

# WOODLAND HABITATS IN OXFORDSHIRE

## 1. INTRODUCTION

### 1.1 Woodland Types

Woodland represents a significant habitat for plants and animals in Oxfordshire with many locally and nationally scarce species being dependent on it. Woodlands are found throughout Oxfordshire, their nature and extent varying according to soil type and the influence of past and present management. The following definitions describe the main woodland types in relation to biodiversity and age; though they can be further subdivided according to species, soil type and management methods.

*Ancient Semi-Natural Woodland (ASNW)* is generally the most valuable for biodiversity. Such sites have had continuous woodland cover since at least AD 1600.

*Plantations on Ancient Woodland Sites (PAWS)* also have maintained tree cover since AD 1600 but the native trees have largely been replaced through felling and replanting (often by conifers but also by beech in the Chilterns).

*Other Semi-Natural Woodland (OSNW)* or *Secondary Woodland* is that which has developed by regeneration on land which is no longer cultivated or grazed. Although not as rich as ancient semi-natural woodland, it can support a wide range of species.

*Plantation Woodland* is that which people have deliberately planted, often in recent times and for which timber production is generally the primary purpose. Plantation woodlands most often make use of highly productive but exotic coniferous species that cannot maintain natural habitat. In such cases their value for biodiversity is limited compared to ancient semi-natural woodland, though they can support a remnant flora along boundaries and rides.

### 1.2 BAP Priority Habitats

English Nature has produced a map of [Natural Areas](#), which are sub-divisions of England, each with a characteristic association of wildlife and natural features. Each Natural Area has a unique identity resulting from the interaction of wildlife, landforms, geology, land use and human impact. Specifically relating to Oxfordshire the County Council has produced the [Oxfordshire Wildlife and Landscape Study \(OWLS\)](#) - an investigation of landscape character and biodiversity across the county.

Biodiversity: the UK Steering Group Report, Volume II (UKBAP) identifies priority woodland habitats, which provide the focus for biodiversity action plans. The 5 priority woodland habitats that are found in BBO are briefly described below:

#### 1.2.1 Lowland beech and yew woodland

Stands of planted beech and semi-natural beech and yew woodland span a variety of distinctive vegetation types. This reflects differences in soil and topographical conditions, often with a mosaic of other woodland communities (e.g. oak and ash). Many of the Chiltern beech woods have been replanted as single species beech plantation or a combination of beech and conifer. The habitat is important for a number of UKBAP priority species such as Devil's bolete fungus *Boletus satanus*, hedgehog fungus *Hericeum erinaceum* and knothole moss *Zygodon forsteri*.

#### 1.2.2 Lowland mixed deciduous woodland

This category covers a very broad range of woodland types growing on a wide range of soil conditions, from very acidic to base-rich and includes most semi-natural woodland in Oxfordshire. Many ancient woods in this category have a history of management as coppice with standards though many have now been converted, or developed naturally, into high forest or have been left as minimum intervention (either by design or default) since

the deterioration of markets for coppice produce. The habitat is important for a number of national priority species including the dormouse *Muscardinus avellanarius*, spotted flycatcher *Muscicapa striata*, pearl-bordered fritillary *Boloria euphrosyne* (now extinct in Oxfordshire) and common fan-foot moth *Pechipogo strigilata*.

### **1.2.3 Wood pasture and parkland**

These habitats are the product of historic land management systems and are frequently of national historic, landscape and ecological importance. The habitat represents a particularly valuable structure consisting of large, open-grown or high forest trees, in a matrix of grazed grassland, heath and/or woodland. The habitat is important for a number of national priority species including violet click beetle *Liminiscus violaceus*, the stag beetle *Lucanus cervus*, the royal bolete fungi *Boletus regius*, oak polypore *Buglossoporus pulvinus* and the heart moth *Dicycla oo*.

### **1.2.4 Wet woodland**

Wet woodland occurs on poorly drained or seasonally wet soils, usually with alder, downy birch and willows as the predominant species. Wet woodland may also be found at the spring line on valley sides. There are two main types of wet woodland in Oxfordshire - floodplain woodlands and bog woodlands.

Floodplain woodlands are concentrated along the river valley floodplains and wet woodlands can be found along the top of the Chilterns where the clay cap has been quarried for flint. Wet woodland is important for a wide range of wildlife, including important species of bryophytes and invertebrates.

### **1.2.5 Traditional Orchards**

Traditional Orchards became a new UKBAP habitat in 2007, cultivated using low-intensity methods without pesticides and fertilizers, and with grazing animals or hay-cutting rather than regular mowing. The combination of old trees and natural management provides an invaluable refuge for wildlife. Orchards in England have declined by more than 60% in the last 50 years.

## **2. WOODLAND HABITAT STATUS**

### **2.1 Current status in the UK**

Woodlands represent one of the richest wildlife resources in Britain, providing a link with the wildwood and climax vegetation that once covered much of these islands. Human influence on, and our relationship with, woodlands over the centuries has been considerable. Tree and woodland issues continue to evoke strong emotions and concerns.

A long and varied history of management has given rise to the woodlands of the present day. The value of timber to man through the ages for fuel, building materials for ships, housing, furniture and tools, coupled with considerable clearance for agricultural purposes has resulted in the intensive management of our woodlands. Present coverage stands at about 2.5 million hectares or 10% of the land area of Britain. Of this woodland, England has 1,027,190 hectares of woodland (Forestry Commission, 2001) of which 333,585 hectares are ancient (Forestry Commission, 2001). 193,460 hectares of this can be described as ancient semi-natural woodland, the balance having been replanted. Secondary woodlands are where woodlands have established through natural succession or planting.

Whilst the changes in woodland cover and woodland type have been marked (it is suggested that woodland cover was in the region of 70% some 8,000 years ago), areas of high wildlife value remain, though often somewhat fragmented. Many of these sites harbour a great number of our rarest species. The survival of these plants and animals is entirely dependent on the continued positive management of our woodlands.

Managing our woodlands with a combination of objectives for timber production, nature conservation and recreation can result in considerable benefits for both people and wildlife. Although broad-leaved woodland cover has remained fairly constant since the 1920s, there has been a dramatic increase in the area of high forest. Much of this is attributable to the cessation of the traditional management systems of [coppice](#) and coppice-with-standards with subsequent progression to

high forest. The coppice industry is an ancient one dating back to 5,000 BC. However many traditional markets have been lost in the last 50 years and the networks between landowners, coppice craftsmen and markets have been broken. Coppice woodland has many ecological and landscape values that need protecting and many species of British flora and fauna have developed under the [coppice management system](#) and are found in working coppice.

Over the last 50 years the timber industry has seen dramatic changes and both the market for woodland products and the infrastructure (saw mills etc) have steadily decreased. The creation of new markets for woodland products is essential for achieving effective woodland management.

## 2.2 Current status in Oxfordshire

The tables below illustrate the area (ha) of woodland in Oxfordshire in relation to the South East and to the UK

Habitat type	UK (ha)	SE Region (ha)
Ancient semi-natural woodland	302,000	85,555
Plantation on ancient sites	275,000	46,680
Secondary woodland	-	137,410
Wood pasture and parkland	20,000	14,320
Total	597,000	283,965

Habitat type	Oxon
Ancient semi-natural woodland	4,770 ha 5.58% of SE
Plantation on ancient sites	2,740 5.87% of SE
Secondary woodland	7,870 5.73%
Wood pasture and parkland	4,020 8.07% of SE
Total	19,400 6.83% of SE

Source: Wicks & Cloughley, 1998, *The Biodiversity of South East England: an audit and assessment*.

Oxfordshire's woodlands are very highly valued features of the landscape and have tremendous value for biodiversity, as well as being an important recreational and educational resource. Many local woodlands also have a rich historical and cultural heritage, through either their links with rural industries or their wealth of [archaeological features](#).

## 10. APPENDICES

### Appendix 1: National Vegetation types in relation to BAP Woodland

<b>NVC Type</b>	<b>Composition</b>	<b>BAP habitat</b>
W1	Salix cinerea – Galium palustre	Wet Woodland
W2	Salix cinerea – Betula pubescens – Phragmites australis	Wet Woodland
W3	Salix pentandra – Carex rostrata	Wet Woodland
W4c	Betula pubescens – Molinia caerulea, Sphagnum sub-community	Wet Woodland
W5	Alnus glutinosa – Carex paniculata	Wet Woodland
W6	Alnus glutinosa – Urtica dioica	Wet Woodland
W7	Alnus glutinosa – Fraxinus excelsior – Lysimachia nemorum	Wet Woodland
W8	Fraxinus excelsior – Acer campestre – Mercurialis perennis	Broad leaf woodland
W10	Quercus robur – Pteridium aquilinum – Rubus fruticosus	Broad leaf woodland & Wood pasture
W12	Fagus sylvatica – Mercurialis perennis, on base-rich soils	Beech and Yew
W13	Taxus baccata, pure yew stands	Beech and Yew
W14	Fagus sylvatica – Rubus fruticosus, mesotrophic soils	Beech and Yew & Wood pasture
W15	Fagus sylvatica – Deschampsia flexuosa, acid soils	Beech and Yew & Wood pasture
W16	Quercus spp. – Betula spp. – Deschampsia flexuosa	Wood pasture

## Appendix 2: Species of national and local importance

1=national priority species, 2=national species of conservation concern, AW= Ancient woodland, B&Y=Beech and Yew woodland, Br=Broadleaved woodland, I=useful indicator species, L=locally important species, SAP=Species Action Plan, V=Veteran trees, parkland and wood pasture, W=Wet woodland

Species	Status	SAP	Notes
<b>Mammals</b>			
Pipistrelle (representing all bats)	1		Br, B&Y, V Barbastelle and Beckstein's bats are priority 1 species. Daubenton's, Brown long eared and Noctule priority 2. All need tree holes, old trees, rides and glades for foraging.
Dormouse	1, I		Br
Polecat	2		
Stoat	2, I		
Weasel	2, I		
Yellow-necked mouse	L		
Hedgehog	2, I		
<b>Birds</b>			
Spotted flycatcher	1		Woodland edges
Bullfinch	1		Undergrowth
Song thrush	1		
Hawfinch	2		Water (ponds, etc) important
Red kite	2		
Whitethroat	I		Young plantations: in the early stages
Nightjar	I		Young plantations: in the early stages
Willow tit	2		Br, V Old and decaying timber
Redstart	2		
Green woodpecker	2		
Woodcock	2		Water (ponds, etc) important
Turtle dove	2		
Blackcap	2		
Buzzard	2		
Chiffchaff	2		
Coal tit	2		
Lesser spotted woodpecker	2		Br, V Old and decaying timber
Nuthatch	2		Br Mature trees
Tawny owl	2		V Old and decaying timber
Treecreeper	2		Br Mature trees
Stock dove	I		Br, V Old and decaying timber
Nightingale	I		Undergrowth
Garden warbler	I		Undergrowth
Willow warbler	I		Woodland edges
<b>Amphibia &amp; Reptiles</b>			
Great crested newt	1		
Grass snake	2		
Adder	2		
<b>Beetles</b>			

Species	Status	SAP	Notes
Stag beetle	1		V Woods and orchards – rotting logs used, e.g. elm, beech, lime
Noble chafer	1		V Orchards / willows
Black-headed cardinal beetle	L		BR, V Larvae under rotting bark on big old broadleaved trees
Elateridae Ampedus cardinalis	1 / 2		V Larvae in dry red rot on large oak
Carabidae Dromius quadrisignatus	1 / 2		Br Tree climbing predator (broadleaves)
a bark beetle Emoporus tiliae	I		V
a wood boring beetle Gastrallus immarginatus	I		V
<b>Butterflies and Moths</b>			
Pearl-bordered fritillary	1		
Purple emperor butterfly	1		Br Mature woodland; sensitive to felling
White admiral	2		Br Unkempt woodland with much honeysuckle
Wood white butterfly	2, I		Open rides, glades, large plants of meadow vetchling & other vetches
Black hairstreak butterfly	2		Woodland edge, dense stands of blackthorn in sun. Manage blackthorn on long coppice rotation. National species task force co-ordinator is Stuart Hodgson (01296 730217)
Brown hairstreak butterfly	2		Blackthorn with sucker growth at woodland edge; master ash nearby
Grizzled skipper	L		Rides, clearings, bare patches, wild strawberry; warm microclimate
Silver-washed fritillary	I		Coppice rotation to encourage Viola foodplant
Speckled wood	I		
Common fan foot moth	1		
Drab looper moth	1		
White-lined snout moth	1		
Heart moth	I		V Wood pasture
<b>Bees and Wasps</b>			
Anthophoridae Anthophora retusa	1 / 2		RDB1 few southern sites
Hornet	I		Nests in hollow trees and chimneys – spreading its range.
<b>Flies</b>			
Bombyliidae Bombylius discolor	1 / 2		Br, V Parasite of bees in deciduous woodland
Stratiomyidae Oxycera analis	1 / 2		W Larvae in calcareous flushes in fens / woodland
Stratiomyidae Oxycera terminata	1 / 2		W Larvae in calcareous flushes in fens / woodland
Syrphidae Eumerus ornata	1 / 2		V Larvae probably in roots / bulbs – adults in rides and edges.
Syrphidae Pocota personata	1 / 2		V Larvae in rot holes on large veteran trees, esp. beech

Species	Status	SAP	Notes
Syrphidae Criorhina berberina	I		Br, V Larvae in dead wood at base of hollow trees (inc. old coppice)
Tipulidae Ctenophora flaveolata	1 / 2		V Larvae in dead wood esp. beech.
Tipulidae Lipsothrix nervosa	1 / 2		W Larvae in wet rotting wood esp. in alder carr
<b>Other Invertebrates</b>			
Millipede Chordeuma proximum	1 / 2 I		Br Leaf litter in acidic / neutral deciduous woodland in Oxon
Millipede Melogona scutellare	1 / 2		Br Leaf litter typically in woodland – also compost heaps in gardens
Millipede Nanogona polydesmoides	1 / 2		Frequent in all calcareous substrates – esp. woodland. Rare in Europe
Pseudoscorpion Dendrochernes cyrenus	1 / 2		V On big trees in parkland under bark
Snail Ashfordia granulata	1 / 2		W Wet woodland (mainly scrubby fens / marsh. Rare in Europe
Roman snail	1 / 2		Br
Slug	Br, B&Y, V Campbell (pers. comm.) and Steve Gregory (pers.com) propose as good indicators of primary woodland quality, some are difficult to identify. M.Tenellus and L.cineroniger are characteristic of Chiltern beech woods, E.montana of rubbly calcareous woods, A.fusca of damp woods especially in the Chilterns and V.substriata of wet (carr) woodlands.		
Slug Malacolimax tenellus	1 / 2		
Slug Limax cineroniger	I		
Snail Ena montana	1 / 2 I		
Snail Acicula fusca	I		
Snail Vertigo substriata	I		
Spider Tuberata maerans	1 / 2		Br, V Fissured bark on old oak
Vascular Plants AW = associated with ancient woodland (Wilson & Reid 1995) most of these are frequent to fairly common, so should indicate change if it occurs.			
Bluebell	2		AW but extending outside and surviving in plantations Can colonise by seed in moist uplands, but hardly in Oxon
Narrow-lipped helleborine	L		AW, scarce, Chiltern beech woods
Early purple orchid	L		AW, also grassland
Herb-Paris	L		AW, uncommon, Primary woodland, needs shade, ?slow colonist
Moschatel	L		AW? Spread slow and mostly vegetative
Wild service-tree	L		AW
Loddon lily	L		Riverbanks and very wet riverside woodland, under willow carr
Wood anemone	L		AW, poor colonist, long-lived rhizome, favoured by coppicing
Barren strawberry	I		AW, poor colonist
Hairy wood rush	I		AW, poor colonist
Ramsons	I		Poor colonist
Wood millet	I		AW, capable of colonising following disturbance
Wood sanicle	I		AW, can colonise secondary woodland

Species	Status	SAP	Notes
Wood sorrel	I		AW, persists in seed bank, slow vegetative spread, tolerates conifers
Wood speedwell	I		AW, poor seed dispersal, vegetative spread
Pignut	I		AW, spreads by seeds. Seldom colonises new habitats
Wood melick	I		AW, spread vegetative, rarely colonises recent habitats
Broad buckler-fern	I		Rapid spread by windborne spores; can tolerate conifers
Fungi			
Orange-fruited elm lichen	I		
Devil's bolete	I		
Royal bolete	I		V Wood pasture
Oak polypore	I		V Veteran trees
Russula	I		Br, B&Y, V The species of fungi expected in a healthy wood depends on the tree species present. (A. and M. Warland, pers. comm.) suggest as Indicators 'a good number' of the fruiting bodies of the appropriate mycorrhizal fungi from these genera.
Lactarius	I		
Amanita	I		
Cortinarius	I		
Inocybe	I		
Hebeloma	I		
Various Boletaceae	I		
Bryophytes G.Bloom (pers. comm.) bases the richness of the bryophyte flora on the number of species represented from a list of 10 liverworts and 33 mosses, 15-20 representatives being considered high, and <10 low. Wytham and Bagley woods have exceptionally high scores (both >20), Little Wittenham 15.			
Moss salebrosum	Brachythecium	L	Widely distributed in small amounts, Oxfordshire speciality