



# UK Biodiversity Action Plan Priority Habitat Descriptions

## Wood-Pasture and Parkland

(Updated in 2011)

### From:

UK Biodiversity Action Plan; Priority Habitat Descriptions. BRIG (ed. Ant Maddock) 2008.

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# Wood-Pasture and Parkland: Habitat Definition and Description

Wood-pasture and parkland are mosaic habitats valued for their trees, especially veteran and ancient trees<sup>1</sup>, and the plants and animals that they support. Grazing animals are fundamental to the existence of this habitat. Specialised and varied habitats within wood-pasture and parkland provide a home for a wide range of species, many of which occur only in these habitats, particularly insects, lichens and fungi which depend on dead and decaying wood. Individual trees, some of which may be of great size and age, are key elements of the habitat and many sites are also important historic landscapes.

Key features of these habitats are:

- Ancient/veteran trees which are special in their own right as some of the oldest living organisms in the UK.
- The presence of grazing animals – animal dung contributes to invertebrate and fungal diversity and grazing controls tree and shrub regeneration, maintaining a semi-open habitat.
- The presence of microhabitats including large diameter (relative to the species) hollowing trees, other decaying wood, rot holes, ageing bark and fallen but regenerating trees, which support a wide range of specialised invertebrates, lichen and fungi.
- Nectar sources for invertebrates.
- Open grassland or heathland ground vegetation.
- Continuity – in terms of very long-lived individual trees and continuity of management.

## Description

Wood-pasture and parkland habitats display at least some of the following characteristics:

- Open grown trees, some of which are ancient or veteran and may be hollow and support significant amounts of dead and decaying timber. If managed, the ancient or veteran trees have generally been pollarded (cut high so re-growth is not in reach of browsing animals), although wood-pastures may incorporate other forms of tree management. The trees often exhibit a browse line at the maximum height that browsing animals can reach.
- Origins in medieval hunting forests (which may not have been completely treed) and emparkments, wooded commons, or pastures with trees in them. Many of these sites were later developed as landscaped parks creating a rich legacy of layers of designed landscapes and archaeological features also of historic importance. A range of native species usually predominates amongst the oldest trees but there may be non-native trees which have been planted or regenerated naturally.
- Designed landscapes not originating from medieval parkland, but with veteran trees, including 19<sup>th</sup> century or later parklands with their origins in earlier agricultural landscapes.
- Scrub as individual plants or clumps, in some instances providing tree protection or opportunities for tree regeneration. A vital source of nectar for invertebrates.
- Evidence of past land use for extensive agriculture and transhumance systems (where livestock are moved between lowland in winter and upland or mountain grazing in the summer). Abandoned wood-pastures in the uplands, complete with associated archaeology, are remnants of a lost land-use system which is still extant in many parts

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<sup>1</sup> The term 'veteran' tree encompasses a wide range of trees which display attributes associated with late maturity such as large trunk girth and truck hollowing. The term 'ancient' refers specifically to the age class of a tree, describing the stage of development in the ageing process beyond full maturity. Whilst all veteran trees are potentially of cultural and ecological value, ancient individuals are a key indication that there is likely to have been a continuity of veteran tree/deadwood habitat and management at a site. JNCC (2006)

of continental Europe. These wood-pastures contain open grown veteran trees (often pollards) which may in some instances now be within a matrix of secondary woodland or scrub that has developed by regeneration and/or planting in the absence of grazing animals.

- Wood-pasture or parkland that has been converted to other land uses such as arable fields, forestry and amenity land, but where surviving veteran trees are of nature conservation interest. Some of the characteristic wood-pasture and parkland species may be surviving this change in state in the short term while the veteran trees remain alive. Sites may contain ancient pollards (e.g. Hatfield Forest) and other less usual tree forms, which result from trees being managed for timber, fodder and other products in the presence of grazing animals.

The following types of habitat are generally outside the scope of the Habitat Action Plan:

- Upland sheep-grazed closed-canopy oak woodland derived from past coppice management;
- Parklands with 19<sup>th</sup> century or later origins with none of the above characteristics.

An extensive range of species is particularly associated with these habitats and many rare species are only known in the UK from this habitat:

- Fungi – on dead and decaying wood on trees (e.g. brackets), on living roots (mycorrhizal) and in unimproved grassland (e.g. waxcaps).
- Saproxylic invertebrates (e.g. spiders, beetles and flies) are highly specialised and dependent on deadwood habitats, often associated with particular forms of wood decay. Many are rare or uncommon species and are poor colonisers. They exist in isolated sites where conditions are suitable.
- Other invertebrates of large or long-lived trees use specialist habitat niches (e.g. sap runs, water-filled holes, sheltered hollows) including lichen and bryophyte mats on bark.
- Lichens.
- Bryophytes.
- Birds: especially hole nesters and woodpeckers.
- Bats: roosting and breeding in crevices and hollows and feeding across the habitat mosaic.
- Long established closed herds of deer, cattle and other livestock. Examples include White Park cattle at Dinefwr Park (Carmarthenshire) and the Bagot goats at Levens Hall (Cumbria).

In addition, these habitats may be good for a wide variety of other wildlife, including many other plants and animals that rely on edge conditions or habitat transitions or which require different conditions for different parts of their life cycles (e.g. butterflies and moths).

Parklands and wood-pasture may also preserve indigenous tree genotypes. Upland and lowland wood-pastures display different characteristics.

**Vegetation types:** Most semi-natural woodland types can have wood-pasture variants, though the typical understorey is usually absent, fragmented or present as pockets of scrub. The lack of woodland understorey is a result of grazing and high light levels and it is usually replaced by grassland or heathland communities. The current range of tree species may be the result of manipulation by past management, for example to favour species which provided animal fodder or longer lived tree species (notably oak) for timber. Other typical tree species include beech, alder, birch, hazel and sweet chestnut with Scots pine typical in parts of Scotland. Woody scrub is a particularly important element with species such as hawthorn and blackthorn contributing nectar sources for invertebrates and protection for regenerating trees.

From the early 18th century newly introduced exotic trees such as Cedar of Lebanon began to be used in parkland design as well as native species and existing trees. However, for parklands to be included within the scope of the HAP they must contain some ancient or veteran trees. Where ancient or veteran trees exist in a changed vegetation type, such as arable, and it is impractical to revert to grazed grassland, steps should be taken to minimise risks to existing old trees and allow for the establishment of a new generation of trees.

Parklands contain some of the oldest specimens of introduced tree species. Some, such as the Cedar of Lebanon, are now very rare or under threat in their native habitat.

Tree spacing in wood-pastures is variable, so a range of tree morphologies (open growth, pollard, etc.) are a significant feature and some wood-pasture may be closed canopy in part or for the whole extent. Shrubs and tree regeneration, though not always present, are an important habitat element in wood-pasture and parkland providing structural diversity, nectar sources for invertebrates and also the next generation of trees.

Remnant Hunting Forest with medieval origins and parkland sites may now be tightly defined by physical boundaries, or by surrounding land use which has fossilised past boundaries. Wood-pasture, especially in the uplands, often has undefined boundaries which may in the past have been dynamic. In some places the distinction between closed canopy woodland, grazed woodland, wood-pasture and grassland is not easily discernable on the ground and may vary temporally, depending on management systems within and adjacent to the habitat.

**Distribution and extent:** These habitats occur throughout the UK, though more extensively in some areas than others. The extent of the habitat varies from landscape scale (the New Forest, Epping Forest) to small discrete sites comprising a few veteran trees. At present, there are no reliable statistics on the extent of the overall resource, nor on historic or current rates of loss or degradation of this habitat.

Wood-pasture and parkland landscapes are frequently of international historic, cultural and landscape importance, for example World Heritage Sites such as Studley Royal (Yorkshire) and Greenwich Park (London). Other notable sites are the New Forest (Hampshire), Bredon Hill (Worcestershire), Croft (Herefordshire); Borrowdale and Glenamara, (Cumbria), Epping Forest (Essex); Dinefwr Park (Carmarthenshire); Hamilton High Parks/Cadzow Oaks (South Lanarkshire), Dalkeith Park (Midlothian), Glen Finglas (Stirling), and Crom (Co Fermanagh). As wood-pasture and parkland have been shaped closely by human uses, archaeological sites and designated monuments may be integral features of these sites.

The high biodiversity value of some parklands, such as Windsor Great Park (Berkshire), has been evident for some time, but wood-pasture in general was not widely recognised as being of special ecological significance until relatively recently. A number of wood-pasture sites, particularly in the uplands, were considered to be examples of impoverished woodlands being destroyed by livestock grazing, but it is now appreciated that these sites are degraded wood-pastures being lost through abandonment of traditional management. The last twenty years has brought recognition of the value of these habitats because of their associated species, especially the saproxylic invertebrates which are confined to a very limited range of sites and closely associated with fungi. There is a growing understanding of the habitat, but more work is required on the distribution and characteristics of the resource.

### **The wider context**

Veteran, especially ancient trees, with their associated distinctive decay and mycorrhizal fungi, saproxylic fauna and epiphytic fauna and flora are more abundant in Britain than elsewhere in Northern Europe. Similar systems with old trees are also found in the Fennoscandian/Baltic Regions (wooded pastures and meadows), Spain and Portugal (dehesas and montados in the hotter south and wood-pastures in the Cordillera Cantabrica

and Pyrenees more similar to those found in the UK). Continental sites tend to be richer in associated species than those in the UK. There are a few Royal Hunting Forest remnants in some countries such as Fontainebleau (France), Jaegersborg Dyrehaven, Copenhagen (Denmark) and Bialowieza (Poland). Structurally, there may be similarities to savannah habitat where the tree canopy cover is low. The extent and richness of the UK wood-pasture and parkland habitats are outstanding in the northern European context, and there is a need for further studies to assess UK habitats in relation to the continent, particularly eastern and southern Europe.

Note the previous description of this habitat is available at:

[http://jncc.defra.gov.uk/Docs/UKBAP\\_BAPHabitats-65-WoodPastureParkland.doc](http://jncc.defra.gov.uk/Docs/UKBAP_BAPHabitats-65-WoodPastureParkland.doc)