WOODLAND TRUST

Marden Park

Management Plan 2020-2025

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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 Consequently this printed version may quickly become out of date, particularly in relation to the planned work programme and on-going monitoring observations.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 or contact the Woodland Trust (operations@woodlandtrust.org.uk) to confirm details of the current management programme.

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

WOODLAND MANAGEMENT APPROACH

The management of our woods is based on our charitable purposes, and is therefore focused on improving woodland biodiversity and increasing peoples' understanding and enjoyment of woodland.

Our strategic aims are to:

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

All our sites have a management plan which is freely accessible via our website www.woodlandtrust.org.uk. Our woods are managed to the UK Woodland Assurance Standard (UKWAS) and are certified with the Forest Stewardship Council® (FSC®) under licence FSC-C009406 and through independent audit.
In addition to the guidelines below we have specific guidance and policies on issues of woodland management which we review and update from time to time.
We recognise that all woods are different and that the management of our sites should also reflect their local landscape and where appropriate support local projects and initiatives. Guidelines like these provide a necessary overarching framework to guide the management of our sites but such management also requires decisions based on local circumstances and our Site Manager's intimate knowledge of each site.

The following guidelines help to direct our woodland management:

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

SUMMARY

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

1.0 SITE DETAILS

Site name:	Marden Park
Location:	Woldingham
Grid reference:	TQ369539, OS 1:50,000 Sheet No. 187
Area:	67.77 hectares (167.46 acres)
Designations:	Ancient Semi Natural Woodland, Area of Outstanding Natural Beauty, Green Belt, Site of Special Scientific Interest

2.0 SITE DESCRIPTION

2.1 Summary Description

Marden Park is a 67.8ha (168 acre) site, situated on the edge of the North Downs National Character Area (NCA), in the Surrey Hills Area of Outstanding Natural Beauty (AONB), just to the south of the village of Woldingham in Surrey and 3 miles (4.8km) north of junction 6 for Godstone of the M25. Surrounding the site to the east is the North Downs Golf course, with fields to the north and west, and pockets of woodland owned by private landowners and the National Trust to the south.

From the chalk plateau at 244m, upon which Marden Park sits, there are expansive views through the trees over Godstone, Oxted and Tandridge as the plateau drops away steeply to the south into the mud- and sand-stones of the Low Weald NCA. The landscape of chalk downland and wooded hill tops includes parts of Marden Park and is designated as Woldingham and Oxted Downs Site of Special Scientific Interest (SSSI). The chalk-derived, nutrient poor soils give rise to the characteristic chalk grassland, scrub and mature secondary woodland with pockets of ancient semi-natural woodland (ASNW) – all of which can be found in Marden Park.

The woodland at Marden Park is predominately naturally established secondary broadleaf woodland (51.21ha – compartments 2a, 3a, 3d and 4a, including the area known locally as The Rumps), dominated by ash and beech with areas of dense hawthorn scrub. Approximately 10ha of Marden Park, including the areas of Great Church Wood and Stubbs Copse (compartments 1a and 3b respectively) are designated ASNW and within

these areas the canopy is more diverse – oak, cherry, whitebeam, field maple and hazel coppice add to the woodland structural and species composition. An area in the southern part of the site, including the area of Horse Shaw (4.9ha, compartment 4b) is planted secondary woodland and part of this planting is over a pocket of ASNW. Planted species include conifers – Scots pine, European larch and Norway spruce accounting for approximately 10% of the otherwise predominately beech, ash and oak planted woodland canopy. The remaining 2.04ha (compartments 2b and 3c) areas of chalk grassland, recently linked by clearing an area of secondary woodland scrub. The area has been extended under the management of the Trust and is gradually being restored to species rich chalk grassland using a variety of management techniques.

Marden Park is effectively spread over three blocks but managed as one unit. The most northern block is bisected by a strip of land owned by Network Rail as a deep railway tunnel runs beneath the site, separating compartments 2 and 3. Meanwhile, compartment 4 is the most southern block separated from the larger block by an area of private woodland. Marden Park was acquired in stages by the Woodland Trust; in 1986 the Trust acquired Great Church Wood (compartment 1a) and then in 1994, with significant support and campaigning from the local community and Woldingham School, the Trust acquired the rest of the site formerly part of the Marden Park Estate.

The wood is particularly popular with locals and is served by many access points including a car park off Gangers Hill, which is owned by Network Rail and managed by Tandridge District Council. Visitors include horse riders and cyclists who use the public and permissive bridleways that transect the site. Public rights of way passing through the site includes the North Downs Way, which runs through the southern block of Marden Park and along its southern boundary parallel to Gangers Hill. The most regular users are local residents from Woldingham and the surrounding area. The Surrey Hills AONB also promotes the Woldingham Countryside Walk, a 9km waymarked circuit that takes in part of Marden Park. It is possible to walk between the northern and southern blocks of Marden Park, as there is a permissive footpath through the adjoining private woodland.

The wood has an active volunteer group who help to manage the woodland, open space habitat and monitor its wildlife.

3.0 LONG TERM POLICY

Over time, the mature beech, ash and oak trees will senesce to form veteran trees or collapse opening up gaps in the canopy for other species (e.g. beech and sycamore) to fill and increasing the wood's standing and fallen dead wood habitat. The impact of ash dieback (Hymenoscyphus fraxineus) will result in the overall decline and death of the majority of ash trees across the wood, which currently account for approximately 80% of the overall woodland canopy. Crown dieback, tree death and increased windblow, will further create gaps in the canopy for other species such as sycamore, beech and woody shrubs to take advantage of, increasing the structural diversity and species composition of the wood. This will enhance its SSSI favourability for biodiversity. The naturally established and planted secondary woodland area will continue to develop, the canopy remaining dominant in beech alongside oak, cherry, whitebeam and sycamore. It will eventually be as rich as the adjoining ancient woodland areas with the boundaries between becoming increasingly less defined.

The grassland (compartment 2b and 3c) makes up 3% and 2ha of the site and will continue to be maintained as open space through appropriate scrub management to enhance the chalk grassland community using a variety of management techniques.

On-going monitoring and maintenance will ensure the site remains a safe and accessible to visit, with infrastructure appropriate for the wood's relatively high visitor numbers.

4.0 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.

4.1 Ancient Semi Natural Woodland

Description

Compartments (cpts) 1a, 3b and parts of 4b and 4c are considered to be Ancient Semi-Natural Woodland (ASNW) and account for approximately 17% of the site (11ha). Cpt 1a, known as Great Church Wood, 3b known as Stubbs Copse and 4a are part of the SSSI and are in favourable condition when last surveyed by Natural England in 2013.

These areas of woodland are distinct from the neighbouring secondary woodland, cpt 1a more so than cpt 3b and 4c. In cpt 1a, the species composition of the canopy is more diverse with mature/veteran oaks abundant in the canopy with ash frequent and occasional beech. Similarly, the understorey is more diverse both in species and structure - with an abundance of hazel coppice throughout the compartment, and other species including holly, field maple, willow, cherry, silver birch, rowan, sycamore, hawthorn, crab apple, elder and blackthorn. The hazel coppice has been actively managed in the past, most recently by volunteers whilst under Woodland Trust ownership. In cpt 3b, mature and pole stage ash is dominant with beech, whitebeam and oak as rarer components. A defining difference between 3b and neighbouring 3a is the understorey, as hazel coppice, field maple, hawthorn and woody shrubs including box form a distinctive shrub layer. In cpt 4c, the area of ASNW is less distinctive, notably the maturity of the canopy-dominating ash trees is greater in the ASNW designated area compared to the adjoining secondary woodland. Other secondary species in the canopy include mature beech, oak and horse chestnut, with an understory of elder, hazel and field maple – the latter species were actively coppiced in the past but have long been abandoned.

Veteran ash and beech can be found throughout the ASNW and secondary woodland. Ash dieback is prevalent across all of the compartments and when surveyed in 2019, the ash trees varied from showing no signs of the disease on a handful of trees to advanced stages of decline, especially in the younger, pole-staged trees. Within all of the woodland blocks there is a noticeable increase in the number of fallen limbs or whole tree failures in the ash population.

The ASNW approximates to National Vegetation Classification (NVC) W12a – beech/oak/ash with a dog's mercury sub-community.

Like in the canopy, the ground flora is distinctively most diverse in the areas of ASNW. Dog's mercury and bluebells dominate alongside wood sorrel, wood anemone, cleavers, hedge woundwort, toothwort, forget-me-not, yellow archangel, lesser celandine, wood spurge, herb robert, dog violet, docks and hard fern– many species typically associated with ancient woodland. Nettles and species of mosses occur under dense canopy and grasses alongside the paths. In the small glades, bramble, nettles and red curraent can be found. The regenerating tree species amongst the ground flora are dominated by ash seedlings along with beech, sycamore hawthorn, holly and elder.

There is a small patch of cherry laurel in cpt 3b.

Significance

Marden Park is situated in London's Green Belt within the North Downs NCA. Woodlands accounts for 19% of the total area of the NCA, and ancient woodland accounts for 9% of this woodland (12,695ha). Woodland, especially ASNW - an irreplaceable habitat, is becoming increasingly fragmented in the South East - a region which supports 40% of the UK ASNW.

The site was designated a SSSI in 1986 for its rich chalk grassland, scrub, and mature and secondary woodland supporting many species of characteristic plants and animals, a number of which are rare.

Opportunities & Constraints

Opportunities
- Increase diversity in the wood's species composition and structure as a result of ash dieback.
- Allow areas of the wood time and space to deal with the impacts of ash dieback and to see if there is any resilience to the disease.
- To allow scientific trials and research to be undertaken in liaison with key partners and organisations to further and promote knowledge and understanding.

Factors Causing Change

- Lack of species diversity across the wood. Silvicultural operations will create and allow opportunities for natural mixed species regeneration.
- Decline in ash population due to Hymenoscyphus fraxineus with ash of each age class present showing decline symptoms. Disease is abundant across the site and will have a high impact. Silvicultural operations will help primarily to manage risk to site users and to create opportunity for natural mixed species regeneration.
- Impact and damage from deer (roe and fallow confirmed on site). A Deer/Herbivore Impact Assessment will be carried out to assess impacts and the management required to mitigate impacts upon the woodland and open space habitat.
- Invasive non-native species such as cherry laurel are present but a control programme will be implemented throughout the plan period.

Long term Objective (50 years+)

Marden Park will be managed to increase the wood's resilience to pests and diseases and maximise the wood's biodiversity. Through silvicultural intervention, the wood's structure and species composition will be more diverse. As ash and mature beech trees decline, the abundance of sycamore may increase and the understorey will become more diverse with hazel, rowan, silver birch and field maple. It is likely that where sycamore fills the gaps, the total amount of sycamore in the canopy will not exceed 15% which will be in line the NE/FC Guidance on 'Managing woodland SSSIs with ash dieback (Hymenoscyphus fraxineus)' (published in April 2019).

The overall structure of the wood will become more diverse, which will enhance the condition of the SSSI and its features.
Deer populations will be at a level where they do not threaten components of the woodlands or their

regeneration. The boundaries between the secondary woodland and the ancient woodland will begin to become indistinguishable. The dieback of ash and mature trees will increase the overall deadwood habitat in the wood.

The wood will also be free from any invasive non-native species such as cherry laurel and garden escapes.

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

During the plan period (2020-25), the main focus of management will look to ensure the safety of the wood's visitors with a secondary benefit of opening up the rides. Ash trees alongside paths will be surveyed annually in the summer months, noting the worst effected trees. Trees showing over 25% of canopy decline and/or the presence of epicormics growth or stem/basal lesions will be considered for felling. The results of the surveys will inform a silvicultural operation in the late summer/winter months of that year. Also, management will be undertaken to control non-native species (e.g. cherry laurel), old tree guards will be cleared and a number of overstood hazel coppice stools will be re-coppiced.

- Approximately 3.4km of footpaths run through the ASNW. Carefully selected paths will be closed until it is considered safety to reopen them. Meanwhile, alongside paths being kept open (tree safety Zone B - approximately equal to a work area of 3ha based on 15m tree length x2), ash trees will be selectively felled, to manage tree risk and to increase light levels. Work will begin in 2020 and be ongoing throughout the plan period determined by annual ash dieback assessments and summer tree safety inspections.
- Cherry laurel (less than 0.05ha) in cpt 3b will be cut and uprooted where possible, beginning 2019 with on-going monitoring. If uprooting is not possible, arisings will be left on site and stumps treated to control any regeneration.
- Redundant plastic tree guards in cpt 1a will be removed and disposed of. The work by volunteers began in 2019 and will be ongoing until all shelters are cleared.
- Overstood hazel coppice will be selectively re-coppiced, up to 40 stools over 5 years across cpt 1a and 3b with the aim of creating a checkerboard effect. E.g. yr1- 4 stools to be re-coppiced in cpt 1a, yr 2 –10 stools in cpt 3b.
- A Deer Impact Assessment will be undertaken in 2021.

4.2 Secondary Woodland

Description

Approximately 80% (56ha) of Marden Park is secondary woodland. Cpts 2a, 3a (includes area known as The Rumps), 3d and 4a are naturally established secondary woodland whilst cpt 4b is planted secondary woodland (also referred to as PAWS). All the naturally established secondary woodland (cpt 2a, 3a, 3d and 4a), excluding a fraction of cpt 4a and 4b, is within the SSSI. At the point of the last assessment by Natural England in 2013, cpt 2a and areas of 4a were in an 'unfavourable recovering' condition as they feature areas of chalk grassland which have a greater than desirable scrub and coarse vegetation component. Cpts 3a and 3d were considered to be in 'favourable' condition with "a good mix of tree species, age classes and varied structure with shrub layer over 30%".

The canopy in all naturally established cpts is dominated by pole-stage ash (50-60 years old) and younger ash regeneration in pockets where mature beech fell in the 1987 storm. There are still frequent mature/veteran beech trees, many of which reflect the boundaries of old field margins, there is a significant, notable avenue of veteran beech pollards in cpt 4a. Another distinct feature are the pockets of dense, mature hawthorn scrub, typically found on the west-facing slopes. Other secondary, more occasional or rarely occurring species include whitebeam, oak, yew, cherry and along the public right of way in 3a near the boundary with cpt 3b, there are a handful of horse chestnut and a dozen or so Corsican pine. The understorey is dominated by hawthorn with rarer species including hazel, elder, holly, field maple, blackthorn, yew and crab apple. Ash dieback is prevalent throughout the wood. When surveyed in 2019, the trees varied in their decline, younger trees were increasingly in stages of advanced decline whilst other, mature and more isolated trees appeared to show no signs of the disease. Within the ash dominated woodland blocks there is a noticeable increase in the number of limb drops and whole tree failures.

Similar to the ASNW, the natural secondary woodland approximates to National Vegetation Classification (NVC) W12a – beech/oak/ash with a dog's mercury sub-community.

The ground flora is limited under the dense beech canopy, however, under the ash canopy dog's mercury dominates with the occasional occurrence of ground ivy, buttercup, cleavers, dog violet, ferns, a small patch of small balsam along the permissive bridleway in cpt 3a and a patch of wild garlic alongside the North Downs Way in cpt 4a. Nettles can be found in areas of past disturbance, grasses alongside paths and mosses under dense shade such as under the hawthorn scrub. The dominant regenerating tree species is usually ash under ash canopies and beech under beech canopies. Other regenerating species include holly, hawthorn, elder, field maple and coppiced hazel. Within cpt 2a and 4a there are areas of chalk grassland, the largest of which is no greater than 30m2. The areas are unfenced, maintained through rabbit grazing and an end of summer cut and collect regime. For full habitat description see KF3: Semi Natural Open Ground Habitat.

Cpt 4b (4.94ha) is an area of planted secondary woodland, partly on an area of ancient semi-natural woodland. Cpt 4b is not included in the SSSI. The north and east boundary of the compartment follows the line of an earth bank and the path marks the south and west boundary.

There are two distinct blocks of planting (not reflecting the area of ASNW and non-ASNW). As with the rest of the wooded component of Marden Park, the secondary woodland approximates to National Vegetation Classification (NVC) W12a – beech/oak/ash with a dog's mercury sub-community.

The northern block of 4b is dominated by mature beech (50%) forming a closed-canopy high forest, interspersed Corsican pine (15%), larch (<1%) and Norway spruce (5%). The conifers are concentrated along the northern and eastern boundaries of the compartment, which follow the contours, path and earth bank. The edge conifers are mature, timber-sized trees; whereas the conifers within the block (possibly used as a nurse crop for the beech) have been less successful and have largely failed. Towards the south-west corner of the beech-dominated block (alongside the North Downs Way), mature ash dominates the canopy, accounting for 30% of the canopy of the block. Under the beech canopy, there is no understorey and ground flora is sparse with pockets of bramble, nettles and ferns occurring where mature beech or the interspersed ash has collapsed. Under the lighter ash canopy, there is an understorey of hawthorn, hazel, sycamore, holly, field maple and elder saplings. The regenerating seedlings (less than 1m tall) found in the canopy gaps, is dominated by ash. However, all are failing as a result of browsing and the effects of ash dieback. The dominant ground flora under the ash canopy is dog's mercury and towards the block edges, wood sedge, common dog violet, red current, lords and ladies, wild garlic, bluebell, archangel, cleavers, primrose and wood speedwell can be found.
In this block, features of ancient woodland ground flora are present and a key factor causing change is ash dieback, which is gradually opening up the closed beech canopy. The gaps created as the ash collapses are being filled by ground flora. As this continues the understorey species from under the ash and surrounding natural secondary woodland, will increasingly colonise the gaps. However, the impacts of deer, squirrels and rabbit browsing may impede this.

The block to the south is a significantly younger plantation. The drawn-up, even-aged, pole-stage canopy of beech (61%), oak (1%), ash (35%), Corsican pine and Norway spruce (3% combined), has seen little evidence of intervention, save one operation to thin out some of the conifer. The oak and conifer component have largely failed and the surviving trees have poor timber form with beech in particular suffering from deer and squirrel damage. Like in the beech block, the declining ash is beginning to open up the canopy. Under the dense canopy there is no understorey. However, within the block runs a strip of ASNW and the ground flora partly reflects this. The flora is noticeably more abundant compared to the beech block and includes dog's mercury, bluebells in abundance, ground ivy, yellow archangel, lords and ladies, lesser celandine, wild garlic, common dog violet, wood speedwell and mosses.

Significance

The secondary woodland increases the site's overall structure and resilience to threats such as ash dieback and climate change. It connects the areas of ASNW, increasing the core area of woodland as well as extending the habitat across the landscape. The scrub element provides valuable woodland edge habitat and a rich ecotone between the mature woodland and chalk grassland.

Opportunities & Constraints

Opportunities
- Increase diversity in the wood's species composition and structure as a result of ash dieback
- Allow areas of the wood time and space to deal with the impacts of ash dieback and to see if there is any resilience to the disease.
- To allow scientific trials and research to be undertaken in liaison with key partners and organisations to further and promote knowledge and understanding.
- It may be possible to link the wood to adjacent woods not owned by the Woodland Trust.

Factors Causing Change

- Lack of species diversity across the wood. Silvicultural operations will create and allow opportunities for natural mixed species regeneration.
- Decline in ash population due to Hymenoscyphus fraxineus with ash of each age class present showing decline symptoms. Disease is abundant across the site and will have a high impact. Silvicultural operations will help primarily to manage risk to site users and to create opportunity for natural mixed species regeneration.
- Impact and damage from mammals, deer, squirrels and rabbits. A Deer/Herbivore Impact Assessment will be carried out to assess impacts and the management required to mitigate impacts upon the woodland and open space habitat.

Long term Objective (50 years+)

Marden Park will be managed to increase the wood's resilience to pests and diseases and maximise the wood's biodiversity. Through silvicultural intervention, the wood's structure and species composition will be more diverse. The secondary woodland should be predominantly broadleaved in character with a few stands of open-canopied, mature conifers retained for their aesthetic appeal. There will be a range of age-classes from scrub to maturing high forest. The secondary woodland will be maintained and enhanced to increase the site's overall resilience to biotic and abiotic threats and maximise the site's biodiversity. As ash, maturing trees and conifers decline, opening up the canopy, other species will be able to fill the gaps resulting in an increase in the wood's overall species composition and structural diversity. The dieback of ash will increase the overall deadwood habitat in the wood. Over time, tree species, such as beech and sycamore, colonising from the neighbouring ancient woodland, will form the high forest canopy over a diverse understorey. Deer populations will be at a level where they do not threaten components of the woodlands or their regeneration. Ancient woodland ground flora will also have the opportunity to further colonise the secondary woodland and in the very long term, the boundaries between the secondary woodland and the ancient woodland will begin to become indistinguishable.

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

During the plan period (2020-25), the main focus of management will look to ensure the safety of the wood's visitors with a secondary benefit of opening up the rides. Ash trees alongside paths, roads/tracks and property boundaries will be surveyed annually in the summer months, noting the worst effected trees. Trees showing over 25% of canopy decline and/or the presence of epicormics growth or stem/basal lesions will be considered for felling. The results of the surveys will inform a silvicultural operation in the late summer/ winter months of that year. Silviculture operations will also further the restoration of the PAWS area. Also, rides and glades will be maintained through annual cutting.

This section should be read in conjunction with the PAWS assessment and strategy maps.

- Alongside approximately 5.3km of footpaths across the secondary woodland. Carefully selected paths will be closed until it is considered safety to reopen them. Meanwhile, alongside paths being kept open (tree safety Zone B - approximately equal to a work area of 16ha based on 15m tree length x2), and along the 1.6km of road and 525m boundary along a well-used track to a local school (tree safety Zone A – approximately equal to a work are of 4.6ha based on a 15m tree length), ash trees will be selectively felled, to manage tree risk and to increase light levels. Work will begin in 2020 and will be ongoing throughout the plan period, determined by annual ash dieback assessments and summer tree safety inspections.
- In the young block, a 30% thin will target conifers and defected trees such as those with significant basal

rot. Around the edge of the compartment, mature conifers will be thinned targeting suitable timber trees. Operation to occur once in the 5 year plan in 2020/2021 and then again in the subsequent plan.
- 200m glade opposite the hedgerow alongside the public bridleway on the boundary of cpt 2b and 1a will be maintained annually at the same time as the second path cut. The scallop will be cut back to the mature tree line.
- A Deer Impact Assessment will be undertaken in 2021 to inform appropriate deer control across the site in order to meet the objective 'to allow regeneration of suitable species to replace felled/dead/dying ash and thinned conifer and beech.

4.3 Semi Natural Open Ground Habitat

Description

There are two chalk grassland areas (cpts 2b and 3c), which account for 3% of the total site (2.04ha). The larger area, cpt 2b is 1.43ha lies on a west facing slope whilst cpt 3c is 0.61ha and faces north/ northeast. Along the eastern edge of cpt 2b is a laid hedge, which was created by Marden Park's volunteer group in 2012.

The chalk grassland areas have been managed through either a cut and collect regime and/or by grazing using sheep and goats in the past. In 2016, the grassland area was extended to include cpt 3c, previously a relatively unmanaged area of open ground. Both areas are now stock-proof fenced and connected by a fenced "link" across land, which is part owned by Network Rail. The cleared area contains stumps of varying diameters. The ground flora is similar to that of the surrounding secondary woodland, namely dogs mercury, dog violets, ivy, primrose and bramble, plus nettles, dandelions and coarse grasses. With cpts 2b and 3c connected they can be managed as one unit and introduce an appropriate and effective grazing regime, which will address the dominance of dogwood and hawthorn scrub, reduce the coarse vegetation and increase the diversity and abundance of species associated with chalk grassland habitats. It is hoped that in time and through appropriate management, "link" will acquire some of the botanical features of the chalk grassland areas..

The area is dominated by grass species (mostly upright broome with glaucous sedge and quaking grass frequent), bramble, old man's beard and woody vegetation (predominantly dogwood and hawthorn). Other flora includes common salad burnet, dwarf thistle, fairy flax, mouse-ear hawkweed, bird's foot trefoil, wild strawberry, milkwort, primrose, hairy violet, eyebright, marjoram, hedge bedstraw, common spotted orchids and round headed rampion. The habitat is most associated to National Vegetation Classification (NVC) type of CG2/3 but a further survey is needed to fully determine the NVC community. The two cpts are included in the SSSI and were considered to be in an 'unfavourable-recovering' condition when surveyed in 2013 by Natural England. This was due to the levels of woody scrub, wild clementis and false broome, which were present in the grassland.

Significance

Chalk grassland is a priority habitat listed in the UK Biodiversity Action Plan. Chalk grassland supports an extremely diverse and unique range of plant and invertebrate species and is one of the richest habitats found in the UK. Besides its biological importance, chalk grassland is also a defining landscape feature of the North Downs, which Marden Park is a part of, and is of significant cultural and historical importance. In the NCA, lowland calcareous grassland accounts for just 1% of the total area and is threatened by increasing fragmentation due to development, poor management, climate change and pressure from surrounding urban environments and visitors.

Opportunities & Constraints

Opportunities
- To work in partnership with other landowners, land managers or organisations to appoint a grazier and suitable stock to graze the chalk grassland sustainably and effectively.
- To contribute towards the UK Biodiversity Action Plan targets and ensure more areas of chalk grassland are created.

- To contribute to the aims and objectives of the North Downs NCA and Surrey Wildlife Trust's Living Landscape Strategy

Constraints
- Steep slope
- Availability and reliability of good graziers and suitable animals.
- A history of antisocial behaviour, vandalism and damage to the fencing and grazing infrastructure.
- Increase in visitors with dogs and a history of incidents involving dog attacks to the livestock.
- Relatively small area for grazing management, which will require more input from a grazier/stockperson to ensure the areas are not overgrazed.

Factors Causing Change

- Unavailability of stock or machinery to carry out required management prescriptions? This would lead to increase in scrub as detailed below.
- ncrease in scrub and coarse grasses on chalk grassland
- Invasive species present (e.g. old man's beard, false broome) and lack of suitable control resulting in spread.

Long term Objective (50 years+)

The chalk grassland will be retained and maintained at its current size, approximately 2ha, including up to 0.1ha of scrub around the grassland edge. Key indicator species for this habitat should be present including pyramidal orchid, wild marjoram, cowslip, chalk milkwort and yellow-wort.

The chalk grassland supports a rich invertebrate fauna. The rufous and stripe-winged grasshoppers Gomphocerripus rufus and Stenobothrus lineatus, the Roman snail Helix pomatia and a hoverfly Microdon devius are among the rare species which occur on this SSSI.

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

To establish a grazing programme in both grassland areas over the plan period, maintaining approximately 10-15% scrub and 80-85% of grassland on all 2ha.

- For the fenced area, sheep will be used to graze the chalk grassland areas and will be supplied and managed by the Surrey Downlands Project, subject to the success of a 3 month trial, which will commence in January 2020. The 3-month trial will assess how effective the grazing is as a management tool and whether there are any incidents with dogs, which may affect the health and wellbeing of the stock and using them as a management tool in the future. The grazier will produce and send a report detailing the grazing and management undertaken in cpts 2b and 3c. If the trial is successful, the numbers and timings will be discussed and agreed with the grazier to ensure the scrub is effectively being targeted and the sheep are contributing towards a more appropriate management for the chalk grassland habitat.
- Monitoring of the habitat will be set up and surveys will be carried out by volunteers who will receive appropriate botanical training. All surveys and data collected will be stored and used to inform future management of the habitat.
- The areas of unfenced grassland in cpt 2a (less than 0.1ha combined) and 4a (approx. 0.16ha) will be cut annually in late summer/early autumn with arisings collected and deposited in an appropriate part of the compartments or site.
- Cut and collect operation may be required, depending on success of grazing in late summer, post flowering

and before animals return, subject to monitoring and results of any surveys undertaken.

4.4 Connecting People with woods & trees

Description

Marden Park is part of the Welcoming Sites Programme (WSP), which aims to improve the visitor experience to this site. The WSP leads to a series of lasting upgrades that will improve the visitor experience and will likely increase the number and range of visitors to the wood. An attractive and serviceable network of tracks and paths will further encourage the appreciation of the woodland both on the site and in the locality. The site will be managed to meet the required high standards of the WSP and will provide a clear welcome: well-maintained entrances, furniture, signs and other infrastructure as well as sustainable path and track surfaces across the variable ground conditions. Access will better facilitate use by a wider range of visitors.

Marden Park is situated in the North Downs NCA and is located next to Woldingham (population c.2,100), an affluent village in Surrey. The wood is within the M25 and is surrounded by a number of villages and towns including Oxted (population c.11,000) 3 miles to the east and Caterham (population c.21,000) 5 miles to the west, and has an access A category designation (high usage with more than 20 people using one entrance per day). There is a car park located on Gangers Hill which is owned by Network Rail and managed by Tandridge District Council that can hold up to 12 vehicles. There are also several lay-bys along the road, which can accommodate parking. Whilst the site is close to urban populations, the site is in a rural location and access is via a single track lane.

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There are 9.6km of footpaths throughout the wood, including a public bridleway, two public footpaths including part of the North Downs Way and a permissive bridleway, which allows horse riders an off-road route beside Gangers Hill. There is also a waymarked trail, The Woldingham Countryside Walk, which is a 9km waymarked circular route that encompasses Marden Park.

There are three orientation boards at the main entrances to the site, situated at the car park, the entrance close to Gangers Hill and Tandridge Hill Lane junction, southern stretch of Gangers Hill and the entrance off

Church Road.

There are no current visitor numbers available, but the woodland and car park is used throughout the day. Visitors are primarily dog walkers, but the wood also appeals to younger and older families.

The site is adjacent to the private girls' school Woldingham School and to a riding school. There are a number of riding stables in the area so the wood is very popular for horse riders, as the permissive bridleway provides a safe, accessible route through the wood that negates the need to ride along the road.

An established Woodland Trust volunteer group which carry out practical tasks once a month throughout the winter from October through to March. The tasks are agreed with the Site Manager and include coppicing, managing scrub and keeping paths open. Usually between 10 and 15 people attend the volunteer task days.

There are several Woodland Trust sites within a 25km radius of Marden Park, but none in its immediate vicinity. The neighbouring woodland is owned and managed by the National Trust.

Significance

Marden Park provides an extensive area for quiet, informal recreation in an area of high scenic value, which is appreciated by many walkers, cyclists, horse riders and visitors alike.
Marden Park is ideally located, as it is within the M25 within 30km of London, has a car park and is surrounded by towns and villages making it very accessible as a countryside site to visit.

Opportunities & Constraints

Opportunities
- To engage with more visitors to promote interest and connection with the habitats and management, (e.g. grazing and protection of ground nesting birds) including events, educational workshops and forest schools.
- To educate and raise awareness to the users of the wood about how our woodlands are managed. This will be done by putting up informative signs before any operations or works take place, to engage, explain the reason for management and raise awareness.
- The site sits within the North Downs, and the North Downs Way passes through it which presents opportunities to promote the woodland to hikers and ramblers, and for collaboration and partnership working to promote the site via relevant appropriate organisations and websites.
- To link activities to the WT's Urban programme e.g. community engagement events.
- To engage more volunteers to carry out conservation tasks, site monitoring and surveys.

Constraints
- Car park is small and not owned or maintained by the Woodland Trust.
- Due to the size of the site, the site has a limited carrying capacity and the impacts from visitors, dogs and litter has an impact on the site.
- Although there are footpaths through the whole site, these are largely natural and unsurfaced, meaning that many of the paths are muddy during the winter or prolonged periods of rainfall.
- The rural location means that the site is only accessible by car for the majority of visitors.

Factors Causing Change

- An increase in visitor numbers could cause a detrimental impact on the wood with damage to unsurfaced paths, increase risk of path encroachment, more desire lines, increased compaction around tree roots near to paths, trampling of specialist ground flora and disturbance to wildlife.
- A recent increase in bike use and anti-social behaviour in the wood includes littering and vandalism, which could result in an increase in health and safety concerns and measures needed to safeguard other users of the site as well as the site itself.
- Marden Park is popular with dog walkers and commercial dog walking companies. This is already a cause for concern with grazing animals being used to manage the chalk grassland, previous incidents and a risk of dog attacks. If dog walking increased significantly it could have a detrimental impact on the visitor experience i.e. an increased risk of dog attacks, visible and abundance of dog faeces and on localised path-side ecology, as the faeces decay and change the local soil characteristics.
- Increased visitor numbers and dogs could also potentially bring conflicts with not only stock but with ground-nesting birds and dogs.

Long term Objective (50 years+)

Marden Park will provide a safe, enjoyable and varied woodland experience for visitors with a good network of accessible footpaths, bridleways and entrances in line with the Welcoming Site Programme designation. Marden Park will continue to offer a high quality visitor experience in line with a WT access category A designation. The woodland will provide an extensive area for quiet informal recreational activities, be well used and appreciated by a wide range of users from the local community and from further afield.

Entrances and signage will have a welcoming appearance and there will be a network of well-maintained paths providing a range of routes suitable for walkers with viewpoints over a range of varied habitat types, integrated with woodland management and wherever possible linking to the surrounding path network. Interpretation and waymarking trails will be fully integrated and complement existing routes and will provide visitors with information and points of interest. Permissive bridleways should be clear and well signed.

Marden Park should be known for its wildlife interest and varied habitats within the wider landscape, network of paths, and should retain its rural aesthetic, with sympathetic infrastructure, signage and interpretation.

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

To provide a safe, enjoyable and varied woodland experience for visitors. Public access will be maintained and enhanced over the plan period to enable greater public engagement. This will be achieved by the following:

- Approximately 9.6km of path and 11 entrances will be maintained annually to allow continued access across the site. This will include strimming path edges and entrances, and appropriate tree safety work identified by Zone B safety inspections.
- Entrance infrastructure and signage will be refreshed and updated in 2020 and maintained throughout the plan period by regular inspections.
- Installation of new orientation panels and waymarker and permissive bridleway posts will be replaced in 2021 and maintained throughout the plan period by regular inspections.
- Hold a number of informative public guided walks in summer 2020 to raise awareness in the local community of ash dieback and the management required.
- Recruit a volunteer (botanical) surveyor to help monitor the chalk grassland, ideally in 2020.

- Recruit woodland wardens to walk the site on a regular basis and to be 'the eyes and ears' noting any rare or notable species, wildlife, maintenance issues or site problems/damaging activities and to have a clear line of communication with the Site Manager.
- Build and encourage the work of the woodland working group throughout the plan period. Site Manager to meet with the group at least twice a year and agree the group's work programme for the year ahead.
- Annual tree safety inspections in line with the Trusts Tree Risk Management Policy and remedial works as required.
- An assessment of access infrastructure as part of the whole site woodland condition assessment and Welcoming Sites Programme in 2024.

5.0 WORK PROGRAMME

Year	Type of Work	Description	Due By
2020	AW - Visitor Access Infrastructure	Replacement engraved finger including delivery and dowels for re-fitting as per quote dated 19.06.2020	31/07/20
2020	NWH - Maintenance Work	Cut and collect vegetation and scrub in glades (areas A, B and C on management map). Arisings to be cleared to edge of glade, keeping base of trees clear.	30/09/20
2020	NWH - Maintenance Work	Cut and collect vegetation and scrub in cpt 2b and 3c. Arisings to be cleared to edge of grassland	30/09/20
2020	WM - Harvesting Sales Income for Resale	Income from ash felling along zone A & B. from cpt 1a, 2a, 3a.	28/11/20
2020	WMM - General Site Management	Clear redundant tree guards from cpt 1a (Great Church Wood).	31/12/20
2020	SL - Tree Safety Silviculture Work	TBC - felling of approx 120 cubic meter of ash alongside road and footpaths.	31/12/20
2021	WMM - Coppice Management	Re-coppice 4 marked stools in cpt 1a and 4 marked stools in cpt 3b. Leave arisings in habitat piles away from other trees. NB: the brash can also be laid around the stool which can help protect the regen from deer.	28/02/21
2021	CS - Ecological Survey & Assessment	Creation of 42 dormouse monitoring boxes @ £7.50 each	28/02/21
2021	NWH - Maintenance Work	TBC - Volunteer training session with Downland Project – grassland management and indicator species ID	26/06/21
2021	SL - Safety / Legal Obligation Work (SODS)	TBC - remove old and install new height barrier at entrance to car park. Permission required from Tandridge District Council	30/06/21
2021	WMM - Invasive Plant Control	Spray laurel regrowth with glyphosate in cpt 3b area no greater than 0.2ha. See management map for area. See EMC spec 4.4	31/08/21
2021	AW - Visitor Access Maintenance	Path cutting and maintenance (see management map for path network) a. Clear fallen, leaning or hung up vegetation from entrances and paths throughout b. Cut all marked paths to approx. 3m width, cutting back any encroaching branches 2. Collect and remove litter from entrances, road frontages and paths 3. Entrances - maintenance and inspection: a. Cut back vegetation around all signs and entrances so signs / info boards are clearly visible and accessible. b. Cleaning of all signage with anti-fungal wash and treatment of wooden signs with Danish oil c. Fixing of any immediate problems with entrance furniture such as broken fence rails etc. d. Reporting of any more serious problems or replacement requirements to SM. See EMC spec 1.01, 2.01, 2.13, 3.01, 5.02	31/08/21
2021	NWH - Maintenance Work	Wildlife monitoring volunteers surveying grassland. Ask to see report at end	15/09/21

		of year.	
2021	NWH - Maintenance Work	Cut and collect vegetation and scrub in glades (areas A, B and C on management map). Arisings to be cleared to edge of glade, keeping base of trees clear.	30/09/21
2021	NWH - Maintenance Work	Cut and collect vegetation and scrub in cpt 2b and 3c. Arisings to be cleared to edge of grassland	30/09/21
2021	WMM - Ride Management	Clear scrub 200m along bridleway starting from northern tip of cpt 2b and working southwards (area D1 on management map). Arisings to be collected and scattered in woodland, keeping base of trees clear.	30/09/21
2021	NWH - Grazing Work	TBC Payment to Downlands Trust for grazing cpt 2b and 3c. Grazier to supply annual grazing report.	20/12/21
2021	WM - Harvesting Sales Income for Resale	Income from ash felling along zone A & B and thinning in cpt 4b	30/12/21
2021	NWH - Grazing Work	Livestock volunteers checking on grazers once/twice a week.	31/12/21
2021	WMI - PAWS Restoration	Thinning operation - 30% in young plantation and timber trees around edge of cpt. Operation to be netted off.	31/12/21
2021	SL - Tree Safety Silviculture Work	TBC - Felling of ash trees. See work schedule for details.	31/12/21
2022	WMM - Coppice Management	Re-coppice 4 marked stools in cpt 1a and 4 marked stools in cpt 3b. Leave arisings in habitat piles away from other trees. NB: the brash can also be laid around the stool which can help protect the regen from deer.	28/02/22
2022	AW - Visitor Access Maintenance	Path cutting and maintenance (see management map for path network) a. Clear fallen, leaning or hung up vegetation from entrances and paths throughout b. Cut all marked paths to approx. 3m width, cutting back any encroaching branches 2. Collect and remove litter from entrances, road frontages and paths 3. Entrances - maintenance and inspection: a. Cut back vegetation around all signs and entrances so signs / info boards are clearly visible and accessible. b. Cleaning of all signage with anti-fungal wash and treatment of wooden signs with Danish oil c. Fixing of any immediate problems with entrance furniture such as broken fence rails etc. d. Reporting of any more serious problems or replacement requirements to SM. See EMC spec 1.01, 2.01, 2.13, 3.01, 5.02	31/08/22
2022	WMM - Invasive Plant Control	Spray laurel regrowth with glyphosate in cpt 3b area no greater than 0.2ha. See management map for area. See EMC spec 4.4	31/08/22
2022	NWH - Maintenance Work	Wildlife monitoring volunteers surveying grassland. Ask to see report at end of year.	13/09/22
2022	NWH - Maintenance Work	Cut and collect vegetation and scrub in glades (areas A, B and C on management map). Arisings to be cleared to edge of glade, keeping base of trees clear.	30/09/22
2022	NWH - Maintenance Work	Biennial, cut back hedgerow along eastern edge of cpt 2b, arisings to be cleared back under hedgerow	30/09/22

2022	WMM - Ride Management	Clear scrub 200m along bridleway starting from car park working northwards (area D2 on management map). Arisings to be collected and scattered in woodland, keeping base of trees clear.	31/10/22
2022	NWH - Grazing Work	Payment to Downlands Trust for grazing cpt 2b and 3c. Grazier to supply annual grazing report.	20/12/22
2022	NWH - Grazing Work	Livestock volunteers checking on grazers once/twice a week.	31/12/22
2023	WMM - Coppice Management	Re-coppice 4 marked stools in cpt 1a and 4 marked stools in cpt 3b. Leave arisings in habitat piles away from other trees. NB: the brash can also be laid around the stool which can help protect the regen from deer.	28/02/23
2023	AW - Visitor Access Maintenance	Path cutting and maintenance (see management map for path network) a. Clear fallen, leaning or hung up vegetation from entrances and paths throughout b. Cut all marked paths to approx. 3m width, cutting back any encroaching branches 2. Collect and remove litter from entrances, road frontages and paths 3. Entrances - maintenance and inspection: a. Cut back vegetation around all signs and entrances so signs / info boards are clearly visible and accessible. b. Cleaning of all signage with anti-fungal wash and treatment of wooden signs with Danish oil c. Fixing of any immediate problems with entrance furniture such as broken fence rails etc. d. Reporting of any more serious problems or replacement requirements to SM. See EMC spec 1.01, 2.01, 2.13, 3.01, 5.02	31/08/23
2023	WMM - Invasive Plant Control	Spray laurel regrowth with glyphosate in cpt 3b area no greater than 0.2ha. See management map for area. See EMC spec 4.4	31/08/23
2023	NWH - Maintenance Work	Wildlife monitoring volunteers surveying grassland. Ask to see report at end of year.	13/09/23
2023	NWH - Maintenance Work	Cut and collect vegetation and scrub in glades (areas A, B and C on management map). Arisings to be cleared to edge of glade, keeping base of trees clear.	30/09/23
2023	WMM - Ride Management	Clear scrub 200m along bridleway starting from northern tip of cpt 2b and working southwards (area D1 on management map). Arisings to be collected and scattered in woodland, keeping base of trees clear.	31/10/23
2023	NWH - Grazing Work	Payment to Downlands Trust for grazing cpt 2b and 3c. Grazier to supply annual grazing report.	20/12/23
2023	NWH - Grazing Work	Livestock volunteers checking on grazers once/twice a week.	31/12/23
2024	WMM - Coppice Management	Re-coppice 4 marked stools in cpt 1a and 4 marked stools in cpt 3b. Leave arisings in habitat piles away from other trees. NB: the brash can also be laid around the stool which can help protect the regen from deer.	28/02/24
2024	AW - Visitor Access Maintenance	Path cutting and maintenance (see management map for path network) a. Clear fallen, leaning or hung up vegetation from entrances and paths throughout b. Cut all marked paths to approx. 3m width, cutting back any encroaching branches	31/08/24

		2. Collect and remove litter from entrances, road frontages and paths 3. Entrances - maintenance and inspection: a. Cut back vegetation around all signs and entrances so signs / info boards are clearly visible and accessible. b. Cleaning of all signage with anti-fungal wash and treatment of wooden signs with Danish oil c. Fixing of any immediate problems with entrance furniture such as broken fence rails etc. d. Reporting of any more serious problems or replacement requirements to SM. See EMC spec 1.01, 2.01, 2.13, 3.01, 5.02	
2024	NWH - Maintenance Work	Wildlife monitoring volunteers surveying grassland. Ask to see report at end of year.	13/09/24
2024	NWH - Maintenance Work	Cut and collect vegetation and scrub in glades (areas A, B and C on management map). Arisings to be cleared to edge of glade, keeping base of trees clear.	30/09/24
2024	NWH - Maintenance Work	Biennial, cut back hedgerow along eastern edge of cpt 2b, arisings to be cleared back under hedgerow	30/09/24
2024	WMM - Ride Management	Clear scrub 200m along bridleway starting from car park and working northwards (area D2 on management map). Arisings to be collected and scattered in woodland, keeping base of trees clear.	31/10/24
2024	NWH - Grazing Work	Payment to Downlands Trust for grazing cpt 2b and 3c. Grazier to supply annual grazing report.	20/12/24
2024	NWH - Grazing Work	Livestock volunteers checking on grazers once/twice a week.	31/12/24

APPENDIX 1: COMPARTMENT DESCRIPTIONS

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Key Features Present	Designations
1a	5.02	Oak (pedunculate)	1900	High forest	Very steep slope/cliff/quarry/mine shafts/sink holes etc		Ancient Semi Natural Woodland, Area of Outstanding Natural Beauty, Green Belt, Site of Special Scientific Interest
This compartment is known as Great Church Wood, and is the highest point of the site and includes a steep west facing bank dominated by beech trees and young ash. The compartment is considered to be ancient woodland and is comprises of mixed broadleaves including oak, beech, ash, cherry, and an understorey of field maple, hazel coppice, rowan, holly, hawthorn, silver birch, elder, blackthorn sycamore and crab apple. The mature dominate trees date largely from two periods; the 1930's and 1970's. Ash and oak is dominant in the canopy and hazel coppice predominates in the understorey. Oak occurs more commonly in the north. The hazel coppice has been actively managed in the past, mostly by volunteers. There is evidence of enrichment planting, likely to have occurred prior to the Trust's ownership. The ground flora reflects the ancient woodland designation. Bluebells dominate alongside wood sorrel, wood anemone, cleavers, hedge wound wort, toothwort, forget-me-not, yellow archangel, lesser celandine, wood spurge, herb Robert, dog violet, docks, hard fern, nettle and species of mosses under dense canopy and grasses alongside the paths. In the small glades, bramble, nettles and red current can be found. The regenerating tree species amongst the ground flora are dominated by ash seedlings along with beech, sycamore hawthorn, holly and elder. Cpt 1a is part of the SSSI (unit 005) and was in favourable condition when last surveyed in 2013.							
2a	9.96	Hawthorn species	1960	Min-intervention	Very steep slope/cliff/quarry/mine shafts/sink holes etc		Area of Outstanding Natural Beauty, Green Belt, Site of Special Scientific Interest
This compartment is dominated by ash to the east, with a greater coverage of blackthorn and hawthorn mixed with the ash in the west. There are occasional sycamore, beech, silver birch and yew in the northern part of the compartment and whitebeam in the southern area. The understorey is mainly hawthorn and blackthorn, alongside occasional dogwood, elder and hazel. There are extensive carpets of mosses under the denser hawthorn and dog's mercury in particular is frequent throughout, especially in the more open areas to the west. Other species include bramble, clematis and ground ivy.							

Also included in this compartment are 2 glades, with viewpoints across to the western part of the northern block of woodland. These are maintained through an annual cut and collect regime.

Note: to south-west boundary of the compartment is a strip of woodland owned by Network Rail and there are tall air vents for the railway tunnel (cylinder structure).

2b	1.43	NULL		Non-wood habitat	Management factors (eg grazing etc), Very steep slope/cliff/quarry/mine shafts/sink holes etc		Area of Outstanding Natural Beauty, Green Belt, Site of Special Scientific Interest

This compartment is the main chalk grassland area of the site. Along the east edge of the compartment is a laid hedge, established by the wood's volunteer group in 2012. This area has been managed through a cut and collect regime and a grazed by sheep and goats. It has a mixture of ash, blackthorn, hawthorn and dogwood scrub and other coarse vegetation e.g. bramble common throughout the grassland but with a concentration of scrub in the northern end of the cpt, old man's beard along the north western edge and bramble in the southern west edge. In the western part of the cpt there are some standing dead semi-mature ash trees that were thinned in 2008.

The area is dominated by grass species (mostly upright broome with glaucous sedge and quaking grass frequent), bramble, old man's beard and woody vegetation (dogwood). Other flora includes common salad burnet, dwarf thistle, fairy flax, mouse-ear hawkweed, bird's foot trefoil, wild strawberry, milkwort, primroses, hairy violet, eyebright, marjoram, hedge bedstraw, a population of common spotted orchids and round headed rampion. The habitat approximates to National Vegetation Classification (NVC) CG2/3 (a further survey is needed to fully determine the community).

The compartment is included in the SSSI (unit 006) and was in an unfavourable-recovering condition when surveyed in 2013 due to the levels of woody scrub, wild clementis and false broome in the grassland.

This area was enlarged in 2017 by connecting with a second area of grassland (cpt 3c) and fencing the whole unit, so grazing management can be introduced across the grassland areas.

3a	23.85	Ash	1950	High forest	Very steep slope/cliff/quarry/mine shafts/sink holes etc		Area of Outstanding Natural Beauty, Green Belt, Site of Special Scientific Interest

The subcompartment boundaries of compartment 3 have been difficult to define. The boundaries have been determined by habitat, physical divisions e.g. a road and the woodland by the Ancient Woodland Inventory map. An area known locally as The Rumps is not included on the Ancient Woodland Inventory map, however, it does appear as woodland on the 1st Edition OS maps in 1868-75 and there are pockets of

ancient woodland typical ground flora, including yellow archangel and wood anemone.

Large quarry pits can be found in the western area of the cpt. 3a is dominated by semi-mature/mature/veteran ash and beech with a strip of dense hawthorn scrub in the middle of the cpt running from the southern boundary of the neighbouring field stretching to the permissive bridleway. Other secondary occasional or rare species include whitebeam, oak, yew, cherry and along the public right of way near the boundary with cpt 3b there are a handful of horse chestnut and a dozen or so Corsican pine. The understorey is dominated by hawthorn or young ash with rarer species including hazel, elder, holly, field maple, blackthorn, yew and crab apple.

The ground flora is limited under the beech canopy but dominated by dog's mercury under the ash canopy with the occasional ground ivy, buttercup, cleavers, dog violet, ferns, red current and a small yellow Himalayan balsam along the permission bridleway. Nettles can be found in patches of disturbance, grasses alongside paths and mosses under dense shade.

Cpt 3a is included in the SSSI (unit 006 and 009) and were last assessed in 2013. Areas of the compartment were in an unfavourable recovering condition (unit 009), as they feature areas of chalk grassland which have a high scrub and coarse vegetation component. However, the majority of the compartment (unit 006) was in a favourable condition.

3b	4.55	Ash	1900	High forest	Very steep slope/cliff/quarry/mine shafts/sink holes etc		Ancient Semi Natural Woodland, Area of Outstanding Natural Beauty, Green Belt, Site of Special Scientific Interest

Cpt 3b (also known as Stubbs Copse) is considered to be ancient semi-natural woodland. Large quarry pits are found in the western part of the cpt – beech and yew trees are more abundant around the edge of the quarry. Mature and pole stage ash is dominant with beech, whitebeam, yew and oak as rare components. A defining difference between 3b and neighbouring 3a is the understorey, as hazel coppice, field maple, hawthorn and woody shrubs including box form a distinctive shrub layer.

Ground flora is also more diverse than in the adjoining cpt 3a, species include dog's mercury, bluebell, bramble, fern, foxglove, primroses and wood avens.

Cpt 3b is part of the SSSI (unit 006) and was in a favourable condition when last surveyed in 2013.

3c	0.61	NULL		Non-wood habitat	Management factors (eg grazing etc)		Area of Outstanding Natural Beauty,

							Green Belt, Site of Special Scientific Interest

This compartment is dominated largely by scrub following the extension to the grassland area in 2017. Scrub is predominantly ash, hawthorn and willow. In the southern area of the compartment, bramble and coarse vegetation dominates while in the north, grasses, common salad burnet, dwarf thistle, fairy flax, mouse-ear hawkweed, bird's foot trefoil, wild strawberry, milkwort, primroses, hairy violet, eyebright, marjoram, hedge bedstraw and a population of common spotted and other orchids are present.

The habitat approximates to National Vegetation Classification (NVC) CG2/3 (a further survey is needed to fully determine the community).

The compartment is included in the SSSI (unit 006) and was in an unfavourable-recovering condition when surveyed in 2013, due to the levels of woody scrub, wild clementis and false broome in the grassland.

3d	0.32	Ash	1960	High forest	No/poor vehicular access to the site		Area of Outstanding Natural Beauty, Green Belt, Site of Special Scientific Interest

Cpt 3d has the same structure and composition as cpt 3a, only separated by the road. A thin strip between the road and earth bank. Canopy dominated by ash – young to mature trees. Rare hazel coppice forms an understorey in places towards the southern end of the cpt. Ground flora dominated by dog's mercury.

Cpt 3d is part of the SSSI (unit 012) is considered to be in favourable condition when last surveyed in 2013.

4a	12.24	Ash	1950	High forest			Area of Outstanding Natural Beauty, Green Belt, Site of Special Scientific Interest

Most of this compartment is secondary woodland. The west of this compartment on a west facing slope is dominated by hawthorn and blackthorn, with beech and ash dominating the central, northern and eastern parts of the cpt. Understorey and occasional species include hazel coppice, whitebeam, sycamore, yew, field maple, and elder.

The cpt includes an area of grassland with good calcareous grassland is dominated by upright brome, with scattered wood false brome. Frequent wild parsnip, marjoram and salad burnet, with hairy violet, hedge bedstraw, rough hawkbit, dwarf thistle eyebright and wild basil. Little bare ground, except at margins of track.

Cpt 4a is part of the SSSI. Unit 013 includes the glades and is considered to be in an unfavourable recovering condition (unit 013 and 010) and is considered to be in favourable condition when last surveyed in 2013.							
4b	5.77	Beech	1950	PAWS restoration			Area of Outstanding Natural Beauty, Green Belt
Cpt 4b is considered to be PAWS. It is divided into two blocks. The northern block is predominately mature beech (50%) and semi-mature ash (30%) with occasional scattered individual Corsican pine (15%), European larch (<1%) and Norway spruce (5%). The ash is more abundance in the western area of the cpt under which there is more ground flora predominately dog's mercury, with ferns, bramble and nettles dominating under the lighter canopy. Other ground flora includes red current, lords and ladies, wild garlic, wood speedwell, tormentil, yellow archangel, cleavers, primrose and bluebells – most diverse along path edge. Rare understorey species found under the ash canopy include hazel, field maple, holly and elder. No conifer regen found. Possible pre-plantation species include mature ash and beech trees on the edge of the cpt. The southern part of the cpt is younger, denser and more evenly mixed. Planted species include beech (64%), oak (1%), ash (35%), and Corsican pine and Norway spruce accounting for <1% - most of the conifer component is dead. No understorey. Ground flora dominated by bluebells with dog's mercury, ground ivy, mosses, lords and ladies, common violet, wood speedwell, wild garlic, lesser celandine, archangel and ash seedlings.							
4c	4.00	Oak (pedunculate)	1900	High forest			Ancient Semi Natural Woodland, Area of Outstanding Natural Beauty, Green Belt
Around the northern boundary are planted lines of Douglas fir and Scots pine (P60). The area of ASNW in cpt 4c is not very distinctive, notably the maturity of the canopy dominating ash trees is greater in the area designated ASNW compared to the adjoining secondary woodland. Other secondary species in the canopy include mature beech, oak, cherry, sycamore and horse chestnut, with an understory of hornbeam, hawthorn, hazel, elder and field maple. Ground flora is dominated by dog's mercury with patches of wild garlic, wood anemones and bluebells. In the north of the cpt there appears to be a former chalk pit.							

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.