

PARKLAND AND WOOD PASTURE

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CURRENT STATUS

Wood pasture and parkland represent a vegetation structure reflecting the history of specific management rather than a particular plant community. They are characterised by large, open-grown or high forest trees at various densities in a mosaic of grassland and/or woodland floras or, in the Sherwood context, this may be grass-heath or heather dominated sward. There is increasing evidence that our commonly accepted vision of the prehistoric wildwood may in fact have been, at least in part, wood pasture with open habitats maintained by a combination of browsing and grazing by native ungulates, disease and fire.

From Palaeolithic times onwards it seems that such habitats may have increasingly resulted from, and then been maintained as a result of, a pastoral system that provided for people's needs in terms of meat, milk and timber, hence the term "wood pasture" is probably more accurately applied. Over the centuries, wood pasture habitats further developed through their mediaeval use as Forest and Chase, later becoming valued as landscapes for purely aesthetic reasons on some large estates. Wood pastures which were maintained artificially long after they ceased to generate an income from hunting or livestock rearing, became known as "parkland".

In Nottinghamshire, the commonest specimen trees in parkland are oak (both pedunculate and sessile, or hybrids) and ash, sweet chestnut, lime, Scots pine, yew and ornamentals such as horse chestnut and cedar continue to be popularly planted.

There are no reliable statistics on either the extent of the overall UK or Nottinghamshire resource, nor on historical and current rates of loss or degradation of this type of habitat. The figure of 10-20,000 ha 'currently in a working condition' given in the 'habitat statement' of the UK Biodiversity Steering Group report is the current best estimate, i.e. where the special features associated with open ground are sustained by grazing.

Outgrown wood-pasture and mature high forest remnants occur in northern and central Europe, but the number and continuity of ancient (veteran) trees with their associated distinctive saproxylic (associated with dead wood) fauna and epiphytic flora are more abundant in Britain than elsewhere. Wood pasture and parkland are also often of substantial interest for bats and birds and may preserve indigenous tree

genotypes. These areas are outstanding at a European level and we have some exceptional examples of wood pasture in Nottinghamshire including a large population of ancient trees.

Wood pasture and parkland are important habitats in Nottinghamshire, both for their wildlife value and their role in shaping some of the characteristic landscapes of the county (particularly in the Sherwood area). Fine examples are evident in the Dukeries which include the wood pasture of Clumber that was originally managed under Forest Law. There are, however, many ecologically valuable parklands distributed throughout the county, reflecting the patterns of the historical estates; such examples include Oxtun, Flintham, Wollaton, Norwood, Hexgreave, Hockerwood, New Park, and Southwell Park, the latter four having been conserved through their role as the deer parks of the Archbishops of York.

The importance attached to maintaining parkland landscapes for aesthetic reasons has been the principal contributory factor in their survival; if it was not for their landscape importance to their owners, they would undoubtedly have gone under the plough or been converted to plantations. Nevertheless, there are many areas of former wood pasture and parkland that have been lost completely to intensive agriculture and forestry. There are also a few that have been cultivated for arable use with the trees left *in situ*. Several of the remaining parklands are now protected to a degree by heritage designations, but these can still suffer impacts on their constituent fauna and flora through pressure of visitor numbers. High stocking rates can cause serious damage to trees, particularly ancient ones, through root compaction, bark stripping and the use of veterinary aids such as some worming treatments which are now known to adversely affect invertebrate communities.

Parkland in some places in the County is still managed effectively as wood pasture - an increasing trend with the re-introduction of grazing to several key sites, particularly in Sherwood. Sherwood Forest National Nature Reserve includes the remnants of the ancient forest of Birklands, much of which is still wood pasture, comprising of acid grassland and heathland studded with ancient oaks and birch (much of the remaining forest of Birklands and Bilhaugh is also a candidate SAC). The value of this area for its flora and, particularly, invertebrate fauna is outstanding. Sherwood is internationally important for its saproxylic coleoptera (beetles associated with dead wood habitats) and supports many scarce moths such as the large red-belted clearwing, angle-striped sawfly and small brindled beauty. It also contains a wide range of UK and Local BAP priority vertebrate species, such as nightjar, barn owl, woodlark, hawfinch and red deer.

Evidence from recent surveys indicates that the wood pasture habitat of Sherwood may also be important for Leisler's bats - a scarce species nationally, but with an exceptionally good population in this part of the County. Wood pasture and parkland throughout Nottinghamshire is important for a wide range of species that are nationally in decline, including noctule bats and spotted flycatchers.

Wood-pasture and parkland can encompass elements of many other habitats including all grassland types, ancient semi-natural woodland and heathland; this HAP should therefore be considered in conjunction with those others.

THREATS

The main factors currently affecting Nottinghamshire's wood pasture and parklands are:

- Lack of appropriate management (such as reduction or cessation of grazing), leading to scrub encroachment and succession to closed canopy woodland.
- Felling and removal of veteran trees, often for public health and safety reasons, but sometimes also for forest hygiene reasons, both of which may not require felling licences.
- Poor practice in extraction techniques.
- Damage to ground flora and tree roots from excessive visitor pressure, which may also result in erosion (the latter can however be beneficial for certain fauna in some circumstances).
- Declining flora and fauna within the remaining fragments of wood pasture, because such patches are too small to support a full complement of species in the long term, and too widely separated to allow re-colonisation.
- Deposition of nitrous gasses causing loss of characteristic species in heathland ground layers and potentially affecting some epiphytes.
- Increasing age of ancient trees with no mid-age replacements, so the lack of younger generations of trees is producing a skewed age structure, leading to breaks in continuity of dead wood habitat and loss of specialised dependent species.
- Neglect and loss of expertise of traditional tree management techniques (e.g. pollarding) leading to trees collapsing or being felled for safety reasons.
- Loss of ancient trees through disease (e.g. Dutch elm disease, oak dieback), physiological stress, such as drought and storm damage, and competition for resources with surrounding younger trees, particularly where scrub is encroaching.
- Changes to ground-water levels leading to water stress and tree death, resulting from abstraction, drainage, neighbouring development, roads, prolonged drought and climate change; this is of particular concern on the Sherwood Sandstone aquifer.
- Pasture loss through conversion to arable, partially as a result of the BSE epidemic but also following the national foot and mouth outbreak and the consequent reduction of livestock which has affected Nottinghamshire, despite the disease not being recorded in the County.
- Pasture improvement through reseedling, deep ploughing, fertiliser and other chemical treatments, leading variously to tree root damage, loss of nectar-bearing plants, damage to the soil and epiphytes.
- In a few locations in the County, there are problems with over-grazing leading to bark browsing, soil compaction and loss of nectar plants.
- High stocking levels (of livestock) and modern worming treatments can cause severe damage to trees and invertebrates.

CURRENT INITIATIVES - EXAMPLES

- A national Habitat Action Plan for lowland wood pasture and parkland has been produced.

- A County-wide survey of veteran trees has been initiated by Nottinghamshire Wildlife Trust (NWT) and supported through Nottinghamshire Biodiversity Action Group (BAG).
- A regional parkland inventory was published by English Nature (EN) in August 2004.
- Many wood pastures in the County are notified as Sites of Special Scientific Interest (SSSI) by EN, who can provide advice and financial help towards management of these sites.
- Birklands Forest, the wood pasture core of Sherwood, was designated as the Sherwood Forest National Nature Reserve (NNR) in 2002.
- Nottinghamshire BAG partners such as the National Trust and Nottingham City Council are managing wood pasture for conservation and public benefit.
- Some wood pasture and parkland sites are now being managed through agri-environment schemes and there has been at least one example of arable reversion in an historic parkland in the County, at Hexgreave.
- Many veteran trees are protected by Tree Preservation Orders (TPO).
- The Forestry Commission is restoring areas of wood pasture, through removal of conifers, on forestry land in the Birklands and the Bilhaugh area.
- The Sherwood Forest Trust (SFT) and its partners have attracted substantial funds to restore the Sherwood landscapes, including wood pasture, and are working on a local origin propagation project.
- The Joint Nature Conservation Committee (JNCC) has a record of some key wood pasture species in Nottinghamshire in their Lower Plants and Invertebrate Site Registers.
- The National Veteran Tree Initiative was launched in 1996 and provides valuable advice, research and support for land managers, as does the Ancient Tree Forum, which represents many experienced ecologists, tree surgeons, arboriculturalists and foresters.
- The Budby South Forest bat box project, run by the South Nottinghamshire Bat Group, is providing roosting opportunities in areas of wood pasture (amongst other habitats) for Leisler's bat and other species. North Nottinghamshire Bat Group monitors bat boxes in Clumber Park, which provides roost sites for several bat species.
- Monitoring is underway for several other key species that are supported by wood pasture such as nightjars, woodlark and herpetofauna in Sherwood and barn owls in South Nottinghamshire; this work is being undertaken largely by voluntary natural history groups. The bird-ringing, Common Bird Census and Breeding Bird Survey schemes that have been running for many years in the County also contribute important information on the distribution of important parkland species throughout Nottinghamshire, including lesser spotted woodpecker, woodlark, tree pipit and spotted flycatcher.
- Moth recording (by light trapping) is being regularly undertaken by Nottinghamshire Biological and Geological Records Centre (NBGRC) and others in parkland in the Sherwood Forest area, Clumber Park, Wollaton Park and elsewhere, to search for species not recently recorded and to monitor populations of scarce species known to still occur in these localities.

TARGETS

- Complete the County-wide Ancient Tree Survey by mid-2007 and utilise the information to identify trees in need of TPOs and encourage local concern for ancient tree conservation.
- Use the information from the Ancient Tree Survey to establish a register of ancient trees and encourage the use of management orders to secure positive management.
- Disseminate EN's regional Parkland Inventory to relevant land managers and policy-makers by the end of 2006.
- Consolidate the information on a county basis by the end of 2006.
- Maintain the current extent of wood pasture and parkland, and where it is in favourable condition maintain it in that state.
- Establish restoration management on all areas of wood pasture and parkland SSSI that are currently in an unfavourable state by 2007. All such areas should be in favourable or unfavourable recovering condition by 2010, in accordance with national government targets.
- Establish restoration management on at least 30% of all undesignated wood pasture and parkland that is currently in an unfavourable state by 2010. These areas should be in favourable or unfavourable recovering condition by 2012.
- Promote and extend a programme of replacement planting in appropriate parkland areas to provide the veteran trees of the future.
- Initiate the creation of 150 ha of new wood pasture habitat by 2010.
- Undertake surveys of other key groups throughout the wood pasture and parkland resource of the County, so as to better understand the ecology of this habitat by 2009.
- Pollard appropriate oaks to create ecological conditions capable of bridging the emerging skewed age structure.

PROPOSED ACTION

Policy and legislation

1. Ensure the incorporation of relevant (inter-)national law, policies and guidance into all plans and policies relating to the protection, enhancement and management of parkland and wood pasture habitat.

ACTION: Government Agencies, Local Authorities, NGO's.

2. Through planning control or other land use consultation processes, allow no further loss of areas of parkland and wood pasture habitat and seek opportunities to enhance existing areas and create new areas through approved development.

ACTION: Government Agencies, Local Authorities, NGO's.

3. Ensure agri-environment, forestry and other funding schemes include appropriate management options and design measures to suit local nature conservation needs.

ACTION: Government Agencies.

Site safeguard and management

4. Review the extent of SSSI coverage of parkland and wood pasture habitat and consider notifying further sites as necessary.

ACTION: Government Agencies.

5. Designate SINCs and declare Local Nature Reserves on appropriate areas of parkland and wood pasture habitat or instigate other appropriate measures for their protection.

ACTION: Government Agencies, Local Authorities, NGO's.

6. Promote the uptake of positive management with owners of SSSIs, LNRs, SINCs and any other areas of parkland and wood pasture habitat.

ACTION: Government Agencies, Local Authorities, NGO's.

7. Carry out appropriate habitat management on sites controlled by BAP partners.

ACTION: Government Agencies, Local Authorities, NGO's.

8. Ensure sites containing parkland and wood pasture habitat have appropriate management plans that are working towards improving site management and condition

ACTION: Government Agencies, Local Authorities, NGO's.

9. Acquire land to ensure good habitat management or to create habitat.

ACTION: NGO's.

Advisory

10. Provide formal or informal training in management techniques for parkland and wood pasture habitat to land managers, site wardens, volunteers, etc.

ACTION: Government Agencies, Local Authorities, NGO's.

11. Establish demonstration sites or projects to demonstrate/publicise good habitat management techniques.

ACTION: Government Agencies, Local Authorities, NGO's.

Future research and monitoring

12. Establish and maintain a monitoring programme (a site register) to determine progress towards county HAP targets.

ACTION: Government Agencies, Local Authorities, NGO's.

13. Ensure that areas of parkland and wood pasture habitat are periodically resurveyed to establish extent and condition. Update resulting habitat inventory every 5 years and revise targets and HAPs if necessary.

ACTION: Government Agencies, Local Authorities, NGO's.

Communications and publicity

14. Improve public awareness and appreciation of parkland and wood pasture habitat by providing appropriate interpretation, education and access (where appropriate).

ACTION: Government Agencies, Local Authorities, NGO's.

15. Improve awareness of the value of, and appropriate management techniques for parkland and wood pasture habitat among site owners and occupiers.

ACTION: Government Agencies, Local Authorities, NGO's.

WHAT YOU CAN DO

- Take part in the Ancient Tree Survey.
- Join organisations such as the National Trust, Nottinghamshire Wildlife Trust, Ancient Tree Forum, and Woodland Trust to support the management of key BAP habitats.
- Encourage owners of this important habitat to manage it effectively.

SPECIES LIST

The following are examples of species of conservation concern (Appendix A) which are likely to benefit from this action plan are:

- Purple hairstreak
- White letter hairstreak
- Leisler's bat
- Hawfinch
- Honey buzzard
- Nightjar
- Woodlark
- Common Lizard
- Large tree-cherries (*Dendrochernes cyrneus*)
- Darkling beetle, (*Corticeus unicolor*)

REFERENCES

Vera, FWM (2002) A park-like landscape rather than closed forest. *Vakblad Natuurbeheer*. **41**: 13-15.

GLOSSARY OF TERMS AND ABBREVIATIONS

Coleoptera: beetles.

Epiphytic: term applied to a plant that grows on another (such as on a tree) and obtains nutrients from decaying leaves and other debris and moisture from the air. These plants do not obtain nutrients directly from the host plant as do *parasites* and *saprophytes*.

Genotype: the genetic constitution of an organism.

Herpetofauna: collective term for reptiles and amphibians

NNR: National Nature Reserve

SAC: Special Area of Conservation

Saproxyllic: associated with dead wood habitats.

TPO: Tree Preservation Order. An order made by a local planning authority (LPA) in respect of trees or woodlands. The principal effect of a TPO is to prohibit the: cutting down, uprooting, topping, lopping, willful damage, or willful destruction of trees without the LPA's consent. The cutting of roots, although not expressly covered above, is potentially damaging, and so, in the Secretary of State's view, requires the LPA's consent. The law on TPOs is in Part VIII of the Town and Country Planning Act 1990 and in the Town and Country Planning (Trees) Regulations 1999, which came into force on 2 August 1999.

BAG: Nottinghamshire Biodiversity Action Group

DEFRA: Department for Environment Food and Rural Affairs

EA: Environment Agency

EN: English Nature

FC: Forestry Commission

FE: Forest Enterprise

FWAG: Farming and Wildlife Advisory Group

JNCC: Joint Nature Conservation Committee. The UK Government's wildlife adviser, undertaking national and international conservation work on behalf of the three country nature conservation agencies: English Nature, Scottish Natural Heritage and the Countryside Council for Wales.

LA: Local Authority

NBGRC: Nottinghamshire Biological and geological records Centre

NWT: Nottinghamshire Wildlife Trust

SFT: Sherwood Forest Trust

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