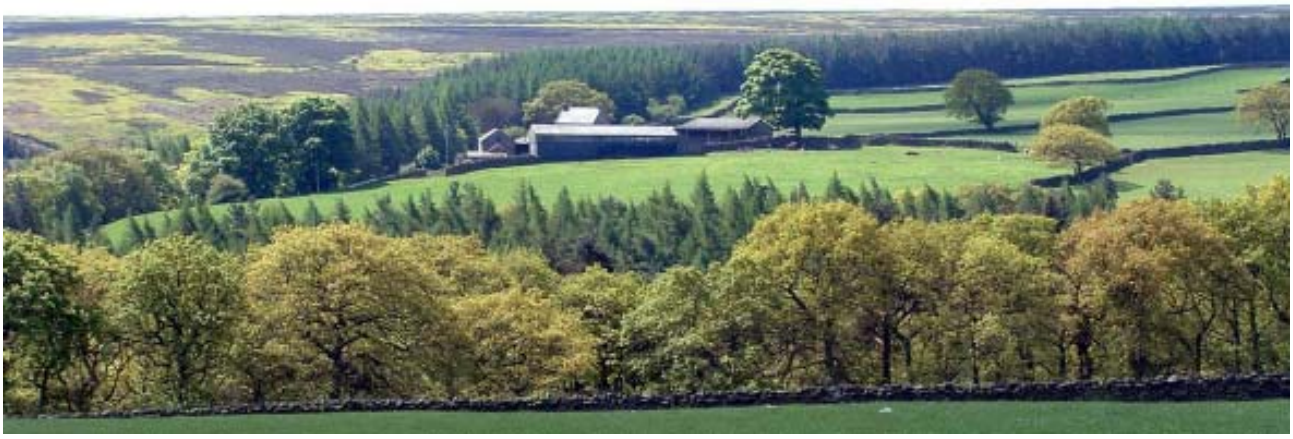
BACKGROUND INFORMATION

# Woodland in Nidderdale AONB



E Moss

*Oak woods in the foreground with coniferous plantation on the moor margin behind in the Dallowgill area.*

## A history of Nidderdale AONB's woodlands

With the retreat of the last glaciation in 12,000BC trees once again began to flourish in Britain. Lime trees were dominant in southern and central England, birch in northern Scotland and pine in central Scotland. Oak and hazel trees grew in Northern England, Wales, southern Scotland and parts of Ireland. So, the ancient woodland of Nidderdale AONB was predominantly oak.

Around 4000BC saw the start of the clearance and management of woodlands by humans. This continued throughout the Bronze Age, and reached its peak in the Iron Age when about half the land in England had been cleared of woodland. However, at this time Nidderdale AONB still had large areas of woodland.

From the earliest times in Britain woodlands were used to provide fuel. This need was not fulfilled by felling the trees but by managing "coppice plots" as coppicing allowed natural deciduous woodland to survive. Coppices are woodlands cut on a fairly short rotation of five to thirty years. Coppice trees are usually deciduous as these trees respond to being cut by sending up multiple shoots.

The Nidderdale AONB has long been noted for its numerous woodland features. Deciduous woodlands are found along the steep sides of becks and gills. Large expanses of deciduous woodland cover the banks of the rivers Laver, Skell and Ure. Around the edges of the AONB the remains of parkland estates are defined by their large freestanding trees and extensive woodland plantations (for example, the Studley Royal and Fountains Abbey area). Nidderdale AONB's reservoirs are also associated with large areas of woodland but, in most cases, this is relatively recent coniferous plantation. Later plantations can be easily distinguished because of their rigid outlines and geometrical shapes.

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*Coniferous woodland is often associated with reservoirs.*

## Why is woodland so important?

Woodlands are ecosystems with many different types of flora and fauna. They provide a diverse habitat for a variety of species, which is very important for the survival of varied wildlife in Britain.

There are four main layers in woodland structure: **tree canopy, shrub layer, field layer** and **ground layer** and each of these layer supports it own different ecosystems. The canopy provides habitats for birds and tree-living mammals like squirrels. They also provide a food source for much smaller wildlife like insects - an oak tree can support 284 species of insect.

The shrub layer usually consists of plants normally hardy deciduous plants which can withstand the low light levels in the summer for example hazel, hawthorn, bracken and brambles. The field layer mainly contains herbs of various sizes.

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*The understorey of this wych elm woodland includes hogweed, red campion and cow parsley.*

Most plants growing in the ground layer in woodlands reproduce asexually such as lichens. The little wind movement means methods like wind seed dispersal are ruled out. The ground layer is especially important for invertebrates and fungi as the old and decaying wood provides an ideal habitat. It is also where most large mammals are based. Common in woodlands are grey squirrels, foxes, deer, badgers and dormice

E Moss

*Bluebells carpet this oak woodland floor whilst the canopy is still forming in spring.*

Woodland plants have to adapt to survive in dark conditions as in the summer the canopy will block most sunlight from the ground level. Woodland trees like holly and yew compensate for the dense shade of the summer by continuing to grow in winter

E Moss

*All year round low light levels in pine forest make it difficult for understorey plants to thrive.*

- with higher than normal levels of chlorophyll in their leaves they can photosynthesise more efficiently in the low light levels.

The woodlands are also important because, during the day they absorb carbon dioxide to convert into sugar in order to grow. This is very useful for us because carbon dioxide is a gas poisonous to humans and created as a waste product of many of man's industries. Carbon dioxide is also a "greenhouse gas" which causes the earth's atmosphere to retain the sun's heat and contributing to "global warming". So trees, which asborb it, help to reduce the effect.

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*Beech woodland is a "riot of colour" in the autumn before the leaves fall.*

## Main species in Woodlands

Woodland in the U.K now covers about 2.8 million hectares, which is 12% of the U.K's land area. A list of main species of tree in woodlands are; oak, birch, aspen, sallow, pine, hazel, alder, lime, elm, holly, ash, beech, hornbeam, maple and chestnut. Natural coniferous woodland in the U.K is a rare habitat. Much of the coniferous woodland is plantation in areas owned by the Forestry Commission and water companies.

Mammals common in woods in modern times are very different from medieval times when wolves, bears, boar and elk were common. In our time there are no large wild predators as all have been hunted to extinction. Due to the lack of predators the herbivore population of the woodland has increased immensely, for instance, deer. The main mammals are now bats, badgers, foxes, deer and rabbits with small mammals like voles and squirrels. There are also reptiles and amphibians.

## Veteran Trees

The term veteran tree is one that is not capable of precise definition but encompasses trees defined by three guiding principles:

- Trees of interest biologically, aesthetically or culturally because of their age.
- Trees that are in the ancient stage of their life.
- Trees that are old relative to others of the same species.

Some trees can be instantly recognisable as veterans. However, these features on their own can be poor indicators of veteran trees as size is a poor characteristic for determining a veteran status. A simple comparison is of a huge mature oak tree with a gnarled veteran hawthorn. It is clear that different from this that different species do not grow to the same size.

### Characteristic features found in veteran trees:

- Width particularly large for the species
- Major cavities in trunk or progressive hollowing
- Naturally forming water pools
- Decaying holes
- Physical damage to trunk
- Bark loss
- A lot of dead wood in the canopy
- Sap runs
- Crevices in bark
- Fungi species attached
- High number of independent wildlife species
- Climbing plants
- An "old" appearance
- High aesthetic interest
- Possibly in a prominent position in the landscape
- Have a cultural/historic value

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*This impressive oak tree is a good example of a 'veteran'.*

## Why are Veteran Trees important?

They can have aesthetic appeal and cause inspiration. For example, many veteran trees have featured in poems and have become tourist attractions in Britain. Veteran trees can have a particular historic link as some have survived from medieval times and also can be associated with specific characters or events of importance e.g. veteran trees of Sherwood Forest.

They often illustrate cultural or past land use as they could have once been used as boundary markers in ancient landscapes. Veteran trees can be found in abundance as part of a landscaped garden normally as part of an avenue from the 18th and 19th centuries.

A veteran tree can provide habitats for a wide range of plants and animals. These ancient trees can be like historical records as they store a record of the past climate changes giving insight into different conditions over the life of the tree.

E Moss

*An oak seedling.*

## Woodland habitats

Woodland has a diverse range of habitats for plants and animals. It is composed of a full range of plants types including trees, shrubs, climbers, herbs, bulbs, grasses, mosses and lichens. Most plants have their own invertebrate fauna, which feeds on it

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*A mature ash tree's furrowed bark.*

more or less exclusively. Dead wood is usually at the bottom of the food chain, supporting organisms and feeding invertebrates which are predated upon by small animals. These in turn are eaten by larger creatures.

Woodland is varied by natural process as dead trees create gaps in the woodland where regeneration can occur. Glades and open space are maintained by herbivores. Areas that are too wet, steep or rocky for trees to grow create diverse zones. If domestic animals graze in woodland they create areas of wooded pasture. Each different habitat is essential for one or more species to survive. Dead wood is an important invertebrate habitat as nutrients from decomposing wood are a source of food for the invertebrates. Woodland ponds, temporary streams and damp ground are also important for many invertebrates and amphibians as they can contain specialised flora.

Charities such as the Woodland Trust are conservation charities for woodlands. They own many ancient woodlands but also plant new ones. They may be able to offer grants to help tree planting in schools' grounds.

# Further information on woodland

## Websites

www.woodland-trust.org.uk

www.royalforestrysociety.org.uk

www.forestry.gov.uk

## Books

### Fiction

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|---|---|---|
| Woodland Tales | Enid Blyton | ISBN: 0861636945 |

### Non-fiction

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| The Story of Autumn - A Golden Leaf | Rosie McCormick | ISBN: 0750244313 |
| Trees & Leaves (Fun with Science Series) | Gareth Morgan & Rosie Harlow | ISBN: 0862727464 |
| The Forest | David Bellamy | ISBN: 0711213852 |

## Organisations/Groups

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