Heartwood Forest

Management Plan

2020–2025

MANAGEMENT PLAN – CONTENTS PAGE

ITEM **Page No.**

Annex 5: Conservation features
Annex 6: Round Wood area to be coppiced

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 Consequently this printed version may quickly become out of date, particularly in relation to the planned work programme and on-going monitoring observations.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:	Heartwood Forest
Location:	Sandridge
Grid reference:	TL162114, OS 1:50,000 Sheet No. 166
Area:	346.72 hectares (856.76 acres)
Designations:	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 and a great place to visit. 600,000 native trees and shrubs were planted between 2010 and 2018 and, together with pockets of ancient woodland, new wildflower meadows, a community orchard, and a native tree arboretum and, whilst a still inchoate forest, it is set to become one of the Woodland Trust's most popular sites and a haven for wildlife.

The Woodland Trust completed the purchase of Heartwood Forest on 30 September 2008. The Trust had been searching for several years for a landscape-scale woodland creation project that was close to large population centres where it could have a significant impact in terms of people engagement and biodiversity.

The acquisition of Heartwood Forest was the Woodland Trust's most ambitious woodland creation project to date in England. The total land area extends to 345ha (858 acres) and was predominantly arable land with access limited to the public bridleways which run through the site and permissive paths within Langley Wood ASNW. The site also contains approximately 18ha (44 acres) of Ancient Semi-Natural Woodland (ASNW) split into four fragmented blocks.

The character of the underlying landscape 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. Underlain by chalk, the soils are slightly acid loamy and clayey soils with impeded drainage, though a more freely draining area cuts through the middle of the site running north to south immediately either side and including the B651 road. Before the planting started, the arable farmland was divided by hedges with scattered trees throughout. There are four patches of mixed broadleaved ancient woodland totalling 17.8ha (44 acres) containing old coppice of hornbeam as well as ash, beech, oak and other native broadleaves. The newly planted woodland extends over about 260ha buffering and linking the patches of ancient woodland and absorbing many of the straight-line hedges and obscuring the original arable field boundaries. There are extensive grass and wild-flower meadows and rides that seek to preserve vistas over the two dry valleys. In addition, there is a 2.5ha community orchard planted with 700 fruit trees, a 7ha arboretum containing all 60 of the UK's native trees and large shrubs, and a 2ha wetland area.

The surrounding landscape is mostly arable though it also consists of pasture used for equines. A train line borders the west with the village of Sandridge to the South and Rifle Butts Wood to the East. To the North Border is Nomansland Common that supports some rare wildlife while the privately owned Hill End Farm lies centrally and almost surrounded by Heartwood Forest. Further afield to the North lies the village of Wheathampstead and town of Harpenden, then to the South is the city of St Albans. The site is also within easy reach of many towns including Hemel Hempstead, Welwyn Garden City, Hatfield, Stevenage and Luton . Access from London is more than achievable.

At the start of the creation of Heartwood Forest, the Trust made the bold statement of its intention to establish "England's largest continuous new native forest" by planting 600,000 trees all with volunteers. This it achieved.

The Trust's vision for Heartwood Forest set out four key objectives:

1. Establish Sandridge as Heartwood's visitor centre for the community of Sandridge and surrounding businesses to benefit by being the source of information and facilities for visitors

2. Make the site inspirational - wow factors. We wanted Heartwood to have a 'wow factor' beyond simply its scale, to inspire, surprise and engage those who visit.
3. Broaden the user groups. We wanted Heartwood to be a hub for active recreation in the area (e.g. for walking, running, cycling, horse riding) by linking Heartwood to surrounding settlements, landscape, facilities and existing routes.
4. Active engagement with people. All 600,000 trees were to be planted by a volunteer, including children.

Hugely popular in the local environment, Heartwood has around 200,000 people visits per year, mainly walkers, many of whom come regularly to walk dogs, enjoying quiet recreation. The public bridleways have been supplemented with a network of permissive bridleways offering recreational opportunities for horse-riders and cyclists, and an extensive network of footpaths (including 2.75km of surfaced paths).

Access to Heartwood is via numerous pedestrian and horse/bike access points. Heartwood has its own car park for 55 cars accessed via a metalled single-track road signposted with a brown tourist sign from the B651 to the north of Sandridge. A grassed overflow car park for 150 cars is located adjacent to the main car park and available for limited use.

Management access to the western side is via a single-track road off Sandridgebury Lane adjacent to the local scout hut, via a field gate off the track to the car park and via a field gate off the track to Hill End Farm. On the eastern side, management access is via field gates off Langley Grove, Drovers Lane, Coleman Green Lane, and Hammonds Lane.

The site's Key features are identified as:

1. Connecting people with woods and trees
2. Ancient semi- natural Woodland
3. New native woodland
4. Other (specific managed spaces)
5. Open ground habitat
6. Community Woodland Group

3.0 UNAVAILABLE

4.0 LONG TERM POLICY

The long-term vision for Heartwood is for an attractive and diverse natural landscape characterised by mixed broadleaf woodland, grass and wildflower meadows and enticing natural features; well known as an interesting and exciting natural amenity well visited and valued by the local community and people from further afield. Remaining a prominent 'shop window' for the organisation, it will continue to demonstrate our ability to achieve at scale and the value of community involvement in successful conservation.

The site will have a diverse range of habitats from wildflower meadows and rough grassland, maturing plantations, scrub and thickets, through to pockets of prime species-rich ancient semi-natural woodland. Meadows and long wide rides will provide a suitable level of openness, and key views out across the countryside. It will also buffer and link the existing ancient woodland blocks, for example between Puddler's Wood and Round Wood, to protect these fragile ecosystems.

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

Opportunities will be taken to demonstrate traditional woodland activities, and these may include coppicing, pollarding (beneficial for certain tree species, particularly sallows), hedgelaying, and charcoal-making.

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 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.

The arboretum is an educational feature with all 60 of the tree and large shrub species native to the British Isles. It will allow visitors to appreciate the diversity and beauty of our native species and signage will reveal the many ways in which they have been used over past centuries.

All areas of Heartwood will be managed to maximise their potential for biodiversity and for people, ensuring long-term resilience through a diversity of management techniques. For example, the newly planted areas will have their edges managed to give a gradual transition from grass and wildflowers, shrubs and then high forest. Consequences of climate change and non-native species will be, where possible and appropriate, actively managed to conserve biodiversity.

Volunteer involvement across all aspects of the site will be encouraged and supported. The involvement of enthusiastic individuals and groups has been central to Heartwood from

the outset and should remain a key factor.

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.

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 Connecting People with woods & trees

Description

Heartwood is the Trust's largest new native woodland in England. It is a flagship woodland creation site in the South East of England, 4km from St Albans in Hertfordshire. Within a 25km radius there is a residential population of over 2 million and being only 25 minutes on the train from London, doubling this distance, there are more than 10 million people within easy reach of the site. The forest provides free public access to over 345ha of woodland and semi-natural habitats which is a huge natural draw for informal recreation. Rough estimates in 2016 suggest there were 108,000 people visits per annum, through ad hoc observations it is certain that this number will have risen significantly.

The forest has been planted solely by volunteers and some 45,000 members of the community have been involved in its creation since 2008. More than half of these volunteers have been students from local schools which has provided an incredible and lasting legacy within the community with ongoing support from a dedicated team of regular volunteers, giving the local community a strong connection to the site . Over the 10-year planting project there has also been support from corporate volunteers who have donated generously to the site's creation. The final tree was planted in March 2018 alongside the first tree with the help of regular volunteers, Lady Verulam and the Mayor of St Albans.

There are some key public rights of way through the site (see Annex 1). 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. Public bridleway 7 crosses above Nomansland Farm adding to the extensive network and creating a safer passage from Nomansland Car Park and the Heartwood Arboretum.

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 with three way marked trails. Some of these routes have been hardened off to improve access, especially in inclement weather (more information is available in the Heartwood Forest Access Guide). Horses and bikes are limited to the public bridleways and the new permissive bridleways installed by the Trust which are well mapped and signposted.

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, eponymous tea room and village store. Sandridge also provides the convenience of public toilets exist in the village hall car park.

Significance

Heartwood has been an incredibly successful woodland creation site in a densely populated area that lacks country parks. This site is now immensely popular with the local community providing a large space for informal recreational activity; walking, cycling, horse riding.

Volunteering has from the start been a key aspect in the creation of Heartwood with every tree planted by a volunteer and, beyond planting volunteering will continue to be a key significance to continue to connect people with woods and trees.

Heartwood Forest also contains a native arboretum which is home to more than 60 species of native tree. That provides locally a unique educational opportunity.

The continued work by the wildlife monitoring group has also recorded the changes in local wildlife over the last ten years. More information is available from Hertfordshire Natural History Society (http://www.hnhs.org).

In summary, Heartwood Forest:

• Provides excellent access facilities suitable for the local population as well as communities from further afield including a 55 space car park, all ability access route and further extensive path network making a total of approximately 19.5km of paths with 19 entrances. Within the path network there is 8km of public and permission bridle ways. There is also 2 extensive areas of open space that is cut 4 times a year and available as amenity use.

• 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:

• Engaging with a wide audience about the work of the Woodland Trust given Heartwood's size, location and its range of habitats. As a demonstration of the Woodland Trust's three main work areas; creation, restoration and protection, Heartwood offers a great base for membership recruitment and national publicity;

• The unrivalled support from the local community and, in particular, the volunteers who are committed to the ongoing development of the site.

Constraints:

• The growing numbers of visitors also provide additional challenges. For example, dog walkers not picking up waste, uncontrolled dogs worrying other visitors and horse riders, improper use of footpaths by horse riders and cyclists and the impact of visitors on precious ancient woodland and on disturbance to both flora and fauna;

• The current permitted parking as agreed with the council is not sufficient at peak times.

Factors Causing Change

• Local development of new housing increasing pressure on parking and therefore access;

• Increasing awareness of the benefits of visiting woodlands and therefore growth in numbers of visitors (and their dogs);

• Popularity of bluebell visitors;

• Woodland Trust regional priorities and funding;

• Oak processionary moth.

• If unmanaged, woodland edges will gradually encroach through natural regeneration into paths.

Long term Objective (50 years+)

• Heartwood Forest is an exemplary demonstration of a woodland creation balancing informal public access and forestry practices;

• Messaging and interpretation enables visitors to understand the importance of Heartwood Forest whilst also inspiring them to connect with the site and the Woodland trust, but also to take responsibility and act appropriately whilst enjoying the site.

• Events are well attended and support membership recruitment on site;

• Barriers to access are reduced to the bare minimum, including sufficient parking,

accessible trails and easily accessible information;
• The community orchard and arboretum are accessible with way-marked trails that support educational visits to the site for all ages but, in particular, school groups.

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

A site where visitors of all ages and abilities are made to feel welcome, are clear about their rights and responsibilities, and leave feeling informed and uplifted.
Work programme:
• Provide more spaces for on-site car parking by a combination of better use of the existing carpark space and by enabling more use of the overflow carpark, including in winter months;
• Review of signage and interpretation to be undertaken to ensure all user groups are receiving clear messaging whilst using the site.
• Consider the possibility of excluding visitors from specific areas to assess the impact on both flora and fauna;
• Produce an events programme that supports wider site messaging and generates income;
• Management activities in high visitor usage areas that require the removal of trees to meet their aims should consider favoring the selection of Oak over other species for removal to reduce the chance of visitors coming into contact with Oak Processionary moth caterpillars.

5.2 Ancient Semi Natural Woodland

Description

There are four distinct fragments of ancient woodland on the site - Langley Wood, Pismire Spring, Well and Pudler's Wood and Round Wood. They total 18ha (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 in the wood 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;
• Demonstration of coppicing techniques to promote regrowth of different ages and to produce woodland products (probably limited to firewood and charcoal).
• A mixture of high forest and coppice management for diversity of structure and potential for demonstration.
• To provide a wide range of ASNW species to colonise the close by planted woodland
Constraints:
• Objections to management actions from those who see a woodland as a static environment rather than a managed one. Any management may cause temporary disruption to favourite walks.

Factors Causing Change

• Ash die back;
• Excessive foot traffic gradually widening the paths and eating into the ground flora. This has been managed in Langley Wood by roping the main paths but path widening is now very noticeable in Well and Pudler's Wood. A denser understory would, in a more natural way, encourage visitors not to stray;
• Progressive encroachment of brambles in the understory;
• Grey squirrels which have stripped the bark from the upper branches of some tree
• Browsing of young natural regeneration by deer. (No current evidence of this, but it could be managed by fencing).
• Longterm stability of already overstood coppice stools.

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. An appropriate portion of the wood back in a sustainable coppice rotation with some areas of the woods developing naturally to provide a varied age range and structure, abundant deadwood, a healthy understory and sufficient natural regeneration. Healthy ground flora and ancient woodland characteristics should 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 but retaining glades/rides for more diverse ground flora and invertebrates such as butterflies.

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

Now that planting has completed a focus can be turned to managing the ASNW. Subject to the findings of a woodland condition assessment necessary intervention will be identified to areas of minimum intervention as well as areas to restart coppicing and encouraging a healthy understory that may perpetuate areas of established scrub, particularly old elder bushes which, besides often being well colonised by widespread lichen species can support more uncommon species.
Ivy, while being important ecologically otherwise, could be identified in some areas to be removed by volunteers, in those instances where it is likely to overcome any well-developed assemblages of lichens.
Work programme:

• Monitor tree health, regeneration and ground flora for damage caused by deer and grey squirrels, path encroachment and misuse;
• Where opportunities arise, liaise with local landowners to manage deer populations locally;
• Remove some brambles annually to control its spread without attempting eradication;
• Tree safety works as necessary as identified through our tree inspection process
• If work is to be done on trees with features such as wound seepages/sap runs, the potential for lichens of note being present should be taken into consideration;
• Monitor ash trees for dieback noting policy is to leave dead trees standing rerouting nearby paths if necessary and possible;
• Obtain expert advice about the management of coppiced woodland and plan for the work and use/disposal of the resulting firewood or other product.

5.3 New Native Woodland

Description

600,000 native broadleaf trees and large shrubs were planted during the nine winters between 2009-10 and 2017-18 and cover about 260ha. Twenty-six species of trees were planted, the primary species included oak, ash, hornbeam, field maple and birch along with woody shrubs such as hazel, holly, hawthorn and guelder rose. Given the advance westwards across the UK of Chalara (or ash dieback), the planting of ash saplings ceased in 2012 with the number of oak saplings planted increased accordingly. The trees were planted by children from local schools, WT volunteers, community groups, corporate organisations and by members of the public (on public planting days). In addition to planting, new woodland was established through planting to close gaps in hedgerows, direct sowing of tree seeds and via natural regeneration. A limited amount of beat-up was undertaken in areas where the sapling survival after two years was particularly poor.

The planting was mainly in large areas with trees usually at 2m spacing in sinuous lines which are becoming less distinct as the trees mature. The overall plan for new native woodland sought to buffer and link the pockets of ancient woodland, preserve views, create rides and open spaces. In terms of protection of the trees, some areas have been fully or partially enclosed by rabbit fencing (in some cases with a permissive footpath running though), some trees have been individually guarded, other areas are completely unprotected. Many of the areas were sown with grass or wildflower mixtures prior to planting.

During winters of 2009-10, 2010-11 and 2011-12, the mix of species planted in any one area was random. From the winter of 2012-13 onwards, the planting methodology was revised to differentiate the shrubby trees that typically form the perimeter of wooded areas and which provide a dense habitat suited to small birds and small mammals from the high canopy trees such as the oak and hornbeam that are often found in the more central parts of wooded areas. The revised methodology also promoted single species stands (typically 25 to 40 trees in a stand) to help minimise the risk of small species being overcome by more dominant species as the woodland matures. In some places, single-species copses were planted mainly to provide visual appeal.

Creation of some parts of Heartwood was funded (and in many cases planted) by individuals and organisations. Much of the site, therefore, has important and often personal affiliations. There are numerous dedicated acre and half-acre groves (0.4ha and 0.2ha respectively) sponsored throughout the site, which also includes the 50 acre (20ha) Magical Wood sponsored by Disney Store.

Heartwood has many kilometres of old hedges (see Annex 3) – roadside and bridleway hedges and original field boundary hedges – with many species although mainly hawthorn, blackthorn and hazel. Hedges alongside a road or path have been trimmed periodically. Hedges that back on to or are now enclosed within new native woodland have been allowed to grow naturally since 2009. Several long sections have been laid during several winters. Gaps in the hedges alongside public roads and in the hedges forming the Heartwood boundary have been planted with new hedgerow trees (with a positive attempt to markedly increase the variety of species) since the winter of 2015-16 and this will continue for a few more years.
Hazel groves have been planted, these will move into coppice rotation to yield wood products for hedgelaying

Significance

One of the Woodland Trust's key aims is to enable the creation of more native woods and places rich in trees and this is more than adequately met at Heartwood.
Early successional woodland, especially when it has a diverse structure, provides biodiversity benefits. It also buffers and links existing ancient woodland and improves the ecosystem of these precious habitats. The landscape scale of Heartwood combined with the adjoining Nomansland Common forms about 1000 acres of semi natural habitat. In combination with paths and open ground, it provides a significant amenity for the public to explore.
Good hedges make an impenetrable boundary to people and dogs and can be used to encourage the use of official entrances to Heartwood and to the ancient semi-natural woodland. The close spacing and wide variety of species within a hedge promotes a diversity of fauna and offers a pleasing appearance for visitors. Shorter, denser, annually trimmed sections will benefit different species compared with others that are left to grow taller and be trimmed less often.

Opportunities & Constraints

Opportunities:
• Create and sustain attractive and resilient native broadleaved woodland;
• Be an exemplar for woodland creation and management;
• Create a range of habitats, for example, thickets, scrub, coppice rotation, glades, elite trees, wide open rides, scalloped woodland edges, and wood pasture, suited to concentrate the abundance of numerous species of fauna and flora;
• Link together ancient semi-natural woodland to provide areas for associated wildlife to

colonise and expand in to.

• Manage woodland edges both to develop a gradual height transition from grass to high forest with habitat variety enhanced by scalloping the edges and to promote well-lit edges but sufficiently sheltered to maintain high levels of humidity are well-suited to the colonisation by lichen. There is opportunity to explore other techniques such as ground disturbance along woodland edges that may allow natural regen to create a gradual height transition;

• Thin some areas at intervals to encourage regeneration to develop a mixed age forest;

• Supply woodland products including wood fuel;

• Consider accelerating the development of appropriate ground flora species by seeding / planting to some areas when full canopy closure has been achieved;

• Provide data to show the environmental changes that take place from creating woodland on arable land and the long-term effects on local flora and fauna populations;

• Thicken some of the hedges to substantially increase attractiveness to birds and invertebrates.

Constraints:

• Prolonged periods without rain, the condition of the soil, the condition of the trees immediately prior to planting and the care taken with planting all have an impact on the survival of the trees. On the average across the whole site, some 75% of trees have survived the first few years. In some parts, it is much higher and, in other parts, much lower;

• Deer, squirrel, rabbit and hare damage could have an impact on the success of the establishment of the woodland;

• Trees are essentially all the same age. This lack of diversity could become an issue in future years as the shorter-lived trees (e.g. birch) reach maturity; pioneer habitats will also be lost.

• The ideal hedge for wildlife would be allowed to grow wider, but where the hedge is adjacent to a path or to a neighbour's property this may not always be possible.

Factors Causing Change

• Drier and warmer conditions with climate change could affect the longer-term survival of some tree species;

• Rabbit fencing will degrade and fail in many parts enabling encroachment by people and dogs. Tree guards will degrade and fall down;

• Deer, squirrel, rabbit and hare damage could stunt or reduce growth of some trees;

• The random mix of species planted in the first three winters could mean the dominant

species (e.g. oak) will prevail over other species;
• Pest and diseases such as Ash Dieback and Oak processionary moth
• If unmanaged, hedges lose their compact structure, become high, unwieldy and open at the bottom.

Long term Objective (50 years+)

Healthy, mature and attractive native broadleaf woodland of varying age structure and habitats. Patches of scrub and thicket as well as mature trees, woody shrubs and tall-herb communities, all integrating with the open spaces to produce a range of excellent woodland habitats suited to promote associated flora and fauna.
An excellent demonstration of multi-functional woodland creation and management on a large scale with mass community involvement and in so doing supplying woodland products to the wider community
Appropriately selected hedgerows managed through rotational cutting with cutting techniques allowing a structure supporting abundant wildlife.

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

To ensure successful establishment of diverse new native woodland that is integrated 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 with management actions implemented where evidence suggests action is necessary. Ensure woodland is healthy, maturing well and fully stocked to the desired 2250 trees per ha (minimum 1100 per ha) 5 years after planting.
Appropriate Hedgerow management identified and initiated.
Work programme:
• Survey the new native woodland (starting in 2020 with the areas planted in 2009-10, followed in 2021 with the areas planted in 2010-11, and so on) to identify and map areas that could be managed to achieve a desired habitat. Define the necessary management actions (e.g. thinning, coppicing) and amend the 5-year work programme accordingly;
• Manage woodland edges to provide a majority of shrubs interspersed with occasional standards. Some edges should be regularly coppiced in scallops to maintain a gradation from grass through coppice and shrubs to full sized trees in the woodland centre. To improve wildlife value a few selected areas could be planted or seeded with wild honeysuckle (Lonicera periclymenum) along the side of a ride, or woodland edge, about 2-5 meters into the wood or also around the edges of scallops;

• Management activities in high visitor usage areas that require the removal of trees to meet their aims should consider favoring the selection of Oak over other species for removal to reduce the chance of visitors coming into contact with Oak Processionary moth caterpillars.

• Monitor tree survival and growth to confirm the desired stocking level is achieved;
• Maintain rabbit fencing and guards fit for purpose until trees are mature enough to withstand damage. Remove fallen or degraded tree guards;
• Define a hedge trimming regime to optimise the conditions for wildlife, taking advice from experts as necessary and produce clear instructions to contractors and to the local council responsible for trimming hedges;
• Thicken selected stretches of boundary hedges by supplementary planting amongst gaps such as blackthorn, hazel and hawthorn;
• Identify suitable areas to lay selected stretches of hedge
• Explore potential and feasibility of management techniques such as ground disturbance along woodland edges that may allow natural regen to create a gradual height transition;

5.4 Other

Description

This Key Feature covers a community orchard, a native tree and shrub arboretum, and a forestry area where the trees are primarily being grown for timber. All of these require tailored management if they are to achieve their objectives.

The orchard, which covers an area of approximately 3ha off the Hertfordshire Way public bridleway, is accessed via Langley Grove (a residential street in Sandridge) and has been planted as a community orchard. About 700 native fruit trees were planted, including local varieties of apples, pears and plums with a section of damsons, cherries and medlars to name a few. The trees were planted in tranches during the seven winters from 2010-11 to 2016-17. The trees are spaced at 5m in formal rows and each tree is protected from deer browsing by a 1.2m high wire mesh cage supported by a stake. The orchard is in an exposed site and a shelter-belt of native trees and shrubs was planted in winter 2019-20 to provide some protection from the south-west winds. The pruning and more specific aspects of orchard management are described in the Orchard Manual available from the Woodland Trust Estate Database (for a copy contact operations@woodlantrust.org.uk) Work on the orchard is undertaken by local volunteers in association with and advice from orchard professionals.

The arboretum is an educational feature with almost all of the trees and shrubs native to the British Isles. It will allow visitors to appreciate the diversity and beauty of our native species and will reveal the many ways in which they have been used over past centuries. It covers an area of 11ha, contains 64 species (including a few hybrids) with over a hundred of most species present. The Arboretum Manual gives details the management regime and is available from the Woodland Trust Estate Database (for a copy contact operations@woodlantrust.org.uk). The unplanted areas are mown four times per year giving easy access to the trees.

The forestry area comprises two deer-fenced enclosures within High Trees at the north-east corner of the site. The westerly enclosure is 6 ha and was planted in the winter of 2016-17 with about 26,000 trees. The easterly enclosure is 7.6 ha and was planted in the winter of 2017-18, with about 33,000 trees. Three species were planted, oak (both pedunculate and sessile), hornbeam and wild cherry with 1.5m spacing in large blocks of several hundred trees, together with some hazel and other shrubs. The spacing of the saplings was significantly closer than other areas of the site. This is to encourage the trees to grow straight and tall. The survival of the trees planted in the winter of 2017-18 was low because of the dry spring and summer in 2018.

Significance

Orchards support an abundance of biodiversity, including pollinating insects, 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.

The arboretum is the only place in the UK devoted exclusively to native species and it includes several that are rare and endangered, such as Elm potentially resistant to Dutch Elm Disease, three species of hybrid Whitebeam, Black Poplar and Plymouth Pear. The large area for many species allows them to be grown in different ways, for example as short or long rotation coppice or pollards. As they mature the products will be used to demonstrate current and historic uses. Every tree and shrub species has their associated fungal and insect populations, providing additional educational opportunities. It is hoped that some species, such as Box, that are rare locally, will avoid pests and diseases that are decimating them elsewhere.

The intention of the forestry area is to grow the oak, hornbeam and wild cherry and show that a well planted and managed wood can be attractive and environmentally sympathetic yet still produce high quality timber and an economic return. I.e. a productive forest with a WT flavour! During the 20th century, the UK has lost much of the know-how of growing hardwood native trees for timber and this Key Feature will serve as a demonstration to other landowners who are considering forestry.

Opportunities & Constraints

Opportunities:

The orchard provides the opportunity to:

- foster community engagement and ownership;
- provide fruit and fruit juices for use and for sale;
- enhance relations with the local community and provide educational material.

The arboretum will:

- show visitors all our native species of tree and shrub;
- show, through leaflets, guided walks, and demonstrations, how these have been used in present and past times.

The forestry area will:

- allow the Woodland Trust to re-learn and to demonstrate how to grow hardwood native trees for timber;

• make a commercial return on the timber;
• encourage other landowners to grow more trees.

Constraints:
All of these areas are for demonstration and education, so will need:
• a higher level of cost and management than the rest of Heartwood Forest;
• greater care to promote healthy growth free from disease or damaging pests;
• long-term commitment.
Specific constraints are:
• the orchard has not yet stimulated the support of the local community;
• the orchard might need some security to prevent theft of the fruit;
• the arboretum has very poor access, especially for disabled visitors;
• we are not allowed to plant ash in the arboretum until ash dieback resistant strains become available;
• Areas of the arboretum designated for a single species may be invaded by other non target species
• If left unmanaged some trees won't illustrate their uses to visitors many of the saplings planted in the forestry area in 2017-18 died as a result of the following dry spring and summer.
• Weather - many of the saplings planted in the forestry area in 2017-18 died as a result of the following dry spring and summer.

Factors Causing Change

In the Orchard:
• Seasonal summer drought affecting the survival and establishment of the fruit trees;
• Deer, badger, rabbit and squirrel damage may stunt or reduce growth of trees;
• Water-logging in the north-west corner of the site has killed trees, and some early replacement trees, this area will not be replanted. Standing water is common close by in wet winters and may kill other trees;
• Local conditions have proved to be unsuitable for some species of trees originally planted: Fig, Mulberry, Peach and Nectarine, which have all died and possibly Apricot which are not thriving. Therefore, none of these species will be replaced;
• Voles nesting in the herbage at the base of the trees may cause damage through ring-barking. There is evidence of this.
In the Arboretum:
• Change will be driven by the growth of the trees. This will be monitored every few years

and management interventions will ensure that each stand develops to illustrate how it would be grown for appropriate uses;
• Self-seeding will be good for some short-lived species, such as Broom, but must be avoided for those, such as birch and oak, likely to produce unwanted hybrids;
• Squirrels, if uncontrolled, are likely to destroy some tree species;
• Climate change may affect some species;
In the Forestry area:
• Mammals, if uncontrolled, may cause serious damage;
• Climate change may limit the growth and hence commercial value of these tree species.

Long term Objective (50 years+)

The Orchard will:
• Become a low maintenance, high biodiversity orchard rich in lichens, ground flora, epiphytes and other wildlife and not a high output commercial orchard;
• Be a demonstration of a volunteer/community managed orchard;
• Feature healthy trees with lots of fruit (although not necessarily a yield commensurate with a commercial orchard);
• Provide an income source to help sustain the ongoing management of Heartwood.
The Arboretum will have matured with:
• An avenue of specimen trees down the Grand Ride;
• Well-managed stands of all our native species;
• Regular workshops illustrating rural crafts and potential for new industries.
As environmental concerns increase, trees will have acquired much greater prominence giving additional interest in the arboretum as a source of inspiration and of tree products.
The Forestry area will become:
• A well-managed demonstration of native hardwood forest providing environmental benefits and an economic return.

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

Full details are available in separate manuals as mentioned above.
The Orchard will develop successfully under a well-defined management regime with local community engagement. All the trees will have been formatively pruned and be maturing appropriately.
The Arboretum will develop as a demonstration of native trees and shrubs, with sufficient healthy specimens of all the species.

The Forestry area should become established as an exemplar of a well-managed emerging area of trees being grown for their timber.

Work programme:

Orchard:

- Complete the formative pruning then continue with a light-touch annual or biennial pruning;
- Continue with general management until such time as the trees reach some maturity and produce fruit;
- Explore opportunities to incorporate interpretation for visitors and scope for events, as part of a wider planned review of interpretation and signage;
- Replace damaged cages and stakes in instances where the replacement provides utility;
- Mow paths through the orchard to Woodland Trust spec 4 times a year;
- Mow whole of orchard at appropriate intervals and strimm around each tree on every cut to control the population of voles that are damaging the young trees;
- Remove herbage from within the cages at end of growing season to limit nesting sites for voles;
- Cut the existing hedges along the western and northern boundaries every two years to prevent encroachment into the orchard. Allow some hedge trees to grow into standards;
- Produce and agree a long-term management and governance regime that can be enacted in 2024;
- Provide training where necessary to allow community to feel empowered to look after orchard.

Arboretum:

- Rogue out unwanted seedling trees;
- Make first coppice cuts and, if necessary, protect those species that are to be coppiced;
- Replace any standard trees that are not thriving;
- Beat up the plots where necessary;
- Check all dioecious species for gender and adjust balance if needed;
- Add explanatory notices for the most interesting species; including coppiced willow;
- Keep the guidebook in print and market as appropriate.

Forestry area:

- Produce a detailed management regime with advice from experts that may include the removal of side branches both to encourage the trees to grown tall and to minimise the number of knots in the harvested timber. In 2031 - 2036 (i.e. 15-20 years after planting), the trees will be thinned by about 75% allowing the remainder to grow on. This will be

repeated in 2046 – 2056 (i.e. after another 15-20 years) leaving just the best specimens to grown on. From 2066, the trees will be selectively felled as they reach their prime and sold for timber. At this stage, further restocking will take place. It is not the intention to clear-fell the area

- Produce an outline business plan showing the costs incurred to date, the cost projections, and a view of the long-term commercial return;
- Produce explanatory literature about the project to share with other landowners;
- Beat up areas where the survival was poor;
- Remove side growth from all trees;
- Periodically check the integrity of the deer fence and repair as necessary.

5.5 Open Ground Habitat

Description

The open space at Heartwood accounts for approximately 20% (70ha) of the total area. It includes key landscape features kept open especially for views and areas of important underlying archaeological interest. It also includes an area of artificially created wetland as a wildlife habitat.

Of these areas, 20 ha are principally grass and clover and 50 ha have been sown with wildflower mixtures. Some were also sown with a mixture of annual flowers though most of these have disappeared as grasses and perennial broadleaf flora have become established although some reappear following rotavation. Annex 2 shows the management regimes for these areas with some mown 4 times per year, some mown once every year in August or September with the hay baled and removed, and some mown every other year with the hay baled and removed. The latter will also be partially cultivated after their biennial mowing.

The wetland is a flat area in the far east of the site, with a seasonal pond of area 1350 m2 and an area of 1050 m2 that floods in the winter. These were created artificially in 2017 as a wetland wildlife habitat. Each pond is surrounded by low bunds formed from the spoil. The ponds are located either side, (north and south) of an ancient boundary line including three mature oaks, and an agricultural drainage ditch, which used to drain to the north west, running for about 200m to the roadside (Hammond's Lane). This ditch has recently been dammed at 4 places to create a line of additional small seasonal linear ponds, overgrown by brambles.

The area is one of the quieter parts of the site. It is bounded by an old hedge to the East with the Herts. Way footpath on farmland on the other side of the hedge, newly planted areas to the north and west, and a mown meadow through Hamm Wood to the south. A rabbit fence and newly planted hedging and shrubs surround the ponds to reduce disturbance by dogs and human visitors.

This southerly pond usually holds a small amount of water year-round and is at full depth (about 1.2 m) Dec-March. The northerly pond is broader and shallower, and holds water only in flood conditions, when the southerly pond overflows.

Significance

The vast meadows allow the site to feel open, offer fine views over the surrounding landscape and provide valuable open ground habitat for invertebrates, birds, small

mammals 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 that numerous species require. The few seasonal ponds alleviate flooding and encourage a wider range of species.
The grass and clover meadows are enjoyed by walkers including those with dogs and, in most of these areas, dogs are allowed to run freely.
Wildflower areas delight visitors with a stunning display of native wildflowers in May, June and July and they have increasing numbers of butterflies, bees and other insects. Their copious seed production provides food for birds and small mammals. These areas are favoured by ground nesting birds and provide a hunting ground for owls and other raptors all of which are rare in Hertfordshire.
Owing to the geology of chalk ridges and valleys, overlain with gravels in the valleys and clay and flint drift on the levels, there is no running water and almost no standing water anywhere on the site and its neighbourhood, apart from here. So, despite being less than 1% of the site area, this wetland is disproportionately significant as a water source for fauna for the entire site, as well as providing increased local diversity of habitats, for a wider range of flora and fauna.

Opportunities & Constraints

Opportunities:
• Areas of grass and clover provide an excellent venue for educational activities including festivals to demonstrate woodland crafts and to celebrate Heartwood's wildlife. School visits will be encouraged enabling young people to understand and value the complexities and inter-dependencies of the natural world;
• The wildflower meadows have been defined by the seeds sown in them, but with good management they will mature into rich and diverse ecosystems as other local flora, such as orchids, invade and become established. As this progresses the populations of invertebrates, small mammals, reptiles and amphibians will also adapt and diversify.
There are opportunities to enrich the flora to include species that are native to but rare in Hertfordshire including orchids and foodplants of locally rare insects, such as the small blue butterfly;
• The dominance of coarse grass in the fertile soils has been partly combatted through the use of semi parasite species Yellow Rattle. The retention and spread of Yellow Rattle around the site is important to ensure a healthy wildflower population;
• Heartwood offers a secure long-term refuge from suburban development for the carefully documented introduction of some rarer species, such as orchids;

• Composting grass piles can be valuable for certain reptiles so if grass cuttings are removed, to gain most benefit, they are best piled up in 1-2 metre lengths in places where sunlight can penetrate;
• Rabbit & deer grazing can be beneficial to managing grasslands, allowing fine grasses to thrive and encouraging a greater variety of plant and insect species;
• The wetland could be made more attractive to wildlife, for example by deepening the north scrape.
• Disturbance could be reduced if measures were taken to keen dogs and walkers further away and the wetland was better screened;
• Avoid planting the wetland area and so allow lower plants to colonise naturally;
• Willow and poplar shrubs will could be removed to avoid overshading;
• The wetland could be made more attractive to visitors by adding a viewing position, mowing paths up to that position, and cutting back foliage to provide sightlines.
Constraints:
In the open spaces there are edaphic constraints arising from the site's long history of arable farming.
Other constraints arise from the large number of visitors and dogs, which will discourage all breeding birds and if unchecked drive away ground nesting birds including Skylarks and Meadow Pipits. Skylarks are a red list species of conservation concern and are an iconic species at Heartwood where populations have been high historically. Starlings, Linnet and Yellowhammer are on the red list and are frequent at Heartwood, and Corn Bunting and Grasshopper Warbler have been seen occasionally. The open areas must be managed to provide for these species, which means, principally keeping people and dogs away from their nesting sites.
The location and small size of the wetland area means that it should not be promoted a visitor attraction.

Factors Causing Change

Grassland and wildflower meadows:
• Open spaces will change naturally and lose diversity if left unmanaged. Annuals will die out, scrub will invade, and some species, especially grasses, will become dominant;
• Increasing numbers of visitors, if uncontrolled, will drive away birds that are of conservation concern;
• If unmanaged, woodland edges will gradually encroach through natural regeneration into paths, glades and open spaces
Wetland:

• Ground water levels may show long-term change with climate and with our change of use from farmland to woodland;
• The recent changes we have made to the drainage may affect one of the mature oaks (we are continuing to monitor groundwater levels);
• Levels of disturbance from dogs and walkers may change;
• Usage of farmland neighbouring to the east, and possible run-off from it into the drainage ditch may change;
• Water quality deterioration in the pond or weed infestation may become a problem;
• Gradual silting up of the southerly pond may occur.

Long term Objective (50 years+)

Open areas consist of diverse habitats rich in locally important flowers and grasses. They will provide enjoyment for visitors, educational opportunities, and a balanced ecosystem for a wide range of invertebrates (including orthoptera, lepidoptera and other pollinating insects), mammals and birds. Food plants for important but rare local species of insect will be well established. The edges will merge seamlessly through taller vegetation, low growing scrub, fully grown flowering shrubs to high forest. Areas of high soil pH will have become rich in chalkland flora and support significant colonies of chalkland butterflies. The aim for the wetland is to provide maximum benefits for wetland flora and fauna. Whilst it will be enjoyed by a few visitors, promotion as a major visitor attraction is avoided to reduce allow wildlife to thrive with minimal disturbance.

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

To enhance the open spaces both for visitors and wildlife by paying greater attention to the edge management regimes, the general mowing regimes, and by helping visitors understand their responsibility towards the flora and fauna and act accordingly.
To develop a maturing wetland area, retaining water for much of the year, providing an opportunity for occasional visitors to stop and quietly observe the wildlife, including aquatic birds and dragonflies.
Work programme:
Grassland and wildflower meadows:
• To implement mowing regime as shown in Appendix 2 ,with meadows cut to a height of no less than 8-10 cm to maintain tussock structure and a ground layer of dense thatch, which is mainly generated by the fall of vegetation over time. Cutting, baling and carting

should be done in August or September to both reduce ecological competition and also the soil fertility. Rotavation of selected areas to be carried out to allow annual plants to persist as well as the bare ground providing feeding grounds for wintering birds. Retain some composting grass piles in 1-2 metre lengths in places where sunlight can penetrate;
• Monitor wildflower, bird and butterfly populations to feed into a new contract to run from 2022 onwards and inform any remedial action where appropriate to conserve biodiversity;
• Retain a band of taller vegetation adjacent to woodland edges in scallops;
• Take steps to promote Yellow Rattle ;
• Survey the site for the possibility of the carefully documented introduction of some rarer species, such as orchids.
• Mow the woodland edges in alternate years to prevent encroachment. Where not already in place, expand the rough grassland edges of all woodland to 8 to 10m width
Wetland:
• Monitor the changes to the habitat;
• Start to monitor factors that might cause change (listed above) and take remedial action if necessary;
• Be prepared to control nuisance weed species such as thistles to avoid impacting the farmland on that eastern side;
• Progress the opportunities set out above with appropriate consultation;
• Construct a simple viewing position or screen and minimally prune nearby trees and shrubs to maintain sightlines;
• In time, pruning or thinning may be needed to ensure that over-shading doesn't occur.
• Explore viability of expanding wetland area, for example creation of a new pond on West side of site within area of ‘Dog pond’ but away from visitor access so that pond is free from disturbance.

5.6 Community Woodland Group

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 the sites success and the continued involvement of volunteers will be encouraged and supported.
We currently (2020) have around 100 volunteers registered. Of this there is a core group of about 30 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.
5.6.2 Significance
Volunteering enables individual ownership of the site that significantly contributes to the success of the site. 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 have extensive local knowledge and are able to engage with local groups on the ground, sharing their enthusiasm for Heartwood.
The environmental monitoring group undertakes a range of research projects across the site including tree growth monitoring, habitat, veteran tree, breeding bird, butterfly, bat, small mammal and invertebrate surveys. It has also laid out 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.

Significance

Volunteering enables individual ownership of the site that significantly contributes to the success of the site. 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 have extensive local knowledge and are able to engage with local groups on the ground, sharing their enthusiasm for Heartwood.
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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.

Opportunities & Constraints

Opportunities:
- To undertake various woodland tasks;
- Enable ownership of the site
- Carry out more tasks beyond staff resource capability
- 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;
- To explore the possibility of a low-key community event.

Constraints:
- Training costs;
- Ability to use power tools.
- Staff capacity to ensure adequate support

Factors Causing Change

- Volunteers losing interest or moving on to other projects;
- Costs involved in sustaining volunteer involvement.

Long term Objective (50 years+)

Regular well attended volunteer activities of a wide range across the site led by the volunteers and well supported by staff. Fully trained and confident in carry out tasks with full engagement in recruiting the next generation of volunteers.

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

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

Work programme:
- Send out quarterly updates with news and future plans;
- Quarterly management team meetings with the site manager to review and agree

woodland working group tasks that might for example include hedgelaying and coppicing, 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
2020	NWH - Initial Restoration Work	Strip cultivate in September/October according to details on page 5 and maps on page 14 and 16-18 of the Heartwood Open Space Management Contract 2018-2022	31/10/20
2020	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	31/10/20
2020	AW - Visitor Access Maintenance	Car park maintenance as required, (zero'd for Tring fencing)	31/10/20
2020	AW - Visitor Access Maintenance	Car park maintenance as required	31/10/20
2020	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	30/11/20
2020	PE - Volunteer on site activity	stakes for hedgelaying	30/11/20
2020	PE - Volunteer on site activity	17 posts to support orchard cages	30/11/20
2020	WC - Fencing	replace stolen rails by bridal near B651	30/11/20
2020	WC - Fencing	Rabbit Fencing repairs and removal as required	30/11/20
2020	WC - Site Maintenance	C.F General site maintenance as required -Padlocks needed for site management access. Order includes: 39KA - 8 boxes of 6 (48 locks in total) £14.85 each 39/2.5KA- 1 boxes of 6 (6 locks in total) £16.93	31/12/20
2020	WC - Site Maintenance	General site maintenance as required -Padlocks needed for site management access. Order includes: 39KA - 8 boxes of 6 (48 locks in total) £14.85 each 39/2.5KA- 1 boxes of 6 (6 locks in total) £16.93	31/12/20
2020	WMM - General Site Management	Hire of barn for 12 months	31/12/20
2020	AW - Visitor Access Maintenance	Car park access gate daily opening and closing	31/12/20
2020	LC - Fly Tipping	Litter removal as required	31/12/20
2020	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	31/12/20
2020	WC - Tree / Seed Supply	trees and guards to beat up plant High Trees area 2nd order	31/12/20
2020	PE - Interpretation & Signage	£60 for Den- building move collateral (Map	31/12/20

		and SOB leaflet)	
2020	WC - Tree / Seed Supply	trees and guards to beat up plant High Trees area 1st order	31/12/20
2020	PE - Interpretation & Signage	As per quote 114833 Heartwood Forest Leaflets, quantity 6000.	31/12/20
2020	PE - Events - Tree Planting	Local community involvement with orchard	31/12/20
2020	WC - Tree Planting / Seeding	Beat up plant High Trees area	31/12/20
2020	PE - Interpretation & Signage	Visitor Basics for Visit England	31/12/20
2020	PE - Events - General	Guided walks	31/12/20
2020	WC - Tree Planting / Seeding	Additional trees required for arboretum -BHT spot buy for Heartwood Wild Cherry 2000 Holly 100 Wild privet 100	31/12/20
2020	WC - Tree Planting / Seeding	C.F Additional trees required for arboretum -BHT spot buy for Heartwood Wild Cherry 2000 Holly 100 Wild privet 100	31/12/20
2020	WC - Tree / Seed Supply	C.F trees and guards to beat up plant High Trees area 1st order -BHT spot buy for Heartwood Wild Cherry 2000 Holly 100 Wild privet 100	31/12/20
2020	AW - Visitor Access Infrastructure	Kissing gates and fencing as required	31/12/20
2020	PE - Interpretation & Signage	Interpretation and signage as needed £60 removed to pay for Den building collateral - GL 25/08/20	31/12/20
2021	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	31/01/21
2021	AW - Visitor Access Infrastructure	For new Den Build Area Supply and erect two sections of post and 3 rail fence leaving overlapping access point. Hire disc cutter and cut 2 metal beams below ground	31/01/21
2021	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	28/02/21
2021	WC - Tree Planting / Seeding	Final beat up planting	28/02/21
2021	AW - Visitor Access Maintenance	Car park access gate daily opening and closing	01/03/21
2021	WC - Site Maintenance	Cut hedges on rotation according to hedgerow management plan	10/03/21
2021	WC - Site Maintenance	Cut bridleway hedges before nesting season,	10/03/21

		trim sides ONLY to maintain clear access along bridleway but DO NOT cut any closer than 70cm from centre of hedge or from stakes and binders.	
2021	WMM - General Site Management	Hire of barn for 12 months	31/03/21
2021	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	31/03/21
2021	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	30/04/21
2021	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	31/05/21
2021	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	30/06/21
2021	AW - Visitor Access Maintenance	Car park access gate daily opening and closing	30/06/21
2021	PE - Volunteer on site activity	Volunteer expenses and costs	30/06/21
2021	PE - Interpretation & Signage	New information/interpretation boards as a result of site audit	30/06/21
2021	WC - Tree Weeding / Fertilising	Halo spray young trees with glyphosate – approx. 7,500 trees planted as beat up in 2020/21 weeded once in early spring, Spec Ref: 4.4 A completed pesticide record sheet is required before the invoice can be paid.	30/06/21
2021	WC - Tree Weeding / Fertilising	Halo spray young trees with glyphosate – planted in hedge gaps in 2019/20 weeded once in early spring, Spec Ref: 4.4 A completed pesticide record sheet is required before the invoice can be paid.	30/06/21
2021	PE - Events - General	Heartwoof	30/06/21
2021	WC - Tree Weeding / Fertilising	Strimm around 600 newly planted whips that make up a new shelter belt on the south edge of the Orchard. To be done twice a year, once in Spring and once in the Summer before the hay cut.	30/07/21
2021	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	31/07/21
2021	AW - Visitor Access Infrastructure	SOB campaign - visitor access infrastructure as required	31/07/21
2021	PE - Interpretation & Signage	SOB campaign - interpretation and signage as required	31/07/21
2021	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	31/08/21
2021	WC - Invasive Plant Control	Noxious weed control – pull and cut ragwort and spray and cut thistles where necessary in summer, see halo spray and noxious weed control map for details Spec Ref: 4.4 A	31/08/21

		completed pesticide record sheet is required before the invoice can be paid.	
2021	WC - Invasive Plant Control	Noxious weed control – spray Japanese knotweed three times throughout the growing season, see halo spray and noxious weed control map for details Spec Ref: 4.4 A completed pesticide record sheet is required before the invoice can be paid.	31/08/21
2021	WC - Invasive Plant Control	Noxious weed control – spray path edges in car park in spring and then again in mid-summer, see halo spray and noxious weed control map for details Spec Ref: 4.4 A completed pesticide record sheet is required before the invoice can be paid.	31/08/21
2021	AW - Visitor Access Maintenance	Car park access gate daily opening and closing	30/09/21
2021	NWH - Maintenance Work	Cut, harvest and remove arisings in August/September according to details on page 4 and maps on page 14-18 of the Heartwood Open Space Management Contract 2018-2022	30/09/21
2021	AW - Visitor Access Maintenance	Cutting paths onsite four times per year, including open space topping according to details on page 4 and maps on page 9-13 of the Heartwood Open Space Management Contract 2018-2022	30/09/21
2021	PE - Interpretation & Signage	Interpretation and signage as needed	30/09/21
2021	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	30/09/21
2021	AW - Visitor Access Maintenance	Cut paths and strim edges and signs four times per year, including additional cuts to small paths in aboretum and strimming around willow bed in aboretum see mowing and strimming map for details Spec Ref: 2.1, 2.12	30/09/21
2021	AW - Visitor Access Maintenance	Cut car park entrance and paths in car park an additional three times per year, see mowing and strimming map for details Spec Ref: 2.1, 2.12	30/09/21
2021	NWH - Initial Creation Work	Enhance woodland edges through planting Honeysuckle,etc	30/09/21
2021	WC - Tree Weeding / Fertilising	Strimm around 600 fruit trees in the Heartwood Orchard twice a year to allow	30/09/21

		tractor mower to keep sensible distance from fruit trees.	
2021	AW - Visitor Access Infrastructure	Fence to divert visitors from skylark breeding area in East side of Heartwood	30/09/21
2021	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	31/10/21
2021	NWH - Initial Restoration Work	Strip cultivate in September/October according to details on page 5 and maps on page 14 and 16-18 of the Heartwood Open Space Management Contract 2018-2022	31/10/21
2021	AW - Visitor Access Infrastructure	Fence to divert visitors from skylark breeding area in East side of Heartwood. Need accurate estimate for 300m fence, ditch & hedge plus blocking other gaps.	31/10/21
2021	WC - Tree / Seed Supply	Trees for beat up to Arboretum and hedge gaps across site	31/10/21
2021	AW - Visitor Access Maintenance	Car park maintenance as required	31/10/21
2021	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	30/11/21
2021	WC - Fencing	Rabbit Fencing repairs and removal as required	30/11/21
2021	PE - Volunteer on site activity	stakes for hedgelaying	30/11/21
2021	AW - Visitor Access Infrastructure	Kissing gates and fencing as required	31/12/21
2021	WC - Site Maintenance	General site maintenance as required	31/12/21
2021	AW - Visitor Access Maintenance	Car park access gate daily opening and closing	31/12/21
2021	LC - Fly Tipping	Litter removal as required	31/12/21
2021	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	31/12/21
2021	PE - Interpretation & Signage	As per quote 114833 Heartwood Forest Leaflets, quantity 6000.	31/12/21
2021	WC - Planting Ground Preparation	cut grass before beat up of High trees Area	31/12/21
2021	WC - Site Maintenance	Orchard Maintenance	31/12/21
2021	WC - Tree Planting / Seeding	Beat up plant High Trees area	31/12/21
2021	PE - Events - General	Guided walks	31/12/21
2021	WC - Tree / Seed Supply	trees and guards to beat up plant High Trees area that are unavailable from Woodland Trust core contract	31/12/21
2022	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	31/01/22
2022	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	28/02/22
2022	AW - Visitor Access Maintenance	Car park access gate daily opening and closing	01/03/22
2022	WC - Site Maintenance	Cut hedges on rotation according to hedgerow management plan	10/03/22
2022	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	31/03/22
2022	WMM - General Site Management	Hire of barn for 12 months	31/03/22

2022	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	30/04/22
2022	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	31/05/22
2022	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	30/06/22
2022	AW - Visitor Access Maintenance	Car park access gate daily opening and closing	30/06/22
2022	PE - Volunteer on site activity	Volunteer expenses and costs	30/06/22
2022	WC - Tree Weeding / Fertilising	Halo spray young trees with glyphosate – approx. 17,500 trees planted as beat up in 2020/21& 2021/22 weeded once in early spring, Spec Ref: 4.4 A completed pesticide record sheet is required before the invoice can be paid.	30/06/22
2022	PE - Events - General	Heartwoof	30/06/22
2022	WC - Tree Weeding / Fertilising	Strimm around 600 newly planted whips that make up a new shelter belt on the south edge of the Orchard. To be done twice a year, once in Spring and once in the Summer before the hay cut.	30/07/22
2022	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	31/07/22
2022	AW - Visitor Access Infrastructure	SOB campaign - visitor access infrastructure as required	31/07/22
2022	PE - Interpretation & Signage	SOB campaign - interpretation and signage as required	31/07/22
2022	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	31/08/22
2022	WC - Invasive Plant Control	Noxious weed control – pull and cut ragwort and spray and cut thistles where necessary in summer, see halo spray and noxious weed control map for details Spec Ref: 4.4 A completed pesticide record sheet is required before the invoice can be paid.	31/08/22
2022	WC - Invasive Plant Control	Noxious weed control – spray path edges in car park in spring and then again in mid-summer, see halo spray and noxious weed control map for details Spec Ref: 4.4 A completed pesticide record sheet is required before the invoice can be paid.	31/08/22
2022	WC - Invasive Plant Control	Noxious weed control – spray Japanese knotweed three times throughout the growing season, see halo spray and noxious weed control map for details Spec Ref: 4.4 A	31/08/22

		completed pesticide record sheet is required before the invoice can be paid.	
2022	AW - Visitor Access Maintenance	Cut car park entrance and paths in car park an additional three times per year, see mowing and strimming map for details Spec Ref: 2.1, 2.12	30/09/22
2022	AW - Visitor Access Maintenance	Car park access gate daily opening and closing	30/09/22
2022	NWH - Maintenance Work	Cut, harvest and remove arisings in August/September according to details on page 4 and maps on page 14-18 of the Heartwood Open Space Management Contract 2018-2022	30/09/22
2022	AW - Visitor Access Maintenance	Cutting paths onsite four times per year, including open space topping according to details on page 4 and maps on page 9-13 of the Heartwood Open Space Management Contract 2018-2022	30/09/22
2022	PE - Interpretation & Signage	Interpretation and signage as needed	30/09/22
2022	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	30/09/22
2022	AW - Visitor Access Maintenance	Cut paths and strim edges and signs four times per year, including additional cuts to small paths in aboretum and strimming around willow bed in aboretum see mowing and strimming map for details Spec Ref: 2.1, 2.12	30/09/22
2022	WC - Tree Weeding / Fertilising	Strimm around 600 fruit trees in the Heartwood Orchard twice a year to allow tractor mower to keep sensible distance from fruit trees.	30/09/22
2022	NWH - Initial Creation Work	Enhance woodland edges through planting Honeysuckle,etc	30/09/22
2022	NWH - Initial Restoration Work	Strip cultivate in September/October according to details on page 5 and maps on page 14 and 16-18 of the Heartwood Open Space Management Contract 2018-2022	31/10/22
2022	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	31/10/22
2022	AW - Visitor Access Maintenance	Car park maintenance as required	31/10/22
2022	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	30/11/22
2022	WC - Fencing	Rabbit Fencing repairs and removal as required	30/11/22
2022	SL - Tree Safety Works - Zone B	Ash Dieback	30/12/22
2022	AW - Visitor Access Infrastructure	Kissing gates and fencing as required	31/12/22

2022	WC - Site Maintenance	General site maintenance as required	31/12/22
2022	AW - Visitor Access Maintenance	Car park access gate daily opening and closing	31/12/22
2022	LC - Fly Tipping	Litter removal as required	31/12/22
2022	LC - Routine Litter Picks	Empty of 5 dog bins, Twice per week	31/12/22
2022	PE - Events - Tree Planting	Local community involvement with orchard	31/12/22
2022	PE - Interpretation & Signage	As per quote 114833 Heartwood Forest Leaflets, quantity 6000.	31/12/22
2022	PE - Events - General	Guided walks	31/12/22
2023	AW - Visitor Access Maintenance	Car park access gate daily opening and closing	01/03/23
2023	WC - Site Maintenance	Cut hedges on rotation according to hedgerow management plan	10/03/23
2023	WMM - General Site Management	Hire of barn for 12 months	31/03/23
2023	AW - Visitor Access Maintenance	Car park access gate daily opening and closing	30/06/23
2023	WC - Tree Weeding / Fertilising	Halo spray young trees with glyphosate – approx. 93,000 weeded once in early spring, see halo spray and noxious weed control map for details Spec Ref: 4.4 A completed pesticide record sheet is required before the invoice can be paid.	30/06/23
2023	PE - Volunteer on site activity	Volunteer expenses and costs	30/06/23
2023	WC - Tree Weeding / Fertilising	Halo spray young trees with glyphosate – approx. 17,500 trees planted as beat up in 2020/21& 2021/22 weeded once in early spring, Spec Ref: 4.4 A completed pesticide record sheet is required before the invoice can be paid.	30/06/23
2023	PE - Events - General	Heartwoof	30/06/23
2023	WC - Tree Weeding / Fertilising	Strimm around 600 newly planted whips that make up a new shelter belt on the south edge of the Orchard. To be done twice a year, once in Spring and once in the Summer before the hay cut.	30/07/23
2023	AW - Visitor Access Infrastructure	SOB campaign - visitor access infrastructure as required	31/07/23
2023	PE - Interpretation & Signage	SOB campaign - interpretation and signage as required	31/07/23
2023	WC - Invasive Plant Control	Noxious weed control – pull and cut ragwort and spray and cut thistles where necessary in summer, see halo spray and noxious weed control map for details Spec	31/08/23

		Ref: 4.4 A completed pesticide record sheet is required before the invoice can be paid.	
2023	WC - Invasive Plant Control	Noxious weed control – spray Japanese knotweed three times throughout the growing season, see halo spray and noxious weed control map for details Spec Ref: 4.4 A completed pesticide record sheet is required before the invoice can be paid.	31/08/23
2023	WC - Invasive Plant Control	Noxious weed control – spray path edges in car park in spring and then again in mid-summer, see halo spray and noxious weed control map for details Spec Ref: 4.4 A completed pesticide record sheet is required before the invoice can be paid.	31/08/23
2023	AW - Visitor Access Maintenance	Cut car park entrance and paths in car park an additional three times per year, see mowing and strimming map for details Spec Ref: 2.1, 2.12	30/09/23
2023	AW - Visitor Access Maintenance	Car park access gate daily opening and closing	30/09/23
2023	PE - Interpretation & Signage	Interpretation and signage as needed	30/09/23
2023	AW - Visitor Access Maintenance	Cut paths and strim edges and signs four times per year, including additional cuts to small paths in aboretum and strimming around willow bed in aboretum see mowing and strimming map for details Spec Ref: 2.1, 2.12	30/09/23
2023	AW - Visitor Access Maintenance	Cutting paths onsite four times per year, including open space topping according to details on page 4 and maps on page 9-13 of the Heartwood Open Space Management Contract 2018-2022	30/09/23
2023	NWH - Maintenance Work	Cut, harvest and remove arisings in August/September according to details on page 4 and maps on page 14-18 of the Heartwood Open Space Management Contract 2018-2022	30/09/23
2023	NWH - Initial Creation Work	Enhance woodland edges through planting Honeysuckle,etc	30/09/23
2023	WC - Tree Weeding / Fertilising	Strimm around 600 fruit trees in the Heartwood Orchard twice a year to allow	30/09/23

		tractor mower to keep sensible distance from fruit trees.	
2023	NWH - Initial Restoration Work	Strip cultivate in September/October according to details on page 5 and maps on page 14 and 16-18 of the Heartwood Open Space Management Contract 2018-2022	31/10/23
2023	AW - Visitor Access Maintenance	Car park maintenance as required	31/10/23
2023	WC - Fencing	Rabbit Fencing repairs and removal as required	30/11/23
2023	AW - Visitor Access Infrastructure	Kissing gates and fencing as required	31/12/23
2023	WC - Site Maintenance	General site maintenance as required	31/12/23
2023	LC - Fly Tipping	Litter removal as required	31/12/23
2023	AW - Visitor Access Maintenance	Car park access gate daily opening and closing	31/12/23
2023	PE - Interpretation & Signage	As per quote 114833 Heartwood Forest Leaflets, quantity 6000.	31/12/23
2023	PE - Events - Tree Planting	Local community involvement with orchard	31/12/23
2023	PE - Events - General	Guided walks	31/12/23
2024	AW - Visitor Access Maintenance	Car park access gate daily opening and closing	01/03/24
2024	WC - Site Maintenance	Cut hedges on rotation according to hedgerow management plan	10/03/24
2024	WMM - General Site Management	Hire of barn for 12 months	31/03/24
2024	AW - Visitor Access Maintenance	Car park access gate daily opening and closing	30/06/24
2024	PE - Volunteer on site activity	Volunteer expenses and costs	30/06/24
2024	PE - Events - General	Heartwoof	30/06/24
2024	WC - Tree Weeding / Fertilising	Halo spray young trees with glyphosate – approx. 10,000 trees planted as beat up in 2021/22 weeded once in early spring, Spec Ref: 4.4 A completed pesticide record sheet is required before the invoice can be paid.	30/06/24
2024	WC - Tree Weeding / Fertilising	Strimm around 600 newly planted whips that make up a new shelter belt on the south edge of the Orchard. To be done twice a year, once in Spring and once in the Summer before the hay cut.	30/07/24
2024	PE - Interpretation & Signage	SOB campaign - interpretation and signage as required	31/07/24
2024	WC - Invasive Plant Control	Noxious weed control – pull and cut ragwort and spray and cut thistles where necessary in summer, see halo spray and noxious weed control map for details Spec Ref: 4.4 A	31/08/24

		completed pesticide record sheet is required before the invoice can be paid.	
2024	WC - Invasive Plant Control	Noxious weed control – spray path edges in car park in spring and then again in mid-summer, see halo spray and noxious weed control map for details Spec Ref: 4.4 A completed pesticide record sheet is required before the invoice can be paid.	31/08/24
2024	WC - Invasive Plant Control	Noxious weed control – spray Japanese knotweed three times throughout the growing season, see halo spray and noxious weed control map for details Spec Ref: 4.4 A completed pesticide record sheet is required before the invoice can be paid.	31/08/24
2024	AW - Visitor Access Maintenance	Car park access gate daily opening and closing	30/09/24
2024	AW - Visitor Access Maintenance	Cut car park entrance and paths in car park an additional three times per year, see mowing and strimming map for details Spec Ref: 2.1, 2.12	30/09/24
2024	PE - Interpretation & Signage	Interpretation and signage as needed	30/09/24
2024	NWH - Maintenance Work	Cut, harvest and remove arisings in August/September according to details on page 4 and maps on page 14-18 of the Heartwood Open Space Management Contract 2018-2022	30/09/24
2024	AW - Visitor Access Maintenance	Cutting paths onsite four times per year, including open space topping according to details on page 4 and maps on page 9-13 of the Heartwood Open Space Management Contract 2018-2022	30/09/24
2024	NWH - Initial Creation Work	Enhance woodland edges through planting Honeysuckle,etc	30/09/24
2024	WC - Tree Weeding / Fertilising	Strimm around 600 fruit trees in the Heartwood Orchard twice a year to allow tractor mower to keep sensible distance from fruit trees.	30/09/24
2024	AW - Visitor Access Maintenance	Cut paths and strim edges and signs four times per year, including additional cuts to small paths in aboretum and strimming around willow bed in aboretum see mowing and strimming map for details Spec Ref: 2.1,	30/09/24

		2.12	
2024	NWH - Initial Restoration Work	Strip cultivate in September/October according to details on page 5 and maps on page 14 and 16-18 of the Heartwood Open Space Management Contract 2018-2022	31/10/24
2024	AW - Visitor Access Maintenance	Car park maintenance as required	31/10/24
2024	PE - Interpretation & Signage	As per quote 114833 Heartwood Forest Leaflets, quantity 6000.	31/12/24
2024	LC - Fly Tipping	Litter removal as required	31/12/24
2024	WC - Site Maintenance	General site maintenance as required	31/12/24
2024	AW - Visitor Access Maintenance	Car park access gate daily opening and closing	31/12/24
2024	PE - Events - General	Guided walks	31/12/24
2025	AW - Visitor Access Maintenance	Car park access gate daily opening and closing	01/03/25
2025	WC - Site Maintenance	Cut hedges on rotation according to hedgerow management plan	10/03/25
2025	WMM - General Site Management	Hire of barn for 12 months	31/03/25
2025	PE - Volunteer on site activity	Volunteer expenses and costs	30/06/25
2025	AW - Visitor Access Maintenance	Car park access gate daily opening and closing	30/06/25
2025	PE - Events - General	Heartwoof	30/06/25
2025	WC - Tree Weeding / Fertilising	Strimm around 600 newly planted whips that make up a new shelter belt on the south edge of the Orchard. To be done twice a year, once in Spring and once in the Summer before the hay cut.	30/07/25
2025	PE - Interpretation & Signage	SOB campaign - interpretation and signage as required	31/07/25
2025	WC - Invasive Plant Control	Noxious weed control – spray Japanese knotweed three times throughout the growing season, see halo spray and noxious weed control map for details Spec Ref: 4.4 A completed pesticide record sheet is required before the invoice can be paid.	31/08/25
2025	WC - Invasive Plant Control	Noxious weed control – spray path edges in car park in spring and then again in mid-summer, see halo spray and noxious weed control map for details Spec Ref: 4.4 A completed pesticide record sheet is required before the invoice can be paid.	31/08/25
2025	WC - Invasive Plant Control	Noxious weed control – pull and cut ragwort and spray and	31/08/25

		cut thistles where necessary in summer, see halo spray and noxious weed control map for details Spec Ref: 4.4 A completed pesticide record sheet is required before the invoice can be paid.	
2025	AW - Visitor Access Maintenance	Cutting paths onsite four times per year, including open space topping according to details on page 4 and maps on page 9-13 of the Heartwood Open Space Management Contract 2018-2022	30/09/25
2025	NWH - Maintenance Work	Cut, harvest and remove arisings in August/September according to details on page 4 and maps on page 14-18 of the Heartwood Open Space Management Contract 2018-2022	30/09/25
2025	NWH - Initial Creation Work	Enhance woodland edges through planting Honeysuckle,etc	30/09/25
2025	PE - Interpretation & Signage	Interpretation and signage as needed	30/09/25
2025	AW - Visitor Access Maintenance	Cut car park entrance and paths in car park an additional three times per year, see mowing and strimming map for details Spec Ref: 2.1, 2.12	30/09/25
2025	AW - Visitor Access Maintenance	Car park access gate daily opening and closing	30/09/25
2025	AW - Visitor Access Maintenance	Cut paths and strim edges and signs four times per year, including additional cuts to small paths in aboretum and strimming around willow bed in aboretum see mowing and strimming map for details Spec Ref: 2.1, 2.12	30/09/25
2025	WC - Tree Weeding / Fertilising	Strimm around 600 fruit trees in the Heartwood Orchard twice a year to allow tractor mower to keep sensible distance from fruit trees.	30/09/25

7.0: COMPARTMENT DESCRIPTIONS

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Key Features Present	Designations
1a	6.57	Hornbeam		High forest		Community Woodland Group, Connecting People with woods & trees	Ancient Semi Natural Woodland, County Wildlife Site (includes SNCI, SINC etc)
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.							
1b	46.45	Oak (sessile)	2009	Wood establishment		Community Woodland Group, Connecting People with woods & trees	Green Belt

Compartment 1b aka Festival, World Record, Sunday Times, Railway and Daily Mail. This area 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.							
1c	2.26	Hornbeam		High forest		Community Woodland Group, Connecting People with woods & trees	Ancient Semi Natural Woodland, County Wildlife Site (includes SNCI, SINC etc)
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.							
2a	18.20	Open ground	2009	Wood establishment		Community Woodland Group, Connecting	Green Belt

						People with woods & trees	
One of the most scenic parts of the whole site, cpt 2a (aka Valley) 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.							
2b	8.17	Oak (sessile)	2010	Wood establishment		Community Woodland Group, Connecting People with woods & trees	Green Belt
2b aka Link Wood. 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.							
2c	7.34	Hornbeam		High forest		Community Woodland Group, Connecting People with woods & trees	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		Community Woodland Group, Connecting People with woods & trees	Ancient Semi Natural Woodland, County Wildlife Site (includes SNCI, SINC etc), Green Belt
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		Community Woodland Group, Connecting People with woods & trees	Green Belt
2e aka Farfield 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.							

3a	4.26	Ash	2008	Wood establishment		Community Woodland Group, Connecting People with woods & trees	Green Belt
3s aka Natural regen area. 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		Community Woodland Group, Connecting People with woods & trees	Green Belt
Compartment 3b aka Magical Wood 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		Community Woodland Group, Connecting People with woods & trees	Green Belt
Compartment 3c aka Magical Wood 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		Community Woodland Group, Connecting People with woods & trees	Green Belt
Compartment 3d aka Hill top and/or Bronze age (western part) was planted during winter 2011/12 by local community members and corporate groups with native broadleaves planted at 2m x1.8m 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		Community Woodland Group, Connecting People with woods & trees	Green Belt
3e aka Magical Wood 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		Community Woodland Group, Connecting People with woods &	Green Belt

						trees	
4a aka Broad Walk. 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		Community Woodland Group, Connecting People with woods & trees	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		Community Woodland Group, Connecting People with woods & trees	Green Belt
4c aka Sixty acres and/or Bronze Age (central and eastern part). 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		Community Woodland Group, Connecting People with woods & trees	Green Belt
4d aka Sixty Acres and/or Bronze Age (central and eastern part). 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		Community Woodland Group, Connecting People with woods & trees	Green Belt
4e aka Sixty Acres and/or Bronze Age (central and eastern part). 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		Community Woodland Group, Connecting People with woods & trees	Green Belt
4f aka Broad Arrow. Due to be planted in 2013/14.							
5a	14.38	Oak	2010	Wood		Community	Green Belt

		(sessile)		establishment		Woodland Group, Connecting People with woods & trees	
5a aka Buryfield (southern part), Orchard, Herts Way. 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		Community Woodland Group, Connecting People with woods & trees	Green Belt
Compartment 5b aka Hamm Wood (part of) 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		Community Woodland Group, Connecting	Green Belt

						People with woods & trees	
5c akaWetlands, Hamm Wood, Buryfield (northern part). Due to be planted 2012/13.							
6a	34.70	Oak (sessile)	2015	Wood establishment		Community Woodland Group, Connecting People with woods & trees	Green Belt
6a aka Arboretum, Drovers, Triangle. 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		Community Woodland Group, Connecting People with woods & trees	Green Belt
7a aka Common. Currently arable land under a Farm Business Tenancy (FBT). Due to be planted 2016-19.							
7b	33.40	Open ground	2017	Wood establishment		Community Woodland Group, Connecting People with woods & trees	Green Belt
7b aka Hightrees. Currently arable land under a Farm Business Tenancy (FBT). Due to be planted 2016-19.							

7c	6.43	Open ground	2017	Wood establishment		Community Woodland Group, Connecting People with woods & trees	Green Belt
7c aka Coleman Green. 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.

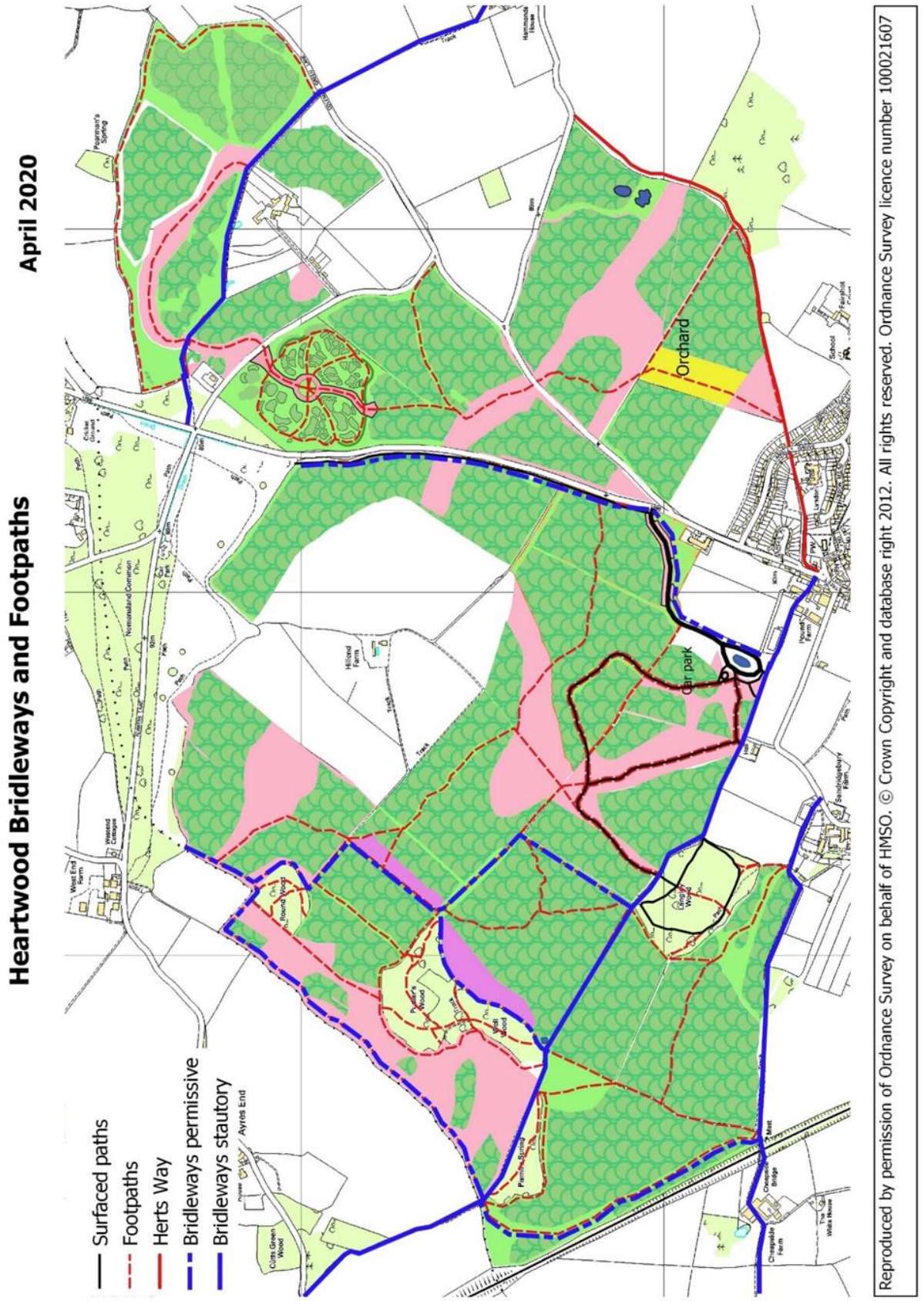
Weeding

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.

Annex 1: Map of footpaths and bridleways (public and permissive)


Heartwood Bridleways and Footpaths
April 2020
Surfaced paths
Footpaths
Herts Way
Bridleways permissive
Bridleways stautory
Orchard
Car park
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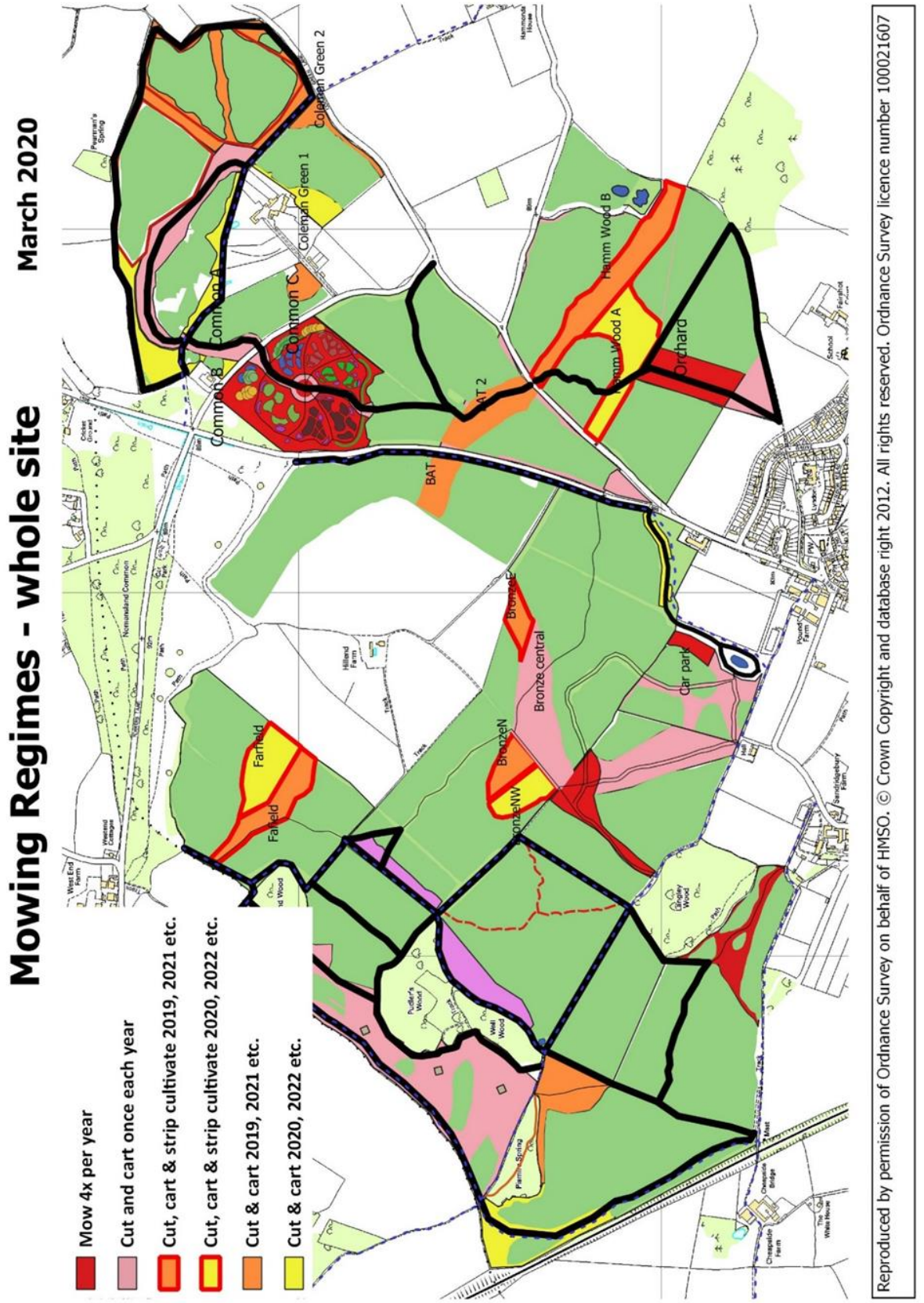
Annex 2: Map of mowing regimes for grassland and wildflower areas


Mowing Regimes - whole site
March 2020
Mow 4x per year
Cut and cart once each year
Cut, cart & strip cultivate 2019, 2021 etc.
Cut, cart & strip cultivate 2020, 2022 etc.
Cut & cart 2019, 2021 etc.
Cut & cart 2020, 2022 etc.
Common A
Common B
Common C
Coleman Green 1
Coleman Green 2
Hamm Wood A
Hamm Wood B
Orchard
BAT 2
Bronze central
Bronze E
Bronze N
Bronze NW
Farfield
Car park
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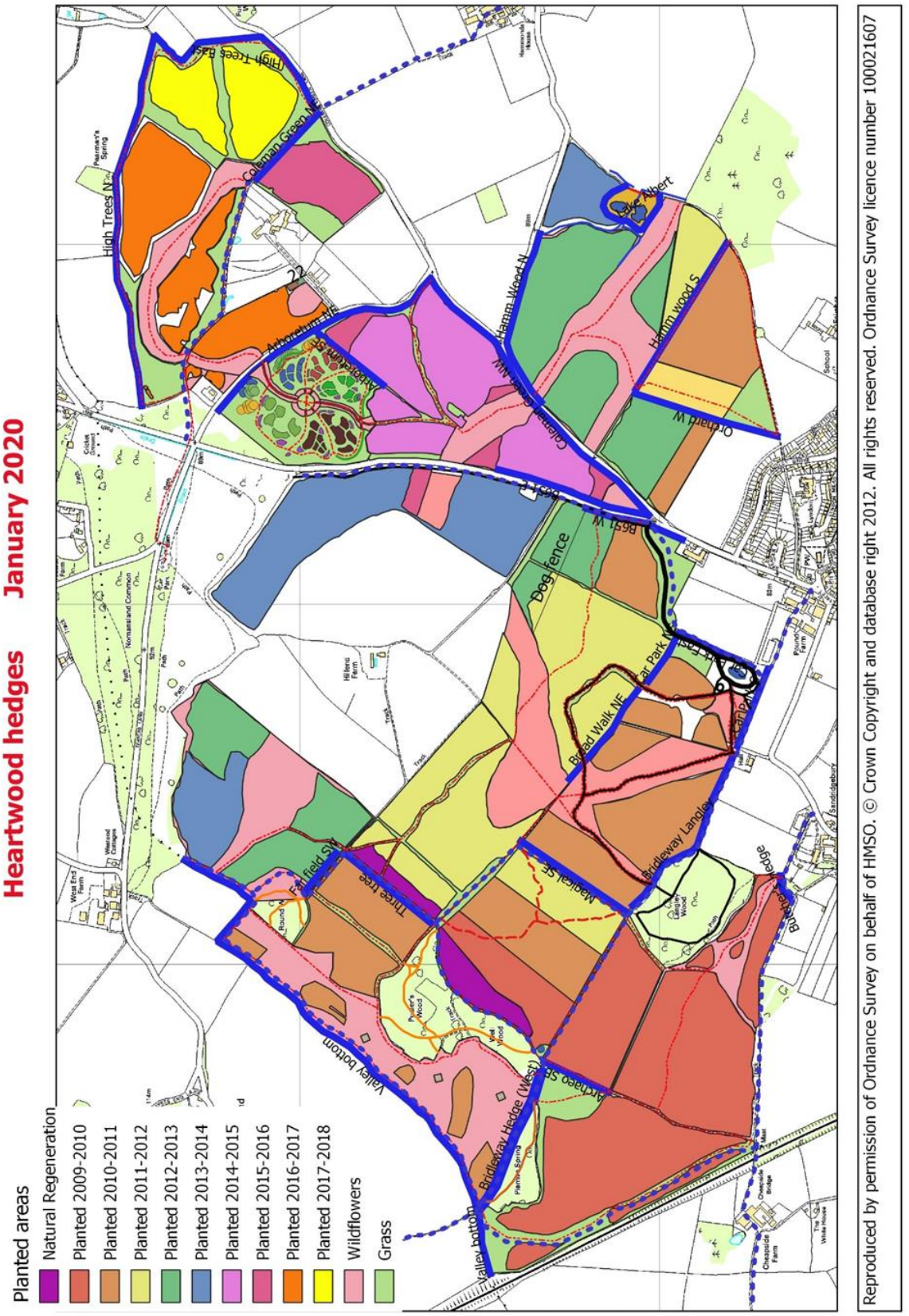
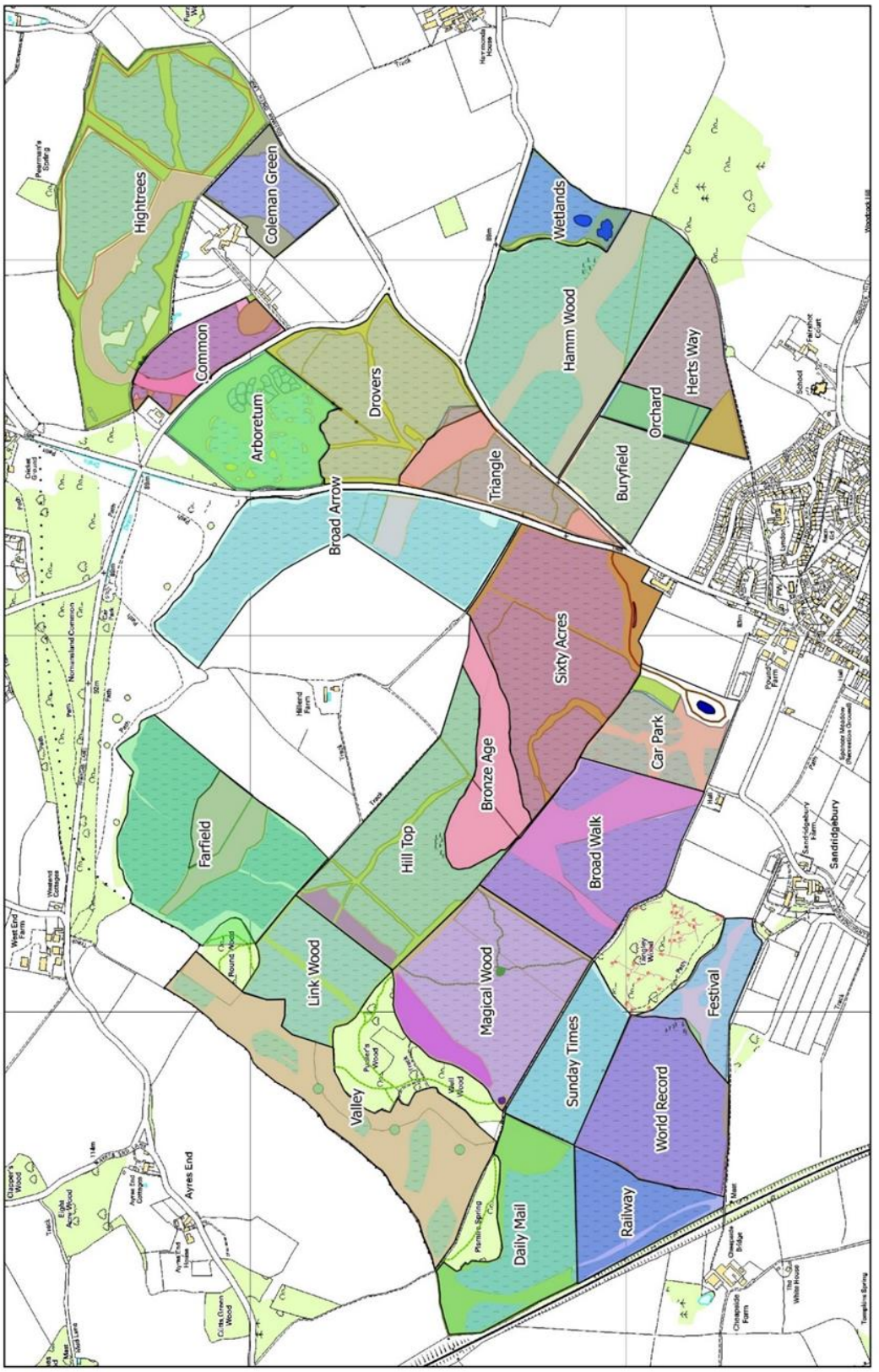
Annex 3: Map of Hedgerows



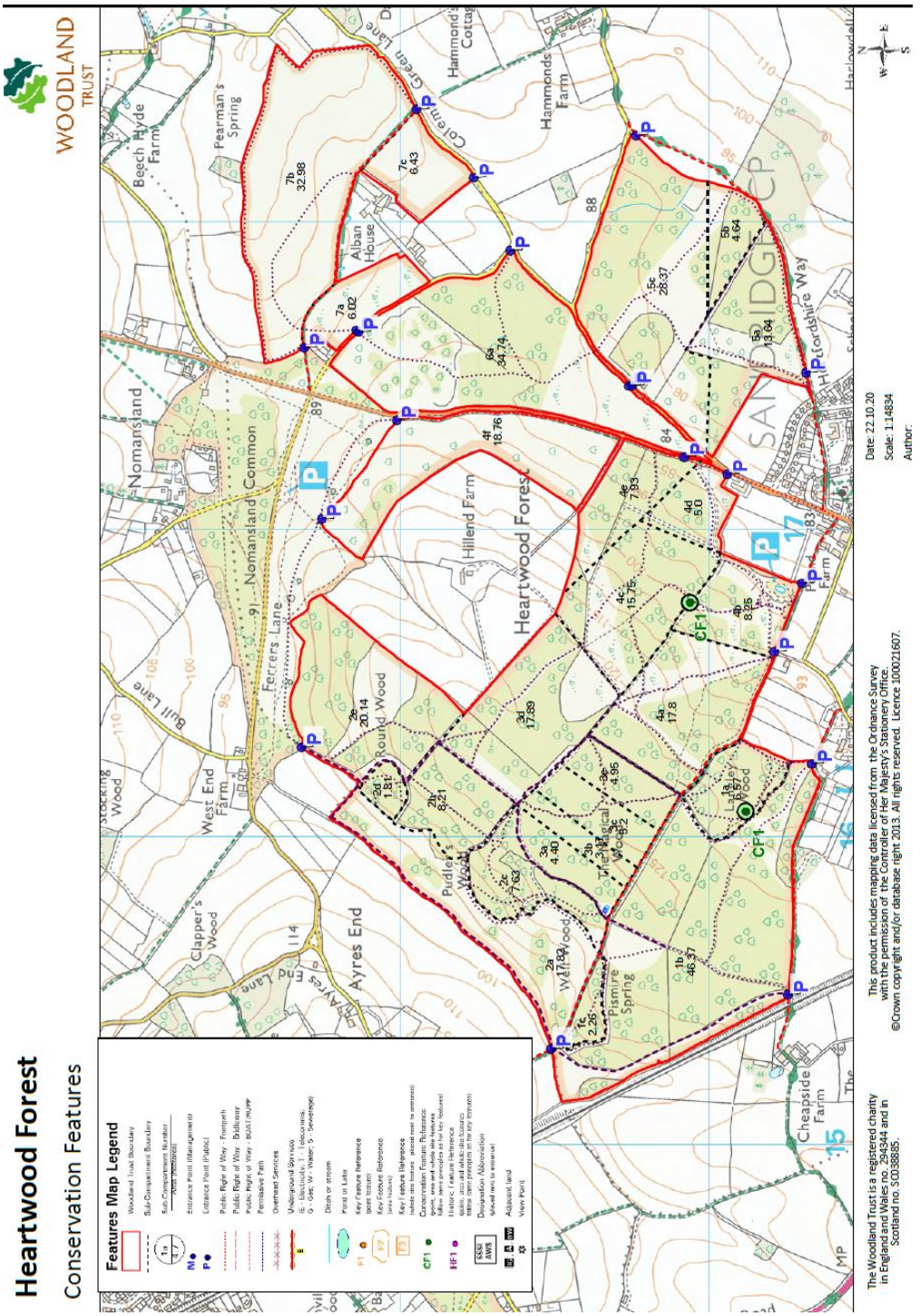
Annex 4: Names designated to areas

Field (compartment) names

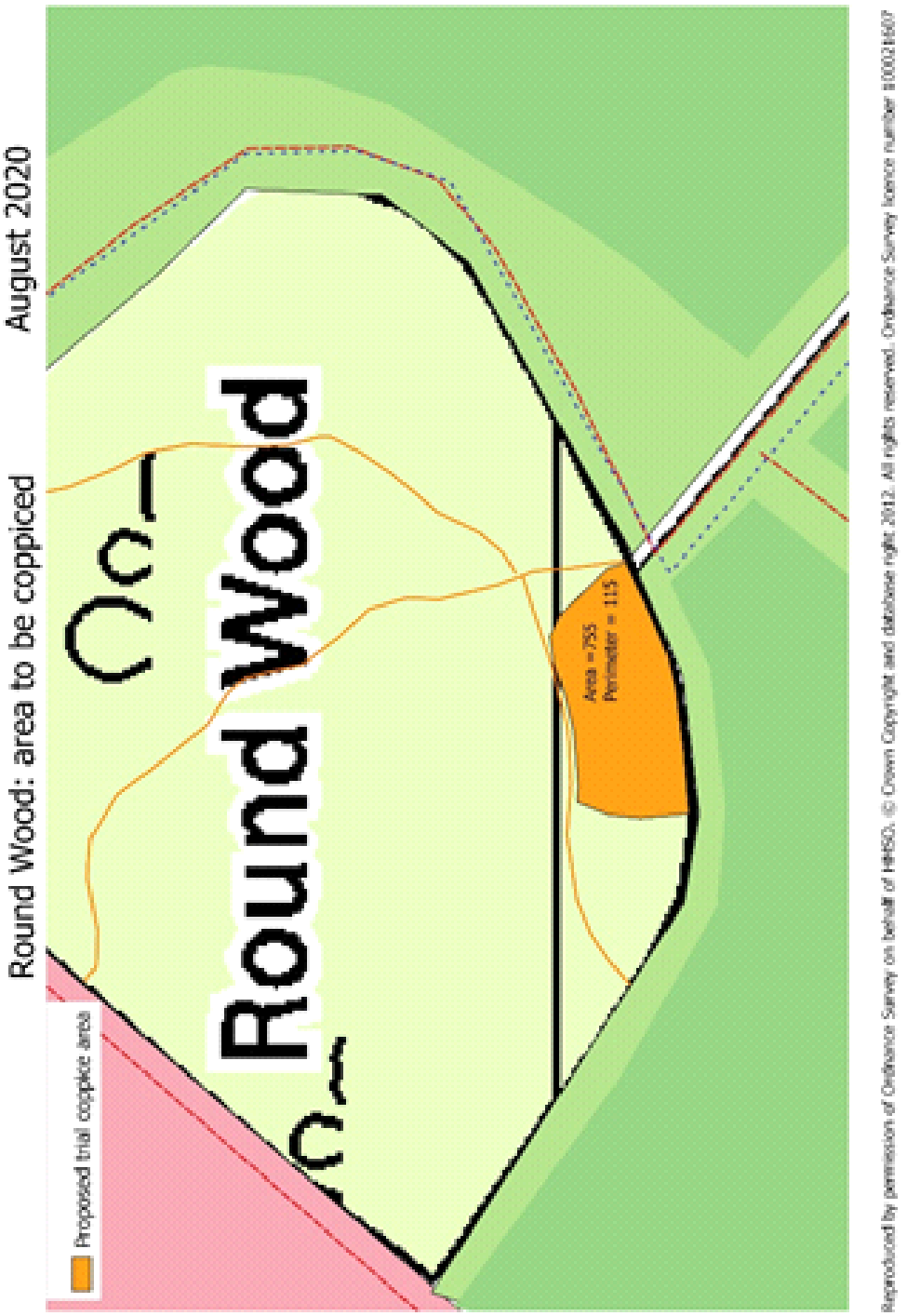
April 2018



Annex 5: Conservation Features



Annex 6: Round Wood area to be coppiced



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