



Hainault Forest

Management Plan 2016-2021

MANAGEMENT PLAN - CONTENTS PAGE

ITEM Page No.

Introduction

Plan review and updating

Woodland Management Approach

Summary

1.0 Site details

2.0 Site description

2.1 Summary Description

2.2 Extended Description

3.0 Public access information

3.1 Getting there

3.2 Access / Walks

4.0 Long term policy

5.0 Key Features

5.1 Veteran Trees

5.2 Wood Pasture

5.3 Informal Public Access

5.4 New Native Woodland

6.0 Work Programme

Appendix 1: Compartment descriptions

Appendix 2: Harvesting operations (20 years)

Glossary

MAPS

Access

Conservation Features

Management

THE WOODLAND TRUST

INTRODUCTION

The Trust's corporate aims and management approach guide the management of all the Trust's properties, and are described on Page 4. These determine basic management policies and methods, which apply to all sites unless specifically stated otherwise. Such policies include free public access; keeping local people informed of major proposed work; the retention of old trees and dead wood; and a desire for management to be as unobtrusive as possible. The Trust also has available Policy Statements covering a variety of woodland management issues.

The Trust's management plans are based on the identification of Key Features for the site and setting objectives for their management. A monitoring programme (not included in this plan) ensures that these objectives are met and any necessary management works are carried out.

Any legally confidential or sensitive species information about this site is not included in this version of the plan.

PLAN REVIEW AND UPDATING

The information presented in this Management plan is held in a database which is continuously being amended and updated on our website. Consequently this printed version may quickly become out of date, particularly in relation to the planned work programme and on-going monitoring observations. Please either consult The Woodland Trust website www.woodlandtrust.org.uk or contact the Woodland Trust (wopsmail@woodlandtrust.org.uk) to confirm details of the current management programme.

There is a formal review of this plan every 5 years and a summary of monitoring results can be obtained on request.

WOODLAND MANAGEMENT APPROACH

The management of our woods is based on our charitable purposes, and is therefore focused on improving woodland biodiversity and increasing peoples' understanding and enjoyment of woodland. Our strategic aims are to:

- Protect native woods, trees and their wildlife for the future
- Work with others to create more native woodlands and places rich in trees
- Inspire everyone to enjoy and value woods and trees

All our sites have a management plan which is freely accessible via our website

www.woodlandtrust.org.uk. Our woods are managed to the UK Woodland Assurance Standard (UKWAS) and are certified with the Forest Stewardship Council® (FSC®) under licence FSC-C009406 and through independent audit.

In addition to the guidelines below we have specific guidance and policies on issues of woodland management which we review and update from time to time.

We recognise that all woods are different and that the management of our sites should also reflect their local landscape and where appropriate support local projects and initiatives. Guidelines like these provide a necessary overarching framework to guide the management of our sites but such management also requires decisions based on local circumstances and our Site Manager's intimate knowledge of each site.

The following guidelines help to direct our woodland management:

1. Our woods are managed to maintain their intrinsic key features of value and to reflect those of the surrounding landscape. We intervene when there is evidence that it is necessary to maintain or improve biodiversity and to further the development of more resilient woods and landscapes.
2. We establish new native woodland using both natural regeneration and tree planting, but largely the latter, particularly when there are opportunities for involving people.
3. We provide free public access to woods for quiet, informal recreation and our woods are managed to make them accessible, welcoming and safe.
4. The long term vision for our non-native plantations on ancient woodland sites is to restore them to predominantly native species composition and semi-natural structure, a vision that equally applies to our secondary woods.
5. Existing semi-natural open-ground and freshwater habitats are restored and maintained wherever their management can be sustained and new open ground habitats created where appropriate.
6. The heritage and cultural value of sites is taken into account in our management and, in particular, our ancient trees are retained for as long as possible.
7. Woods can offer the potential to generate income both from the sustainable harvesting of wood products and the delivery of other services. We will therefore consider the potential to generate income from our estate to help support our aims.
8. We work with neighbours, local people, organisations and other stakeholders in developing the management of our woods. We recognise the benefits of local community woodland ownership and management. Where appropriate we allow our woods to be used to support local woodland, conservation, education and access initiatives.
9. We use and offer the estate where appropriate, for the purpose of demonstration, evidence gathering and research associated with the conservation, recreational and sustainable management of woodlands. In particular we will develop and maintain a network of long-term monitoring sites across the estate.
- 10 Any activities we undertake will conform to sustainable forest management principles, be appropriate for the site and will be balanced with our primary objectives of enhancing the biodiversity and recreational value of our woods and the wider landscapes.

SUMMARY

This public management plan briefly describes the site, specifically mentions information on public access, sets out the long term policy and lists the Key Features which drive management actions. The Key Features are specific to this site - their significance is outlined together with their long (50 year+) and short (5 year) term objectives. The short term objectives are complemented by a detailed Work Programme for the period of this management plan. Detailed compartment descriptions are listed in the appendices which include any major management constraints and designations. A short glossary of technical terms is at the end. The Key Features and general woodland condition of this site are subject to a formal monitoring programme which is maintained in a central database. A summary of monitoring results is available on request.

1.0 SITE DETAILS

Site name:	Hainault Forest, Havering
Location:	Romford, Romford
Grid reference:	TQ473936, OS 1:50,000 Sheet No. 177 TQ495942, OS 1:50,000 Sheet No. 177
Area:	113.37 hectares (280.14 acres) 54.29 hectares (134.15 acres)
Designations:	Ancient Semi Natural Woodland, Country Park, Designated Watercourse, Green Belt, Public Open Space, Registered Common Land, Site of Special Scientific Interest

2.0 SITE DESCRIPTION

2.1 Summary Description

Once a hunting forest providing venison for the King's table, this beautiful ancient woodland is home to a wealth of wildlife and plant species. Together with the southern section, owned by the London Borough of Redbridge it forms Hainault Forest Country Park, the Redbridge section has a lake, petting zoo and orienteering course, makes it the perfect destination for a family day out. And it's easily accessible from London.

2.2 Extended Description

Hainault Forest is made up of two discrete areas. The larger part owned by Essex County Council (ECC) and leased to the Woodland Trust is an ancient woodland pasture site and along with land owned by the London Borough of Redbridge forms Hainault Forest Country Park (HFCP). In 2006 four adjacent arable fields (135 acres, 54ha) were acquired by the Trust (known as Havering Park Farm) adding significantly to the total area of publicly accessible land in and around the Country Park.

This plan updates the 2010 - 2015 Hainault Forest Management Plan and include the additional land

(known as Havering Park Farm). Details regarding the land owned by London Borough of Redbridge have not been included in this plan. When Hainault Forest is referred to it mean the area managed or owned by the Woodland Trust. The term Hainault Forest Country Park (HFCP) will be used to refer to the whole forest area, including LBR land.

Hainault Forest is made up of a broad range of habitat types. These include ancient wood pasture, native broadleaved woodland, mature scrub and open grassy margins, amenity grassland, semi-improved acid grassland, heathland and former arable fields. Wetland habitats include streams, drainage ditches and woodland ponds.

HFCP is situated in a very urban environment with residential areas adjoining the site to the west and a municipal golf course to the east and south. The Forest is only 8 miles from the M25 and 4 miles from the M11, consequently it is a popular destination for visitors from a wide area. The northern section, managed by The Woodland Trust, is situated along a ridge and forms the highest part of the Forest with generally flat to gently sloping ground. The section managed by LBR is more sloping, lower-lying land including an artificial lake, old farm buildings, significant open grassland areas, café and small zoo.

The majority of the site, including the northern ridge, is London Clay. Around Cabin Hill, and over most of the Lambourne section, is a large cap of sandy and loamy beds. The summit of Cabin Hill (formally Sandpit Hill) is mapped as Bagshot Beds and Dog Kennel Hill is overlain by Claygate Beds. According to the Geological Survey, there are patches of Glacial Gravel and Till on the middle and west of the ridge. Although Pebble Gravel is not mapped there may be a small patch of it on Crabtree Hill. Lying in the valley bottom are drift deposits of undifferentiated head (deposits consisting of fragmented material which, following weathering, have moved downslope through a process known as solifluction).

The soils over the majority of the site are therefore heavy clays of neutral to acidic pH, becoming lighter on higher ground over the silty sands of the Claygate Beds. Higher still, the Bagshot series give rise to even sandier soils of lower pH, with a coarse pebbly content. The soils of the valley floor are derived from a complex mixture of pebbly, sandy clays. The soils in general are fairly infertile except in the valleys, and poorly drained, with many springs and flushes.

The history of the Woodland Trust Hainault Forest Estate can be divided into two distinct chronologies.

1. Pre 1851

Until 1851 all of the land presently owned by Essex County Council and one of the recently acquired fields, 90 acre field, lay within what was known as Hainault Forest, which was then an extensive area of common land with ancient pasture woodland covering some 4,900 acres/1,984 hectares. All of this land was originally established as part of a much larger Forest known as The Forest of Essex which is thought to have been created by the Normans in the 1130's (i.e. approximately 60 years after the Norman Invasion). The name Henehout was first recorded in 1221 and then called Hyneholt a few years later (the "holt" element as Saxon origins meaning "wood").

2. Post 1851

In 1851 the whole of Hainault Forest was disafforested by an Act of Parliament ('disafforested' is a term used in English law meaning "to reduce (land) from the status of a Forest to the state of ordinary land"). Most of the pasture woodland of Hainault Forest was destroyed very soon after the 1851 Act and converted to arable farmland with only 300 acres out of the original 4900 acres left in 1900.

Essex County Council owns almost the entire remaining ancient pasture woodland habitat of Hainault Forest. Most of these remnants of Hainault Forest are now included within the Hainault Forest Country Park, which is jointly owned by both Essex County Council and the London Borough of Redbridge - the county boundary, which is an ancient boundary line, passes through the Country Park. Hainault Forest Country Park was created in 1906 following the acquisition of what was left of Hainault Forest in 1903 by Essex and London Councils galvanised into action by Edward North Buxton. An act of Parliament in 1906 laid down the agreement for the Forest to be managed for the public forever.

The Woodland Trust, in 1998, leased 319 acres/129 hectares of the relict ancient pasture woodland of Hainault Forest from Essex County Council and manages it on their behalf. While the lease states 129 hectares of land, the area has been revised following precise GIS measurements to 113.5 ha.

Havering Park Farm:

Since at least the 12th century three of the recently acquired fields formed part of the deer park to the west of Havering Palace (ECC 2004). Early maps indicate the northern boundary of the fields, Spurgate Brook formed the boundary pale fence for the deer Park. The park was enclosed in the mid 17th century and the three fields appear to have been intensively farmed ever since. The Woodland Trust acquired the land in 2006.

Species in Hainault Forest:

The wood pasture history of much of HFCEP has resulted in hornbeam becoming the dominant species at the expense of other trees. Oak (*Q. robur*) while found through HFCEP is only occasional to locally common in abundance, probably associated with former glades and plains. The understorey/intervening vegetation is dominated by holly or bramble. Main variations are linked to wet areas where ash appears and on the edges of the former plains where scrub encroachment has led to a wider variety of species, including oak, grey poplar, hawthorn and blackthorn. Hainault has rather fewer plant species than would be expected for an ancient semi-natural woodland of its size. A notable rarity is hazel, presumably eliminated by centuries of browsing. Calcicoles are generally few, except around Roes Well where species such as Dogwood mark the influence of boulder clay.

Ground flora is generally sparse as a consequence of the shade, where present it is predominantly bracken and brambles with small patches of bluebell and holcus mollis. Plants of ancient woodland are well represented and include *Luzula pilosa* and *Ruscus aculeatus*. The richest communities are in wet places, which have not only wetland species such as *Typha latifolia* and *Humulus lupulus* but are also the chief habitat of the ordinary woodland flora such as *Oxalis*, *Ajuga* and *Brachypodium sylvaticum*. Even small flushes have *Solanum dulcamara* and *Carex remota*. Much remains of the heathland component, especially on the westernmost edge. Regionally rare plants on the site include dwarf gorse and water chickweed and regionally uncommon are heather, broad-leaved helleborine, common centaury, black poplar, ramson and barren strawberry.

335 species of macro-fungi and slime moulds have been recorded across the site.

158 bird species have been recorded at HFCP. Many of these are associated with the lake and grassland with 63 species associated with the ancient woodland. HFCP is regionally important for the following breeding birds - marsh tit, bullfinch, tree sparrow, nightingale, firecrest, linnet and turtle dove. Notably it is one of the key sites in the London area for hawfinch. It is of county importance for wood warbler, spotted flycatcher, tree pipit, redpoll, woodcock, and all three species of woodpecker. Wintering species include fieldfare, redwing and brambling. The lake supports breeding coot, moorhen, mallard, tufted duck, great crested grebe, Canada goose and mute swan. Wintering species include pochard and shoveler.

Prominent mammals include fox, grey squirrel and rabbit. Badgers can be found on the eastern side of the forest in low numbers and deer are also present in small numbers. Typical small mammals include wood mouse, bank vole, field vole and shrew species. Bat species found to roost in both buildings and woodlands have been recorded throughout the forest.

Over 940 species of invertebrates have been recorded at HFCP of which 7 are Red Data Book species, 79 are nationally scarce and 176 are of local importance. These include comma and speckled wood butterflies; goat moth; common darter and southern hawker dragonflies; and roesel's bush-cricket. In addition, one of the countries rarest spiders Midia Midas (Midas tree weaving spider) was first recorded on the site in 1982 and again in 2012. Hainault Forest is one of only six sites across the county where Midia Midas has been discovered. This money spider is significantly associated with ancient trees, it is listed as nationally endangered and is identified as a Priority Species for conservation action under the UK Biodiversity Action Plan (UKBAP).

The recorded fauna of ponds and watercourses is limited and unexceptional. However Roes Well is interesting in that it supports species that are characteristic of both flowing and still water.

3.0 PUBLIC ACCESS INFORMATION

3.1 Getting there

By car: From Romford Road (A112), turn into Fox Burrow Road, where there are two fee paying car parks owned by the London Borough of Redbridge. There are also two free car parks managed by the Woodland Trust along Manor Road on the northern edge of the site. All car parks are open during daylight hours only.

By public transport: Take the London underground Central Line to Hainault station, and then bus 247 (to Romford).

You can plan your journey by public transport at www.traveline.info

3.2 Access / Walks

The site has 10 pedestrian entrances (kissing gates and squeeze gaps) and four permissive bridleway entrances. In the section managed by the Woodland Trust, there are three surfaced multi-user paths extending to 4.5 miles. Details of the surfaced routes are on the main information board in Camelot car park (opposite the Miller and Carter pub) and smaller notice boards in Common Car Park (opposite Chigwell Row Infants School) and at other access points.

Surfaced paths are either flat or gently sloping. Puddles can form on the stone paths in wet weather and the unsurfaced paths can become very muddy so it's advisable to wear sturdy footwear.

Cyclists and horse riders are required to keep to the surfaced paths.

The Redbridge section of Hainault Forest Country Park has a number of attractions, including a boating and fishing lake, farm/zoo, orienteering course and interactive nature and sculpture trails.

4.0 LONG TERM POLICY

The long term management principles for Hainault Forest will be to:

- maintain (and where possible enhance) the conservation/biodiversity value,
- maintain the significant cultural/historical value and
- maintain high quality public access (infrastructure, interpretation and in both qualitative and quantitative terms).

From a conservation/biodiversity perspective the long term vision for Hainault Forest is for it to be maintained as a pollarded wood pasture landscape with new pollards actively created/managed and veteran pollards brought back into a pollarding cycle on a gradual bases (i.e. re-pollarding 20-30 veteran pollards annually). The re-pollarding programme will focus in and around existing open glades/plains and look to introduce the re-pollarding on a coup by coup basis. This process will gradually allow the former historic open character of the Forest to be restored over time. Livestock, mainly cattle, will be sensitively and gradually re-introduced across much of the forest with some parts (particularly primary walking routes) of the Forest maintained as livestock free. The recreation of a wood pasture landscape and the re-pollarding programme has been developed with input and support from Natural England, Forestry Commission, Epping Forest (Corporation of London), The Ancient Tree Forum (particularly Ted Green and David Lonsdale), Hatfield Forest (National Trust) and Epping Forest District Council.

Particular long term intentions focussed on within this plan are:

Veteran Trees

1. Retention of all existing pollarded/veteran trees to as old an age as is practically possible. A significant number of veteran hornbeam pollards will be brought back into a pollarding cycle on a gradual bases (i.e. re-pollarding 20-30 veteran pollards annually). The re-pollarding programme will focus in and around existing open glades/plains and look to introduce the re-pollarding on a coup by coup basis. The 70-80 veteran oak pollards will be monitored and where necessary a very gradual haloing programme will be introduced to maintain/enhance this resource
2. Increase the number of new maintained pollarded trees. Regular pollarding of the newly established pollards on an approximately 10-15 year rotation. Approximately 50-100 new hornbeam pollards will be created annually and 5-10 new oak pollards will be created annually
3. Develop a monitoring programme of pollarded trees to assess effectiveness and response to the work

Woodpasture

1. Restoration of a wood pasture system of management across as much of the Forest as is reasonably practical. Following on from the success of the pilot grazing programme a gradual expansion programme will be introduced in consultation with the local community and stakeholders. Particular emphasis will be place on maintaining specific cattle free areas

2. Maintenance of up to three existing woodland ponds in Hainault Forest in an open water condition. Remaining woodland ponds to be left undisturbed
3. Restoration and maintenance of the heathland community on the west of the Forest
4. Acquisition or management of further land which either abuts Hainault Forest or strengthens access, interpretation and/or biodiversity linking opportunities with nearby significant natural areas

Public access

1. Provision of sustainable and appropriate high quality formal and informal access, interpretation and recreation opportunities
2. Increased community involvement in the care and management of Hainault Forest
3. Support and maintain a programme of events and activities within the forest co-ordinated by either the Woodland Trust or other recognised bodies (Forest Schools, rambling/walking groups, running/orienteering clubs, youth organisations, etc)

Prioritizing aspirations

As a Site of Special Scientific Interest, Public Open Space, Registered Common Land and Country Park, significant expectations are made upon Hainault Forest by a diverse range of stakeholders. Changes in management policy will be consulted on with key stakeholders and the public consulted and given the chance to comment in writing, email or in person through open days. The priority of focus in the management of the Forest will be the key conservation needs identified for the site under Key Features, namely conservation of the Veteran Tree resource and the restoration of the woodpasture character of the site. In approaching the policy changes the emphasis will be on achieving as full an understanding of specific concerns underpinning stakeholders views and working to achieve deliverable compromises.

5.0 KEY FEATURES

The Key Features of the site are identified and described below. They encapsulate what is important about the site. The short and long-term objectives are stated and any management necessary to maintain and improve the Key Feature.

5.1 Veteran Trees

Description

It is estimated that there are up to 6000 veteran hornbeam pollards in Hainault Forest. In addition there are 70-80 veteran oak pollards across the site and at least two ash pollards.

Historically, approximately 80 veteran hornbeam pollards were repollarded by the London County Council (LCC), complete decapitation to the original cut level/knuckle, in the early 1980's and approximately 250 trees repollarded by the London Borough of Redbridge (LBR) in 1988/1989. The latter trees were in 25m x 25m plots (identified by large metal pegs in each corner) while the former trees were isolated individuals mainly along streamlines. Initial monitoring of the 250 LBR pollarded trees recorded a 'success' rate in excess of 80%. However, this only took account of shoot re-growth and did not record the condition of the stem. Subsequent field observation suggests that the success of the repollarding work of 1988/89 is actually more likely to be between 5 - 10%, if the criteria for success is ensuring the tree will live longer as a result of the pollarding work. Widespread stem death and decline in many of the repollarded trees seems to have been the main cause of the failure or decline in the pollards continued survival. The reasons for the failure are unclear, LBR observed the increased presence of a number of potentially pathogenic fungi on trees following repollarding and halted work. However, it is not possible to conclude whether these fungi were the cause or an effect of the pollarding actions that were taken. In addition, field surveys have highlighted that following pollarding by LBR the brushwood was burnt on site beside the pollarded trees and this may also have had an impact on the subsequent success of the work. Experience elsewhere on pollarding hornbeam is mixed but indications are that the previous work at Hainault should have been more successful than indicated and that some other factor affecting tree health, such as the fires, could be at work.

Between 1998 - 2002, the Woodland Trust with substantial input from numerous experts in the field undertook a pilot repollarding programme on 114 old/veteran hornbeam pollards utilising a variety of methodologies (including; heavy thinning of shoots, leaving long stubs, only pollarding a percentage of the stems, pollarding under varying shade levels, etc) and in some cases with the trees around thinned. Premature stem failure (i.e. brown/white rot in the trunks over the next few years) in many trees led to this pilot work being suspended. Future pollarding maintenance work of the successfully repollarded trees (approx. 25%) will be undertaken on a rolling programme with priority given to those in existing open glades or on their fringes.

In 2015 a re-pollarding programme was developed with input and support from Natural England, Forestry Commission, Epping Forest (Corporation of London), The Ancient Tree Forum (particularly Ted Green and David Lonsdale), Hatfield Forest (National Trust) and Epping Forest District Council. A significant number of veteran hornbeam pollards will be brought back into a pollarding cycle on a gradual bases (i.e. re-pollarding 20-30 veteran pollards annually). The re-pollarding programme will focus in and around existing open glades/plains and look to introduce the re-pollarding on a coup by

couple basis. An essential part of this work will include an extensive monitoring programme of pollarded trees to assess effectiveness and response to any work carried out.

Over 1000 maiden trees (90% hornbeam, 10% oak) have also been pollarded - most of these were under 10cm diameter at the point of cutting. The intention is to start to recreate the pollard resource for future generations. An on-going programme of additional pollards created (approx. 50-100 each year) and repollarding of the new pollards has been established.

The accumulation of deadwood in and around clearings has produced favourable conditions for saproxylic beetle species in particular. Detailed surveys have been carried out in 1999, 2000 and 2007 with a resurvey being planned for 2016.

Significance

1. Veteran trees are capable of supporting a phenomenal range of other wildlife, from large obvious creatures such as owls, woodpeckers and bats to a myriad of insects, and communities of extremely specialised lichens, mosses and fungi
2. Concentrations of veteran trees and in particular pollarded veterans are hugely rare across the county and across northern Europe. Concentration such as that found in Hainault Forest and with its proximity to Epping Forest make it an almost unique landscape hugely significant in historic, cultural heritage and biodiversity terms

Opportunities & Constraints

- C1: Poor historical vigour/survival associated with repollarded hornbeam
- C2: Increasing age of pollard regrowth
- C3: Monitoring of individual pollards is difficult particularly relocating the same tree with accuracy. Labels keep disappearing.
- O1: Profuse natural regeneration so ample scope to start new pollards
- O2: Substantial past site experience and monitoring data
- O3: Deadwood is a valuable microhabitat

Factors Causing Change

Intervening woody regrowth competition e.g. holly, poor historical success of repollarding, squirrel damage, increasing age of pollards, increasing instability of the ageing pollards, moisture availability/seasonality, Sudden Oak Death, Acute Oak Decline, Turkey Oak and Knopper Gall affecting Oak regeneration

Long term Objective (50 years+)

1. Establish within the next 50 years at least 1000 veteran hornbeam pollards brought back into a managed pollarding cycle across the forest (unless on-going monitoring identifies this work as prejudicial to the long term survival of the veteran pollards)
2. Create at least 2,500 new pollards across the forest within 50 years, managed within an appropriate pollarding cycle
3. Maintain the existing 70-80 Oak pollards found across the forest and work to keep them in as upright and healthy condition as possible
4. A high quantity and diversity of deadwood habitats will be maintained across the forest
5. Expanding the population of veteran maiden trees, mainly hornbeam but also including oak, silver birch and other common native tree species found in the forest
6. Develop an on-going substantial case history for the pollarded trees in Hainault Forest through a sustained monitoring programme

Short term management Objectives for the plan period (5 years)

1. A significant number of veteran hornbeam pollards will be brought back into a pollarding cycle on a gradual bases (i.e. re-pollarding 20-30 veteran pollards annually). The re-pollarding programme will focus in and around existing open glades/plains and look to introduce the re-pollarding on a coup by coup basis
2. Annual recruitment of 50-100 new pollards. These trees to be repollarded every 10 - 15 years
3. Oak pollards across the forest to be reviewed/monitored and a gradual halo process to be undertaken to ensure good light levels are maintained as the oaks age and stag heads. Work will only be undertaken to maintain trees in as upright position as possible or if health and safety issues are a significant concern
4. An annual monitoring programme of pollarded trees will be undertaken to assess effectiveness and response to the pollarding work
5. Undertake an invertebrates survey as part of the long-term monitoring of the Forest and any changes brought about by the pollarding work
6. Ensure an extensive dead wood habitat is maintained and old growth conditions through long term retention of stands or individual maiden trees until they senesce and die. Hornbeam to be the main species for retention, with occasional oak, silver birch and other common native tree species found in the forest. Introduce veteranisation to maintain a valuable succession of deadwood habitats with the added benefit of supporting the reinstatement of a wood pasture structural habitat
7. All deadwood should remain on site if possible. Some cut timber should be stacked in piles and allowed to decay naturally in clearings and more remote parts of the Forest. Where standing deadwood presents a health and safety hazard, tree surgery should be undertaken as necessary

5.2 Wood Pasture

Description

Hainault Forest is a historic wood pasture forest of the non-compartmental type, with tracts of pollard trees and also areas of grassland or heath called plains. There were about 40 such forests in medieval England and Hainault was one of the last to remain intact.

Hainault Forest is one of the best known survivors of this type of forest (apart from the nearby Epping and Wintry Forest, the New Forest, and Birkland in Sherwood). Hainault Forest as it stands at present provides an excellent impression of the structure and management of a medieval Forest having maintained a significant wealth of veteran pollards and having resisted attempts to turn it into "ordinary woodland".

There has been little or no woodcutting or grazing since the turn of the century. The Forest, when the Woodland Trust started managing the Essex County Council owned area, was in a dark and overgrown state and the plains overgrown with trees and dense ground vegetation. A phased programme of opening up and connecting these open areas has been undertaken. Subsequent annual management of these areas has been by swiping (cutting) the ground vegetation in late summer.

Approximately 40 acres of former arable land at Park Farm Havering (Subcmpt 3b) has been converted to grazed grassland with British Short-horn cattle (sometimes with calves) introduced in 2007. There is considerable support from various sources (e.g. Natural England, Ancient Tree Forum, etc) that grazing should be extended from these fields in a gradual phased programme into areas of Hainault Forest. An extensive research and consultation process is being undertaken to assess the various options and processes required to re-establish wood pasture grazing across wider areas of the forest.

In 2006 a pilot grazing area was established in sub-cmpts: 1c, 2c and 2d (approximately 19 acres). A water trough was installed in 2c and the whole area stock fenced. The stock fence was substantially and repeatedly vandalised by cutting the netting and linewires. This vandalism was undertaken prior to the introduction of cattle onto the site, however since that time no new vandalism of the fencing has been encountered. It is suspected that the culprits realised the significant animal welfare and health and safety issues, particularly to road users, that would have been caused with continued vandalism of this nature.

There is a small area (0.4 ha) of ericaceous heathland which is particularly uncommon in Essex (sub-comp 2D). The soils are Bagshot sands and a number of key plants have been recorded in the area, notably Dwarf Gorse, Petty Whin and Lousewort. Woodland had established over much of this area but has been partly cleared by the London Borough of Redbridge (LBR) prior to 1998. At the same time the topsoil removed to the underlying mineral soils. Since this initial reclamation work, maintenance lapsed and woodland began to reassert itself. This was cleared along with an adjacent section of old established woodland between 2003 and 2005. The nationally scarce beetle *Rhynchites tomentosus*, and the local leaf beetle *Zeugophora subspinosus*, occur quite commonly on very young re-growth of aspen in the heathland area. More mature aspen have been removed to allow young aspen to establish.

Ponds across the woodland that were once a source of water for the livestock had become silted up and colonised by scrub. Two ponds, Sheepwater and Roes Well, were desilted in 1999/00 with 80% of the silt removed and the surrounding trees cleared for a distance of 30m.

Significance

1. Hainault Forest is of national historic, biological, cultural and landscape importance. It is the result of historic traditional land management practice over many hundreds of years and represents a vegetation structure rather than a particular plant community. Without active and focussed management it would not have existed and will not continue to exist

2. Outgrown wood pasture and mature high forest remnants ('virgin forest') occur in northern and central Europe, but the number and continuity of ancient trees with their associated distinctive saproxylic fauna and epiphytic flora are more abundant in Britain than elsewhere. These areas are recognised to be of outstanding value at both a national and a European level

3. It is likely that the current grassland management regime will result in the re-establishment of a significant area of the dry acid grassland which forms part of a UK Habitat Action Plan

4. Hainault Forest is recognised as one of the top "old growth" sites in the UK. Important not only because of the continuity of old trees over generations but even more so because of the high concentration of veteran/ancient trees. Very few of these sites exist elsewhere in the UK and northern Europe

Opportunities & Constraints

C1: Public perception of recreating wood pasture at any scale may be negative, particularly when undertaking any tree management

C2: Combining grazing livestock with the high public usage of the site

C3: Limited grazing infrastructure in the forest at present

C4: Fencing on Public Open Space/Common Land needs to be undertaken sensitively and in consultation with stakeholders

C5: Organic livestock practices will be essential due to the potential impacts of antibiotics on soil mycho-flora

C6: Invertebrate fauna inhibited by scrub development at expense of grassland mosaic

O1: Most 'appropriate' means of managing the intervening woody vegetation between the pollards. Uncontrolled, this vegetation could ultimately suppress the pollarded trees

O2: Although grazing may appear to be a longer term financially justifiable and traditional management system, on-going fencing maintenance costs and the need to maintain mechanical management of areas not grazed will remain, however an overall cost reduction could be achieved or at least maintained at a break even level

O3: Huge opportunity to raise public awareness of this historic, cultural and biologically valuable site and how it was once a prominent part of our rural landscape

O4: To maintain and extend grassland and heathland habitats

Factors Causing Change

Increased presence of deer, animal welfare concerns, natural regeneration where no grazing/cutting, negative public perception of converting woodland to wood-pasture, adverse reaction to use of fencing on site, negative understanding/reaction to livestock (e.g. H & S concerns of public), squirrel damage, national and micro climatic variation

Long term Objective (50 years+)

1. Wood pasture to be the dominant habitat type across the forest, managed via grazing and/or through a mechanical management system. Where wood pasture systems have been established the overall canopy of the forest will resemble a more traditional wood pasture 'patchwork' landscape which will alternate within the 15-20 year coup pollarding cycle. The overall canopy cover across the forest will be approximately 50-60%.
2. A significant part of the Forest to be dominated by a pollarded landscape with occasional patches of scrub. Hornbeam pollards will predominate with the occasional oaks maidens, oak pollards and other species of native trees common to the forest
3. Robust scrub communities are to be a dynamic but sustainable feature of the Forest
4. A number of open water habitats spread throughout the Forest, including on the grazed area of the land Havering Park farm

Short term management Objectives for the plan period (5 years)

1. Undertake a baseline botanical survey as part of a long term monitoring process to assess the impact of recreating a wood pasture habitat
2. Undertake a baseline invertebrate survey as part of a long term monitoring process to assess the impact of recreating a wood pasture habitat
3. Undertake an information dissemination and consultation programme assess people's response to the various options available to the recreation of a wood pasture habitat
4. Maintain cattle grazing on part of Havering Park Farm and 'Ethelstones Land West', including the heathland and Latchford Meadow and extend grazing into additional areas of the forest both outside the Common land designation in Hainault Forest and also onto the natural regeneration area in the Havering Park Farm site
5. Maintain open areas within forest as integral component of wood pasture system through cutting grassland areas in the wood, annually with tractor and swipe in Jul/Aug. Leave arisings on site. Promote the extension and maintenance of grassland into peripheral areas with swipes of bramble, bracken and thinning of holly. It is anticipated that annually approximately 4ha will be extended and maintained for 5 years and followed by a full review to assess the benefits to wildlife, treescape and forest users
6. Extend and link existing and newly created open ground areas (Roes Well/Sheep Water, Taylor's Plain/Weddrell's Plain, Spurgate Plain)
7. Maintain and manage veteran pollards (see KF f1: Veteran Trees), including the creation of new pollards
8. Maintain a varied age structure of aspen, and particularly favouring young aspen, along the boundary of the heathland and the woodland to encourage beetles and fauna
9. Cut Common Meadow for hay in late summer/early Autumn each year. Hay to be left on site in permanent heaps
10. Cut Common Field regularly for use as amenity grassland area
11. Establish a pilot temporary grazing area within the area known as Lambourne Common to cover a maximum of 10% of the Common (i.e. 7.6ha). This area will still welcome public access via the instillation of both public and management gates
12. Subject to public consultation and approval from the Planning Inspectorate, extend grazing into additional areas across the Forest in a phased manner in approximately 2017 and 2019

5.3 Informal Public Access

Description

The Essex County Council land under the management of the Woodland Trust along with that owned by the London Borough of Redbridge, forms a Country Park of some 252 ha (623 acres) in size. It was acquired under the Local Government Act 1985, following abolition of the Greater London Council in April 1986. The Country Park has been recognised by the Countryside Commission under section 9 of the Local Government Act 1974. The majority of Hainault Forest is registered Common Land (Commons Act 2006) and registered with the Open Spaces Society under the name Lambourne Common..

Significance

Public recreation: A very popular, high profile area of Public Open Space on the very edge of London. There are an estimated 1 million visitors to the Country Park annually (2013) of which an estimated 250,000 (2013) visits are made to Hainault Forest annually

Opportunities & Constraints

C1: Limited options for controlling public access when desirable for habitat management reasons

C2: New informal footpaths created every year

C3: Litter and fly-tipping increasing

O1: Improving infrastructure and access to increase both the quantity and quality of visitor experience (and reducing anti-social activities)

O2: A programme of high profile events and activities will raise awareness and hopefully valuing of the forest

O3: Greater community involvement in the care and 'ownership' of Hainault Forest has been established through the development of the Hainault Forest Volunteer Rangers

Factors Causing Change

Changes in Country Park Policy by LBR/Vision Redbridge, increased numbers of visitors, changing expectations (e.g. higher access for people with disabilities), changes in visitor behaviour or expectations

Long term Objective (50 years+)

1. Increased use of Hainault Forest for quiet informal recreation
2. Improved access to the landscape around Hainault Forest and links to nearby Public Open spaces, Havering Country Park, Epping Forest and Woodland Trust Land at Theydon Bois
3. Maintain good opportunities for people, including those with a range of disabilities to access Hainault Forest.
4. A regular programme of high profile events and activities to raise awareness and valuing of the Forest will have taken place and planned for the future
5. Support the on-going Forest School programme
6. Establish greater community involvement in the care and 'ownership' of Hainault Forest
7. Permissive bridleway access on the majority of surfaced paths on Woodland Trust managed land and reducing unauthorised access on unsurfaced paths/areas

Short term management Objectives for the plan period (5 years)

1. Continue to review and upgrade access infrastructure to maintain good access to the forest
2. Prepare annual events and activities programmes to increase awareness and valuing of the forest
3. Continue to review security measures to restrict access by unauthorised users to all or specific parts of the forest (e.g. motorcyclists, horse on the common, pony and traps, joyriders)
4. Maintain and develop the Hainault Forest Volunteer Rangers to both support the events programme and undertake practical conservation activities
5. Cut grass on Common Field for school sports day and School fair (July) and maintain a moderately short sward over summer to permit its use for general amenity purposes
6. Support the existing Forest School programme (currently two local schools)

5.4 New Native Woodland

Description

Sub Cmpt 3c, a former arable field called 'ninety acres' was once part of the wooded area of Hainault Forest. Following enclosure in 1851 it was cleared along with the adjacent field, 'Fifty Acres' which separates 3c from the existing Hainault Forest.

Sub Cmpt 3c was deer fenced prior to planting and was planted with 55,000 over five years (commencing in 2006) with an approximate gross area of 6.15ha planted each year. Species mix as follows:

- 8% Woody shrubs (*Malus sylvestris*, *Rhamnus catharticus*, *Populus tremula*, *Alnus glutinosa*, *Betula pubescens*, *Cornus sanguinea*, *Ilex aquifolium*, *Salix cinerea*)
- 5% *Crataegus monogyna*,
- 9% *Corylus avellana*,
- 13% *Acer campestre*,
- 20% *Carpinus betulus*,
- 20% *Fraxinus excelsior*
- 24% *Quercus robur*

Species choice was based on local native species found both in hedges and particularly those found in Hainault Forest. Hawthorn was planted along the wide ride and elsewhere all species were planted in random 5 plant pure-species groups. The relative abundance of the species is such that natural groupings of species will arise randomly across the site with the relative success of the species groups varying with the micro-site. Following initial establishment and tree maintenance work subsequent maintenance will be through minimal intervention. It is expected shrub species in particular will colonize from the surrounding hedges. A small farm pond can be found just to the east of the centre of the field and Spurgate Brook and pond/wetland areas border the southern extent of the field.

Sub-cmpt 3a has been left to minimal intervention and is in the process of returning naturally to woodland.

Sub-cmpt 3b was part of the original cattle grazing project and is still grazed. This cmpt was historically part of the extensive royal deer park that stretched eastwards toward Havering Atte Bower and it will remain as a grazed pasture with occasional trees and shrubs. The canopy will be maintained at below 20% canopy cover.

Sub-cmpt 1c, lies to the west of the site and just outside the SSSI and ancient woodland designations. It is an area of secondary woodland planted and allowed to naturally regenerate shortly after the acquisition of the forest in 1903. Part of the area was established as a tree nursery by the London County Council.

1c is now a fairly dense wooded area with oak, hornbeam, ash and silver birch as the main species, occasional yew trees and an understory dominated by holly with a scattering of hawthorn and backthorn. The area was part of the initial grazing trial and is still grazed. A number of drainage channels pass through the area and wet flushes have formed. In recent years parts of the wooded area have been thinned and a glade created adjoining the healthland area. Numerous new maiden pollards have been created and some have also had their second pollarding cut.

Significance

The sub-compartment 3c was only cleared of woodland in 1851. While intensively farmed since then it is close to ancient landscape features such as Spurgate Brook, and close to Hainault Forest SSSI.

In association with the adjacent fields which are being converted to grazing the new woodland extends and buffers Hainault Forest.

Increasing the area of new native woodland is a corporate objective of the Woodland Trust.

Technically the secondary woodland in sub-cmpt 1c should be considered and PAWS (Planted Ancient Woodland Site) as the Chapman & Andre map of 1777 shows it as at least partially, if not totally wooded. However, by the time of the OS County Series Epoch 1 (1843 - 1893) map the area is shown with only a scattering of trees.

Opportunities & Constraints

C1: Grazing mammals: squirrels, rabbits, hares and deer

C2: Remote location of 3c making school and other visits more difficult

C3: Proximity of 3c to high easily accessible urban populations

C4: Issues arising from multiple land use (dog walkers and cattle grazing)

O1: Creation of a grazed pasture woodland landscape with oak/hornbeam pollards

O2: To promote the WT's message to local people through conservation activity days and interpretation

Factors Causing Change

Squirrels, rabbits, hares and deer browsing pressure; vandalism of fencing and grazing infrastructure

Long term Objective (50 years+)

1. New treed areas of mixed native woody species typical of the local area;

2. Long-term management will aim to convert new native woodland into a wood pasture habitat across both Hainault Forest and the adjacent site known as Havering Park Farm

Short term management Objectives for the plan period (5 years)

1. Maintain and manage 3c to become a new native woodland
2. Allow 3a to naturally regenerate into new native woodland
3. Maintain 3b as a grazed area with occasional trees and shrubs. As the cattle are more prone to locate themselves on the eastern more open field , the instillation of a cattle gate and upgrade he fencing between the two fields will help encourage grater grazing of the western field and help maintain the less than 20% canopy cover
4. Maintain grazing in 1c, where necessary mechanically maintain open glades, continue the new pollarding programme which is part of the phased opening up of the woodland canopy and introduce an annual 10% thin of tree stems within the more dense wooded areas in the southern section of 1c

6.0 WORK PROGRAMME

Year	Type of Work	Description	Due By
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APPENDIX 1: COMPARTMENT DESCRIPTIONS

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Key Features Present	Designations
1a	47.20	Hornbeam		Wood pasture	Housing/infrastructure, structures & water features on or adjacent to site, Mostly wet ground/exposed site, People issues (+tve & -tve), Sensitive habitats/species on or adjacent to site	Informal Public Access, Veteran Trees, Wood Pasture	Ancient Semi Natural Woodland, Country Park, Green Belt, Registered Common Land, Site of Special Scientific Interest
<p>Remnant wood pasture dominated by hornbeam pollards with occasional oak standards situated on gently to moderate sloping ground interspersed with numerous small streams. Spurgate Brook rises on the west of the sub-comp and runs approx due east for much of the sub-comp's length. The understorey/intervening woody vegetation is dominated by holly.</p> <p>Overall the ground vegetation is relatively sparse and is dominated by bramble with the occasional bracken patch. Stream side and wet flush vegetation are botanically the most interesting</p> <p>Extensively damaged during the 1987 storms, including areas of catastrophic damage. A non-intervention zone has been established with a permanent transect set up for monitoring the changes since the storm.</p> <p>Public Rights of Way and permissive horse paths cross the sub-comp and three domestic residences abut the wood at the northeastern corner. The Camelot car park lies on the northwest corner of the Sub Cmpt. This is a busy car park opposite a popular eating pub. It is locked at night due to persistent problems of prostitution, public sex and drug dealing</p>							
1b	38.80	Mixed native broadleaves		Wood pasture	Housing/infrastructure, structures & water features on or adjacent to site, Mostly wet ground/exposed site, People issues (+tve & -tve)	Informal Public Access, Veteran Trees, Wood Pasture	Ancient Semi Natural Woodland, Country Park, Green Belt, Registered Common Land, Site of Special Scientific Interest

This sub-comp is situated on an occasionally gently undulating plateau with several small meandering streams.

Two broad stand types are present. Less common is remnant wood pasture dominated by hornbeam pollards and the occasional oak standard. More frequent are stands of older secondary woodland dominated by either pure hornbeam or hornbeam/oak high forest towards the east and inclining towards more ash on the west where soils change to more boulder clay

Overall the ground vegetation is relatively sparse with bramble generally dominant with occasional patches of bracken. Significantly there are several large patches of *Holcus mollis*.

Two wood pasture trial plots have been established in this sub-comp. They have been progressively enlarged and linked through thinning of the overstorey and management of the ground vegetation by late summer cutting with a swipe.

Sheeps Water was desilted and an area of up to 30 m surrounding it, was opened up in February 1999. Roes Well was desilted and an area of up to 30 m surrounding it, was opened up in February 2002.

A Public Right of Way and Permissive horse ride pass through the sub-comp. The Angel Car Park is on the northern boundary of the compartment. Due to significant fly-tipping and anti-social behaviour problems

1c	16.50	Mixed native broadleaves		Wood pasture	Housing/infrastructure, structures & water features on or adjacent to site, Mostly wet ground/exposed site, People issues (+tve & -tve)	Informal Public Access, Veteran Trees, Wood Pasture	Country Park, Green Belt
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Recent semi-natural secondary woodland with occasional trees left over from former GLC nursery. Flat terrain with ground vegetation dominated by bramble with occasional bracken.

In 2006 an acre was cleared of trees on the west side as part of open ground/woodpasture creation within the Forest. This work proved contentious leading to a number of complaints focussed on mainly the principle of grazing the forest, felling trees and also the aesthetics of leaving a number of stumps shaped as seats.

In 2006, 1c along with 2d and 2c are enclosed within a stock fence in anticipation of the area being grazed as part of a pilot project. The fence has been repeatedly vandalised.

A ditch running approximately n-s through the sub cmpt contains the outfall from someone's domestic drain. This has been reported to the authorities but they have failed to act. Letter on file.

2a	2.20	NULL		Non-wood habitat	Housing/infrastructure, structures & water features on or adjacent to site, People issues (+tve & -tve)	Informal Public Access, Veteran Trees, Wood Pasture	Country Park, Green Belt, Registered Common Land
<p>Common Field (West): Closely mown field used for informal recreation. Maintained as short grassy sward with a dog free area established in February 1999.</p> <p>Illicit riders pose a potential hazard to other users and their dogs in this area. In 2006 works to deter riders from entering this area were implemented, including bunding of external boundary, deepening ditch sections and make footbridges and entranceways less accessible for riders</p> <p>The field abuts Chigwell Row County First School which use the field for its annual sports day in July. Maintenance contractor checks with school for date each year and the grass is cut in time for the school to white line the grass.</p> <p>The Common Car Park lies within this compartment. Well used by visitors to the forest and to the school. It has a tarmac surface and gate locked at night due to problems of anti-social behaviour including suspected drug dealing and prostitution</p>							
2b	3.40	NULL		Non-wood habitat	People issues (+tve & -tve)	Informal Public Access, Veteran Trees, Wood Pasture	Country Park, Green Belt, Registered Common Land
<p>Common Field (East): Late summer hay meadow, floristically relatively poor but with some diverse areas where ground tends to be moister, with Lady Smock historically a particular feature.</p> <p>Difficulties of disposing of the hay have meant this area is only cut to waste every other year. This has led to some local objections over the decline of Ladies Smock due to the changed management. Long-term intention following the completion of pilot grazing project is to graze the area.</p> <p>Regular illicit use by riders poses a safety concern.</p>							
2c	2.30	NULL		Non-wood habitat	Housing/infrastructure, structures & water features on or adjacent to site, People issues (+tve & -tve)	Informal Public Access, Veteran Trees, Wood Pasture	Country Park, Green Belt

<p>Latchford Meadow: Late summer (July/Aug) previously cut meadow which in recent years the management has lapsed due to difficulties in selling the hay. Scrub has begun to encroach the area and it is proposed this area be one of the first grazed as part of the pilot grazing project. A water trough was installed in 2006 and the area stock fenced along with Sub cmpt 2c and part of 1c in 2006. Repeated vandalism to the fence has proved a problem.</p>							
2d	2.00	NULL		Non-wood habitat	Housing/infrastructure, structures & water features on or adjacent to site, People issues (+tve & -tve)	Informal Public Access, Veteran Trees, Wood Pasture	Country Park, Green Belt
<p>Small area of heathland which has become partially colonised by scrub and woodland. Clearance work undertaken by previous managers and topsoil removed. <i>Calluna vulgaris</i> and a number of other locally important heathland plants present.</p>							
3a	0.00	Mixed native broadleaves		Wood establishment	Mostly wet ground/exposed site, People issues (+tve & -tve)	Informal Public Access, Veteran Trees, Wood Pasture	Green Belt
<p>Former arable field acquired in 2006. Arable cultivation except annual cutting had lapsed for some years prior to acquisition by the WT. Even so a robust scrub community has established albeit 'coppiced' annually. Woody species frequent on the site include: Hornbeam, Field Maple, Sallow and Oak. In 2007 four spikes of Common spotted Orchid were found towards the NW corner of the compartment (TQ 487940.) Current management is minimal intervention with the view it is ultimately grazed.</p> <p>Permissive public access to the field with a new surfaced multi-user path running along the western boundary and eventually cutting east across the site.</p>							
3b	0.00	NULL		Non-wood habitat	People issues (+tve & -tve), Services & wayleaves	Informal Public Access, Veteran Trees, Wood Pasture	Green Belt

Two former arable fields acquired in 2006. Arable cultivation except annual cutting had lapsed for some years prior to acquisition by the WT. Northern boundary, Spurgate Brook, is thought to be the boundary of the deer park that once was part of Havering palace. Along the brook side are a number of veteran trees.

The eastern-most field appears to have been cultivated more recently while the western field has a more diverse sward and established colonising scrub. Eight British Short-horn cattle started grazing June 2006. No water available on site and it is being bowsered in by farm staff at the Lambourne End centre

Permissive public access to the fields with a new surfaced multi-user path running along the southern boundary which has fence and new planted hedge. Cut grass paths are maintained within the fields.

3c	0.00	Mixed native broadleaves	2006	Wood establishment		Informal Public Access, Veteran Trees, Wood Pasture	Green Belt
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Former arable field once part of Hainault Forest but cleared following the enclosure of the Forest in 1851. The whole field is enclosed within a deer fence except for an 8m boundary path and 50-70m plus corridor along the southern boundary adjacent to Spurgate brook. There are two large silted up ponds. One in the middle of the site and one on the southern boundary.

The whole area is to be planted with new woodland over five years, with 6.15ha planted each year. First area planted in 2006/07. Except for the 2006.07 planting all the areas to be planted will be pres-sown to grass and cut to establish a thick grassy sward.

The intention is to maximise the amount of community input planting the trees, using them as tool to enthuse and reach out to local people However it is a relatively remote area for working with some groups.

Appendix 2: Harvesting operations (20 years)

Forecast Year	Cpt	Operation Type	Work Area (ha)	Estimated vol/ha	Estimated total vol.
2019	1a	Pollard	1.00	100	100
2020	1a	Pollard	1.00	100	100
2021	1a	Pollard	1.00	100	100
2022	1a	Pollard	1.00	100	100
2023	1a	Pollard	1.00	100	100

GLOSSARY

Ancient Woodland

Ancient woods are defined as those where there has been continuous woodland cover since at least 1600 AD. In Scotland ancient woods are defined strictly as sites shown as semi-natural woodland on the 'Roy' maps (a military survey carried out in 1750 AD, which is the best source of historical map evidence) and as woodland all subsequent maps. However, they have been combined with long-established woods of semi-natural origin (originating from between 1750 and 1860) into a single category of Ancient Semi-Natural Woodland to take account of uncertainties in their identification. Ancient woods include Ancient Semi-Natural Woodland and plantations on Ancient Woodland Sites (see below). May support many species that are only found in ancient woodland.

Ancient Semi - Natural Woodland

Stands in ancient woods defined as those consisting predominantly of native trees and shrubs that have not obviously been planted, which have arisen from natural regeneration or coppice regrowth.

Ancient Woodland Site

Stands in ancient woods that have been converted to plantations, of coniferous, broadleaved or mixed species, usually for timber production, including plantations of native species planted so closely together that any semi-natural elements of the understorey have been suppressed.

Beating Up

Replacing any newly planted trees that have died in the first few years after planting.

Broadleaf

A tree having broad leaves (such as oak) rather than needles found on conifers (such as Scots pine).

Canopy

The uppermost layer of vegetation in a woodland, or the upper foliage and branches of an individual tree.

Clearfell

Felling of all trees within a defined area.

Compartment

Permanent management division of a woodland, usually defined on site by permanent features such as roads. See Sub-compartments.

Conifer

A tree having needles, rather than broadleaves, and typically bearing cones.

Continuous Cover forestry

A term used for managing woods to ensure that there are groups or individual trees of different ages scattered over the whole wood and that some mature tree cover is always maintained. Management is by repeated thinning and no large areas are ever completely felled all at once.

Coppice

Trees which are cut back to ground levels at regular intervals (3-25 years).

Exotic (non-native) Species

Species originating from other countries (or other parts of the UK) that have been introduced by humans, deliberately or accidentally.

Field Layer

Layer of small, non-woody herbaceous plants such as bluebells.

Group Fell

The felling of a small group of trees, often to promote natural regeneration or allow planting.

Long Term Retention

Discrete groups of trees (or in some cases single trees) that are retained significantly past their economic felling age. Operations may still be carried out within them and thinning is often necessary to maintain stability.

Minimum Intervention

Areas where no operations (such as thinning) will take place other than to protect public safety or possibly to control invasive exotic species.

Mixed Woodland

Woodland made up of broadleaved and coniferous trees.

National vegetation classification (NVC)

A classification scheme that allows an area of vegetation to be assigned to the standardised type that best matches the combination of plant species that it contains. All woodlands in the UK can be described as being one of 18 main woodland types (W1 - W18), which principally reflect soil and climatic conditions. For example, Upland Oakwoods are type W11, and normally occur on well drained infertile soils in the cooler and wetter north and west of Britain. Each main type can be subdivided into numerous subtypes. Most real woods contain more than one type or sub-type and inevitably some woods are intermediate in character and can't be properly described by any sub type.

Native Species

Species that arrived in Britain without human assistance.

Natural Regeneration

Naturally grown trees from seeds falling from mature trees. Also regeneration from coppicing and suckering.

Origin & Provenance

The provenance of a tree or seed is the place where seed was collected to grow the tree or plant. The origin is the geographical location within the natural range of a species from where seeds/tree originally derives. Thus an acorn collected from a Turkey oak in Edinburgh would have an Edinburgh provenance and a southern European origin.

Re-Stocking

Re-planting an area of woodland, after it has been felled.

Shrub Layer

Formed by woody plants 1-10m tall.

Silviculture

The growing and care of trees in woodlands.

Stand

Trees of one type or species, grouped together within a woodland.

Sub-Compartment

Temporary management division of a compartment, which may change between management plan periods.

Thinning

The felling of a proportion of individual trees within a given area. The remaining trees grow to fill in the space created.

Tubex or Grow or Tuley Tubes

Tubes placed over newly planted trees or natural regeneration that promote growth and provide protection from animals such as rabbits and deer.

Weeding

The control of vegetation immediately around newly planted trees or natural regeneration to promote tree growth until they become established. Either by hand cutting or with carefully selected weed killers such as glyphosate.

Windblow/Windthrow

Trees or groups of trees blown over (usually uprooted) by strong winds and gales.