

# BROADLEAVED WOODLAND

## DEFINITION

Broadleaved woodland is defined as woodland primarily, though not exclusively, made up of native broadleaved species. For the purpose of this Biodiversity Action Plan we refer to woodlands of the following three types: oak woodland, ash woodland and wet woodland. Most broadleaved or deciduous woodland in Devon is made up of a mixture of tree species and the degree to which one species dominates varies according to the interaction of two main environmental conditions; degree of natural drainage (or water-logging) and soil nutrient status. Oak woodland is predominantly found in North Devon and Torridge on the more acid/ base-poor sites of the high valley ground, ash woodland on the richer brown earth soils of the lower valleys grading to wet woodland on the water-logged soils.

Broadleaved woodlands of these three types represent the climax vegetation in the south-west before large scale clearances by humans would have dominated the vegetation types in Britain. They are often long established and have been a source of timber for fuel and building for many years. In the case of oak woodland it is fair to say that long established management practices such as coppicing for the tanning have influenced the dominance of oak within these woodlands. Many of these original woodlands were managed until about a hundred years ago and are frequently referred to as ancient semi natural woodlands' (woodland that has been in existence since around 1600 AD).

## DISTRIBUTION

There are approximately 2916 ha of ancient semi-natural woodland within the Biosphere Reserve. It is found predominantly on the steep valley sides along Bradiford Water, the rivers Yeo, Mole, Taw, Torridge, Bray and Little Dart where they have escaped the fate of clear felling in the past. Notable concentrations can be found on the fringes of Exmoor National Park, along the Bray and Bradiford Valleys north of Barnstaple, along the coastal combes of the high North Devon Coast and near Welcombe, along the river valleys of the Taw near King's Nympton and along the Little Dart from Chulmleigh to East Worlington.

## KEY BROADLEAVED WOODLAND LOCATIONS

Little Dart River Valley near East Worlington

Arlington

Coastal woodland between Hobby and Peppercombe

Torridge Valley from Landcross to Dolton

Broadleaved Woodland

Knapp Woods near Atherington  
Hawkridge Woods near Cobbaton  
Bridge Woods near Burrington  
Bradiford Valley and Tutshill Woods near Barnstaple  
Blakewell Woods South of Brayford  
Heddon Valley and Woody Bay near Lynton  
Watersmeet woodlands along the East Lyn River  
Marstrand & Welcombe valleys  
Glenthorne, Exmoor



## **CHARACTERISTIC WILDLIFE**

Oak woodland is the most common broadleaved woodland in North Devon and it comprises mainly of sessile oak, though pedunculate oak is often be present, as are hybrids. Associated tree species include rowan, hazel and holly. Oak woodland represents the most diverse of all of our habitats in Britain; a three-dimensional home to a wide range of plants, birds, animals, insects and plants. Many of the oak woodlands have great interest for their characteristic mosses and lichens.

Wet woodland occurs on poorly drained or seasonally wet soils, usually with alder, birch and willows as the predominant tree species, but sometimes including oak, ash and beech on the drier areas. It is found along streams and hill-side flushes, and is often the result of cessation of management of culm grasslands. Wet woodland frequently occurs in mosaic with other key habitat types. It combines elements of many other ecosystems and as such is important for many taxa. The high humidity favours bryophyte growth. Wet woodland provides cover and breeding sites for otters.

Plants: sessile oak, pedunculate oak, Devon whitebeams, rowan, hazel, holly, bluebell, primrose, wood anemone, bilberry, heather, ferns including broad buckler fern.

Insects: 423 plant feeding species, more than other woodland types, including blue ground beetle and silver-washed fritillary.

Mammals: dormouse, pipistrelle bat, greater horseshoe bat, noctule bat, otter

Birds: woodpeckers, pied flycatcher, wood warbler, sparrow hawk, redstart, woodcock .

## THREATS

Since the earliest times the area of woodland cover in Britain has declined as the forests were cleared by humans. By Norman times (11<sup>th</sup> Century) it is estimated that there was a maximum of 15% woodland cover in England, which was predominantly oak and by 1900 this figure was about 5-7% and included coniferous woodland. This was sustainably managed through coppicing until the beginning of the 1900's when many woodlands fell into disuse as humans found other substitute materials. Further clearances and substitution by non native conifer plantations in the last century has led to a coverage of only 2.2% of semi-natural ancient woodland in Devon. Whilst these woodlands are often protected from clearance many are no longer managed and are neglected.

The influence of war is one of the foremost factors in loss of woodland in recent history. Large scale felling for shipbuilding in previous centuries was followed by felling for pit-props and charcoal used in the production of steel in the two World Wars of the last century. Added to this, food shortage during these times resulted in many of these sites being put under agricultural production.

Clearance and subsequent agricultural use of the most accessible woodland sites meant that woodland cover was reduced to pockets of steep and wetter areas. These factors have made continued management by traditional methods impractical and has reduced the range of many important species such as dormice to levels below which populations can survive.

Management of the underwood, traditionally by coppicing provides varied and intermittent changes in light levels within what is essentially climax vegetation and also structural diversity. Without management of this type, which would also involve the selection of replacement timber trees in some systems, woodlands become open and over-mature.

Low market prices for timber in recent years plus the cessation of tax benefits for woodland owners has led to neglect in many cases. Many surviving small broadleaved woodlands that would benefit from management suffer from a lack of economies of scale. Though the demand for local sustainably sourced hardwood timber is high the costs involved in harvesting are often prohibitively high. Coupled with the timescale involved in growing high quality hardwood trees from new broadleaved plantations and regenerating woodlands, the majority of which were felled just sixty years ago, the industry relies heavily on faster growing conifer species in order to maintain itself.

There has been a general resurgence of interest in ancient woodland crafts such as coppicing for the production of hurdles, thatching spars and barbeque charcoal though these industries are small and largely locally based. The woodchip market is only likely to be of limited value to sites where conifer is being thinned or removed; hardwood thinning is much more economically utilised if sold for firewood where the roadside values for bulk cordwood is of the order of £35 per cubic metre, whereas softwood chip was around £15/18

per metre but since the *Phytophthora ramorum* has now fallen to £8/10 per metre. The growing demand for woodchip for fuel has opened up possibilities for a market for low-grade hardwood thinnings but there are questions raised about whether there is enough woodland to sustain this market with low uptake of current grant opportunities for new woodland planting.

With regard to whether there enough woodland to supply the demand for biomass, there is plenty, but in reality the 5 million cubic metre of wood in the annual waste stream is more likely to be targeted and cleaned up in more cost effective way for biomass than working a steep difficult wood in North Devon. Similarly imports from larger timber producing countries like Canada will be cheaper.

Opinion varies widely on how climate change will affect various tree species. It is generally agreed however, that variety in future planting, both in terms of species and provenance will limit the risks of woodland loss through disease or changes in hydrology brought about in response to extreme climate conditions.

In previous decades lack of regulation on replanting of ancient woodland sites with faster growing conifer species has led to a loss of woodland ground cover during the initial canopy closure phase of shade bearing species such as Douglas fir and sitka spruce. Many of these Plantations on Ancient Woodland Sites (PAWS) if only undergoing a single conifer rotation have the potential to regenerate well from their seed banks. Currently grant structures which provide incentives for these restorations are only attractive to those woodland owners with woodlands large enough to benefit from economies of scale as the grants are unlikely to recover the full costs of restoration without positive income generated from timber sales.

There are lots of PAWS, which have great potential value as ASNW once the restoration process is started. The FC support mechanisms are more generous for this type of work through the WIG programme than woodland creation and some sites have benefited from grants to create access tracks for uneconomic thinning or biodiversity driven thinning.

Until recently deer population numbers in the South West have been relatively low. Roe deer are common in the South West and there are large areas where red deer population numbers have risen to a point where browsing and fraying damage has a significant impact on newly planted broadleaved woodlands and regeneration within existing woodland. Selective grazing may have an adverse effect on the biodiversity of woodland ground flora and inhibit natural regeneration from seed or coppicing, so reducing woodland structural diversity. Fencing and individual tree protection in the form of shelters is expensive and therefore discourages landowners from undertaking woodland creation or management projects.

An element of grazing and browsing can, on the other hand, be very useful in helping to maintain suitable habitat for much woodland biodiversity, for example stock exclusion can frequently result in development of dense bramble and consequent loss of ground flora interests. Similarly in the absence of adequate browsing, trees supporting rich lichen communities within the Exmoor woodlands have become engulfed in ivy resulting on loss of some notable lichen species.

Shrubs originally planted as game cover such as Rhododendron, Portuguese and cherry laurel and Japanese knotweed, as well as numerous garden escapes are present in many woodlands and have the capacity, if left unchecked, to completely dominate the indigenous ground flora of semi-natural woodlands.

Beech, though native to parts of the UK was not found in the pollen record for the region pre-5000 before present (about the time humans first began extensively clearing the land for agriculture). Sycamore was thought to be introduced at the time of Roman occupation and so both of these species are considered non-native in the South West. Both species are shade bearing and will regenerate more freely under woodland canopy than native tree species. At low densities these species will add to the overall biodiversity of semi-natural woodlands but left unmanaged will over time begin to change the character of native oak and ash woodlands reducing ground flora and invertebrate diversity. There are very few woodlands in Devon that do not have one or the other of these species present to various degrees.

## **SITE STATUS**

Some of the notable oak woodlands are Sites of Special Scientific Interest and some are also Special Areas for Conservation (SAC):

West Exmoor Coast & Woods near Lynmouth (SAC)	158 ha
Hobby to Peppercombe	135 ha
Watersmeet near Lynmouth (SAC)	85 ha
Halsdon	29 ha
Clovelly (Marsland to Clovelly Coast SSSI)	35 ha
Marsland (Marsland to Clovelly Coast SSSI)	19 ha
Bradiford Valley (Tutshill Woods) near Barnstaple	5 ha

Many other Ancient Semi-Natural Woodlands are designated as County Wildlife Sites. There are 81 confirmed County Wildlife Sites of Ancient Semi-Natural Woodland, covering 786 ha within North Devon's Biosphere Reserve.

Some small woodlands are protected under the District Councils' planning legislation through Tree Preservation Orders which may protect trees of amenity or conservation value.

## CURRENT ACTION

Since the publication of the North Devon Biodiversity Action Plan in 2001 Forestry Commission baseline data suggests that the creation of broadleaf woodland was running at about 96 hectares per year, the majority of which will ultimately be dominated by oak. Since the demise of South West Forest, this quantity is thought to have declined to 10-20 Ha per year.

Much of the coastal woodland on Exmoor, as well the woodlands around Arlington Court, are in the ownership of the National Trust and frequently under active management.

The English Woodland Grant Scheme (EWGS), run by the Forestry Commission, is available to landowners to provide financial incentives to create and manage woodlands. Grant support for the management of small woodlands may also be obtained through the recently introduced Entry and Higher Level Stewardship scheme.

Additional help and advice can be obtained through Countryside Management Services, such as Exmoor National Park, FWAG and North Devon AONB and Biosphere Service.

## LINKS TO OTHER BIODIVERSITY ACTION PLANS

	<b>UK BAP</b>	<b>SW BAP</b>	<b>Devon BAP</b>	<b>Exmoor BAP</b>
Habitat Action Plans	Upland oak wood Wet woodlands Lowland mixed deciduous woodland	Upland oak wood	Oak woodland Alder/willow wet woodland	Upland oak wood
Species Action Plans	Dormice Greater horseshoe bat Lesser horseshoe bat Pipistrelle bat Blue ground beetle Pearl bordered fritillary High brown fritillary	Pipistrelle bat	Greater horseshoe bat Pearl bordered fritillary Primrose Golden hair lichen Devon whitebeams	Lungwort lichens

## OBJECTIVES

- 1 Ensure that the existing area of broadleaved woodland is not lost to other land uses
- 2 Ensure the existing stock of broadleaved woodland is managed so that it has capacity to regenerate, retains a natural character and has an enhanced wildlife value.
- 3 Expand the area of well-managed broadleaved woodland with a diverse and characteristic community of animals and plants, without consequent loss to other semi-natural habitats.
- 4 Foster greater public understanding, involvement and enjoyment of broadleaved woodland, wildlife and its management.



	<b>ACTION</b>	<b>TARGET</b>	<b>LEAD DELIVERER</b>	<b>PARTNERS</b>	<b>Obj. No.</b>
<b>A</b>	<b>Policy and Legislation</b>				
1	Ensure planning policies protect broadleaved woodland sites from inappropriate development requiring planning permission, by linking to the Ancient Woodland Inventory, CWS data and other sources of information.	No absolute loss of Ancient Semi - Natural Woodland. No net loss of more recent sites.	NDC, TDC	FC, DCC	1
2	Ensure the requirements for felling licences is maintained and enforced.	Prevent illegal felling	FC		1
3	Maximise use of Section 106 Agreements to create new broadleaved woodland through planning gain.	As opportunity arises	NDC, TDC	DCC	4
4	Favour appropriate, sensitively sited new woodland planting and natural regeneration, with priority to linking, buffering and building upon existing broadleaved woodland sites.	Create 1000 ha of new broadleaved woodland (NVCs W8, W10, W11, W16, W17) by 2020.	FC	DWT, NE, WT	4
5	Establish further Community Woodlands.	2 new sites by 2015 preferably within 500m of a settlement.	NDABS	FC, Silvanus Trust, ITF, WT, NT	4
6	Identify opportunities for new woodlands in Green Infrastructure Strategies	GI Strategies completed	NDC TDC		1,3

	<b>ACTION</b>	<b>TARGET</b>	<b>LEAD DELIVERER</b>	<b>PARTNERS</b>	<b>Obj. No.</b>
<b>B</b>	<b>Site Safeguard and Management</b>				
1	Continue or instigate management programmes to control invasive species which inhibit native regeneration or which are detrimental to broadleaved woodland wildlife.	Increase and halt the decline in woodland management.	FC, landowners and managers.	NDC, ENPA, DWT, NE, NT, WT	2
2	Use planting mixes, predominantly of local provenance stock, where woods are too small or otherwise unable to regenerate naturally.	40 ha planted	FC		2
3	Identify and seek to acquire or establish new accessible woodland nature reserves in areas currently without them	Increase the number of native woodland sites with free public access	DWT, WT, NDC, TDC		

<b>ACTION</b>		<b>TARGET</b>	<b>LEAD DELIVERER</b>	<b>PARTNERS</b>	<b>Obj. No.</b>
4	Offer advice and assistance to SSSI woodland owners	All SSSI woodlands in a favourable condition by 2015	NE		
<b>C Advisory</b>					
1	Offer advisory services to woodland owners on management techniques which promote regeneration and which benefit characteristic broadleaved woodland wildlife.	Advice given to 20 woodland owners each year	FC	ENPA, NDC, TDC FWAG, NDABS, Sylvanus, Tilhill, WT	2
<b>D Research and Monitoring</b>					
1	Identify all broadleaved woodland sites and evaluate condition to identify County Wildlife Sites.	CWS woodland survey completed by 2015	DBRC	DWT, NDC, TDC, ENPA, NE	1