



# Penn Wood

# Management Plan 2012-2017

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## THE WOODLAND TRUST

### INTRODUCTION

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

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

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

### PLAN REVIEW AND UPDATING

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 Consequently this printed version may quickly become out of date, particularly in relation to the planned work programme and on-going monitoring observations.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

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

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## WOODLAND MANAGEMENT APPROACH

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

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

All our sites have a management plan which is freely accessible via our website [www.woodlandtrust.org.uk](http://www.woodlandtrust.org.uk). Our woods are managed to the UK Woodland Assurance Standard (UKWAS) and are certified with the Forest Stewardship Council (FSC) 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.

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## SUMMARY

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

## 1.0 SITE DETAILS

<b>Site name:</b>	Penn Wood
<b>Location:</b>	Penn Street
<b>Grid reference:</b>	SU914959, OS 1:50,000 Sheet No. 165
<b>Area:</b>	176.33 hectares (435.72 acres)
<b>Designations:</b>	Ancient Semi Natural Woodland, Ancient Woodland Site, Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site

## 2.0 SITE DESCRIPTION

### 2.1 Summary Description

Penn Wood is one of the largest ancient woodlands in the Chilterns Area of Outstanding Natural Beauty (AONB) and lies in the heart of this area. It has a long history and was once part of a very large common called Wycombe Heath. A herd of cows is still used to manage part of the site today as 'wood pasture' and this continues the traditional management carried out in the past. The wood contains impressive bluebell areas in the spring and red kites and buzzards are commonly seen overhead.

## 2.2 Extended Description

Penn Wood is one of the largest ancient woodlands in the Chilterns Area of Outstanding Natural Beauty (AONB). The Chilterns is characterised by its high density of ancient woodland much of which is semi natural. Penn Wood lies in the heart of this area. A number of ancient woods adjoin Penn Wood at various points around its boundary, including Common Wood to the south managed by Penn and Tylers Green Residents Association.

Penn Wood was acquired by The Woodland Trust in 1999 following a long running and successful campaign by the local community to prevent the wood from becoming a golf course.

Historically, Penn Wood was part of Wycombe Heath, a large wooded common. The common rights were extinguished in 1855 whereupon extensive felling and replanting of the woodland with conifers (as well as some broadleaves) took place. Penn Wood today is given the designation of a Planted Ancient Woodland Site (PAWS). This recognises that the wood has been modified by planting. Conifers have been planted on the site a number of times. Currently the major species of conifer present include Douglas fir, European larch, Corsican pine and Norway spruce.

A large proportion of the wood is also predominantly broadleaved, dominated by oak and beech together with birch. Most of these broadleaved stands are also derived from plantations. Penn has a scattering of trees over 200 years old (mainly beech) which date from when the site was part of Wycombe Common. There is also one veteran oak tree.

In addition to the dense canopy woodland there is a proportion of more open woodland, especially to the south. This habitat consists of a mixture of acid grassland, large open grown trees (oak and beech) with scrub and bracken. Some of the open areas are partly a result of tree clearance for the proposed golf course fairways in the 1990's.

Exotic shrubs have been established along the major rides of the wood, dating from the 19th century, with the main species being *Rhododendron ponticum*. These same rides also contain large specimen conifer trees such as Douglas fir.

There are also several historic ponds on the site, and these hark back to when Penn was common land when they would have been important watering locations for the animals. Archaeological features exist such a woodbank around most of the perimeter, flint and clay pits, and old tracks.

A community group, The Friends of Penn Wood, led the campaign to prevent the development of a golf course on site. They have evolved into a group that help warden the site and take an active interest in the management of the wood.

There are three public rights of way (PROW) at Penn but also a large network of permissive paths allowing a variety of walking routes for the visitor. There is also a surfaced 'easy access' path, from the church entrance.

## 3.0 PUBLIC ACCESS INFORMATION

### 3.1 Getting there

**By bus:**

Buses regularly stop at the bus stop near Mop End on the A404 at Penn Street on route between High Wycombe and Chesham. Occasional buses stop near the Squirrel public house in Penn Street village.

**By train:**

The nearest train stations are at Beaconsfield (4.8 km/3 miles), Amersham (6.4 km/4 miles) and High Wycombe (8 km/5 miles).

For further information about public transport, contact Traveline: [www.traveline.org.uk](http://www.traveline.org.uk) or phone 0871 200 22 33.

**By car:**

From junction 4 of the M40 turn north on the A404 into High Wycombe and remain on the A404 through the town, following signs for Amersham and Hazlemere. The A404 passes through Hazlemere and climbs a hill. At the top of the hill go past the first right, signposted for Penn Bottom, and take the next right 2km further on, signposted for Penn Street.

There are numerous places to park in the village, but the best place is the main car park next to Holy Trinity Church which has a shared used with the church.

## 3.2 Access / Walks

There are seven main entrances to Penn Wood and three rights of way running through the wood which link it to the surrounding countryside. A surfaced 360m circular easy access path runs from the entrance of Penn Street church, together with a 1km surfaced bridleway. There are also many more permissive paths totalling about 10,000m (10km), providing a variety of walking routes for the visitor. A link to Common Wood (another wood with public access) can also be found at the western corner of Penn Wood.

In general, the paths are moderately easy to walk on but do get muddy during the winter months.

Walking and cycling are both popular within the wood, but horse riding less so because the bridleway is separated from a connecting route by the busy A404.

There are currently no way-marked trails through the wood, but the Chilterns Conservation Board have produced a walk leaflet for those who are less mobile: [www.chilternsaonb.org/accesswalks](http://www.chilternsaonb.org/accesswalks) .

There is easy access from the village of Penn Street, where there is also some opportunity to park along the roadside.

Information for visitors is provided at three of the entrances:

- Church Gate
- Beamond End Gate and
- Goose Pond Gate.

All distances are approximate.



## 4.0 LONG TERM POLICY

**PAWS restoration:** The PAWS areas of the woodland will be restored to address the threats to the semi-natural components (in particular the flora and the older broadleaved trees) and to achieve a largely broadleaved woodland. A gradual thinning of the conifers will take place to remove the threat of their shade, as well as eradicating any invasive *Rhododendron ponticum* from within the stands. Restoration will be complete when conifers occupy no more than 20% of the tree species mixture and *Rhododendron ponticum* is no longer present. Broadleaved trees will develop within the stands via natural means.

**Rhododendron control:** *Rhododendron ponticum* will be eradicated from the whole wood to remove the threat it poses to flora across the site, both in the canopy woodland and open grassland areas. Non invasive *Rhododendron* varieties and any other non-invasive exotic shrubs along the central rides will be retained but managed, so this element of Penn's history is kept.

**Wood pasture management:** The areas of open habitat will be largely managed through cattle grazing. Initially grazing will only take place in areas to the south of the central east-west ride (Compartments 1A and 1B) because PAWS restoration will be focussed north of this. Open semi-natural habitat elsewhere and especially to the north of the central ride will be managed through mechanical means with the intention of extending grazing management to some of these parts in the future after the PAWS areas are restored. The aim of wood pasture management will be to achieve a approximate balance of 30% grassland, 20% scrub and 50% woodland in the grazed areas. This wood pasture is likely to need some mechanical cutting of scrub and trees to maintain this balance.

**Management of old trees:** Old growth trees (those older than 200 years) will be allowed sufficient growing space to ensure they live as long as possible and do not become dominated by younger surrounding trees. Specimen conifer trees along the central rides will also be managed in the same way, so they remain strong features in the wood.

**Management for public access:** Open access will be retained at the wood in perpetuity and there will be a well managed network of paths. Well used paths will be made open and sunny in parts. The wood will be made as safe as practicable through regular safety inspections. Good information will be made available on and off the site to enable visitors to explore and navigate around the wood and to appreciate its inherent qualities. High quality and prominent signage will greet visitors on their arrival to the wood. Penn will be widely promoted in the Chilterns local area as one of largest accessible woods for people to visit and enjoy.

## 5.0 KEY FEATURES

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

### 5.1 Ancient Woodland Site

#### Description

The history of Penn Wood was researched by Miles Green, a local historian, who conclusively proved that the area had been woodland since Domesday Book (see summary of available information). For many centuries Penn Wood was a well wooded part of Wycombe Heath and could be described historically therefore as a 'wooded common'. Most of the common finally became enclosed in 1855. Following this the woodland has had several waves of felling and replanting with conifers, mixed with broadleaves of mainly beech and oak (sessile as well as pedunculate). The whole site is classified as a planted ancient woodland site (PAWS) in the ancient woodland inventory because of this replanting. Currently 40% of the site (approximately) is conifer-dominated woodland, and another 40% is 'semi natural' and largely composed of broadleaved trees. The other 20% of the site is open grassland with widely spaced trees and scrub.

Penn is an 'old growth' woodland (woodland with trees exceeding 200 years in age with a continuity of old trees reaching into the past). There are at least 50 of these 'old growth' trees (mainly beech) on the site and they date back to when Penn was common land, prior to its enclosure. The majority of the old trees are along the northern edge of the wood.

Penn occupies a plateau in the landscape for much of its area and the soils are mildly acidic (pH 4.5 to 5.5) on the whole. This acidity greatly influences the naturally occurring vegetation on the site, with wavy hairgrass being common as well as heather (ling). The majority of the woodland approximates to W14 (beech-bramble) under the National Vegetation Classification (NVC). As well as frequent bramble, drifts of bluebells can be found beneath the stands of trees, most notably on the west side, together with other species such as wood spurge. The land slopes in the far south of the site and here the soil becomes more calcareous (Compartment 3f). Consequently the flora is far more rich in this area, with species such as sanicle, primrose, woodruff and black bryony present. An invertebrate study of the site in 2000 found 10 nationally scarce beetles, of which 2 are considered to be ancient woodland indicator species.

Shortly after the site's enclosure some of the main rides were made more formal with the planting of exotic flowering shrubs and specimen conifer trees such as Douglas fir and Austrian pine (the conifers are now an impressive size). Amongst the shrubs *Rhododendron ponticum* was planted and would have also been the rootstock for other *Rhododendron* varieties. The *R.ponticum* is now spreading from these rides and invading the surrounding woodland, as well as the open areas of woodland. It is estimated that the plant now covers approximately 5.5 hectares of the site.

Penn contains a number of archaeological features which are typical of an ancient woodland site. There is large wood bank surrounding most of the perimeter which is many centuries old and this is particularly prominent on the southwest and northern boundaries. There are also pits and dells; some of these are man made quarries for acquiring flint and clay, but others are thought to be natural 'solution hollows' where pockets of underlying chalk has dissolved.

## Significance

Ancient woodland is a limited and irreplaceable resource which is home to more species of conservation concern than any other habitat in the UK. Restoration of ancient woodlands by removing the shading effects from conifers is the only way the area of ancient semi natural woodland can be increased. The larger a woodland is, the more species it will be able to support. As one of the largest ancient plateau beech woods in the Chilterns, Penn Wood is an important woodland. Old growth woodland (woodland containing trees over 200 years old and with a continuity of old trees reaching into the past) is rare and declining world wide. A substantial number of specialist woodland species are almost wholly confined to old growth stands.

## Opportunities & Constraints

### Opportunities

1. Restoration of the whole site to ancient semi natural broadleaved woodland by the gradual removal of conifers and invasive exotic shrubs such as *Rhododendron ponticum*.
2. Retaining the old growth trees well into the future to enable them to become veteran and ancient trees; this will require some control of competing trees or extending the area of wood pasture management.
3. Providing continuity of old growth characteristics through increasing the number of old trees on the site by recruitment from the 19th century broadleaved stands. There is potential for colonisation of old growth species from surrounding mature and over mature trees from nearby sites (eg Naphill).
4. Extending wood pasture management over a greater area of the site after PAWS areas become restored.

### Constraints

1. Avoiding compaction of poorly drained soils and damage to tracks/paths through the use of forestry machines undertaking PAWS restoration. Timing and extraction routes need to be carefully planned.
2. Avoiding damage to archaeological and historic features when implementing forestry operations.

## Factors Causing Change

*Rhododendron ponticum* is spreading within the stands of trees from the main central rides. Open areas within the wood are succeeding to scrub and woodland thickets, dominated by birch and beech.

Natural regeneration of broadleaves is occurring within the formerly thinned conifer stands.

## Long term Objective (50 years+)

Penn Wood will have become semi-natural in composition and structure and the majority of the woodland will be composed of existing and naturally regenerating broadleaved trees (typically beech, oak and birch) with a minor percentage of conifers in the mixture (no more than 20%). All PAWS compartments will be rated as 'secure'. All ancient woodland components, such as specialist woodland flora and old growth trees, will be intact and the threats to their survival from the shade of conifers will have been taken away. There will be no invasive exotic species within the restored stands of trees. Any exotic shrubs and trees growing along the internal rides will be non-invasive, and there will be large specimen conifers along these rides.

Some of well used paths between the stands of trees will be open and sunny and have good woodland edge habitat.

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

All PAWS compartments which have been identified in the PAWS strategy as having high or medium shade will be thinned during this plan period, with an initial focus on the high shade ones (listed as critical). The thinning will concentrate on removing conifers to benefit remnant ancient woodland features such as old broadleaf trees and hotspots of important flora. This will affect compartment 2 in the following areas: 2a, 2b, 2d, 2f, 2g, 2i, 2j, 2k, 2l, 2m, 2o, 2q, 2r, 2s, 2t. In total over 46Ha will be thinned during this plan period.

The *Rhododendron ponticum* will be reduced by at least 60% in area by 2017 by cutting and controlling with use of herbicide; this equates to approximately 3 hectares removed. The priority will be to remove it from within the stands of trees and some of the main rides so it is only present along the main east-west ride (but reduced in area here as well by half). Where it has been removed, replacement of the plant with non-invasive flowering shrubs will be considered if there is local interest. Removal of the rest of the *Rhododendron ponticum* will be carried out early in the next plan period. Any other non-invasive shrubs growing along the rides (such as *Azalea*) will be retained. At least 3km of ride edge coppicing/thinning will be undertaken, creating more open and sunny conditions along the bridleway, the easy access trail and the ride between 2r and 2s. The paths will be coppiced to an average width of 10m which will vary along the length.

## 5.2 Wood Pasture

### Description

Remnant areas of semi-natural acid grassland exist at the site and ironically this habitat benefitted and increased in the mid 1990's when tranches of tree clearance were carried out for a possible golf course. Patches of more open woodland, containing the acid grassland, exist throughout the site. However there is more of a concentration of this habitat in the southern half of the site. In the northern half of the site the open woodland exists largely as glades between the blocks of plantations. The acid grassland is very rich and diverse and contains 20 plant species which are uncommon in the county. As well as numerous species of grass, sedge and rush the grassland also contains flora such as heath bedstraw and patches of heather (ling). Within these more open areas of woodland there are also occasional old growth trees and widely spaced mature oaks and beeches, dating from early plantations in the 19th century. Historically this open habitat would have been managed through commoners grazing their animals and removing some tree growth for fuel. This management ceased following enclosure of the former common (1855). However, in 2001 winter grazing was re-introduced by The Woodland Trust on the southernmost two-thirds of the site to help manage and maintain a wood pasture habitat. As with the denser woodland areas, *Rhododendron ponticum* is invading from the formalised rides into parts of the open grassier areas; especially from the east-west central ride.

### Significance

Wood pasture is a nationally rare habitat and especially rare in the Chilterns. There is also a suite of species associated with this habitat, which are by association rare and rely on the right conditions of old trees in open conditions with associated flora. Within the Chilterns there only a few sites where relict wood pasture features exist and where there is an opportunity for restoration; Penn Wood is one of these sites. The old growth trees at the site are especially important in this context.

### Opportunities & Constraints

### Opportunities

1. An important opportunity to manage and restore areas of acid grassland to enhance the surviving mosaic of wood pasture habitat in Penn Wood. There is a possibility of extending wood pasture management across the whole site following restoration of PAWS stands. It has been reported that this could be the largest opportunity to recreate wood pasture in the Chilterns (N.Sanderson, Ecological and Historic Assessment of Penn Wood, Aug 2000 - see reference information and surveys)
2. The quality of the existing grassland would be improved by all year round grazing that helps to control growth of scrub, bracken and bramble. This will also help to control young tree growth around open grown trees, with the possibility of increasing the number of old growth trees and extending the lives of the present ones.
3. The open glades in the northern half of the site could be kept open through cutting until such a time as they can be included within a wood pasture system.
4. Continued restoration and management of a wood pasture habitat at Penn could provide suitable conditions for priority species for conservation including birds such nightjar and woodlark.

### Constraints

1. There is a need to actively restore dark stands of conifer plantation in parts of the site. This is priority and precludes wood pasture in these areas, until lighter woodland conditions are created and the stands are largely broadleaved.
2. Grazing a large area extensively can be problematic for graziers because of stock welfare, and there may be a need for more internal compartment fencing to enable animals to be kept in smaller areas and then moved around.
3. Rhododendron ponticum will continue to invade the grassland, to the detriment of the habitat, unless controlled and eradicated

### Factors Causing Change

Rhododendron ponticum is spreading within the wood pasture from the main central rides. Open areas within the wood are succeeding to scrub and woodland thickets, dominated by birch and beech. Bracken cover is also increasing in the open habitat. Cattle grazing in the coming years will reduce the extent of this succession.

### Long term Objective (50 years+)

Wood pasture management will initially be undertaken over approximately one third of the site area, in the southern half of the wood. Grazing by cattle will be used to manage a balance of 50% woodland, 20% scrub and 30 % open grassland with widely spaced trees; bracken and bramble will be present but part of the scrub component and therefore at a manageable level. As PAWS compartments become restored then wood pasture management will be extended into these areas, and open glades with species rich acid grassland will be managed in the PAWS areas until this time. No invasive exotic species will be present within the wood pasture. Old growth trees will be in open conditions and not in competition with younger trees. Over time and with continued wood pasture management, some of the beech and oak planted in the 18th century will develop into future old growth trees. With careful manipulation of the grazing pressure, some saplings will also develop in patches to become future open grown trees as well.

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

- Initial scrub cutting work of approximately 5Ha in total will be carried out in 1a and 1b and 1c, concentrating on bracken and bramble, to achieve a scrub level of approximately 20% overall. This should initially bring about the required balance of 50% woodland, 20% scrub and 30% grassland with widely spaced trees
- All year round grazing with cattle will be introduced to manage the wood pasture habitat (approximately 60 hectares) across 1a, 1b and 1c, to the above percentage levels. The local community will be encouraged to help with this by carrying out daily stock checks to support the grazier.
- Follow up cutting is likely to be needed in the first few years, even after grazing is operating, to control bracken and bramble. This cutting will be on annual basis but will vary in location from year to year. The extent and location will be judged through the annual monitoring.
- Internal stock fencing will be erected across 1a, 1b and 1c in 2012, through consultation with the grazier. There is already one smaller fenced enclosure in 1a and the whole area is likely to need 4 or 5 more fenced enclosures: to benefit stock welfare and allow concentrated grazing management, with stock being moved around on rotation.
- Invading *Rhododendron ponticum* will be eradicated from within the wood pasture and from around Keepers Cottage in the south of the site.
- The small oak and beech plantation in 1c will be thinned by approximately 20%, favouring oak, to create lighter conditions within the plantation for more favourable wood pasture management.
- The glades within the non-wood pasture parts of the site will be cut annually to keep them open (these are marked on the conservation features map). A total area of approximately 10Ha will be cut and mainly carried out at the end of the season, with some partial cutting/rolling earlier in the summer to control bracken.
- Fixed point photography will be used to record any structural changes to the habitat with photographs taken annually. Local volunteers will assist with this.
- At least 50 beech and oak trees, dating from the 18th century planting will be marked and mapped. These trees will be of good form and health and show some promise of becoming future old growth trees. Future monitoring of these trees will be set up to demonstrate that grazing levels and competing tree growth are being adequately managed to produce further old growth trees at the site.



## 5.3 Informal Public Access

### Description

Penn is a large site with good complex of paths across the whole area, totalling 10km. There is easy access from the village of Penn Street, where there is also some opportunity to park along the roadside. There are quite a few other surrounding villages close by such as Holmer Green and Tylers Green, and the towns of Amersham and High Wycombe are 4-5 miles away. Most of the paths in the wood are unsurfaced but there is a surfaced 360m easy access path which starts at Penn Street church, plus a 1km surfaced bridleway. Horse riding is not popular at the wood however because the bridleway is separated from a connecting route by the busy A404. Walking and cycling at both popular at the wood. Some visitors to the wood park at the Church car park, which is mainly for church users. There are 7 main entrances to the wood and there are 3 rights of way running through the wood which link to the surrounding countryside. There is also a link to Common Wood (another wood with public access) at the western corner of Penn Wood. Information for visitors is provided at 3 of the entrances: Church gate, Beamond End gate and Goose Pond gate. There are currently no waymarked trails through the wood. An information leaflet about the wood and a leaflet about less-abled access (produced by Chilterns AONB) currently exist. The local community is very engaged and interested in the wood and there is a local Friends Group who help warden the site.

### Significance

In a busy part of the country Penn Wood provides a relatively peaceful and accessible place for visitors to enjoy. This is one of the largest ancient woodlands open to the public in the Chilterns and offers a good experience to visitors.

### Opportunities & Constraints

#### Opportunities

1. The site could be more widely promoted, with improved on and off site information, to attract visitors from further afield. The site has the potential to carry more visitors and has a lot to offer in terms of variety and experience.
2. Marked trails through the wood will allow people to explore and help spread the public's use of the site.
3. There is the possibility of improving the linkages to Common Wood and of combining information to the public, which would lead to an enhanced experience.
4. There is the opportunity to involve the community more in the management of the wood

#### Constraints

1. Enhanced signage and information at the site needs to be balanced against preserving its natural qualities.
2. There could be a conflict between more grazing animals and an increase in people using the site in the future, especially if there is a need for more stock fencing.
3. Formal car parking is limited at the wood.

### Factors Causing Change

An increase in visitors is likely to occur through better facilities and greater promotion of the wood. This could also lead to more antisocial behaviour and more conflicts between different user groups.

### Long term Objective (50 years+)

Penn Wood should offer a high quality visitor experience in line with a category A Access designation (high usage with more than 20 people using one entrance per day).

Open access will be retained at the wood in perpetuity and there will be a well managed network of paths including some provision for less-abled users. Well used paths will be made open and sunny in parts to add variety and interest for the visitor, as well benefitting woodland edge wildlife. The wood will be made as safe as practicable through regular safety inspection of trees in high risk zones and inspection of access furniture. Good information will be made available on and off the site to enable visitors to explore and navigate around the wood and to appreciate its inherent qualities. High quality and prominent signage will greet visitors on their arrival to the wood. Penn will be widely promoted in the Chilterns local area as one of largest accessible woods for people to visit and enjoy. There will also be a regular programme of events to aid visitor's understanding and enjoyment of the wood and to attract new visitors. The local community will continue to be engaged with the management of the wood.

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

- Approximately 10km of paths and 8 main entrances will be cut and managed on an annual basis to keep them open for use
- Annual safety inspections will be carried out on trees in high risk zones, and the quality of access infrastructure will also be inspected formally at least once during this 5 year plan period.
- All access gates improved by 2013 to make them more accessible for the less abled and prams/buggies
- New information signage and presentational signage will be installed by 2014
- 2 waymarked routes to be signed through the site by 2014
- Easy access route to be widened and extended to over 1km by 2014
- Annual programme of events and themed walks to be started in 2012
- Update the off site public information material (eg site leaflets and website) by 2014
- Provide more opportunities for the local community to help in managing and promoting the wood. In 2012 this will start by offering volunteering opportunities for cattle watching and leading guided walks and developing the fixed point photography project. In the future volunteers could also help with interpreting and researching some of the archaeological features of the site.

## 6.0 WORK PROGRAMME

Year	Type of Work	Description	Due By
2012	AW - Visitor Access Maintenance	General path maintenance including entrance management.	26/06/12
2012	WMM - Wood Pasture Management	Carrying out fencing work to compartmentalise 2 new areas for wood pasture grazing. Work as per quote received 19 May 2012 and to specification given in tender document dated 23 April 2012: 1. Aprox 1634m of stock netting and removal of old fence 2. Aprox 1535m of post and wire fencing with 3 strands barbed and 2 single plain wire 3. 2 double and 3 single gates 4. 8 kissing gates with dogways. The contract is subject to providing copies of public liability insurance, risk assessment for job and machinery certificates (especially chainsaw).	30/06/12
2012	PE - Interpretation & Signage	Initial sculpture work for new trail. Funded by Four Winds Trust	01/07/12
2012	SL - Tree Safety Works - Zone A	Tree safety work from survey and clearing additional fallen trees	31/07/12
2012	PE - Events - Contractor/Provider	Delivering a conservation grazing talk at start of the year at Penn Street village hall	31/07/12
2012	PE - Events - Contractor/Provider	Delivering a conservation grazing walk on site at Penn Wood on 17 June 2012	31/07/12
2012	WMI - PAWS Restoration	Repair to paths between the rhododendron avenues, following the harvesting work last year.	31/07/12
2012	PE - Events - Contractor/Provider	Providing Bushcraft activities over the summer	31/07/12
2012	PE - Events - Contractor/Provider	Providing woodland discovery events with schools	31/07/12
2012	WMM - Invasive Plant Control	Bracken control for grazing management in some new areas within cattle enclosure.	28/08/12

2012	WMM - Invasive Plant Control	Ragwort control by hand-pulling in and around the cattle enclosure area and disposing of on site outside of the grazed area.	28/08/12
2012	WMM - Wood Pasture Management	2 days with 2 men cutting bracken and bramble to support grazing management of wood pasture habitat.	31/08/12
2012	WMI - PAWS Restoration	Conifer thinning in compartments 2j, 2k and 2b + ride widening close to Goose Pond Gate. Price as given in your quotation dated 14th July 2012. Please note we are still waiting for the felling licence to carry out the ride widening work at Goose Pond only.	31/08/12
2012	WMI - PAWS Restoration	<p>Gateway improvements to Justice gate off Gravelly Way to provide lorry and machinery access:  Brick rubble base course £500 + Mot type one topping £600 + Geotextile membrain £175 +  Installing 2 new 12 ft gates with posts, moving 10ft gate and kissing gate, roller hire and labour £1750.  Detailed specification as per my letter of 3rd July with amendment of using largely brick rubble instead of Type 1 stone.  Please provide a risk assessment for the job before starting work.</p> <p>Gates posts furniture digger and roller hire £1750</p>	31/08/12
2012	AW - Visitor Access Maintenance	General path maintenance including entrance management.	25/09/12
2012	PE - Interpretation & Signage	5 X wood gate signs for various sites	30/09/12
2012	PE - Events - Contractor/Provider	Delivery of Family event at Penn Wood	30/09/12
2012	PE - Events - Contractor/Provider	Draft sum for VIP work at Penn Wood, to be used for initial work on a sculpture trial and engagement with local school. Funding by Four Winds Trust.	31/10/12

2012	SL - Tree Safety Works - Zone A	Tree safety work from summer survey plus clearing fallen trees and repair works.	31/10/12
2012	PE - Events - Contractor/Provider	Delivering a bat walk on 16th Sept 2012	31/10/12
2012	SL - Tree Safety Works - Zone A	c.f. Tree safety work from summer survey plus clearing fallen trees and repair works.	31/10/12
2012	PE - Events - Contractor/Provider	Week of woodland discovery events during autumn.	30/11/12
2012	CS - Ecological Survey & Assessment	Commissioning of a formal ecological survey to compare against the original one written by Neil Sanderson in 2000.	31/12/12
2012	PE - Events - Contractor/Provider	Provision of a family craft day at Penn Wood on 8 December 2012. Funded by The Four Winds Trust	31/12/12
2013	PE - Events - Contractor/Provider	Delivering a historical walk at Penn Wood on 10th Feb to help interpret the features on the ground for local people. Event to be delivered by John Morris of Chilterns Woodland Project.	14/03/13
2013	WMI - Ride Restoration	Completion of tree felling at Goose Pond entrance and windrowing.	30/04/13
2013	LC - Fly Tipping	clearance of 2 loads of dumped rubbish	30/04/13
2013	CS - Ecological Survey & Assessment	Commissioning of a formal ecological survey to compare against the original one written by Neil Sanderson in 2000.	30/04/13
2013	WMI - PAWS Restoration	24 cans of fluorescent orange tree marker paint. £5.22 per can + £15 delivery charge  Please deliver to: Paul Jarczewski, Woodland Trust, 9 Lys Hill Gardens, Hertford SG14 3EH	31/05/13
2013	AW - Visitor Access Maintenance	Repair surface of track leading to church car park at Penn Wood. Applying stone to pot holes and rolling flat. Work undertaken by Carl Asquith of Cool Gardens Landscaping, Penn Bottom Farm, Penn Bottom, Penn, Bucks HP10 8PH	30/06/13
2013	PE - Events - Contractor/Provider	Family fun day at Penn Wood on 2 June 2013	30/06/13

2013	WMM - Wood Pasture Grazing Work	Installation of 2 new troughs and connecting pipes. Management of scrub in the grazing areas.	30/06/13
2013	PE - Volunteer on site activity	1st Aid training for the 5 guided walk leaders.	30/06/13
2013	AW - Visitor Access Infrastructure	Improvements to easy access trail: wide passing places, surface improvements to the extended route. Should be non-recoverable VAT.	30/06/13
2013	PE - Events - Schools	schools resource pack	30/06/13
2013	PE - Volunteer on site activity	Training and recruitment of volunteers: possible PR volunteer, speaker or cattle watchers	30/06/13
2013	PE - Events - Contractor/Provider	Family Learning events: bushcraft, foraging and art	30/06/13
2013	AW - Visitor Access Maintenance	Improvements to Penn St church car park for the benefit of a wider range of users including families and less-abled: making the area safe and more visible through tree works, marking out disabled bays, and ensuring the surface is level up to the wood entrance.	30/06/13
2013	AW - Visitor Access Maintenance	Path and entrance management: 1. Mow/cut back all paths as shown to aprox 3m in width ensuring overhanging branches are dealt with 2. Cut back vegetation at all marked entrances, clean signs and carry out any minor repairs 3. Remove litter from entrances and paths	30/06/13
2013	PE - Interpretation & Signage	3 X wooden name signs: two to read 'Penn Wood', and the other to read 'Penn Wood (Justice Gate)'. Delivery cost of all signs included (£35). Please deliver to: John Lowe & sons, 9 Croft Cottages, Croft Lane, Chipperfield, Kings Langley, Herts WD4 9DX	31/07/13
2013	AW - Visitor Access Maintenance	Repairs to existing surfaced track near the church	31/08/13
2013	PE - Events - Contractor/Provider	Delivery of 3 summer events at Penn Wood in 2013: - Family bushcraft on 3 Aug; - Foraging and bodging on 11 Aug - Wild and crafty on 17 Aug	31/08/13

2013	WMM - Invasive Plant Control	Follow up spray of all cut rhododendron following cutting/mulching	31/08/13
2013	AW - Visitor Access Maintenance	Path and entrance management: 1. Mow/cut back all paths as shown to aprox 3m in width ensuring overhanging branches are dealt with 2. Cut back vegetation at all marked entrances, clean signs and carry out any minor repairs 3. Remove litter from entrances and paths	30/09/13
2013	WMM - Wood Pasture Management	Mow/strim L-shaped glade (£300). Install 2 kissing gates: one near Justice Gate, the other into grazing area (£300). Install new straining post and tension wire next to existing kissing gate (£50).	30/09/13
2013	WMM - Wood Pasture Management	SITA funded. Mechanical cutting of bramble and bracken to maintain wood pasture areas and support the grazing: 3 areas identified. Control of ragwort in the holding pen.	30/09/13
2013	PE - Informal Play	Commissioning a chainsaw artist to cut back and open up the large rhododendron stems near church entrance to the wood: enabling them to be climbed on and used by children	30/09/13
2013	AW - Visitor Access Infrastructure	Waymark 3 routes through the wood: 1. Easy access route 2. Long route across full area of the wood 3. Extension/additional route to combine with Common Wood	30/09/13
2013	AW - Visitor Access Maintenance	New kissing gate at Goose Pond (£400), 4 man days work cutting back vegetation (£600) + estimate of £1000 in stone and labour to surface entrance points, especially levelling at Beamond End path into the wood.	30/09/13

2013	AW - Management Access Capital	<p>Order for Centrewire Ltd, Mossfield Road, Adderley Green, Longton, Stoke on Trent ST3 5BW.</p> <p>Three No kissing Oxford style gates required: 2 medium mobility (£157ea) and one pedestrian (£130ea). Includes £70 delivery charge.</p> <p>Delivery of gates should be to our estates contractor: John Lowe &amp; Sons, 9 Croft Cottages, Croft Lane, Chipperfield, Kings Langley, Herts WD4 9DX</p>	30/09/13
2013	WMM - Wood Pasture Management	<p>c.f. Mow/strim L-shaped glade (£300). Install 2 kissing gates: one near Justice Gate, the other into grazing area (£300). Install new straining post and tension wire next to existing kissing gate (£50).</p>	30/09/13
2013	SL - Tree Safety Works - Zone A	Cutting back roadside trees down the hill from Goose Pond Gate to prevent vehicle damage.	31/10/13
2013	PE - Interpretation & Signage	Re-printing of Penn Wood leaflet including folding.	31/10/13
2013	AW - Visitor Access Maintenance	Adjustments to kissing gates and dog gates. Moving of one grove post near Justice Gate.	31/10/13
2013	WMM - General Site Management	Work around the pond to discourage anti-social activities: Coppicing marked trees around the pond to open up view from the path, clearance of bottles and cans, felling of conifers in camping area.	31/10/13
2013	AW - Visitor Access Infrastructure	Rideside coppicing/felling along edge of bridleway: To create a lighter drier path of aprox 10m in width with some specimen trees retained. This is path 1 in the tender submitted (dated 02/10/12)	31/10/13
2013	PE - Interpretation & Signage	Navigational aids to go with sculpted benches	31/10/13



2013	WMM - Wood Pasture Management	Restoration of the 2 glades in the northern half of the wood. Price is as agreed in your quote of 23 January 2013. Please refer to map as part of this contract where the areas are identified. Cut approximately one acre of young trees (less than 15 years old) and bracken in each area to enable annual mowing in future years. The areas can be cut using a forest mulcher if necessary.	31/10/13
2013	PE - Interpretation & Signage	Wooden signs to let public know which areas of site are being grazed by cows. 10 signs.	31/10/13
2013	PE - Interpretation & Signage	6 new ladderboard signs	31/10/13
2013	PE - Events - Schools	2 weeks of woodland discovery events	31/10/13
2013	PE - Interpretation & Signage	6 chainsaw carved benches to be navigation aids as well as for informal play and site interpretation.	31/10/13
2013	PE - Events - General	Events programme, one walk/event each quarter	31/10/13
2013	SL - Tree Safety Works - Zone A	Tree Safety work - cut back road boundaries to improve sightlines for motorists along the A404 in particular.	31/10/13
2013	WMM - Invasive Plant Control	SITA Rhododendron control within avenues and across site. Please refer to map and specification as part of this contract. This price is as of your revised quote given on 23 January 2013 by email. The majority of the work to be done using the rubber tracked excavator mulcher with follow up handcutting. All arising to be left in chip form.	31/10/13
2013	WMI - PAWS Restoration	Thinning of larch in compartments 2q and selected pine blocks in compartment 2s as per quote of 16 April 2013. Total volume of thinnings estimated to be 982m <sup>3</sup> . This cost to be netted off against timber income of £19,640. The formal contract for the work will be issued after receipt of risk assessment and insurance documentation.	30/11/13

2013	WMI - Ride Restoration	Rideside coppicing/felling along the easy access trail and the extension to this. To create a lighter drier path of approx 10m in width with specimen trees retained. This is for paths 2 & 3 in the tender submitted (dated 02/10/12)	30/11/13
2013	PE - Events - Contractor/Provider	Carry over sum for VIP work at Penn Wood. Funding by Four Winds Trust. Can be used for all ability trail and events as necessary. Total funding was £10k	30/11/13
2013	AW - Management Access Capital	Supply and install new 12ft gate at Justice entrance (inner gate to replace the one which was stolen). Please route 'Woodland Trust' into top rail.	30/11/13
2013	SL - Tree Safety Emergency Work	clearance of fallen trees on 29 Oct and 8 Nov 2013	31/12/13
2013	WMM - General Site Management	Adjustments to kissing gate boxes. Clearance of 3 lots of flytipping	31/12/13
2013	PE - Events - Contractor/Provider	Delivery of Christmas Craft day at Penn Wood on 7 December 2013	31/12/13
2014	AW - Visitor Access Maintenance	Fell marked trees along the edges of the wet path near Keepers Cottage. Allow approx 1 man day. Leave brash and logs scattered in surrounding woodland and several metres back from path edge.	28/02/14
2014	SL - Tree Safety Works - Zone A	Tree Safety work - cut back road boundaries to improve sightlines for motorists along the A404 in particular.	28/02/14
2014	WMM - Invasive Plant Control	Follow-up work on rhododendron. Allow 10 man days. Cut to ground level the rhododendron in the hard to reach areas. Please see map. All cut rhododendron to be chipped with brushwood chipper if practical (allow for 2 days chipper hire).	31/03/14
2014	AW - Visitor Access Infrastructure	Supply and fit 2 new kissing gates through grazing area for extra access points - next to the 2 management gates.	31/03/14
2014	WMM - General Site Management	Install 6 deer exclosures (approx 4m X 4m) in positions shown on the EMC map. Part of ewgs commitment.	31/03/14

2014	AW - Visitor Access Maintenance	Removal and disposal of 300m of old barbed wire fencing, which is no longer part of the grazing areas. Areas shown on the map, including along the bridleway.	31/03/14
2014	CS - Historical Survey & Assessment	Initial set up costs for a community led project to study the archaeological features at Penn Wood.	31/03/14
2014	WMM - General Site Management	24 cans of tree marker paint ( Fluo). 22 orange and 2 green. Cost as quoted £4.35 ea + £15 delivery.	31/03/14
2014	LC - Fly Tipping	Clear and dispose of flytipped asbestos sheets at Tyler End Gate, Penn Wood, Penn Street.	30/04/14
2014	SL - Tree Safety Works - Zone A	Tree safety works following Autumn 2013 survey	30/04/14
2014	SL - Tree Safety Emergency Work	Clearance of storm damage in pines area during end of February and re-instating paths. Clearing fallen trees on 12 dec & 31 Jan (includes 3 loads of rubbish).	30/04/14
2014	NWH - Grazing Work	Repair to fence in grazing area, from January.	31/05/14
2014	SL - Routine Safety Work	Cut back any overhanging branches along the roadside and down the hill from Goose Pond gate. Cut the branches 1m back from the road edge and up to a height of 4.2m.	31/05/14
2014	PE - Events - Schools	schools resource pack	30/06/14
2014	AW - Visitor Access Maintenance	Path and entrance management: 1. Mow/cut back all paths as shown to aprox 3m in width ensuring overhanging branches are dealt with 2. Cut back vegetation at all marked entrances, clean signs and carry out any minor repairs 3. Remove litter from entrances and paths	30/06/14
2014	PE - Events - Schools	Teacher inset days. Teachers only to attend.	30/06/14
2014	AW - Visitor Access Maintenance	Monthly litter picks of the Church car park - for period April to June 2014. At £45 per collection	30/06/14

2014	PE - Events - Contractor/Provider	Woodland history walk for the Penn Wood festival on 21st June. Approximately one hour long and starting at 2pm.	31/07/14
2014	WMM - Wood Pasture Management	SITA - Mechanical cutting, especially of bramble and bracken, to maintain wood pasture areas and support the grazing. Cutting to take place in agreed areas and to include any rhododendron found in these areas.	31/07/14
2014	WMM - Wood Pasture Management	Annual cut of the L-shaped glade in northern half of the site	31/08/14
2014	PE - Events - Contractor/Provider	Wood Turned and Bodger for Penn Wood Summer Festival 21st June 2014 - 11am - 4pm Full event briefing to follow nearer the time.	31/08/14
2014	SL - Tree Safety Emergency Work	Clearance of fallen trees near stables. Felling and snedding of leaning and fallen trees near recently thinned area in preparation for horse logging demo. Felling of aspen near church.	31/08/14
2014	PE - Events - Contractor/Provider	Environmental Educational Activities for Penn and Common Wood Summer Fair 21st June 2014 please be ready and set up for 10.30am full event briefing will follow prior to the event	31/08/14
2014	PE - Events - Contractor/Provider	Willow weaving for Penn Wood Summer Festival Event 21st June 2014 Full event briefing will follow nearer the event.	31/08/14
2014	AW - Visitor Access Maintenance	Repair to damaged track between the church and the bridleway. Ruts to be removed by combination of disc harrow, rotavator and roller. Large tree stumps in direct line of the path to be removed. Finish path width of approximately 3m to be created.	31/08/14
2014	AW - Visitor Access Maintenance	Take down and remove barbed wire fence through larch stand near Quaker gate. Repair of fence rails along bridleway and removal of old rolled heap of barbed wire. Supply and fit near 14ft gate at Goose Pond. Site clear up following travellers.	31/08/14

2014	AW - Visitor Access Infrastructure	Supply and install two A2 plywood signboards. One to be installed near church car park and the other at Beamond End car park.	30/09/14
2014	AW - Visitor Access Maintenance	Monthly litter picks of the Church car park - for period July to Sept 2014. At £45 per collection	30/09/14
2014	AW - Visitor Access Infrastructure	Waymark 2 routes through the wood: 1. Short easy access routes in Penn and Common Wood: 20 of (150X150mm) waymarkers with routed bands @ £98 each + one finger post for start @ £495 2. Long circular landscape route linking both woods and through the Penn House Estate: 50 of (100X100mm) waymarkers with routed bands @ £79 each + 4 finger posts at road crossings @ £495 each £175 delivery charge for all materials. All waymark posts will be made from FSC certified UK grown oak.	30/09/14
2014	PE - Interpretation & Signage	Production of a distinctive waymark disc for the long distance landscape trail around Penn and Common Woods. The disc will incorporate the logo for Penn & Tylers Green Residents Assoc to give it a recognised symbol. 500 discs to be produced. Design of the disc to be handled by our in-house design team. Discs priced at 69p each + £12.50 charge.	30/09/14
2014	AW - Visitor Access Maintenance	New kissing gate at Goose Pond (£400), 4 man days work cutting back vegetation (£600) + estimate of £1000 in stone and labour to surface entrance points, especially levelling at Beamond End path into the wood.	30/09/14
2014	WMM - Invasive Plant Control	Follow-up work on rhododendron. Treat with glyphosate all cut the re-growth from the cut rhododendron and laurel plants. Allow 6 man days + cost of chemical. Please see map.	30/09/14

2014	AW - Visitor Access Maintenance	Path and entrance management: 1. Mow/cut back all paths as shown to aprox 3m in width ensuring overhanging branches are dealt with 2. Cut back vegetation at all marked entrances, clean signs and carry out any minor repairs 3. Remove litter from entrances and paths	30/09/14
2014	WMI - PAWS Restoration	Thinning of larch in PAWS compartments 2a and 2f and extraction of timber to roadside. Cost as per your quote of 9 May 2014. The cost for the operation is to be netted off against the income from the timber which is also contained in your quote, and this is £16,700 + VAT. Total volume estimated = 835m <sup>3</sup> . All trees to be felled have been marked with orange paint. Details of the work such as extraction routes, stacking areas and site constraints are contained in the formal contract for this operation.	31/10/14
2014	PE - Events - Contractor/Provider	Biodiversity management to be carried out by Chiltern Rangers. 2 mid week and 2 weekend volunteer tasks. Weekdays tasks @ £375 per task, weekend tasks @ £200 per task. Dates for the tasks will be 21st & 24th August, 18th & 20th September 2014. Tasks to include removal of invasive western hemlock regeneration , and removal of rhododendron around a pond. Tasks will be promoted to the local community.	31/10/14
2014	AW - Visitor Access Infrastructure	Improvements to easy access trail: surfacing with Type 1 size stone in sections which are waterlogged or very uneven. The route is the same as that contained in your quote of 28 August 2012 and includes the dog-leg path in the Northeast corner of the wood and the bridleway.	31/10/14

2014	AW - Visitor Access Maintenance	Improvements to Penn St church car park: filling and levelling the potholes on the access road, and removing the grass and making level the rear of the car park. Price as agreed in your quote of 28 August 2014.	31/10/14
2014	PE - Interpretation & Signage	Signage to teach people about the value of grazing. Interpretation board (lectern style) A2 size to be erected near the cattle holding area, in the centre of the grazed area and near the footpath. £900 for supply + £150 installation	31/10/14
2014	PE - Events - Contractor/Provider	Firelighting Activity for the Penn Wood Summer Fair 21st June 2014 to be set up and ready for 10.30am Full Event Briefing to follow.	31/10/14
2014	PE - Events - Contractor/Provider	Woodland Summer Festival. Remaining budget for horselogging demo.	30/11/14
2014	SL - Tree Safety Works - Zone A	Tree safety works from summer survey.	30/11/14
2014	PE - Events - General	Catering at Hit or Miss pub for 10 people on 29 Oct, and for 12 people on 5 Nov. Afternoon buffet at £7.50 per head. £75 cost for 29 Oct, and £90 cost for 5 Nov.	30/11/14
2014	LC - Fly Tipping	Removal of a camp and associated waste from area of woodland near Justice Gate.	30/11/14
2014	AW - Visitor Access Infrastructure	Entrance repairs: Replace post and rehang fieldgate at Quaker Gate. Replace fence and remove flytipping at Beamond End Gate	30/11/14
2014	PE - Volunteer on site activity	carry over from 2014 (underspend). 1st Aid training for volunteers on 14th November at Penn Street village hall, Bucks.	30/11/14
2014	PE - Volunteer on site activity	Provision of lunch for 17 people at Volunteer training in dormouse monitoring 13th November 2014.	30/11/14

2014	PE - Interpretation & Signage	5 ladderboard signs for Penn Wood as per quote of 10 Sept 2014 (2 of these headed Penn Wood & Holy Trinity Church, 3 headed Penn Wood). Includes delivery charge to John Lowe & sons, 9 Croft Cottages, Croft Lane, Chipperfield, Herts WD4 9DX. Delivery of the 3 Common Wood signs included.	30/11/14
2014	PE - Volunteer on site activity	1st Aid training for volunteers on 14th November at Penn Street village hall, Bucks.	30/11/14
2014	PE - Community Group Support	Annual volunteers and stakeholders event. This event will provide the opportunity for all volunteers/stakeholders to feedback and input ideas into the continued work at Penn and Common Wood. It will be used as an ongoing consultation exercise for the delivery of the investment project with the community. It will also be an opportunity to recruit new and interested volunteers. Costs are based on hire of village hall for 4hrs (approx £120) and catering (buffet) for 30 people at £4 per head.	30/11/14
2014	PE - Volunteer on site activity	Volunteer dormouse monitoring at Penn & Common Woods: purchase of 100 nest boxes (50 for each wood) from PTES = £300 (boxes produced through Doncaster prison)	30/11/14
2014	PE - Volunteer on site activity	Volunteer training in dormouse monitoring for volunteers at Penn & Common Woods. One day training to take place on 13th November at Penn & Tylers Green village hall, with field session in Penn Wood.	30/11/14



2014	PE - Interpretation & Signage	Schools engagement project: work with 2 local schools close to Penn Wood and Common Wood to design and create a number of sculptures/features in the wood out of natural materials. Artist/craftsman to spend a day in each school teaching skills and facilitating designs. Schools then to spend a day in the woods with the craftsman to create the features. Materials could be hazel from the wood or cut rhododendron. Schools: Curzon School, Penn Street and The Middle School at Penn & Tylers.	21/12/14
2014	PE - Events - Schools	Forest school training for 6 people (4 x school staff and 2 x local community) to enable local learning at the woods to be self led into the future. Ideally train 2 teachers for each of schools closest to Penn and Common Wood and one member of each community. If not possible then train local volunteers instead to equip them in leading schools groups. Costs based on prices from Shortenhills Environmental Centre at Chalfont St Giles	21/12/14
2014	PE - Events - General	Event on 4th December run by Chiltern Rangers. Practical activities to be held to promote greater engagement with the wood by local people - especially the disabled.	21/12/14
2014	PE - Events - General	2 x Christmas Craft Activity Days - 29th and 30th Nov 2014	21/12/14
2014	AW - Visitor Access Maintenance	Monthly litter picks of the Church car park - for period Oct to Dec 2014. At £45 per collection	31/12/14
2014	PE - Events - Schools	teacher supply costs during Forest school training	31/12/14
2014	WMM - Wood Pasture Management	Manual cutting of remaining areas of rhododendron along rides: 5 man days + chipper Cutting young birch to re-instate glade and additional rhododendron cutting: 4 man days	31/12/14

2014	WMI - PAWS Restoration	<p>Felling conifers in 4 areas (without extraction). Costs as per your quote of 28 January 2014.</p> <p>The 4 areas are shown on the contract map but are described as follows:</p> <ul style="list-style-type: none"> <li>- Area 1: Compartment 2d near Keepers Cottage. 404 Norway spruce trees</li> <li>- Area 2: Western edge of Compartment 1c. 260 Norway spruce trees</li> <li>- Area 3: Large old quarry pit in compartment 2s. 74 Corsican pine trees</li> <li>- Area 4: Roadside trees in compartment 2t. 88 Douglas Fir trees</li> </ul> <p>All trees to be felled are marked with orange dots. Felled trees should be left with trunks lying flat on the ground and all side branches removed and brash left thinly scattered on the ground. The trunks can be left in long lengths. Timber and brash should not be left blocking paths and no arisings should be left within the quarry pit in area 3.</p>	31/12/14
2014	AW - Management Access Maintenance	Repair of ground next to management gate at Justice entrance - level and grade off. Digger, driver and banksman for one day. Price as per quote in August 2013.	31/12/14
2014	SL - Tree Safety Works - Zone A	<p>Cut holly and rhododendron around the southern boundary of Keepers Cottage.</p> <p>All rhododendron to be cut and any holly which is growing around trees within falling distance of road and private property.</p> <p>All 4 man days for this work.</p>	31/12/14
2015	WMM - Ride Management	Tree works to open up main paths and small glades in Cpt 1b. Allow 12 man days. Cutting mainly semi-mature birch. Work to be done prior to cows entering the grazing area.	28/02/15
2015	SL - Tree Safety Works - Zone A	Cutting back sight lines along A404. No longer needed. Do every other year.	28/02/15

2015	PE - Interpretation & Signage	Installation of 5 ladderboard signs at Penn Wood and 3 at Common Wood. (8 X £125 as per quote)	28/02/15
2015	AW - Visitor Access Maintenance	Monthly litter picks of the Church car park - for period Jan to Mar. At £45 per collection	31/03/15
2015	AW - Visitor Access Maintenance	Removal and disposal of 300m of old barbed wire fencing, which is no longer part of the grazing areas. Areas shown on the map, including section near Western Hemlock plantation and section up from Gravelly way entrance.	31/03/15
2015	WMM - Invasive Plant Control	Follow-up work on rhododendron. Allow 20 man days. Cut to ground level the rhododendron in the hard to reach areas. Please see map. All cut rhododendron to be chipped with brushwood chipper if practical (allow for 4 days chipper hire).	31/03/15
2015	PE - Events - Contractor/Provider	Budget for volunteer tasks with Chiltern Rangers with the intention of growing community support for the site. 2 mid week and 2 weekend tasks over first quarter of the year. Removal of rhododendron and Western hemlock saplings.	31/03/15
2015	CS - Historical Survey & Assessment	Data capture and production of LIDAR data for an area of 9km <sup>2</sup> around Penn & Common Wood for use in archaeological fieldwork. Data to be produced at 0.5m resolution Digital Surface and Digital Terrain Model LIDAR (DSM & DTM). Payment made in instalments according to contract conditions set out by supplier.	31/03/15
2015	SL - Routine Safety Work	Cut back any overhanging branches along the roadside and down the hill from Goose Pond gate. Cut the branches 1m back from the road edge and up to a height of 4.2m.	31/05/15

2015	AW - Visitor Access Maintenance	Path and entrance management: 1. Mow/cut back all paths as shown to aprox 3m in width ensuring overhanging branches are dealt with 2. Cut back vegetation at all marked entrances, clean signs and carry out any minor repairs 3. Remove litter from entrances and paths	30/06/15
2015	PE - Events - Schools	Forest school training for 6 people (4 x school staff and 2 x local community) to enable local learning at the woods to be self led into the future. Ideally train 2 teachers for each of schools closest to Penn and Common Wood and one member of each community. If not possible then train local volunteers instead to equip them in leading schools groups. Costs based on prices from Shortenhills Environmental Centre at Chalfont St Giles	30/06/15
2015	AW - Visitor Access Maintenance	Monthly litter picks of the Church car park - for period April to June. At £45 per collection	30/06/15
2015	AW - Visitor Access Infrastructure	Waymark 3 routes through the wood: 1. Short easy access routes in Penn and Common Wood: 20 of (150X150mm) waymarkers with routed bands @ £98 each + one finger post for start @ £495 2. Long circular landscape route linking both woods and through the Penn House Estate: 50 of (100X100mm) waymarkers with routed bands @ £79 each + 4 finger posts at road crossings @ £495 each £175 delivery charge for all materials. All waymark posts will be made from FSC certified UK grown oak.	30/06/15

2015	PE - Interpretation & Signage	Production of a distinctive waymark disc for the long distance landscape trail around Penn and Common Woods. The disc will incorporate the logo for Penn & Tylers Green Residents Assoc to give it a recognised symbol. 500 discs to be produced. Design of the disc to be handled by our in-house design team. Discs priced at 69p each + £12.50 charge.	30/06/15
2015	PE - Events - Contractor/Provider	Annual wood fair in Penn Street village.	31/07/15
2015	AW - Visitor Access Infrastructure	Upgrading poor sections of path which suffer from waterlogging and very uneven surfaces. 3 sections to be tackled: - Beamond Gate entrance. Creating a uniform surface from entrance gate to the crossroads: Filling in a large hole, making the main path even and uniform all the way along using flint stone with edging boards to tie in with existing. - Large waterlogged hole on path in north of 1a (just south of 2h/2j): Draining and filling with stone. - Path to north of 2a: Draining waterlogged holes, putting down membrane and filling level with stone.	31/07/15
2015	CS - Ecological Survey & Assessment	The undertaking of a botanical survey of Penn Wood and Penn Jubilee Wood.	28/08/15
2015	WMM - Wood Pasture Management	Annual cut of L-shaped glade in northern half of the site. Open up path on eastern side, so entry is clear (extra 2 man days of felling to last year - leaves logs and brash to side of path).	31/08/15
2015	NWH - Invasive Plant Control	Follow-up work on rhododendron. Treat with glyphosate all cut the re-growth from the cut rhododendron and laurel plants. Allow 6 man days + cost of chemical. Please see map.	31/08/15
2015	AW - Visitor Access Infrastructure	Labour cost for installation of 70 waymark posts and 6 finger posts for waymark trails.	31/08/15
2015	AW - Visitor Access Maintenance	Repairs to existing all ability trail near church.	31/08/15

2015	WMM - Wood Pasture Grazing Work	Alterations to cattle crush and fencing repairs. To be carried out by grazier.	30/09/15
2015	AW - Visitor Access Maintenance	Monthly litter picks of the Church car park - for period July to Sept. At £45 per collection	30/09/15
2015	PE - Events - Schools	Forest school training for 6 people (4 x school staff and 2 x local community) to enable local learning at the woods to be self led into the future. Ideally train 2 teachers for each of schools closest to Penn and Common Wood and one member of each community. If not possible then train local volunteers instead to equip them in leading schools groups. Costs based on prices from Shortenhills Environmental Centre at Chalfont St Giles	30/09/15
2015	PE - Interpretation & Signage	Signage to teach people about the value of grazing. Interpretation board (lectern style) A2 size to be erected near the cattle holding area, in the centre of the grazed area and near the footpath. £900 for supply + £150 installation	30/09/15
2015	AW - Visitor Access Infrastructure	Supply and installation of 2 roadside WT promotional signs to go along A404. Advertising consent required prior to installation.	30/09/15
2015	WMM - Wood Pasture Management	Mechanical cutting, especially of bramble and bracken, to maintain wood pasture areas and support the grazing. Similar area to previous years, breaking up bramble and bracken into thin ribbons. Cut bramble and scrub later in the season (Sept) to avoid impact on wildlife and berries. Bracken ideally cut in July.	30/09/15
2015	AW - Visitor Access Maintenance	Path and entrance management: 1. Mow/cut back all paths as shown to aprox 3m in width ensuring overhanging branches are dealt with 2. Cut back vegetation at all marked entrances, clean signs and carry out any minor repairs 3. Remove litter from entrances and paths	30/09/15

2015	PE - Interpretation & Signage	New site leaflet - to include Common Wood. Include a membership ask. Includes printing costs.	30/09/15
2015	PE - Interpretation & Signage	Branded Leaflet dispensers X3	30/09/15
2015	PE - Interpretation & Signage	Leaflet for the all ability trail at Penn and easy access routes in Common Wood. To include description of the routes for disabled users. Also to be educational in format for use by schools and families with children. Membership ask to be included. The leaflet to be more web based but printing costs included here.	30/09/15
2015	WMI - Ride Restoration	Ride widening between 2r and 2s. Aprox 700m. Part funded by WIG. Work has been tendered and winning contractor is Mark Blake.	31/10/15
2015	WMI - Wood Pasture Restoration	Fencing of a new grazing area in the eastern half of compartment 1b, to join with existing grazed area. Total length of fence is £1076m. This work has been tendered and winning contractor is John Lowe. Part of a Sita bid.	31/10/15
2015	NWH - Invasive Plant Control	Beamond End pond restoration work. Manually remove rhododendron around pond edge. Clear any fallen trees from within pond. Dig out and remove approx 75% of the reedmace and floating grass mat on western half of the pond. Coppice a proportion of the willows and other trees around the pond edge to improve light levels. Work has been tendered and winning contractor is Mark Blake.	31/10/15
2015	WMI - PAWS Restoration	Thin PAWS compartments 2o, 1c, 2r	31/10/15
2015	WMI - PAWS Restoration	Re-instatement work to paths following PAWS thinning. Felling of any trees not able to be reached by harvesting machinery.	31/10/15

2015	PE - Interpretation & Signage	Schools engagement project: Work with 2 local schools close to Penn Wood and Common Wood to design and create a number of sculptures/features in the wood out of natural materials. Artist/craftsman to spend a day in each school teaching skills and facilitating designs. Schools then to spend a day in the woods with the craftsman to create the features. Materials could be hazel from the wood or cut rhododendron. Schools: Curzon School, Penn Street and The Middle School at Penn & Tylers.	31/10/15
2015	PE - Events - Contractor/Provider	Budget for volunteer tasks with Chiltern Rangers with the intention of growing community support for the site. 2 mid week and 2 weekend tasks over autumn/winter 2015. Removal of rhododendron and Western hemlock saplings and opening up around veteran trees.	30/11/15
2015	PE - Community Group Support	Annual volunteers and stakeholders event. This event will provide the opportunity for all volunteers/stakeholders to feedback and input ideas into the continued work at Penn and Common Wood. It will be used as an ongoing consultation exercise for the delivery of the investment project with the community. It will also be an opportunity to recruit new and interested volunteers. Costs are based on hire of village hall for 4hrs (approx £120) and catering (buffet) for 30 people at £4 per head.	30/11/15
2015	PE - Volunteer on site activity	carry over from 2014 (underspend). 1st Aid training for volunteers on 14th November at Penn Street village hall, Bucks.	30/11/15
2015	PE - Volunteer on site activity	carry over from 2014 (underspend). Volunteer training in dormouse monitoring for volunteers at Penn & Common Woods. One day training to take place on 13th November at Penn & Tylers Green village hall, with field session in Penn Wood.	30/11/15



2015	PE - Interpretation & Signage	4 interpretation boards at Penn Wood: Church gate, Goose Pond gate and Beamond End gate and Justice Gate. One interpretation board for Common Wood. Large boards with 4 interchangeable panels. Cost of each board=£900 (based on Brede High Woods) + £150 to install each one.	30/11/15
2015	PE - Community Group Support	Carry over from 2014. Annual volunteers and stakeholders event. This event will provide the opportunity for all volunteers/stakeholders to feedback and input ideas into the continued work at Penn and Common Wood. It will be used as an ongoing consultation exercise for the delivery of the investment project with the community. It will also be an opportunity to recruit new and interested volunteers. Costs are based on hire of village hall for 4hrs (approx £120) and catering (buffet) for 30 people at £4 per head.	30/11/15
2015	PE - Events - General	Resources to help the Chess valley archaeological & historical society (CVAHS) to examine the LIDAR data. Breakdown of costs: - £350 for the purchase of 'Globalmapper' software to enable the production of images from the raw LIDAR data - £800 to hire a 'Total station' for at least 4 weeks, to enable measurement of ground features.	31/12/15
2015	PE - Events - General	Mini-events programme (fungi, ecology, Christmas craft etc)	31/12/15
2015	PE - Events - Schools	Supply teacher costs during Forest school training. ZEROED DOWN AS REPEAT OF PREVIOUS LINE	31/12/15

2015	PE - Events - Schools	Forest school training for 6 people (4 x school staff and 2 x local community) to enable local learning at the woods to be self led into the future. Ideally train 2 teachers for each of schools closest to Penn and Common Wood and one member of each community. If not possible then train local volunteers instead to equip them in leading schools groups. ZEROED DOWN AS REPEAT OF PREVIOUS LINE	31/12/15
2015	AW - Visitor Access Maintenance	Monthly litter picks of the Church car park - for period Oct to Dec. At £45 per collection	31/12/15
2015	PE - Events - Schools	Forest school training for 6 people (4 x school staff and 2 x local community) to enable local learning at the woods to be self-led in the future. Ideally train 2 teachers for each of schools closest to Penn and Common Wood and one member of each community. If not possible then train local volunteers instead to equip them in leading schools groups.	31/12/15
2015	PE - Events - Schools	Supply teacher costs during Forest school training	31/12/15
2015	PE - Events - Schools	Supply teacher costs during Forest school training. ZEROED DOWN AS REPEAT OF PREVIOUS LINE	31/12/15
2015	PE - Events - Schools	Supply teacher costs during Forest school training ZEROED DOWN AS REPEAT OF PREVIOUS LINE	31/12/15
2016	AW - Visitor Access Maintenance	Fell marked trees along the edges of the wet path near Keepers Cottage. Allow approx 1 man day. Leave brash and logs scattered in surrounding woodland and several metres back from path edge.	28/02/16
2016	SL - Tree Safety Works - Zone A	Tree Safety work - cut back road boundaries to improve sightlines for motorists along the A404 in particular.	28/02/16
2016	PE - Events - Contractor/Provider	Annual woodfair in Penn Street village.	31/03/16
2016	PE - Events - General	Events programme, one walk/event each quarter in both Penn and Common Wood.	31/03/16

2016	AW - Visitor Access Maintenance	Monthly litter picks of the Church car park - for period Jan to Mar. At £45 per collection	31/03/16
2016	SL - Routine Safety Work	Cut back any overhanging branches along the roadside and down the hill from Goose Pond gate. Cut the branches 1m back from the road edge and up to a height of 4.2m.	31/05/16
2016	PE - Events - Schools	Teacher inset days. For teachers only	30/06/16
2016	PE - Interpretation & Signage	Marketing and joint promotion with local pubs : table mats as recommended by the pubs.	30/06/16
2016	AW - Visitor Access Maintenance	Path and entrance management: 1. Mow/cut back all paths as shown to aprox 3m in width ensuring overhanging branches are dealt with 2. Cut back vegetation at all marked entrances, clean signs and carry out any minor repairs 3. Remove litter from entrances and paths	30/06/16
2016	AW - Visitor Access Maintenance	Monthly litter picks of the Church car park - for period April to June. At £45 per collection	30/06/16
2016	PE - Interpretation & Signage	Schools engagement project: work with 2 local schools close to Penn Wood and Common Wood to design and create a number of sculptures/features in the wood out of natural materials. Artist/craftsman to spend a day in each school teaching skills and facilitating designs. Schools then to spend a day in the woods with the craftsman to create the features. Materials could be hazel from the wood or cut rhododendron. Schools: Curzon School, Penn Street and The Middle School at Penn & Tylers.	30/06/16
2016	PE - Events - Schools	Teacher inset days. Teachers only to attend.	30/06/16
2016	WMM - Wood Pasture Management	Mechanical cutting, especially of bramble and bracken, to maintain wood pasture areas and support the grazing.	31/07/16
2016	WMI - PAWS Restoration	Thin PAWS compartments 2g, 2i, 2j	31/07/16

2016	WMM - Wood Pasture Management	Annual cut of all glades in northern half of the site, as marked on conservation features map	31/08/16
2016	NWH - Invasive Plant Control	Follow-up work on rhododendron. Treat with glyphosate all cut the re-growth from the cut rhododendron and laurel plants. Allow 6 man days + cost of chemical. Please see map.	31/08/16
2016	AW - Visitor Access Maintenance	Monthly litter picks of the Church car park - for period July to Sept. At £45 per collection	30/09/16
2016	AW - Visitor Access Maintenance	Path and entrance management: 1. Mow/cut back all paths as shown to approx 3m in width ensuring overhanging branches are dealt with 2. Cut back vegetation at all marked entrances, clean signs and carry out any minor repairs 3. Remove litter from entrances and paths	30/09/16
2016	PE - Interpretation & Signage	Brown Tourist sign from A404. Need to apply to highways agency.	30/09/16
2016	PE - Interpretation & Signage	Interpretation of historical information on both woods: 8 days to update, edit and make technical material appropriate to be hosted online (£250 per day). £1000 to digitise and convert to pdf, cost based on amount to develop a new site leaflet or booklet. Includes printing costs.	31/10/16
2016	PE - Community Group Support	Annual volunteers and stakeholders event. This event will provide the opportunity for all volunteers/stakeholders to feedback and input ideas into the continued work at Penn and Common Wood. It will be used as an ongoing consultation exercise for the delivery of the investment project with the community. It will also be an opportunity to recruit new and interested volunteers. Costs are based on hire of village hall for 4hrs (approx £120) and catering (buffet) for 30 people at £4 per head.	30/11/16
2016	PE - Interpretation & Signage	Schools resource packs	30/11/16

2016	AW - Visitor Access Maintenance	Monthly litter picks of the Church car park - for period Oct to Dec. At £45 per collection	31/12/16
2017	AW - Visitor Access Maintenance	Fell marked trees along the edges of the wet path near Keepers Cottage. Allow approx 1 man day. Leave brash and logs scattered in surrounding woodland and several metres back from path edge.	28/02/17
2017	SL - Tree Safety Works - Zone A	Tree Safety work - cut back road boundaries to improve sightlines for motorists along the A404 in particular.	28/02/17
2017	AW - Visitor Access Maintenance	Monthly litter picks of the Church car park - for period Jan to Mar. At £45 per collection	31/03/17
2017	PE - Events - General	Events programme, one walk/event each quarter in both Penn and Common Wood.	31/03/17
2017	PE - Events - Contractor/Provider	Annual woodfair in Penn Street village.	31/03/17

## APPENDIX 1: COMPARTMENT DESCRIPTIONS

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Key Features Present	Designations
1a	32.26	Mixed native broadleaves	1900	Wood pasture	Archaeological features, Sensitive habitats/species on or adjacent to site	Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
<p>Mainly widely spaced mature pedunculate oak and beech planted in 19th century with open grassland in between the trees. Several larger pre-plantation (old growth) beech trees present also. Large patches of bracken and bramble are present in the grassland. The compartment is much more open in eastern half. Avenues of rhododendron present to the east and north with specimen conifer trees. Rhododendron is spreading further into the compartment. There are Medieval woodbanks (hollow way) on the southern boundary.</p>							
1b	22.79	Mixed broadleaves	1900	Wood pasture	Archaeological features, Sensitive habitats/species on or adjacent to site	Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
<p>Mainly widely spaced mature pedunculate oak and beech planted in 19th century with open grassland in between these trees. Blocks of younger woodland (less than 20 years) also present especially in the eastern half, and this is dominated by naturally regenerating birch with some beech and oak present; the grassland forms smaller glades in this half. Patches of bracken and bramble are present. Rhododendron avenues to the west and north with specimen conifer trees; Rhododendron is spreading from these. There are Medieval woodbanks (hollow way) on the southeastern boundary, and pits of historic origin which have been mapped and are shown in the study of Penn Wood by N A Sanderson (Aug 2000).</p>							
1c	2.26	Oak (pedunculate)	1986	Wood pasture	Archaeological features, Sensitive habitats/species on or adjacent to site	Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
<p>Plantation of beech and oak planted in 1986 with some red oak and much self sown birch.</p>							

2a	2.07	Larch (European)	1979	PAWS restoration	Archaeological features	Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
Plantation of European larch and beech planted in 1979. The larch was last thinned in 2005. The beech is being suppressed by the larch.							
2b	1.67	Norway spruce	1979	PAWS restoration	Archaeological features	Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
Plantation of Norway spruce and southern beech planted in 1979. This was last thinned by lines in 2005.							
2c	3.60	Larch (European)	1986	PAWS restoration	Archaeological features	Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
Plantation of European larch and sessile oak planted in 1986 and last thinned (by lines) in 2010. There is Rhododendron in north and west which is part of the avenue complex and invading the compartment.							
2d	1.14	Oak (pedunculate)	1983	PAWS restoration	Archaeological features, Sensitive habitats/species on or adjacent to site	Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
Plantation of Norway spruce and pedunculate oak planted in 1983. The spruce was last thinned to waste in 2009 and is now present only in small clumps, with much naturally regenerating birch within the stand. Also beech, cherry, ash and hawthorn present and gaps of grassland. There is an old pond site to the south of the compartment. Rhododendron is present and invading from the boundary with the house.							

2e	0.89	Beech	1965	PAWS restoration	Archaeological features, Sensitive habitats/species on or adjacent to site	Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
<p>Plantation of European larch and beech planted in 1965 with the larch now a minor component, due to silvicultural works in recent past. No further thinning of conifers is required for restoration. Patches of Rhododendron are present however.</p>							
2f	3.81	Larch (European)	1982	PAWS restoration	Archaeological features	Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
<p>Plantation of European larch, pedunculate oak and ash planted in 1982, with self sown beech and birch (now taller than planted oak) present. Broadleaves are being suppressed by conifers. Rhododendron present especially to east. Medieval bank and hollow way present on southern boundary.</p>							
2g	2.23	Larch (Japanese)	1982	PAWS restoration		Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
<p>Plantation of Japanese larch, pedunculate and sessile oak with Scots pine to east, planted in 1982 and last thinned by lines in 2007. Minor components of ash, cherry and birch also present. Old sewage sludge pipes still very evident (southwest corner), from when this was spilled into the wood with nettle abundant close by. Medieval boundary bank and hollow way present along southwest boundary.</p>							
2h	3.67	Larch (European)	1969	PAWS restoration		Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
<p>Plantation of European larch and beech planted in 1969. The larch has been routinely thinned and the last operation was in 2011. Mature specimen Douglas fir trees situated along ride edge to south. Much bracken and rhododendron present to the south. Drifts of bluebells are present. Sewage pipes also present.</p>							



2i	1.95	Douglas fir	1982	PAWS restoration		Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
<p>Plantation of Douglas fir and pedunculate oak planted in 1982 with much birch regeneration. The conifers were last thinned by lines in 2011.</p>							
2j	1.08	Norway spruce	1965	PAWS restoration		Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
<p>Plantation of Norway spruce, European larch and beech planted in 1965. The southern front edge of the compartment has been thinned more routinely and beech is dominant here. Elsewhere the compartment is dominated by conifers and much darker.</p>							
2k	5.75	Larch (European)	1970	PAWS restoration		Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
<p>Plantation of European larch and beech planted in 1970. The larch has been routinely thinned. Large dell present in the northwest corner. Extensive mammal damage present on the beech. Rhododendron is invading from the rides on the east and south sides.</p>							
2l	2.81	Larch (European)	1984	PAWS restoration		Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
<p>Plantation of European larch and sessile oak planted in 1984 with some self sown birch and beech. Oak is being suppressed by conifers and there is very limited ground vegetation other than mosses. The large Beamond End Pond is present in northwest corner which was de-silted in 2005 and 2007 and opened up around its perimeter.</p>							

2m	1.97	Larch (European)	1976	PAWS restoration		Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
<p>Plantation of beech and European larch planted in 1976, in 3 small blocks. The conifers have been thinned by line and selectively. The broadleaves are being suppressed within the blocks by the conifers. The matrix between the blocks is young birch and oak (less than 20 years) with grass and bracken. The individual conifer blocks are shown on the PAWS strategy map.</p>							
2n	1.64	Larch (European)	1981	PAWS restoration		Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
<p>Plantation of beech, pedunculate oak and European larch planted in 1981. The larch was thinned by lines in 2004 and again in 2010. Rhododendron is invading from the ride on the south side. Acid grassland with heather present along this section of the ride also.</p>							
2o	3.99	Douglas fir	1980	PAWS restoration		Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
<p>Plantation of Douglas fir, European larch, Western hemlock, Norway spruce, pedunculate oak and beech; planted in early 1980's. The conifers were last thinned by lines in 2004 and again in 2010. Acid grassland with heather present at southern edge, and also some heather present within the compartment.</p>							
2p	1.91	Larch (European)	1985	PAWS restoration		Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
<p>Plantation of pedunculate oak and European larch planted in 1985. Archaeological features are present (pits and depressions). The larch was thinned by lines in 2003 and again in 2010. Rhododendron is invading from the ride on the south side.</p>							

2q	1.81	Larch (European)	1981	PAWS restoration		Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
Plantation of European larch and pedunculate oak planted in 1981 with self sown birch and sycamore, and a minor component of planted cherry. The oak is being heavily suppressed by the larch which was line thinned in 2005.							
2r	7.13	Western hemlock	1975	PAWS restoration		Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
Plantation of Western hemlock and beech, planted in 1975, with a scattering of mature oaks thought to be planted in 19th century. Much of the hemlock in the central portion of this compartment has been felled creating a habitat of acid grassland and heather through the middle. The hemlock was thinned in 2003 and 2008; it is now present in the compartment in clumps, covering no more than 20% of the total area. Drifts of hemlock seedlings are now growing in the middle of the area.							
2s	24.99	Beech	1978	PAWS restoration		Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
Plantation of Corsican pine and beech planted in 1978 together with areas of pure broadleaved woodland. The conifers are present in 6 distinct blocks, which can be viewed on the PAWS strategy map. The pine was last thinned in 2005. In between the conifer blocks the woodland is broadleaved and mixed structured. There is a scattering of old growth trees (beech and oak) including a hollow veteran oak. These older trees are mixed with planted mature oak and beech and also more recent thickets of natural regeneration consisting of beech and birch. The compartment overall is approximately 40% conifer plantation (containing some broadleaves) and 60% pure broadleaves. There is a screen of rhododendron and cherry laurel spreading from the church perimeter in the southeastern corner. A mediaeval wood bank exists along the northern boundary. Small open grassy areas are present.							
2t	3.01	Douglas fir	1978	PAWS restoration		Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site

<p>Plantation of Douglas fir, European larch, beech and pedunculate oak planted in 1978. A minor component of self sown birch is present. The Douglas fir in this compartment was last thinned in lines in 2011. There is medieval wood bank on boundary with Compartment 2s.</p>							
2u	1.21	Beech	1965	PAWS restoration		Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
<p>Plantation of European larch and beech planted in 1965, which was last selectively thinned in 2011. The stand is now over 70% broadleaved and will require one further thin of the larch to be restored. Mediaeval wood bank present on boundary with Compartment 2s and enclosure bank along northern boundary.</p>							
3a	5.72	Beech	1900	High forest		Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
<p>A mixture of mature beech and pendunculate oak planted towards end of 19th century. Mature rowan and birch also present, with younger beech, all of which are probably self sown. This is the most important area of the woodland for old growth trees with over 20 scattered across this compartment (mostly beech). There are several open glades containing patches of heather but also much bracken and rush. Drifts of bluebells are present beneath the trees</p>							
3b	2.64	Beech	1900	High forest		Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
<p>Area of broadleaved woodland contained within surrounding conifer blocks. Mostly widely spaced mature beech planted towards the end of 19th century with young natural regeneration of mostly birch and beech in between. The compartment is more open and grassy through its centre.</p>							
3c	20.78	Beech	1900	High forest		Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site

<p>Broadleaved woodland consisting of widely spaced beech and pedunculate oak planted at end of 19th century. There is a matrix of open grassy glades and clumps of younger natural regeneration of birch and beech between these older trees. A proportion of the compartment, approximately 25%, consists of recently restored PAWS conifer plantations from the 1960's and 70's. European larch and Scots pine remain from this as a minor component.</p>							
3d	9.47	Beech	1954	High forest		Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
<p>Restored PAWS plantations of European larch and beech planted in 1954. There are now only remnants of larch present plus a minor component of pedunculate oak. Pockets of young self sown birch and beech are present, which are probably the result of windblow of the plantation. Rhododendron and cherry laurel thickets present to the north. Several small glades present, dominated by bracken but containing occasional heather as well as grasses.</p>							
3e	1.31	Oak (pedunculate)	1986	High forest		Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
<p>Plantation of beech and oak planted in 1986 with some red oak and much self sown birch, especially in the northern half. Several rows of mature Western hemlock located along the ride edge on the eastern side.</p>							
3f	0.82	Beech	1986	High forest		Ancient Woodland Site, Informal Public Access	Area of Outstanding Natural Beauty, Green Belt, Planted Ancient Woodland Site
<p>Young beech, pedunculate oak, ash and hornbeam plantation with some exotics such as red oak and Norway maple planted in 1986 with self sown birch, ash, and hazel. One of the only chalk rich areas in the woodland and because of this the ground flora is diverse containing species such as woodruff, sanicle and black bryony amongst others. A medieval hollow way is present on the northern boundary with compartment 1b</p>							

## Appendix 2: Harvesting operations (20 years)

Forecast Year	Cpt	Operation Type	Work Area (ha)	Estimated vol/ha	Estimated total vol.
2012	2b	Thin	1.70	71	120
2012	2j	Thin	1.10	64	70
2012	2k	Thin	5.75	100	575
2012	3d	Ride edge Coppice	0.50	100	50
2013	2q	Ride edge Coppice	0.25	80	20
2013	2q	Thin	1.70	59	100
2013	2s	Thin	6.00	133	800
2013	2s	Ride edge Coppice	1.50	120	180
2014	2a	Thin	2.10	83	174
2014	2d	Selective Fell	1.10	45	50
2014	2f	Thin	4.00	165	661
2015	1c	Thin	2.30	74	170
2015	2l	Thin	3.80	63	240
2015	2o	Thin	3.60	56	200
2016	2g	Thin	2.20	59	130
2016	2i	Thin	2.00	65	130
2016	2m	Thin	1.50	67	100
2017	2r	Thin	3.60	67	240
2017	2t	Thin	2.80	64	180

## 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.