An alternative to Dog rose but difficult to obtain commercially.

Origins/provenance Existing populations are wild. Use plants of local provenance. Allowing natural colonisation may be the preferred option.

Soft Downy Rose, Downy Rose Rosa mollis

Status Native.

Distribution Widespread.

Habitats Scrub, hedge banks, woodland margins, upland road verges.

Requirements Will grow on a range of better-drained soils. Tolerates exposure.

Recommendations An alternative to dog rose. Vigorous suckering habit.

Origins/provenance Existing populations are wild. Use plants of local provenance. Allowing natural colonisation may be the preferred option.

Sweet Briar, Eglantine Rosa rubiginosa

Status Native & introduced.

Distribution Localised.

Habitats Hedgerows, disturbed sites.

Requirements Well-drained neutral or calcareous soils.

Recommendations An uncommon species in County Durham which is not recommended for general planting.

Origins/provenance Existing populations are wild. Use plants of local provenance. Allowing natural colonisation may be the preferred option.

Rowan, Mountain Ash Sorbus aucuparia

Status Native.

Distribution Widespread though more thinly distributed in the east.

Habitats Woodland, scrub, stream sides, road verges, rock & scree.

Requirements Will grow on a broad range of soils. Tolerates shade and exposure.

Recommendations An attractive small tree bearing conspicuous flowers and berries. A fast growing pioneer species suitable for general planting as a woodland fringe and under storey species, particularly in the west of the county and on poor and exposed sites.

Origins/provenance The existing population is largely wild although increasingly planted as a landscaping tree. Widely dispersed by birds. Use plants of local provenance or FC seed zones 302 & 204 and avoid ornamental cultivars in rural situations.

Notes The related Whitebeam is not considered a native of County Durham though naturalised in places. Rock Whitebeam *Sorbus rupicola*, is very rare and found here only on limestone exposures in Teesdale.

Small Leaved Lime Tilia cordata

Status Native & planted.

Distribution Rare & localised.

Habitats Ancient woodland sites, particularly in lowland gorges & limestone denes.

Requirements Prefers heavier and deeper neutral and alkaline soils.

Recommendations A large forest tree on the edge of its natural range in County Durham and therefore not typical of its woodland flora. It does not set viable seed here in the current climate and is found in a small

number of ancient woodlands where its presence is indicative of great antiquity. It is not recommended for general planting in rural situations. Existing trees should be conserved where they are found.

Origins/provenance Existing populations are predominantly wild but it has been occasionally planted as an avenue or parkland tree. Ornamental cultivars may be suitable in these situations but planting elsewhere is not recommended.

Spindle Euonymus europaeus

Status Native.

Distribution Rare & largely restricted to the magnesian limestone.

Habitats Hedgerows and woodland margins.

Requirements Well-drained neutral and calcareous soils.

Recommendations A small tree on the edge of its natural range in County Durham and therefore not typical of its woodland flora. It is not recommended for general planting. Existing populations should be conserved where they are found. It may have been eradicated in some areas as a host of the Black Bean Aphid.

Origins/provenance The existing population is wild. Use plants of local provenance.

Spurge Laurel Daphne laureola

Status Native.

Distribution Sparsely distributed on the Magnesian Limestone.

Habitats Hedgerows and woodlands.

Requirements Well-drained neutral and calcareous soils. Shade tolerant.

Recommendations On the edge of its natural range in Durham. Not recommended for widespread planting.

Origins/provenance The existing population is wild. Dispersed locally by birds. Use plants of local provenance.

Wild Privet Ligustrum vulgare

Status Native and introduced.

Distribution Widely distributed.

Habitats Deciduous woodlands & hedgerows.

Requirements Typical of more base rich soils, though tolerating a broader range.

Recommendations A small fast growing species. Suitable for planting in small numbers as a shrub in hedgerows and woodland margins, and in coastal scrub.

Origins/provenance Widely planted in the past as a garden shrub but also a common wild species. Use plants of local provenance or FC seed zones 302 & 204.

Willow (Almond) Salix triandra

Status Native.

Distribution Very rare in County Durham: restricted to a few lowland sites.

Habitats Stream banks.

Requirements Wet sites. Neutral or calcareous soils.

Recommendations A rare plant in County Durham. Not recommended for general planting.

Origins/provenance The existing population is wild. Use cuttings from local plants.

Willow (Bay) Salix pentandra

Status Native.

Distribution Widespread but thinly distributed.

Habitats Damp woods, alder carr, stream banks & shaded road banks.

Requirements Wet sites.

Recommendations A fast growing small tree suitable for planting in small numbers on damp sites or adjacent to wetlands or watercourses.

Origins/provenance The existing population is wild. Use plants of local or regional provenance and preferably cuttings from local plants.

Willow (Crack) Salix fragilis

Status Native.

Distribution Wide distribution.

Habitats River & stream banks, drainage ditches, damp woods.

Requirements Will grow on a range of wetter neutral or alkaline soils. Light demanding.

Recommendations A large fast growing tree suitable for planting as a woodland fringe species, particularly adjacent to wetlands & watercourses.

Origins/provenance The existing population is predominantly wild. Spreads vegetatively along watercourses as well as from seed. Use plants of local provenance, preferably cuttings from local plants, or FC seed zones 302 & 204.

Willow (Creeping) Salix repens

Status Native.

Distribution Scattered on limestones, particularly in the east but also in Teesdale.

Habitats Damp heaths, coastal cliffs, limestone quarries.

Requirements Limestone sites.

Recommendations A dwarf shrub. Appropriate only for specialist habitat creation schemes.

Origins/provenance The existing population is wild. Use cuttings from local plants.

Dark leaved willow Salix myrsinifolia (S. nigricans)

Status Native.

Distribution Sparse: lowland denes, hill streams.

Habitats Damp woodland, stream sides, scrub.

Requirements Damp neutral or alkaline soils.

Recommendations Not suitable for general planting. May have uses in restoration of limestone quarries and the reconstruction of bank side vegetation along upland streams.

Origins/provenance The existing population is wild. Use plants of local provenance and preferably cuttings from local plants.

Eared Sallow Salix aurita

Status Native.

Distribution Widespread but thinly distributed. Most common on the Coal Measures.

Habitats Damp woodland and scrub, streamsides, road verges.

Requirements Wet acidic soils. Withstands shade.

Recommendations A medium sized shrub willow suitable for planting in scrub and woodland margins on wet ground.

Origins/provenance The existing population is predominantly wild. Use plants of local provenance, preferably cuttings from local plants, or FC seed zones 302 & 204.

Willow (Goat), Pussy Willow. Salix caprea

Status Native.

Distribution Widespread. Particularly frequent on Coal Measures.

Habitats Watercourses, ponds, damp woodland, scrub & carr, road verges, hedgerows, railway banks, disturbed land.

Requirements Will grow in most soils & situations. Tolerates shade and exposure.

Recommendations A fast growing small tree suitable for planting in scrub and woodland margins and adjacent to watercourses and wetlands. Particularly useful on poor ground.

Origins/provenance The existing population is largely wild although increasingly planted as a landscaping shrub. Use plants of local provenance, preferably cuttings from local plants, or FC seed zones 302 & 204.

Willow (Grey), Common Sallow Salix cineria

Status Native.

Distribution Widespread.

Habitats Watercourses, ponds, damp woodland, scrub & carr, road verges, hedgerows, railway banks, disturbed land.

Requirements Will grow in most soils & situations.

Recommendations A fast growing small tree suitable for planting in scrub and woodland margins and adjacent to watercourses and wetlands. Particularly useful on poor ground.

Origins/provenance The existing population is largely wild although increasingly planted as a landscaping shrub. Use plants of local provenance, preferably cuttings from local plants, or FC seed zones 302 & 204.

Willow (Osier) Salix viminalis

Status Doubtfully native. Introduced.

Distribution Widespread, though more common in the east.

Habitats Watercourses, ditches, ponds & damp woodlands.

Requirements Prefers damp neutral or alkaline soils.

Recommendations An old introduction if not a native of the County & suitable for planting adjacent to watercourses and wetlands.

Origins/provenance Has been widely planted in the past and heavily influenced by selection. Avoid short rotation coppice cultivars unless planting for that purpose.

Willow (Purple), Purple Osier Salix purpurea

Status Native & introduced.

Distribution Well distributed along main watercourses.

Habitats River banks, shingle.

Requirements Wet sites.

Recommendations A fast growing large shrub suitable for planting along watercourses, particularly major rivers, but not for more general planting.

Origins/provenance The existing population is wild. Use plants of local provenance. Where possible use cuttings from the same river catchment.

Willow (Tea-leaved) Salix phylicifolia

Status Native.

Distribution Pennine Dales, occasionally elsewhere. Highly localised.

Habitats River banks, scars & screes, damp woodland, limestone quarries.

Requirements Wet rocky limestone sites.

Recommendations A small tree not recommended for general planting: may have uses in the restoration of limestone quarries and the reconstruction of bank side vegetation along upland streams.

Origins/provenance The existing population is wild. Use cuttings from nearby plants.

White Willow Salix alba

Status Doubtfully native. Introduced.

Distribution Scattered, more common in the lowlands.

Habitats Damp woods, river banks & pond sides.

Requirements Prefers damp neutral or alkaline soils.

Recommendations An old introduction if not a native of the County. Suitable for planting adjacent to watercourses and wetlands in the lowlands.

Origins/provenance The existing population is probably planted or naturalised rather than truly wild. Use plants of local provenance, preferably cuttings from local plants, or FC seed zones 302 & 204.

Wych Elm Ulmus glabra

Status Native.

Distribution Widespread.

Habitats Mixed deciduous woodlands, hedges.

Requirements Prefers calcareous soils but tolerates a broader range avoiding very acid conditions. Moist well-drained & fertile sites.

Recommendations Formerly an important component of the county's woodland flora it is not recommended for widespread planting due to the prevalence of Dutch Elm Disease. Planting in small numbers in new woodlands may nevertheless have some value as it will persist as a shrub/small tree in the under storey subject to cyclical dieback.

Origins/provenance The existing population is largely wild. Use plants of local provenance or FC seed zones 302 & 204.

Notes The related English Elm is likely to be an ancient introduction rather than a county native

Yew Taxus baccata

Status Native and introduced.

Distribution Considered native on Carboniferous & Magnesian Limestone sites although may have had a wider natural distribution. Widespread as a planted tree.

Habitats Deciduous woodlands and scrub in limestone scars & coastal denes, and as a specimen tree in churchyards, parks & gardens.

Requirements Strongly associated with calcareous soils though tolerant of a broader range. Shade tolerant.

Recommendations Slow growing evergreen tree suitable for planting as an ornamental species in formal landscapes or as a component of woodland and scrub on calcareous soils.

Origins/provenance Has been widely planted in the past although also wild populations also present. Dispersed widely by birds. Use plants of local provenance or FC seed zones 302 & 204.

Other Native Woody Species – dwarf shrubs

Bearberry Arctostaphylos uva-ursi

A dwarf shrub found in cracks & crevices in upland dolerite rocks. Very rare in Durham where it is found only in upper Teesdale.

Bell Heather Erica cinerea

A common dwarf shrub of dry upland and lowland heaths. Found on the drier eastern moors of the North Pennines, and the heaths of the West Durham Coalfield and Wear Lowlands.

Bilberry Vaccinium myrtilus

A common dwarf shrub of upland moors, lowland heaths and acidic woodlands. Found across the moorlands and oak-birch woodlands of the North Pennines, and the heaths of the West Durham Coalfield and Wear Lowlands.

Bog Bilberry Vaccinium ulginosum

A dwarf shrub of upland blanket bog. Very rare in Durham and found only the higher moorlands of the North Pennines.

Cloudberry, Knoutberry Rubus chamaemorus

A dwarf shrub of upland blanket bog. Very rare in Durham and found only on the highest moorland summits of the North Pennines

Common Rock Rose Helianthemum nummularium

A dwarf shrub of limestone grasslands, quarries, cliffs & coastal dunes and food source of the Durham Argus Butterfly. Restricted in Durham to the limestones of the East Durham Limestone Plateau and Upper Teesdale.

Cowberry Vaccinium vitis-idea

A dwarf shrub of montane heath & scree. Rare in Durham and found only on a few Pennine moors.

Cranberry Vaccinium oxycoccos

A dwarf shrub found in upland mires & flushes in the North Pennines.

Cross-leaved Heath Erica tetralix

A common dwarf shrub of upland mires, blanket bog and wet heath. Found on wetter moorlands in the North Pennines and wet heathland in the West Durham Coalfield.

Crowberry Empetrum nigrum

A Common dwarf shrub of upland & lowland heaths. Found on the moors of the North Pennines and the heaths of the West Durham Coalfield and Wear Lowlands.

Downy Currant Ribes spicatum

A rare native of woodlands on limestone.

Dwarf Birch Betula nana

A rare species in County Durham, unique to one upland site.

Dyers Greenweed Genista tinctoria

A rare dwarf shrub with a scattered distribution on heaths & road verges.

Dewberry Rubus caesius

Thinly distributed in hedgerows & woodlands on base rich soils, particularly in East Durham.

Harsh Downy Rose Rubus tormentosa

A very rare rose in County Durham. Restricted to a single site.

Heather Calluna vulgaris

A common dwarf shrub of heath & mire, open woodlands on acidic or free draining soils, & waste ground. Found across the moorlands and oak-birch woodlands of the North Pennines, the heaths of the West Durham Coalfield & Wear Lowlands and areas of colliery spoil and other waste ground.

Mountain Currant Ribes alpinum

A rare native of limestone denes and gorges, also found as a garden escape.

Petty Whin Genista anglica

A rare dwarf shrub with a scattered distribution on heaths, rough grassland, road verges, railway banks & woodland margins.

Red Currant Ribes rubrum

Possibly native but also found as a garden escape. Thinly distributed with a bias towards the east.

Rock Whitebeam Sorbus rupicola

Rare whitebeam found growing in rock crevices on limestone exposures in Teesdale.

Shrubby Cinquefoil Potentilla fruticosa

A small deciduous shrub. Rare native of river shingle on the upper Tees. Planted as an ornamental garden and landscaping species elsewhere.

Stone Bramble Rubus saxatilis

A rare found on limestone cliffs

Western Gorse Ulex gallii

Found only rarely in County Durham, it is restricted to a few heathland sites

Species not native to County Durham

The following commonly planted species are not UK natives, or are UK natives which are outside of their natural range in County Durham.

Broadleaves

Alders

Grey Alder **Alnus incana**

Green Alder **Alnus viridis**

Italian Alder **Alnus cordata**

Red Alder **Alnus rubra**

Non-native Alders are occasionally planted on difficult and reclaimed sites as they are tolerant of very poor conditions. They are not recommended for planting in rural situations where the native Common Alder - itself a broadly tolerant species - is a more characteristic species.

Apple **Malus domestica**

Cultivated varieties of apple, and hybrids with the native crab, are often found in hedgerows, scrub and woodland margins, usually as individual trees. They are relics of gardens or orchards, plants grown from discarded apple cores, or bird-sown wildings. Many old varieties of apple are now lost to cultivation and survive only in relic populations such as these. Raising plants from locally collected seed and planting in small numbers may help to preserve genetic diversity.

Beech **Fagus sylvatica**

A UK native outside of its natural range in County Durham but extensively planted for its high quality timber and ornamental qualities. Naturalised in places. Will grow on a range of sites although preferring deeper well drained neutral to alkaline soils. Tolerates exposure. Suitable for planting as an ornamental or timber species in areas where it is already characteristic.

Buckthorn Rhamnus catharticus

Former native now extinct in Durham and always probably rare. Not recommended for general use. As a food plant of the Brimstone butterfly there may be some value in reintroducing Buckthorn in situations where it might benefit this species.

English Elm Ulmus procera

English Elm is considered to be outside of its natural range in the north of England. An ancient introduction with a scattered distribution throughout the lowlands of the county it is now substantially reduced by disease and can no longer be recommended for general planting

Other elm species with some disease resistance are occasionally planted - these are not recommended for planting in rural situations where alternative native species should be used. The native Wych Elm can still be planted in woodland mixtures and will ‘self-coppice’ and persist in the understorey if affected by disease.

Horse Chestnut Aesculus hippocastanum

Widely planted as an ornamental tree in parks, gardens and public open spaces in towns and villages, particularly in the lowlands. As a traditional ornamental species Horse Chestnut may be suitable for formal planting in urban situations but is not recommended for wider planting elsewhere.

Hornbeam Carpinus betulus

A UK native outside of its natural range in County Durham, occasionally planted as a specimen and parkland tree, or self-sown in woodlands. Not a characteristic feature of the county's flora and therefore not recommended for general planting.

Limes

Common Lime Tilia x vulgaris

Large Leaved Lime Tilia platyphyllos

Occasionally planted as an ornamental tree Large-leaved Lime is outside of its natural range in County Durham. Common Lime has been widely planted as an ornamental species of avenues, urban streets, parks & gardens and plantations. As traditional ornamental species Limes are suitable for formal planting in urban situations & parkland but are not recommended for wider planting elsewhere. See also Small-leaved Lime.

Oaks

Holm Oak Quercus ilex

Turkey Oak Quercus cerris

Red Oak Quercus rubra

Non-native oaks have been planted in the past for their ornamental qualities, and in the case of Red Oak, for timber on more difficult sites. They are not recommended for general planting in rural situations where native oak species are more appropriate.

Pear Pyrus communis

Pear is rare outside of gardens in the county and never truly wild, occurring as a relic of cultivation in old orchards and garden hedgerows and occasionally as a bird-sown wilding. Planting outside of gardens and orchards is not recommended.

Plums

Wild Plum Prunus domestica subsp. domestica

Bullace Prunus domestica subsp. insititia

Cherry Plum Prunus cerasifera

Wild plums are occasionally found in hedgerows and woodland edges as individual trees or small groups. Bullace is very rare and Cherry Plum rare outside of towns and villages. Wild Plum is more common and quite variable. All have either been planted for their fruit, as pollinators for orchards, or are wildings descended from cultivated stock. Raising plants from locally collected seed and planting in small numbers may help to preserve their genetic diversity.

Poplars

White Poplar Populus alba

Grey Poplar Populus x canescens

Lombardy Poplar Populus nigra ‘italica'

Hybrid Black Poplars Populus x euramericana.

Balsam Poplars Populus trichocarpa, P. x candicans, P. x beroliniensis.

Widely planted in the past for their rapid growth. Modern hybrids & cultivars have commercial applications as fast growing timber species for better lowland sites and include cultivars suitable for short rotation coppice and for agro forestry. They are not recommended for more general planting. See also the native Aspen and Black Poplar.

Sea Buckthorn Hippophae Rhamnoides

Considered native on the North Sea coast to the north and south of Durham and therefore possibly a former native of suitable habitats such as fixed dunes. Occasionally planted for erosion protection on dunes and as a landscaping shrub for its vandal resistance and tolerance of salt and exposure. A fast growing, nitrogen fixing species forming dense thickets, often at the expense of more desirable species, it has the potential to become invasive. It is not recommended for general planting in rural situations.

Sweet Chestnut Castanea sativa

Occasionally planted as an ornamental tree of parklands and plantations. There is no wider tradition of planting Sweet Chestnut in the County and it is not recommended for general planting in rural situations.

Maples

Sycamore Acer psuedoplatanus

Norway Maple Acer platanoides

Sycamore is a non-native forest tree extensively planted and naturalised throughout the County in woodlands, hedgerows and shelterbelts. As a tolerant fast growing tree producing quality timber Sycamore has commercial applications, and is a traditional field and shelter tree, particularly in the upland dales. As a potentially invasive species it should not be planted near semi-natural woodlands or other woodlands of a high conservation value. Consideration should be given to the use of alternative native species.

Norway Maple is occasionally planted as a timber tree and as an ornamental tree in urban situations. It is not recommended for wider planting in rural situations.

Whitebeams

Common Whitebeam Sorbus aria

Swedish Whitebeam Sorbus intermedia.

Common Whitebeam is a UK native on the edge of its natural range in County Durham although naturalised in some areas. A tolerant and hardy small tree often planted on difficult sites and particularly on calcareous soils. It is not recommended for wider planting in rural situations where species more characteristic of the

County's flora are generally to be preferred. Swedish Whitebeam is a hardy small tree widely planted as a highway and urban street tree. It is not recommended for planting in rural situations where native species are to be preferred.

Willows Salix species & cultivars

There are increasing numbers of willow cultivars bred specifically for use as biomass crops in short rotation coppicing systems. These are only suitable for commercial applications.

Wayfaring Tree Viburnum lantana

Considered not to be a native of County Durham though growing naturalised on the magnesian limestone in places. Not recommended for general planting.

Conifers

Douglas Fir Pseudotsuga menziesii

A fast growing commercial species producing high quality timber for construction use. Only suitable on fertile soils and sheltered sites.

Larches

European Larch Larix decidua

Japanese Larch Larix kaempferii

Hybrid Larch Larix x eurolepsis

Commercially important species widely planted throughout the county. Fast growing & producing good quality timber. Particularly suitable as a nurse crop for broadleaved species in mixed plantations and particularly on well-drained & reasonably fertile soils.

Pines

Scots Pine Pinus sylvestris

Corsican Pine Pinus nigra var maritima

Lodgepole Pine Pinus contorta

Scots Pine is former native of the county, introduced and naturalised in places. A traditional forestry tree producing good quality timber widely planted throughout the County. Useful as a timber tree and as a nurse crop in mixed plantations particularly on difficult sites. Can provide valuable habitat for red squirrel. A very tolerant species preferring lighter neutral to acidic soils.

Corsican Pine is a forestry timber tree suited to commercial applications in larger plantations, and particularly on drier soils & reclaimed or otherwise difficult sites- very tolerant of exposure.

Lodgepole Pine is a forestry tree with commercial applications in larger plantations, particularly on very poor soils & reclaimed or otherwise difficult sites. A quick growing species sometimes used as a nurse crop on poor sites. Timber quality can be poor. Tolerates exposure.

Spruces

Norway spruce Picea abies

Sitka Spruce Picea sitchensis

Norway Spruce is widely planted as forestry timber tree suitable for more fertile sheltered sites. The traditional Christmas tree.

Sitka Spruce is extensively planted as a forestry tree in commercial applications in larger plantations, and particularly in higher rainfall districts and on wetter acidic soils.

Western Hemlock Tsuga heterophylla

A fast growing commercial species producing good quality structural timber on sheltered sites. Useful for under planting in heavily thinned plantations. Suitable for poorer well-drained acidic soils.

Western Red Cedar Thuja plicata

A fast growing commercial species producing good quality durable timber on suitable sites. Requires deeper, well-drained base rich soils.

Help & advice

Organisations

The Arboricultural association www.trees.org.uk. The Arboricultural Association promotes tree care and tree knowledge throughout the UK and provides a list of approved tree surgery contractors and consultants.

The Arboricultural Association
Ullenwood Court
Ullenwood
Cheltenham
Gloucestershire
GL53 9QS
T 01242 522152
F 01242 577766
E admin@trees.org.uk

The International Society of Arboriculture www.isa-arboriculture.org The International Society of Arboriculture provides a list of ISA certified arborists and offers a range of tree care information, including brochures on pruning mature and young trees, and mature tree care.

International Society of Arboriculture UK and Ireland Chapter
148 Hydes Road
Wednesbury
West Midlands
WS10 0DR
T 0121 556 8302
E enquiries@isa-arboriculture.org

The Tree Council www.treecouncil.org.uk The Tree Council is the lead tree campaigning charity and provides advice on caring for newly planted, established and veteran trees

71 Newcomen Street
London
SE1 1YT
T 020 7407 9992
F 020 7407 9908
E info@treecouncil.org.uk

The Tree Advice Trust www.treehelp.info The Tree Advice Trust is an independent charity whose aims are to research and disseminate practical information and guidance on the cultivation, maintenance and care of trees grown for amenity. The Trust is responsible for the work of the Arboricultural Advisory and Information Service (AAIS).

Forestry Commission www.forestry.gov.uk: Advice and support for woodland planting and management. Felling control. Planting and management grants. Publications.

North East England Conservancy Office (Chester-le-Street, Derwentside, Durham City and Easington)
1 Walby Hill
Rothbury
Morpeth
Northumberland
NE65 7NT
T 01669 621591
F 01669 621454
E northeast.fce@forestry.gsi.gov.uk

Southern Area Office (Wear Valley, Teesdale, Sedgefield)
Redford
Hamsterley
Bishop Auckland
DL13 3NL
T 01388 488721
F 01388 488762
E northeast.fce@forestry.gsi.gov.uk

Northwoods www.northwoods.org.uk : Training, advice and support for tree and timber businesses in the North East.
Northwoods
1 Walby Hill
Rothbury
MORPETH
Northumberland
NE65 7NT
T 01669 621 489
F 01669 621 522
E enquiries@northwoods.org.uk

The Ancient Tree Forum. www.woodlandtrust.org.uk/ancient-tree-forum Information and publications on the ecology, management and conservation of ancient and veteran trees.

Grants and funding

The English Woodland Grant Scheme

The Forestry Commission's suite of grants covering Woodland Creation, Woodland Planning, Woodland Assessment, Woodland Regeneration, Woodland Improvement and Woodland Management. For more information visit the Forestry Commission website (www.forestry.gov.uk) or contact the North East England Conservancy Office on 01669 621591 (north and east Durham) or 01388 488721 (south and west Durham)

National Tree Week

The Tree Council's festival to mark the start of the tree planting season. Durham County Council offer grants for tree planting of £150 to schools, community groups and parish councils. Advice and information is also available on what trees to plant and how to give them the best possible start. For more information contact the Landscape Section, Environment on Tel: 0191 383 4076.

County Durham Environmental Trust (CDENT)

CDENT provide grants through the Landfill Tax Credit Scheme on projects which offer significant and lasting benefit for the environment and people in areas served by contributing waste management companies. For more information visit the CDENT website (www.cdent.co.uk) or contact them on 0191 383 4630.

Publications

The following publications can be downloaded from the ancient tree forum website:

Ancient Tree Guide No 1: Trees and Farming

Ancient Tree Guide No 2: Trees in Historic Parks and Landscape gardens

Ancient Tree Guide No 3: Trees and Development

Ancient Tree Guide No 4: What are ancient, veteran and other trees of special interest?

Ancient Tree Guide No 5: Trees and climate change

The following publication can be downloaded from the Natural England website:

Veteran Trees Management Handbook

The following publication can be downloaded from the Durham County Council website:

The Trees of County Durham by John McBain