



# Blackbush & Twenty Acre Shaw Woods

## Management Plan

# 2019-2024

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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 Consequently this printed version may quickly become out of date, particularly in relation to the planned work programme and on-going monitoring observations.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®) under licence FSC-C009406 and through independent audit.

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

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

The following guidelines help to direct our woodland management:

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

## SUMMARY

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

## 1.0 SITE DETAILS

<b>Site name:</b>	Blackbush & Twenty Acre Shaw Woods
<b>Location:</b>	Cudham
<b>Grid reference:</b>	TQ440593, OS 1:50,000 Sheet No. 187
<b>Area:</b>	27.25 hectares (67.34 acres)
<b>Designations:</b>	Ancient Semi Natural Woodland, County Wildlife Site (includes SNCI, SINC etc), Green Belt, Site of Special Scientific Interest, Tree Preservation Order

## 2.0 SITE DESCRIPTION

### 2.1 Summary Description

Lying in the vicinity of Downe House, home to the naturalist Charles Darwin, these two woods contain ancient woodland and are important wildlife habitats. Furthermore, five orchid species and the uncommon Autumn Gentian are found here.

### 2.2 Extended Description

Blackbush & Twenty Acre Shaws are two adjacent woods, situated in the east-facing slopes in the attractive Downe Valley, within the North Downs National Character Area (NCA), approximately 0.5 miles west from the village of Cudham in the London Borough of Bromley, close to the county boundary of Kent and Surrey and the M25. The wood is immediately bounded to the west by Restavon Park home and private properties with long gardens of the hamlet of Berry's Green. To the north of Blackbush Shaw and west of Twenty Acre Shaw lies open grassland, grazed primarily for conservation. To the east and south of Blackbush Shaw rises a west-facing wooded slope up to Cudham. Surrounding land use is predominately pasture or arable with pockets of woodland and the nearby Cherry Lodge golf-course. The Downe Valley is a dry chalk valley with thin soils varying from clay-with-flint deposits in the valley bottom, supporting chalk grasslands, to thin chalk on the higher slopes, a defining feature of the North Downs, where pockets of semi-natural ancient woodland remains.

Blackbush Shaw is a mixture of habitats: ancient woodland dominated by mature beech and ash with a hazel coppice understorey, regenerating secondary woodland, dominated by hawthorn, young ash, dogwood and field maple and a small proportion of chalk grassland. Twenty Acre Shaw is a mix of ancient and secondary woodland, again dominated by ash and beech although has a greater diversity of secondary canopy species compared to Blackbush Shaw. Species include yew, sycamore, field maple, cherry and oak and in the spring the woodland floor is abundant in ancient woodland flora - including bluebells, dog's mercury, wood anemone and yellow archangel. Along the wood's boundary there are notable veteran pollarded beech and ash trees. The area of Twenty Acre designated as ancient woodland is part of the Downe Bank and High Elms Site of Special Scientific Interest (SSSI), majority of which is owned by Kent Wildlife Trust, designated for woodland and chalk grassland.

The whole site was acquired by the Trust in 3 main phases. The original area known historically as Blackbush Shaw (compartment 2a) was acquired first in 1997 with financial help from the Heritage Lottery Fund, Bromley Borough Council and numerous local people. Twenty Acre Shaw (compartment 1a) was bequeathed to the Trust in 2002, and compartment 3a and most of 3b were acquired in 2006 with financial help from the Heritage Lottery Fund and donations from local people. A thin strip of land over part of the public footpath in compartment 2a was purchased in 2007 to make access through the site more consistent.

The woods are valuable for recreation, for their contribution to the local landscape and for their habitat and conservation value. Most regular users of the site are local residents, walking from an adjacent caravan park, the village of Cudham and Berry's Green, or children from the adjacent Cudham Environmental Activities Centre who visit Blackbush Shaw when learning about the countryside. About 2000 children visit this centre annually, both local and from inner London. The woods are in a very attractive wooded and rural valley, inside the M25 and close to large population centres.

Blackbush & Twenty Acre Shaws form an integral part of the Cudham Valley where Darwin carried out many of studies of plants and animals as he investigated the driving force behind his theory of evolution, natural selection. These two woodlands form part of a wildlife corridor of woodland and grassland stretching from the southern fringe of Orpington, south to the Kent Downs Area of Outstanding Natural Beauty. The woodbanks, coppiced and pollarded trees of Blackbush & Twenty Acre Shaws, veteran in Darwin's time, were also part of the scenery with which he was familiar. It is a landscape which has changed with economic circumstances as arable or pastoral farming became more or less important. However, although the woodland, scrub, and grassland which make up Blackbush & Twenty Acre Shaws have increased or decreased in size as circumstances have changed, they have remained constant features in the changing landscape which Darwin observed during the forty years he lived at Downe House.

## 3.0 PUBLIC ACCESS INFORMATION

### 3.1 Getting there

**General location:**

Blackbush Shaw & Twenty Acre Shaw lie 0.5miles west of the village of Cudham and east of the hamlets Berry's Green and Single Street, south of Orpington, in the London Borough of Bromley, approximately 3miles north of the M25 between junctions 5 and 6.

**Overview of access and paths:**

There are 3 pedestrian entrances to Blackbush Shaw: off Berry's Hill, via a public footpath off New Barn Lane, and by a public footpath entrance from the east side of the Restavon Park. There are also 3 entrances to Twenty Acre Shaw: one next to the management gate on Luxted Road, one via a public footpath off Luxted Road, and another from the east side of the wood at a public footpath entrance from surrounding countryside. There are two public footpaths running through the woods. One cuts through Blackbush Shaw from New Barn Lane to Restavon Park, in an east-west direction. The other cuts down from Single Street through the middle of Twenty Acre Shaw going east-west. There are other permissive paths, especially in Blackbush Shaw which can be used to enjoy more of the woods. All paths in the woods are unsurfaced and there are some steep slopes.

**Parking:**

Parking next to the wood is difficult and the best place is at the recreation ground in Cudham (next to the Blacksmiths Arms pub). From here access to the site can be made by walking down New Barn Lane (no pavement); or by walking along Cudham Lane from the pub to a public footpath on the right which crosses New Barn Lane and then enters Blackbush Shaw after walking down a set of wooden steps. Twenty Acre Shaw can be accessed from Single Street village.

**Public transport:**

The nearest bus-stop is at the Blacksmiths Arms pub in Cudham, which is next to the recreational ground. The nearest public toilets are on High Street, Green Street Green, on the southern edge of Orpington, which is approximately 4 miles from these woods. The toilets do not have a designated disabled facility.

## 3.2 Access / Walks

## 4.0 LONG TERM POLICY

The long term intentions for Blackbush & Twenty Acre Shaw are focused on retaining and where possible improving woodland and grassland biodiversity and increasing peoples' understanding and enjoyment of woodland.

Over time, the mature trees will decline 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 ash trees, which currently account for approximately 35% of the overall woodland canopy. Crown dieback, tree death and increased windblow, will create further gaps in the canopy for other species such as sycamore, beech and woody shrubs to take advantage of, increasing the structural diversity of the wood. The long established secondary woodland area in Twenty Acre Shaw (cpt 1a) will continue to develop and eventually be as rich as the adjoining ancient woodland area. The dieback of ash will lead to greater structural diversity in the area of Twenty Acre Shaw designated as a SSSI, which will enhance its favourability for biodiversity. The regenerating secondary woodland adjoining Blackbush Shaw (subcpt 3a) will evolve through the self-thinning of ash and will gradually become less distinctive from the adjoining woodland as tree, shrub and ground flora species colonise. The grassland (subcpt 3b) will continue to be maintained as open space through appropriate scrub management, enhancing the chalk grassland community.

On-going monitoring and maintenance will ensure the wood remains a safe wood to visit, with infrastructure appropriate for the wood's relatively low visitor number i.e. those from neighbouring villages.

## 5.0 KEY FEATURES

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

### 5.1 Ancient Semi Natural Woodland

#### Description

Ancient woodland at this site comprises all of compartment 2 (historic part of Blackbush Shaw) and half of compartment 1a (Twenty Acre Shaw), the remainder being long established secondary woodland and included under this Key Feature. Part of the ancient woodland in compartment 1a is within a SSSI, designated for its biodiversity value and character within the North Downs landscape. In 2008, when the SSSI unit was last surveyed, the woodland was classified as being in a recovering unfavourable condition due to its decrease in bird assemblage compared to when it was first designated. However, Natural England determines the overall woodland block to be in a favourable condition due to an increase in structural diversity immediately adjoining the SSSI.

Both woods are a mix of native broadleaf species, dominated primarily by mature beech and ash with occasional sycamore. Ash is most prevalent in the southern part to the wood accounting for approximately 35% of the overall canopy, and 50% of the canopy in Blackbush Shaw. Beech dominates the northern area of Blackbush Shaw and is the most frequent canopy tree in Twenty Acre Shaw despite the Shaw's increased diversity within the canopy and understorey. Secondary canopy species in Twenty Acre Shaw include Douglas fir (<1%), oak, cherry, whitebeam and wayfaring tree. Meanwhile hawthorn, field maple, holly, dogwood, hazel, spindle, yew, guelder rose and alder form a sub-canopy - most abundant in Twenty Acre Shaw, and woodland edge around the grassland areas in Blackbush Shaw. The wood approximates to National Vegetation Classification (NVC) W12a beech -dogs mercury. There are numerous veteran trees in both woods, particularly beech and ash pollards. Ash dieback is prevalent throughout the wood and when surveyed in 2018 ash trees varied from showing no signs of the disease on a handful of trees to an increasing levels of advanced decline in the younger trees and those in the southern end of Blackbush Shaw around the open areas.

Woodland flora is dominated by bluebells and dog's mercury, alongside lords and ladies, garlic mustard, common dog violet, cleavers, herb Robert, cow parsley, ferns, nettle, primrose, slender St John's wort, lesser celandine, wood speedwell, wood spurge, creeping buttercup, yellow archangel, wood anemone and toothwort - many species typically associated with ancient woodland. There are some small patches of cherry laurel in compartment 1a.

#### Significance

Blackbush & Twenty Acre Shaw is situated in London's Green Belt within the North Downs. Woodland, especially ASNW- an irreplaceable habitat, is becoming increasingly fragmented in the South East- a region which supports 40% of the UK ASNW. Locally, Bromley is fortunate in containing around one third of London's ancient woodlands. Twenty Acre Shaw is partly a SSSI, designated for its woodland value.

### Opportunities & Constraints

#### Constraint

Poor management access

### Factors Causing Change

Decline of ash due to ash dieback (*Hymenoscyphus fraxineus*)

Mammal damage (deer, rabbits, grey squirrels)

Invasive non-native species (cherry laurel)

### Long term Objective (50 years+)

Blackbush & Twenty Acre Shaw will be managed to increase the wood's resilience to pests and diseases and maximise the wood's biodiversity. As ash and mature beech trees decline, the abundance of sycamore, semi-mature beech, cherry and oak may increase and the understorey will become more diverse with species such as hazel, blackthorn, hawthorn and hazel, as will the overall structure of the wood (enhancing the condition of the SSSI). The boundaries between the secondary woodland and the ancient woodland will 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 invasive non-native species e.g. laurel and garden escapes.

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

During the plan period (2019-23), management will be undertaken to control non-native species e.g. cherry laurel and the decline of ash trees will be monitored and selectively felled where posing a risk to site visitors, neighbouring properties and roads.

- Laurel (less than 0.05ha) will be cut and uprooted where possible, beginning 2019 with on-going monitoring.
- Deer impact assessment will be undertaken in 2021.
- Alongside approximately 1.8km of footpaths across the site (tree safety Zone B), ash trees will be selectively felled, partly due to tree risk management but also to increase light levels.
- Alongside road and property boundaries (tree safety Zone A, approximately 570m) ash trees with canopy dieback greater than 50% will be felled. Work will begin in 2019 and be ongoing throughout the plan period.

## 5.2 Natural Secondary Woodland

### Description

The recent secondary woodland in compartment 3a (6ha) buffers the adjacent ancient woodland of Blackbush Shaw to the west, extending the core area of woodland and connecting Blackbush Shaw to woodland on the west-facing slide of the valley.

The area was acquired by the Woodland Trust in 2006, having been previously farmed for turf. The area has since been left to naturally colonise with trees and now shows visible distinctions between different areas of succession. The east side is predominantly hawthorn with some field maple and blackthorn and very young ash. Further west the area gradually becomes dominated by ash with an understory of hawthorn. Ground flora remains dominated by grass species with clover, mosses, hairy St John's wort, cow parsley, forget-me-not, vetch species, ground ivy, buttercup species and wild rose. The diversity of ground flora noticeably increases in clearings with overall canopy cover at approximately 80%.

### Significance

The naturally arising secondary woodland has increased the site's overall structure and resilience to threats such as ash dieback and climate change. It connects Blackbush Shaw to neighbouring woodland on the opposite side of the valley, increasing the core area of woodland as well as extending the habitat overall. The scrub element is a valuable woodland edge habitat providing a rich ecotone between the mature woodland and chalk grassland. Unlike planted secondary woodland, the natural secondary woodland has been allowed to colonise the former agricultural land with minimal input and management with all establishing species being native and adapted to the site.

### Opportunities & Constraints

Constraints:

- poor management access

### Factors Causing Change

Decline of ash due to ash dieback (*Hymenoscyphus fraxineus*)  
Mammal damage (deer, rabbits, grey squirrels)

### Long term Objective (50 years+)

The recent secondary woodland will be maintained and enhanced to increase the site's overall resilience to pests and diseases and maximise the site's biodiversity. As ash trees decline, the abundance of other species such as sycamore, hazel and dogwood will increase in the young woodland increasing the wood's species and structural diversity.

Over time, tree species, such as beech and sycamore, colonising from the neighbouring ancient woodland, will form the canopy over a diverse understorey. Ancient woodland ground flora will also have the opportunity to colonise the new woodland and in the very long term the boundaries between the secondary woodland and the ancient woodland will begin to become indistinguishable, as with Twenty Acre Shaw. The dieback of ash will increase the overall deadwood habitat in the wood. The wood will also be free from invasive non-native species e.g. laurel and garden escapes.

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

The woodland will continue to develop naturally with minimal intervention unless observations of significant mammal damage or lack of colonisation by long-term canopy species dictate otherwise.

- In 2019, the footpath currently running along the west edge of the cpt will be diverted away from the boundary with the neighbouring declining ash in subcpt 2a and a new route will be cut through the secondary woodland. Young ash trees will be selectively felled, to manage risk to site visitors, along the diverted path with brash used to block previous path route.
- Deer impact assessment will be undertaken in 2021.
- Ash trees alongside paths to the north, east and south of the cpt (totally 900m) will be selectively felled if canopy dieback greater than 50% will be felled. Work will begin in 2019.

## 5.3 Semi Natural Open Ground Habitat

### Description

There are two chalk grassland areas at this site (subcpts 2b and 3b). The smaller, more established area (subcpt 2b) is a 0.4ha clearing toward the top of the valley slope within Blackbush Shaw. The scrub surrounding this area has been managed by coppicing on a short rotation to increase structural diversity. The area is particularly species-rich and throughout the spring and summer there are stunning displays of wildflowers such as primrose and cowslip which are present in high numbers. There are also 6 species of orchid recorded, including over 40 bee orchids recorded in 2011.

Subcpt 3b (2.98ha) was acquired by the WT in 2006 and was previously managed for turf production. It is the northern section of the field that has succeeded to secondary woodland (see KF2). The area is still dominated by grass species, although some flowering plants such as common milkwort and fairy flax have been recorded on the higher slope. Other species include common vetch, bird's foot trefoil, common speedwell and common sedge. The habitat approximates to National Vegetation Classification (NVC) type of CG2/3, dominated by sheep's fescue (*Festuca ovina*) or upright/meadow brome (*Bromus erectus*). A further survey is needed to fully determine the community.

Both areas have been managed by a mix of sheep grazing, hay-cutting and scrub clearance since 2006.

### Significance

Chalk grassland is a key 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 an important landscape feature as well as of cultural and historical importance, especially as Blackbush Shaw is located within the North Downs. The species rich grassland is an excellent educational resource for children from the Environmental Activities Centre next door to Blackbush Shaw, as well as others.

### Opportunities & Constraints

#### Constraints

- poor management access
- small area for grazing management

### Factors Causing Change

Scrub encroachment  
Invasive species (e.g. ragwort)

### Long term Objective (50 years+)

The chalk grassland will be maintained at its current size, approximately 3ha, including a scrub edge of up to 20% of total area around the grassland edge. Key indicator species for this habitat should be present including pyramidal orchid, wild marjoram, cowslip, chalk milkwort and yellow wort, dominated by sheep's fescue (*Festuca ovina*) or upright/meadow brome (*Bromus erectus*).

Management options will include grazing, hay cutting in late summer after flowering and manual or mechanical scrub cutting.

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

To establish a cut and collect regime in both grassland areas, maintaining approximately 20% scrub and 80% of grassland on all 3.31ha.

- In subcpt 3b, a hay cut and collect in Aug/Sept will be undertaken annually. Monitoring may result in timing or area being amended.
- In subcpt 3b, fencing will be retained with the possibility of grazing being re-introduced,
- In subcpt 2b, a cut and collect in Aug/Sept will be undertaken annually. Monitoring may result in timing or area being amended.
- In subcpt 2b, redundant fencing will be removed in 2020

## 5.4 Connecting People with woods & trees

### Description

Blackbush & Twenty Acre Shaw is a WT category B site (moderate usage site where paths are maintained). Blackbush Shaw (compartments 2a, 2b and 3a) is situated close to the village of Cudham, the hamlets of Single Street and Berry's Green, the Cudham Environmental Activities Centre and a mobile home park. Twenty Acre Shaw is adjacent to Single Street and Berry's Green and also near the village of Downe and Down House, which is managed by English Heritage. The nearest town, Biggin Hill is 2 miles from the site and has a population of approximately 10,000.

Two public rights of way (PROW) pass through the woods which link them to the surrounding countryside and to Cudham where there is a public car park. In addition to PROW, Blackbush Shaw is well serviced by internal permissive paths; these are more limited at Twenty Acre Shaw. The waymarked Cudham Circular Walk runs through Twenty Acre Shaw, a 7.5miles walk taking in the countryside between Cudham, Luxted, Downe and Hazelwood.

A number of historical associations exist with Charles Darwin who lived locally at Downe House and is known to have visited the area of the wood. Cudham Environmental Activities Centre is adjacent to the southern boundary of Blackbush Shaw and school groups from there regularly use the site for educational purposes.

### Significance

Blackbush & Twenty Acre Shaws provide an extensive area for quiet, informal recreation in an area of high scenic value which is appreciated by many visitors. These woods are important for public use because they sit within the M25 and close to London, giving people the opportunity to visit ancient woods and open countryside in a busy part of the country.

### Opportunities & Constraints

Constraints:

- No availability for people to walk between the 2 woodlands, because of legal constraints surrounding ownership/management of the southern stretch of Twenty Acre Shaw
- There is no car-parking at or next to the site. The nearest public car-park is 0.5 miles away in the village of Cudham

Opportunities:

- Potential to work with Cudham Environmental Activities Centre and other local groups to use the site as an educational resource

### Factors Causing Change

Antisocial behaviour

### Long term Objective (50 years+)

The site will continue to provide low key public access, mainly for visitors from the immediate surrounding area. There will be a safe, maintained network of paths throughout the site with appropriate entrance infrastructure. The site will continue to have regular daily visitors but with no anticipated major increase in numbers.

The site will continue to be an asset for the neighbouring environmental activities centre.

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

Low key public access will be maintained over the plan period by regular maintenance and safety inspections, appropriate for the numbers of visitors.

- Approximately 3.15km of path and 7 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 2019.
- Broken fencing along the southern boundary with Restavon Park will be removed and replaced with appropriate fencing (approx. 165m) in 2019.
- Recruit a volunteer surveyor to help monitor grassland communities, ideally in 2019.

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## 6.0 WORK PROGRAMME

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

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Key Features Present	Designations
1a	8.29	Oak (pedunculate)		Min-intervention	No/poor vehicular access within the site, Sensitive habitats/species on or adjacent to site	Connecting People with woods & trees	Ancient Semi Natural Woodland, County Wildlife Site (includes SNCI, SINC etc), Green Belt, Site of Special Scientific Interest, Tree Preservation Order
<p>This compartment is known as Twenty Acre Shaw. The upper, western section is a plateau supporting mixed broadleaf high forest comprising of ash, oak, sycamore, beech with the occasional conifer - yew and Douglas fir (5 trees). There are also a few small patches of laurel. The rest of the compartment runs along a valley side, where the upper slopes are ancient woodland with rich woodland specialist flora (dominated by dogs mercury and bluebells along with speedwell, anemone, toothwort, yellow archangel, dog violet, nettles, primrose, lords and ladies, wood spurge, cow parsley, butter cup and lesser celandine), overstood ash coppice, large veteran beech pollards with an understory of yew, ash, sycamore, field maple, and cherry. The lower slopes are dominated by ash and sycamore, with occasional beech and hawthorn, holly and spindle adding to the understorey. The north-east part of this compartment is part of the Downe Bank and High Elms SSSI, designated for woodland and chalk grassland.</p>							
2a	9.54	Ash		Min-intervention	No/poor vehicular access to the site, Sensitive habitats/species on or adjacent to site, Very steep slope/cliff/quarry/mine shafts/sink holes etc	Connecting People with woods & trees	Ancient Semi Natural Woodland, County Wildlife Site (includes SNCI, SINC etc), Green Belt, Tree Preservation Order

Compartment 2a is ancient woodland and runs along the top of the western side of the valley with Berry's Hill to the north and Cudham Environmental Centre to the south. The canopy is dominated by ash in the south, with beech and sycamore becoming more common towards the northern end of the compartment, with the occasional Whitebeam, cherry and goat willow. The understory is hawthorn, hazel, field maple, wayfaring tree, dogwood, alder, holly, guelder rose and yew. There are a number of veteran beech trees throughout this compartment and a small patch of laurel. The ground flora is dominated by bluebells under beech and dogs mercury under ash. Other flora includes: lords and ladies, garlic mustard, dog violet, cleavers, herb Robert, cow parsley, fern, nettle, primroses john's wort spp, and lesser celandine. Standing and fallen dead wood is occasional across the compartment.

2b	0.33	Open ground		Non-wood habitat	No/poor vehicular access to the site	Connecting People with woods & trees	County Wildlife Site (includes SNCI, SINC etc), Green Belt
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Compartment 2 contains an established small area of chalk grassland, on an east facing slope, which is rich in specialist species. Species include milkwort, primrose, cowslips, surge, bindweed, common dog violet, mouse-ear, bird's foot trefoil, clover, hairy St John's wort and a number of orchids (bee, pyramid, common spotted, ).

3a	6.01	Hawthorn species	1998	Min-intervention		Connecting People with woods & trees	Green Belt
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Former agricultural land now reverting to woodland through natural regeneration. The area was last used for agriculture in 1998 when it was farmed for turf. The main species are ash and hawthorn but there is also field maple, dog wood, sycamore and some oak. Despite the history of land use the grassland still retains patches of floristic interest including pyramidal and common-spotted orchid, noticeably more diverse in the clearings.

3b	2.98	Open ground		Non-wood habitat		Connecting People with woods & trees	
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This large area of open space in the valley is developing into chalk grassland. It was acquired as part of the 2006 acquisition, and was previously cut for turf. Since it been managed as chalk grassland through sheep grazing and hay cuts and is still predominantly grassland, although some species such as common milkwort and fairy flax have been recorded on the higher slope. Other species include common vetch, bird's foot trefoil, common speedwell and common sedge.

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**Appendix 2: Harvesting operations (20 years)**

Forecast Year	Cpt	Operation Type	Work Area (ha)	Estimated vol/ha	Estimated total vol.
2020	1a	Thin	0.00		20
2020	2a	Thin	0.00		50
2020	2a	Thin	0.00		200
2020	2a	Thin	0.00		5
2020	3a	Thin	0.00		5
2021	1a	Thin	0.00		120
2021	2a	Thin	0.00		120

## 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.