



# Heartwood Forest

## Management Plan 2019-2024

## 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 Ancient Semi Natural Woodland

5.2 Informal Public Access

5.3 New Native Woodland

5.4 Orchard

5.5 Open Ground Habitat

5.6 Other

6.0 Work Programme

Appendix 1: Compartment descriptions

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 Consequently this printed version may quickly become out of date, particularly in relation to the planned work programme and on-going monitoring observations.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](http://www.woodlandtrust.org.uk) or contact the Woodland Trust ([wopsmail@woodlandtrust.org.uk](mailto: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.

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## 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](http://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

<b>Site name:</b>	Heartwood Forest
<b>Location:</b>	Sandridge
<b>Grid reference:</b>	TL162114, OS 1:50,000 Sheet No. 166
<b>Area:</b>	346.72 hectares (856.76 acres)
<b>Designations:</b>	Ancient Semi Natural Woodland, County Wildlife Site (includes SNCI, SINC etc), Green Belt, NULL

## 2.0 SITE DESCRIPTION

### 2.1 Summary Description

Heartwood Forest is a vast, beautiful new forest which is already a great place to visit but once completed will offer some amazing features. Already, 600,000 trees have been planted, and along with the pockets of ancient woodland, new wildflower meadows, a community orchard in the making, and fantastic wildlife, it's set to become one of the Trust's Top 10 destination sites.

### 2.2 Extended Description

The Woodland Trust completed the purchase of Heartwood Forest on 30th September 2008. The Trust had been searching for a large scale woodland creation project for a number of years that was close to a large population where we could have a significant impact in terms of biodiversity and engaging with lots of people.

The acquisition of Heartwood Forest is the Woodland Trust's most ambitious woodland creation project to date in England. The total land area extends to 345 ha (858 acres) and is predominantly arable land. The site also contains approximately 18 ha (44 acres) of Ancient Semi-Natural Woodland (ASNW) split into four fragmented blocks.

Heartwood Forest occupies an area of land situated in-between the villages of Sandridge,

Wheathampstead and Harpenden, and within close proximity to large towns of St Albans, Welwyn Hatfield, Stevenage and Luton. The site is also within easy reach of London. Prior to acquisition access was limited to the bridleway which runs through the site and permissive paths within Langley ASNW.

Through this project we're making the bold statement to create "England's largest continuous new native forest" and we propose to plant 600,000 trees in the process involving huge numbers of people in its creation.

Our People Engagement Plan for Heartwood Forest set out four key objectives:

1. Establishing Sandridge as Heartwood's visitor centre. We want lots of people to visit Heartwood on a regular basis and for the community of Sandridge and surrounding businesses to be the source of information and facilities.
2. Making the site inspirational - wow factors. We want Heartwood to have a 'wow factor' beyond simply the scale. It will inspire, surprise and engage those who visit.
3. Broadening user groups. We want Heartwood to be a hub for active recreation in the area e.g. for walking, running, cycling, horse riding, and by linking to surrounding settlements, landscape, facilities and existing routes.
4. Every tree should be planted by a volunteer. All 600,000 trees to be planted by volunteers, in particular children.

Shortly following acquisition and prior to commencement of tree planting, a very comprehensive and detailed Environmental Impact Assessment (EIA) was carried out. This can be found online at [woodlandtrust.org.uk/heartwood](http://woodlandtrust.org.uk/heartwood). This looked in detail at the impact that the new woodland creation project may have on the following areas: Historical and cultural, Flora and fauna, Population and access, and Air, soils and water. The EIA underwent lengthy research and consultation and it was eventually signed off on 28 Nov 2009 by the Forestry Commission - the government department responsible for regulating forestry in Britain.

The landscape character is typical of Hertfordshire; gently undulating lying over a ridge between two dry valleys, with a fairly flat top to the ridge and in places steeper slopes. The landscape is divided by hedges with scattered trees throughout. The agriculture is arable cropping on the clay, with flint soils overlying chalk. Patches of mixed broadleaved woodland totalling approx 17.8 Ha, 44 acres, containing old coppice of hornbeam as well as ash, beech, oak and other native broadleaves are also a feature, generally averaging 5-10 ha in size.

Hugely popular in the local environment, the site already has an influx of visitors enjoying quiet recreation. Access onto the site is variable with numerous pedestrian and horse/bike access points. The newly built car park in 2011 is situated off the B651, the main road that runs from Sandridge to Wheathampstead. The nearest postcode is AL4 9DQ and there is a brown tourist sign pointing into the car park from the main road.

Management access to the western side is via a single track road off Sandridgebury Lane adjacent to the local scout hut and also through the car park. On the eastern side, management access is

restricted to an access point off Langley Grove.

## 3.0 PUBLIC ACCESS INFORMATION

### 3.1 Getting there

#### By car

Heartwood Forest is located either side of the B651 between Sandridge and Wheathampstead Village and approximately 4 km (2.5 miles) north of St Albans City Centre in Hertfordshire.

From St Albans, head north-east on the B651 and after 4km you will see a brown tourist sign pointing into the car park from the main road. The nearest postcode is AL4 9DQ.

#### By train

There is a good train service to St Albans station 4km (2.5 miles) away from Heartwood Forest. This includes Bedford to Brighton via East Croydon, Luton to Sutton via Hackbridge and Luton to Sutton via Wimbledon. There is on average nine trains per hour. Monday to Friday. with six trains per hour on Saturdays and five on Sundays. Harpenden train station is also 7.5km (4.7 miles) with a good service on the same line.

Check times at [traveline.org.uk](http://traveline.org.uk) or phone 0871 200 2233.

#### By bus

There are two buses for Heartwood Forest that stop in Sandridge village - the 304 from Hitchin to Potters Bar via St Albans and the 620 from Hemel Hempstead to Hatfield via Harpenden. Monday to Friday there are nine 304 buses per day with seven on Saturday and three on Sunday. There are 18 620 buses Monday to Friday per day, 12 on Saturday and seven on Sundays.

The nearest bus stop is outside Pound Farm opposite St Leonard's Church at entrance point 1. Walk through the farm yard and up the bridleway to Heartwood Forest.

Check times and services at Heartwood Forest lies on either side of the B651, sandwiched between Harpenden, Wheathampstead and Sandridge; 4.8km (three miles) north of St Albans in Hertfordshire and only 32km (20 miles) from central London. Heartwood Forest lies on either side of the B651, sandwiched between Harpenden, Wheathampstead and Sandridge; 4.8km (three miles) north of St Albans in Hertfordshire and only 32km (20 miles) from central London.

Check times at [traveline.org.uk](http://traveline.org.uk) or telephone 0871 200 2233.

#### By bicycle

There are several good cycle approaches to Heartwood from each major village and town. See cycle route and footpath map for more information. Take care if using the B651. The road is narrow, winding and busy. There are several bike stands for locking bikes in the car park.

## On foot

There are good walking routes from each major village and town around Heartwood. See cycle route and footpath map for more information. Paths become slippery and muddy when wet. Take care crossing the B651.

For information on public footpaths in Hertfordshire contact Hertfordshire County Council on 0300 123 4047 or visit [hertsdirect.gov.uk](http://hertsdirect.gov.uk)

## 3.2 Access / Walks

There is a developing network of paths in Heartwood Forest including a public footpath and two bridleways. The majority of the paths are unsurfaced and can become muddy, slippery and at times waterlogged.

There are some moderate gradients leading up from Sandridge village.

The network of public footpaths and bridleways in and around the forest, together with other paths in the existing ancient woodlands, provide opportunities for a variety of walks in the area.

There are 12 entrances to the forest which are well linked to existing footpaths and bridleways. One of the entrances is close to the bus stop.

Responsible dog owners are welcome at Heartwood Forest. Visit [walkiees.co.uk/walks/view/heartwood-forest](http://walkiees.co.uk/walks/view/heartwood-forest)



## 4.0 LONG TERM POLICY

The long term vision for Heartwood is for a significant expanse of native broadleaf woodland. It should be an attractive and diverse natural landscape characterised by mixed broadleaf woodland, grassy meadows and enticing natural features; well known as an interesting and exciting natural amenity visited by lots of different people from miles around. It should be an exemplar woodland creation site and a demonstration of all the Woodland Trust's aims.

The site will continue to provide a diverse range of habitats, primarily early successional communities in close proximity to each other; from wildflower meadows and rough grassland, young plantations and scrub, through to pockets of prime species-rich ancient semi-natural woodland. Vast meadows and long wide rides will provide a suitable level of openness, and key views out across the countryside will remain. It will also buffer and link the existing ancient woodland blocks to protect these fragile ecosystems.

Volunteer involvement across all aspects of the site will be encouraged and supported. The involvement of enthusiastic individuals and groups is at the heart of this project and it should remain a key factor.

The community orchard will be a well managed, healthy and productive example of an establishing orchard with excellent support from the local community who will be rewarded in the future by an abundance of fruit. The long term vision is for the fruit to be used locally and for it to be juiced and sold to help care for the orchard.

Mature hedgerow trees and ancient specimens of lime and hornbeam will be left to senescence and beyond to provide valuable ancient trees and deadwood habitats.

The Trust's objective of inspiring people to enjoy and value woods and trees will be achieved at Heartwood by continuing to provide and maintain high standard access paths and facilities throughout the wood and to encourage its use as an informal outdoor educational facility. This aim will primarily be achieved by maintaining and enhancing the high profile status of Heartwood through fresh and innovative ideas to ensure it is an exciting destination for woodland conservation and recreation. We will also continue to work to improve access links from further afield and maintain well respected permissive routes for multi use as well as creating an all ability route that allows pushchairs and wheelchair users to enjoy the site.

## 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 Ancient Semi Natural Woodland

#### Description

There are four distinct fragments of ancient woodland on the site - Langley Wood, Pismire Spring, Well & Puddlers Wood and Round Wood. They total 18 ha (44 acres) and are classed as County Wildlife Sites. They principally comprise oak standards with out-of-rotation hornbeam coppice now forming a largely high forest canopy.

Scattered amongst are ash, cherry and some enormous specimens of lime coppice. Earth banks, ditches and depressions add to the mix giving a nod to man's long-standing association with ancient woods. Typically over a dozen plant species commonly associated with ancient woodland can be found including dog's mercury, pignut and dog violet. In Spring the wood anemones and bluebells are a real treat.

#### Significance

ASNW's have been in existence for many hundreds of years and unfortunately are a declining resource. As well as being a traditional feature in the landscape they support an abundance of plants, mammals, birds, insects and fungi. It is one of the Trust's main objectives to ensure no further loss of ASNW. They take centuries to evolve and are irreplaceable. The diverse woodland habitat has resulted in the ancient woods at Heartwood being classed as County Wildlife Sites.

#### Opportunities & Constraints

##### Opportunities:

Use ancient woods as an educational resource and practical demonstration of fragmentation and the importance of these hugely precious habitats.

Monitor and manage deer population to control levels of damage to tree regeneration and ground flora.

##### Constraints:

Browsing of young natural regeneration by deer.

Excessive foot traffic gradually widening the paths and eating into the ground flora.

Horses and bikes straying off the bridleway damaging the footpaths and sensitive woodland ground flora.

#### Factors Causing Change

Deer damage.

Excessive foot traffic.

Horse and bike damage.

### **Long term Objective (50 years+)**

Retain the existing 18Ha (44 acres) of ancient semi-natural woodland, dominated by the current oak / mature hornbeam coppice characteristics that provide its unique importance as a woodland ecosystem. Allow the wood to develop naturally, resulting in a varied age range and structure, abundant deadwood, a healthy understory and sufficient natural regeneration. Healthy ground flora and ancient woodland characteristics remain evident throughout the woods. These woodlands will also be buffered and linked through planting trees between the existing blocks to protect the fragile ecosystem.

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

#### **Operational objective:**

Through minimal intervention, retain the healthy and attractive mixed woodland with a predominantly over-mature hornbeam coppice understorey and evidence of natural regeneration throughout the woods. Windblown trees, producing gaps in the canopy, should release natural regeneration and enhance the diverse age structure.

#### **Work Programme:**

Monitor tree health, deer damage, misuse and path encroachment throughout the woods.

Work in partnership with The Deer Initiative and where opportunities arise liaise with local landowners to manage deer populations locally.

Tree safety works as necessary and as per outcomes of annual inspections.

## 5.2 Informal Public Access

### Description

Heartwood is the Trust's largest site in England. It is our flagship woodland creation site yet is only 25 minutes on the train from London. The population within 15 miles is over 2 million; double the distance and it's 10 million. Free public access to over 345 hectares of woodland and semi-natural habitats is a huge natural draw for informal recreation. Initial surveys put current annual visits to Heartwood at over 100,000.

Importantly, since Heartwood is so large and cannot all be planted in one go, large areas will continue to be farmed until it is ready to be planted and as a result public access will be restricted. In Oct 2011 there was over 180ha open, which will rise to over 280ha, gradually increasing with the entire property available around 2015.

There are some key public rights of way through the site. Bridleway 8 runs northwest from Sandridge up past Langley Wood and out towards Ayres End. It is a massively popular route, especially with horse riders and cyclists and a popular starting point for current visitors to the site. The long distance path, The Hertfordshire Way, passes the southern boundary of the property, part bridleway (BW9), part footpath (FP18) it is a common route for horses and pedestrians alike. Public footpath 32 runs parallel to the B651 and connects Sandridge with Nomansland Common. This would form an excellent traffic free multi-user alternative to a hazardous section of the B651 if it could be upgraded. Negotiations for this have started with our neighbours and the county council. Public bridleway 7 crosses above Nomansland Farm adding to the extensive network.

Although the entire site is openly accessible, the bulk of visitors will stick to good paths and set routes. There is an extensive network of permissive paths throughout the site openly accessible to foot traffic. Some of these routes are wheelchair and pushchair accessible. Horses and bikes are limited to the public bridleways and the new permissive bridleways installed by the Trust and are well mapped and signposted. These can be revoked at any time following persistent misuse or excessive damage.

There are mutual benefits with Heartwood being close to Sandridge - it is a great base to communicate information and visitors can easily obtain refreshments from the three pubs and village store.

### Significance

Heartwood's size and prominent position make it a natural attraction for the local population as well as communities from further afield who can enjoy and appreciate the varied young woodland and its associated habitats.

Informal public access at Heartwood inspires people to enjoy and value woods and trees, fulfilling one of the Trust's three strategic aims.

In summary it:

Provides suitable areas for the local population as well as communities from further afield to walk and ride and also to exercise dogs.

Provides opportunities for nature study and the appreciation of the countryside for people of all ages and abilities.

Adds interest to the surrounding villages and the region.

Adds to the local rights of way network.

Helps people understand the history of the landscape and how it developed.

Supports local businesses.

## Opportunities & Constraints

Opportunities:

These are covered in detail in the Heartwood Access and Engagement Strategy (LN, Aug 2010) which principally focuses on the following themes / priorities:

Car park

Access

Communications

Different user groups

Community engagement and learning

Wow factors

In addition there is strong desire to continue to build working relationship with Sandridge Parish Council, St Albans City and District Council and Herts County Council to monitor and develop / upgrade access links and promote public transport services. A quarterly access meeting is held with local representatives from all the major recreation groups including horse riders, cyclists and walkers.

Constraints:

Potential conflict between different user groups and between local residents.

Horses and bikes straying off the bridleway can cause severe damage to path surfaces and potentially to woodland ground flora, particularly in the ancient woodlands.

Dog walkers and in particular dog walking businesses not cleaning up after their dogs can cause an unpleasant situation. Out of control dogs can have a detrimental impact on ground nesting birds during the breeding season.

## Factors Causing Change

Difference user conflicts.

Horse and bike users straying from the paths.

Irresponsible dog walkers.

### Long term Objective (50 years+)

The whole site will be open for free public access and will be heavily frequented by a range of visitors enjoying quiet informal recreation, predominantly walkers, cyclists and horse riders from the surrounding area. We will work towards increasing the wheelchair and pushchair accessibility through surfaced routes and continuing to install wheelchair friendly gates.

The site will be exciting, have 'wow factors' to encourage repeat visits, to draw people from further afield and to foster long-term, lasting relationships that will encourage people to support the project and the organisation.

Heartwood Forest will be used for events such as woodland festivals, orienteering and team building, and be used by schools, community groups and businesses as an area for outdoor learning.

Waymarked walks, information boards, interactive materials and educational resources will be retained / enhanced in line with public use and demand.

The car parking area will be well maintained, monitored and fit for purpose as the main arrival point at the Trust's flagship woodland creation site.

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

Operational Objective:

Easily accessible, attractive, well maintained and safe young woodland regularly used by the public. Path network and entrances remain in good condition and are appropriate for level and type of use and in accordance with access category A. Retain and enhance the internal vistas and excellent views out of the wood from the existing viewpoints high up on the plateau.

Put in place appropriate measures to help fund and deliver the objectives set out in the Access and Engagement Strategy.

Summary work programme:

Cut main paths 4 times a year to a minimum width of 3m with some rides cut full width on rotation including mowing either side of King Henry's Avenue.

Monitor use of permissive bridleways and misuse of other paths by horses/bikes.

Annual safety inspection of all on-site infrastructure including gates, benches, waymarkers and information boards.

Annual tree safety inspection of Zones A and B and arboricultural work as required.

Update maps, leaflets and information boards as more land becomes available each October.

Install appropriate entrances and signs at new entrances as new land is made available each October.

Develop the wow factors, by initially undertaking consultation using external consultants in 2012/13.

Install interpretation and information boards in Sandridge village.

Work towards upgrading the public footpath along the B651 to a bridleway to provide safe horse and cycle access from Nomansland common and Wheathampstead village avoiding the busy road.

## 5.3 New Native Woodland

### Description

If Heartwood could be summarised in a few words it would be 'Large Tree Planting Site'. 600,000 trees are to be planted, all with volunteers. Native broadleaf trees and shrubs will eventually cover approximately 80% of the property. The majority of this will be through direct tree planting with local schools, volunteers, community groups and corporate organisations. However, woodland will also be established through the spreading of hedgerows, direct sowing of tree seed and via natural regeneration, evident in cpt 3a and planned for cpt 3b. The primary species include oak, ash, hornbeam, field maple and birch along with woody shrubs such as hazel, holly, hawthorn and guelder rose.

Tree planting will be spread over approximately 10 years. Much of the property will continue to be arable farmland until it is ready to be planted. There are large continuous blocks of planting, usually at 2m spacing in sinuous lines which will become indistinct when the forest matures.

The project is funded and planted by individuals and organisations therefore much of the site has important and often personal affiliations. There are numerous dedicated acre and half acre groves sponsored throughout the site and the plateau is home to Disney Store's 50 acre Magical Wood.

### Significance

The Woodland Trust's primary aim is to enable the creation of more native woods and places rich in trees and this is more than adequately met at Heartwood. With just 12% woodland cover in the UK, compared to an average of 44% in mainland Europe, this is working towards improving this native woodland cover.

Early successional woodland, especially when it has a diverse structure, provides biodiversity benefits, and in combination with paths and open ground is pleasant for the public to explore and walk in. It will also buffer and link the existing ancient woodland blocks and improve the ecosystem of these precious habitats. The landscape scale of the project (combined with Nomansland Common this is approx 1000 acres of semi natural habitat) will be a significant resource for people and wildlife.

### Opportunities & Constraints

**Opportunities:**

Opportunity to create and sustain attractive and developing native broadleaved woodland in an area where such habitats have not been common in recent times.

The different ways of creation and the long establishment period means that there will be a fairly diverse age and structure to the woodland across the site. This enhances the site's potential value for biodiversity and provides aesthetically pleasing visual diversity.

In the future there may be opportunities to supply woodland products and be an important local resource for wood fuel. It will also be an exemplar site for woodland creation and engaging with local communities to create a substantial, well respected mixed woodland habitat.

The environmental monitoring opportunities will also be utilised to provide long-term data concerning the changes that take place from creating woodland on arable land and the long term effects on local wildlife populations.

**Constraints:**

Planting so many trees each year all with volunteers has complicated logistics and has awkward repercussions when planned events fall through.

Severe weather can also delay planting and push it towards the end of the season, increasing risk of tree loss.

Although the planting is staggered over several years there are still huge numbers being planted every year and unseasonal events such as a drought can cause extensive tree losses.

Rabbit and deer damage could have an impact on the success of the establishment of the woodland.

**Factors Causing Change**

Seasonal drought effecting the survival and establishment of saplings.

Deer, rabbit and hare damage that may stunt or reduce growth of saplings.

**Long term Objective (50 years+)**

Healthy, mature and attractive native broadleaf woodland of varying structure and habitats. Patches of scrub and thicket as well as mature trees, woody shrubs and tall-herb communities, all integrating with the open space and associated flora and fauna to produce an excellent woodland habitat.

A huge core area of mainly woodland fitting into and complementing the landscape. An excellent demonstration of multi functional woodland creation on a large scale with mass community involvement.

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



**Operational Objective:**

To ensure successful establishment of diverse new native woodland that is integrating into the existing habitats and landscape. Where possible, the range of scrub, thicket and young woodland habitats will be allowed to develop and diversify through natural processes. Ensure woodland is healthy, maturing well and fully stocked to the desired 2250 trees / ha (minimum 1100/ha) 5 years after planting.

**Work Programme:**

**Planting preparation -**

Each year following crop removal from land under Farm Business Tenancy (approx Sept/Oct), prepare land by spraying, harrowing and rolling. In Sept, sow with suitable grass mix @ 30kg/ha twice in a diamond pattern. (Mix comprises: 20% meadow fescue, 20% red fescue, 15% chewings fescue, 15%, sheeps fescue, 10% smooth stalked meadow grass, 10% Timothy grass, 10% white clover).

Erect fencing as deemed necessary in hot spot locations. Tree shelters will be used for any hedge planting and small group planting in vulnerable areas.

Nov - Mar each year plant relevant number of native broadleaf trees at 2m x 1.8m spacing (2800/ha) in sinuous lines through various volunteer planting mechanisms. Mixed and group planting with a prevalence of woody shrubs near ride edges.

Complete in line with current Forestry Commission woodland grant scheme and to fit broadly with the Design Concept map:

2009/10 - cpts 1b, 3b (approx 40ha)

2010/11 - cpts 2a, 2b, 3c, 4a, 4b, 4d, 5a (approx 42ha)

2011/12 - cpts 3d, 3e, 4c, 5b (approx 38ha)

2012/13 - cpts 2e, 4e, 5c (approx 36ha)

2013/14 - cpt 2f, 4f (approx 25ha)

2014/15/16 - cpt 6a (approx 17ha/yr)

2016-19 - cpt 7a,b,c (approx 15ha/yr)

**Newly planted trees -**

Halo spray trees with a glyphosate once a year in April/May for three years following planting.

Fill in any gaps during the following years planting where necessary and use *Quercus robur* and *Q. petraea* and *Fraxinus excelsior* as beat up species to keep future longer term wood fuel/timber demonstration supply option.

Maintain rabbit fencing and guards fit for purpose until trees are mature enough to withstand damage.

## 5.4 Orchard

### Description

An area of approximately 3ha within compartment 5a and close to the local people in Sandridge, the community orchard is an exciting development with the scope for over 600 native fruit trees to be planted, the majority being local varieties of apples, pears and plums with a section of damsons, cherries and medlars to name a few. In the first season (2010/11) 111 apple trees were planted by school children and 72 trees have been planted in 2011/12. They are spaced at 3m in formal rows.

The orchard is subject to a separate plan and it will be cared for by local volunteers in association with the Hertfordshire Orchard Initiative.

### Significance

Orchards not only provide tree cover, meeting corporate aims, they support an abundance of biodiversity and can provide valuable produce.

In the last 150 years Hertfordshire has lost two thirds of its orchards through housing development or neglect. This will be one of the largest orchards in the area.

### Opportunities & Constraints

Opportunities:

Foster community engagement and ownership.

Provide a useable / saleable non-forest product.

Educational and PR tool.

Constraints:

Management to promote a healthy and productive orchard can be intensive and without the buy in and involvement from the local community it could suffer neglect and/or have high costs to retain favourable conditions.

### Factors Causing Change

Seasonal drought effecting the survival and establishment of young trees.

Deer, rabbit and hare damage that may stunt or reduce growth of trees.

### Long term Objective (50 years+)

A volunteer/community managed orchard that can be used as a demonstration. Well maintained, healthy trees laden with lots of fruit and a good income source to help sustain the ongoing management of Heartwood.

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

Plant a total of 600 fruit trees with 50 - 100 trees a year being planted by local school children and volunteers. Plant according to the draft plan designed by Martin Hugi of Eco Tree Care which includes a wide range of apple varieties, many of which are old Hertfordshire varieties. The plan also includes medlar, quince, plum and damson and can be viewed online at [woodlandtrust.org.uk/heartwood](http://woodlandtrust.org.uk/heartwood).

Mow paths through the orchard 4 times a year and strim around each tree on every cut. Mow whole of orchard at end of the growing season.

Formative pruning on an annual basis in Oct/Nov carried out by volunteers.

## 5.5 Open Ground Habitat

### Description

The open space at Heartwood will eventually account for approximately 20% (70ha) of the total area. It includes key landscape areas kept open especially for views, areas of important underlying archaeological interest, underground/overhead wayleaves and man-made ponds.

### Significance

The vast meadows allow the site to feel open and offer fine views over the surrounding landscape and provide valuable open ground habitat for invertebrates, birds and reptiles. Both the biodiversity value and the recreational value are enhanced by the way the open ground is combined with young woodland and scrub to form an important element of the habitat mosaic. The mainly seasonal ponds alleviate flooding and encourage a wider range of species.

### Opportunities & Constraints

#### Opportunities:

To utilise some of the open space to fulfil the major access and interpretation requirements that will increase the site's profile.

To retain the feeling of openness and views out across the countryside.

Establish an attractive natural landscape and valuable rough grassland habitat.

Maintain and increase plant diversity where practical, by carrying out a regime of sowing annual and perennial species without fertilisers to increase biodiversity value and create high impact visual displays and manage through baling and topping.

Allow up to 10% scrub development in open areas to provide valuable early succession habitat as planted woodland matures.

To alleviate flooding where it has become an issue along bridleways and in the car park and to encourage a wider range of species.

#### Constraints:

Un-grazed fields can suffer a steady loss of soil fertility and an impoverished grass sward leaving them susceptible to invasive species such as ragwort and thistle which may require regular and intensive control.

High cost associated with retaining open space.

### Factors Causing Change

Excessive growth of invasive species.

Water table and rainfall.

### Long term Objective (50 years+)

The open space habitats should remain an interesting and attractive landscape. The meadows will be a natural landscape with a wide range of grasses and some scattered, mixed-aged scrub possibly taking up about 10% of some areas. There may be potential for some of the land to be grazed by sheep or cattle to maintain and enhance the biodiversity of these meadows.

Wildflower meadows and ponds should be species rich, teeming with invertebrates and an attractive addition to the landscape.

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

#### **Operational Objective:**

Maintain the open grassland habitat in good condition with a diverse grass and wildflower sward. Scrub and invasive weeds should not be allowed to develop out of control and kept to a maximum of 10% in some areas.

The ponds should be attractive and safe.

#### **Work Programme:**

Open areas will either be mown several times a year for recreational purposes (eg wide rides through cpt 1b and 4a) or cut and baled once in July/Aug (2a, some of 1b and 4a). See management proposals map.

Maintain existing ponds to alleviate flooding on bridleway and car park and create seasonal pond in cpt 5c where flooding occurs during the winter months.

## 5.6 Other

### Description

Volunteer involvement at Heartwood has been at the forefront of the project since the beginning in 2009. They are an essential part to ensuring it is successful and their continued involvement will be encouraged and supported throughout the life of this project.

We currently (2017) have over 150 volunteers signed up to receive regular monthly updates. Of this 150 there is a core group of about 50 individuals that regularly carry out a number of roles including volunteer speaker, guided walk leader, environmental monitor, event organiser and helper, work party leader, admin volunteer, woodland warden, leaflet distributor and volunteer photographer. Other volunteers dip in and out as time and other commitments allow.

Heartwood also boasts thousands of tree planting volunteers that have ensured our ambitious objective of planting every tree with a volunteer is achieved. These volunteers come from various groups and communities and include school children on educational days, individuals from the surrounding communities and corporate employees on team building days.

### Significance

Heartwood's core volunteer group allows us to engage with the surrounding communities at a much deeper level as they carry out a range of tasks that the current staff resources will not allow. For example volunteer speakers and guided walk leaders engage with local groups on the ground, sharing their enthusiasm for the project. They have extensive local knowledge and are able to spread information wide about the project and up coming events.

Our newly established environmental monitoring group are carrying out a range of research projects across the site including annual sapling survival reports, habitat, veteran tree, breeding bird, butterfly, bat, small mammal and invertebrate surveys. They have also set long term monitoring plots to assess the change in vegetation over time. This is invaluable research data that would not otherwise be collected and will help us to produce a clear picture of the changes that take place when arable land is converted to woodland habitats.

The tree planting volunteers are also an extremely important part of the project, nationally significant as the largest new native forest created entirely by volunteers and ensure our ambitious target of planting every tree with a volunteer is sustained. They also give us the opportunity to enthuse them about trees and woods and the Woodland Trust core aims.

### Opportunities & Constraints

### Opportunities:

To engage with the surrounding communities and ensure individuals feel ownership for the site.  
To spread the message of the importance of trees and woods in our landscape for people and wildlife.

To ensure important research data is collected to form an accurate picture of woodland creation on arable land to be established.

To enhance the local media opportunities to spread the awareness of the value of trees and woods.

### Constraints:

Every tree being planted by a volunteer is more costly and time consuming than utilising contractors, however it allows us to achieve many of our organisational objectives.

### Factors Causing Change

Volunteers losing interest or moving on to other projects.

Costs involved in sustaining volunteer involvement.

Tree planting program ending 2018/9.

### Long term Objective (50 years+)

Volunteer involvement should remain a key mechanism in creating and maintaining Heartwood Forest throughout the life of the project. Volunteers will continue to carry out a range of important roles post planting to support delivery and community involvement on an ongoing basis.

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

#### Operational objective:

Ensure volunteer involvement is maintained and encouraged in as many areas of the project as is practical.

#### Work programme:

Annual program of community tree planting events (minimum of two/year), several weeks of schools group opportunities to get involved in creating Heartwood and corporate planting programs to deliver annual tree planting program 2012 - 2018.

Send out monthly updates with news and future plans.

Maintain blog site, minimum of four posts/month to retain interest and volunteer opportunities.

Quarterly meetings with the Support Group to discuss future events, planting plans, where support is needed etc.

Biannual meetings with the Environmental Monitoring group to discuss news, findings and future research projects etc.

Annual 'thank you' get together to recognise volunteer achievements.

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	6.57	Hornbeam		High forest		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Ancient Semi Natural Woodland, County Wildlife Site (includes SNCI, SINC etc)
<p>Langley Wood is a magnificent little piece of ancient woodland, the jewel in Heartwood's crown. Traditionally oak standards with hornbeam coppice, although now out of rotation and forming a proper high canopy woodland. There are some beautiful old gnarled coppice stumps and a row of old coppiced limes along the path on the SW side. There are numerous species recorded that are associated with ancient woodland, including yellow archangel, dog's mercury, pignut, dog violet and hairy brome. However, the wood anemones and bluebells are the real show-stopper and in spring they turn the woodland into a celebrity feature. Understory is sparse, consisting of elder, hawthorn, holly and mature bramble toward the centre. Due to intense historical coppicing there is a lack of deadwood and associated habitats. The wood is surrounded by old wood banks, eroded in places. A tall, diverse hedgerow along the high bank of an ancient track forms the NE boundary. There are several old depressions along the SW boundary, possibly former chalk pits and a large depression in the northern corner, rumoured to have been formed by a WWII bomb.</p>							
1b	46.45	Oak (sessile)	2009	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
<p>Compartment 1b forms the bulk of the first season's planting in 2009/10. It also saw Heartwood's very first trees planted on 28 Nov 2009 just south of Langley Wood by Lady Verulam, along with the first, 1 millionth and 2 millionth child of the Trust's Tree for All planting campaign. Adjacent to the southern boundary is a large block planted with containerised stock on 5 Dec 2009 as part of a world record attempt where 20,326 trees were planted in 1 hour by 100 young volunteers. Towards the railway line on the western boundary there are dedicated groves where individuals have sponsored hectares of new planting. These are marked with a grove post in the centre of the plots. Other areas within this large compartment have been supported by The Sunday Times and the Daily Mail. Trees are planted at 2.1m x 2.1m spacing (2250 trees/ha) in sinuous lines. Fulfilling one of our key project aims - every tree was planted by a volunteer. Local schools, community and organisations all helped out. Cpt 1b is also home to the roman settlement that was identified as part of the EIA archaeological surveys. It can be found south east of Pismire Spring and is managed as open habitat, cut twice a year, to ensure tree roots do not damage any remaining archaeology.</p>							

1c	2.26	Hornbeam		High forest		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Ancient Semi Natural Woodland, County Wildlife Site (includes SNCI, SINC etc)
<p>ASNW known as Pismire Spring. Primarily oak/hornbeam woodland with a high canopy, dominated by old coppiced hornbeam, scattered oak standards with a few old cherry and a few large ash. Ground flora includes bluebell, yellow archangel, pignut, primrose and celandine. Understory comprises hawthorn, elder, hazel and holly and a small amount of deadwood. On the southern fringe is a small steep-sided quarry dotted with elder, traveller's joy and dog's mercury.</p>							
2a	18.20	Open ground	2009	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
<p>One of the most scenic parts of the whole site, cpt 2a lies in a Landscape Conservation Area and holds fine views out towards Harpenden. The bulk of this south-east facing slope of a mini valley is open meadows sown with a grass and wild flower mix in spring 2009. Small clumps of trees have been planted throughout the area to break up the expanse and improve diversity.</p>							
2b	8.17	Oak (sessile)	2010	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
<p>An important block of new planting, linking up two blocks of ASNW. Created in 2010/11 through community planting events, local schools and volunteers. Trees are planted at 2m x 1.8m spacing (2800/ha) in sinuous lines and contains a whole variety of native broadleaves, primarily oak, ash, hornbeam, birch, field maple, hazel and hawthorn. The north western half is a large dedicated grove sponsored by a local Trust supporter.</p>							
2c	7.34	Hornbeam		High forest		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Ancient Semi Natural Woodland, County Wildlife Site (includes SNCI, SINC etc), Green Belt

Compartment 2c is another piece of ASNW known as Well and Puddlers Wood. It is dominated by over mature coppiced hornbeam, with occasional oak, ash, lime and field maple. It has more of a natural, unmanaged feel to it than Langley Wood. Over a dozen species commonly associated with ancient woodland have been recorded, including wood anemone, bluebell, enchanter's nightshade, figwort, three-nerved sandwort and broad buckler fern. There are some tremendous ancient trees in the wood, most notable include an ash with a girth of 5.15m measured 0.6m above the ground, field maple (4.5m), hornbeam (5.24m) and lime (7.60m). There is also a strip of young elms along the eastern margin, complementing re-generating elm in the mature hedge. There is a mixed understory of elder, hawthorn, ash regen and bramble, and there is an excellent amount of standing and fallen deadwood habitats. The wood is littered with interesting archaeological features including an intact wood bank, numerous old mounds, banks, ridges, depressions and sunken paths or channels.

2d	1.81	other oak spp		High forest		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Ancient Semi Natural Woodland, County Wildlife Site (includes SNCI, SINC etc), Green Belt
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Round Wood is the smallest block of ASNW. It is primarily oak standards with a fairly mature hornbeam coppice understory (perhaps last coppiced 20 years ago) along with the odd cherry, ash and birch. The bluebells are tremendous in spring.

2e	13.10	Oak (sessile)	2012	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
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2e comprises a block of 7.5ha of planted woodland, due to be planted in 2012/13 alongside an expanse of open wildflower meadow roughly measuring 5ha. Tree species include oak, ash, willow, hornbeam, cherry and lime planted at 2.1m x 2.1m spacing (2250 trees/ha) in sinuous lines. The wildflower meadow will be sown with a mix of red campion, cow parsley, hedge bedstraw, field scabious, lesser knapweed, cowslip and vipers bugloss.

2f	7.00	Oak (sessile)	2013	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	
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Compartment 2f is due to be planted in winter 2013 by local volunteers, school and corporate groups.

3a	4.26	Ash	2008	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
High up on the plateau and downwind of Well Wood, this piece of land has been left to let nature run its course. The final crop of wheat was removed from this area in July 2008 and since then the land has turned to flourishing young woodland. It is dominated by ash natural regeneration, some stems now over 2m high, along with oak nearer the NW edge and some hornbeam, birch and field maple further in.							
3b	2.66	Oak (sessile)	2010	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
Compartment 3b represents the first season's planting in 2010 by Disney Store UK in their 'Magical Wood' which covers 50 acres and spreads into cpts 2c and 3a, b, c & e. 350 of Disney's volunteers planted around 7500 trees on 28 Feb 2010. Species include oak, ash, willow, hornbeam, cherry and lime planted at 2.1m x 2.1m spacing (2250 trees/ha) in sinuous lines.							
3c	5.39	Oak (sessile)	2011	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
Compartment 3c represents the second season's planting in 2011 by Disney Store UK in Magical Wood. On 27 Feb 2011 500 volunteers planted 15,000 trees. Species include oak, ash, willow, hornbeam, cherry and lime planted at 2.0m x 1.8m spacing (2250 trees/ha) in sinuous lines.							
3d	17.66	Oak (sessile)	2011	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
Compartment 3d was planted during winter 2011/12 by local community members and corporate groups with native broadleaves planted at 2m x 1.8m spacing (2800/ha). The north western section remains unploughed from the last harvest in 2011 and will be left to naturally regenerate by local seed, extending the regeneration seen in cpt 3a. The south eastern section was found to contain remnants of a Bronze Age round house during the EIA and therefore has been sown with a wildflower and grass seed mix to remain as open habitat.							

3e	5.46	Oak (sessile)	2012	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
Planted in 2012 and forms the final planting of Disney's 50 acre Magical Wood. On 26th February 2012 over 500 Disney Store staff planted 15,000 trees in one large tree planting event.							
4a	17.90	Oak (sessile)	2010	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
Planted in 2010/11 through community planting events, local schools and volunteers. Trees are planted at 2m x 1.8m spacing (2800/ha) in sinuous lines and contain a whole variety of native broadleaves, primarily oak, ash, hornbeam, birch, field maple, cherry, rowan, hazel and hawthorn. The north western fringe contains dedicated groves sponsored by local Trust supporters. A large open wide ride runs north to south through the middle and the busy bridleway runs up the southern side in a sunken lane just over a tall hedge. Hedgelaying has begun on this hedge and will continue all the way along its length over the years as Heartwood develops.							
4b	7.23	Oak (sessile)	2011	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
Surrounding the car parking area, this compartment houses the Heartwood car park. The car park provides 55 permanent spaces and an overflow area that can be used for specific events, all designed to accommodate cars and coaches in a practical yet aesthetic environment. Much of the area has already been planted with native broadleaves as per other compartments and further planting was carried out during the winter of 2011/12 to soften the edges and screen the car park from the village.							
4c	17.76	Oak (sessile)	2011	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
This area has been planted during the winter of 2011/12 with a wide range of native broadleaves at 2x1.8m spacing (2800/ha) mostly by school children and local community groups. The north western area has been sown with a wildflower mix and will remain an open habitat to retain much of the spectacular views seen from here.							

4d	5.00	Oak (sessile)	2010	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
Native broadleaves planted at 2.0m x 1.8m spacing (2800/ha) in Nov 2010 can be seen here. This compartment also holds the access point off the public highway for the new car park and the internal connecting track runs through the middle.							
4e	6.00	Oak (sessile)	2013	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
This compartment is due to be planted in 2012/13. It has been taken out of the FBT and sown to a general grass mix ready for tree planting.							
4f	18.80	Oak (sessile)	2013	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
Due to be planted in 2013/14.							
5a	14.38	Oak (sessile)	2010	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
A mix of woodland creation and open space greets visitors accessing the forest off the Hertfordshire Way north of Sandridge village. The east of the compartment contains a large rabbit fenced block of mixed native broadleaves planted in Feb/Mar 2011 at 2.0m x 1.8m spacing in sinuous lines. The west of the cpt over the hedge contains another fenced area part sown with native tree seed. This covers an approx 2ha area and started in Oct 2010 with school children scattering hundreds of thousands of birch, field maple, ash and hornbeam seed. Not to mention dibbing in thousands of oak, hazel and cherry. Running through the centre of the compartment is a young, establishing community orchard. The first local variety apple trees were planted on 21 October 2010 by local school children with the help of the Lord Mayor of St Albans. The orchard is subject to a separate plan.							

5b	5.13	Oak (sessile)	2011	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
Compartment 5b comprises approx 2.5ha of scattered tree seeds and 2.5ha of native tree planting at 2x1.8m spacing's (2800/ha) and was completed during the winter of 2011/12. The tree seed have been scattered by local school children and the trees planted by local volunteers. The hope is that natural regeneration will play a role here too as the area is adjacent to an existing ancient woodland.							
5c	28.10	Oak (sessile)	2012	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
Due to be planted 2012/13.							
6a	34.70	Oak (sessile)	2015	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
Currently arable land under a Farm Business Tenancy (FBT). Due to be planted in 2014/15/16.							
7a	5.50	Open ground	2017	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
Currently arable land under a Farm Business Tenancy (FBT). Due to be planted 2016-19.							
7b	33.40	Open ground	2017	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
Currently arable land under a Farm Business Tenancy (FBT). Due to be planted 2016-19.							

7c	6.43	Open ground	2017	Wood establishment		Informal Public Access, New Native Woodland, Open Ground Habitat, Other	Green Belt
Currently arable land under a Farm Business Tenancy (FBT). Due to be planted 2016-19.							



## 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.