

# Haugh Wood Forest Plan

2020 - 2030

West England Forest District



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## Introduction

Haugh Woods Forest Plan consists of one woodland block to the east of Hereford totalling 366ha of mixed broadleaf and coniferous woodland. The woodland lies within the Wye Valley Area of Outstanding Natural Beauty (AONB), and although located at the highest point of the Woolhope Dome, is not overly dominant within the well-wooded wider landscape, being well-linked to other small privately owned woodlands nearby.

The National Character Assessment identifies the well-wooded hillsides as a distinctive local feature within this part of Herefordshire. Haugh Woods are all Plantation on Ancient Woodland Sites or Ancient Woodland meaning that the woods will be gradually restored to native woodland through the removal of conifer and the natural regeneration or restocking of native tree species. The majority of the conifer within Haugh Woods is now beginning to enter maturity having been planted in the 1950s-1970s. The broadleaf is more varied with mature stands of beech and oak interspersed with coppice coupes, many of which have been established since 2010, providing increased age structure and diversity.

Haugh Woods is an important Site of Special Scientific interest (SSSI), primarily designated for its rich invertebrate assemblage and native woodland types which have limited national distribution.

## Objectives

Protecting and enhancing the conservation value of Haugh Woods is a high priority which will be achieved alongside the sustainable production of timber through clearfelling and thinning.

This Forest Plan will build on progress achieved over the last ten years in creating a more complex and diverse woodland, increasing both species diversity and age structure across the woodland extent, whilst gradually reverting Haugh Woods back to a native broadleaf woodland. Coppice coupes will be managed in rotation to provide a mosaic of transitional open space alongside the clearfelling and programmed thinning of conifer and broadleaf elements, benefitting key species for which Haugh Woods SSSI is designated for.

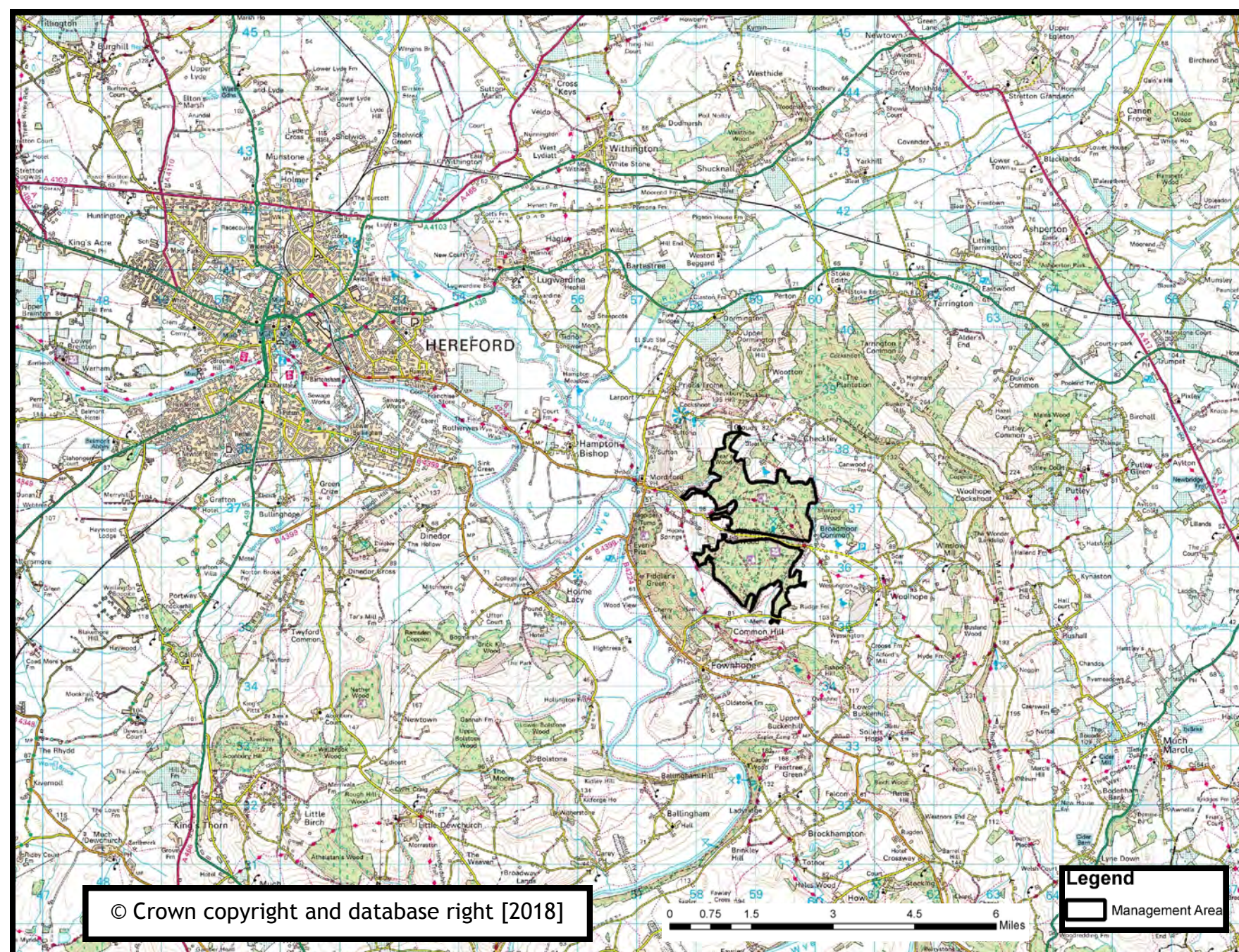
Haugh Woods will continue to provide a locally important recreational amenity, including car parking and waymarked trails.

## Location

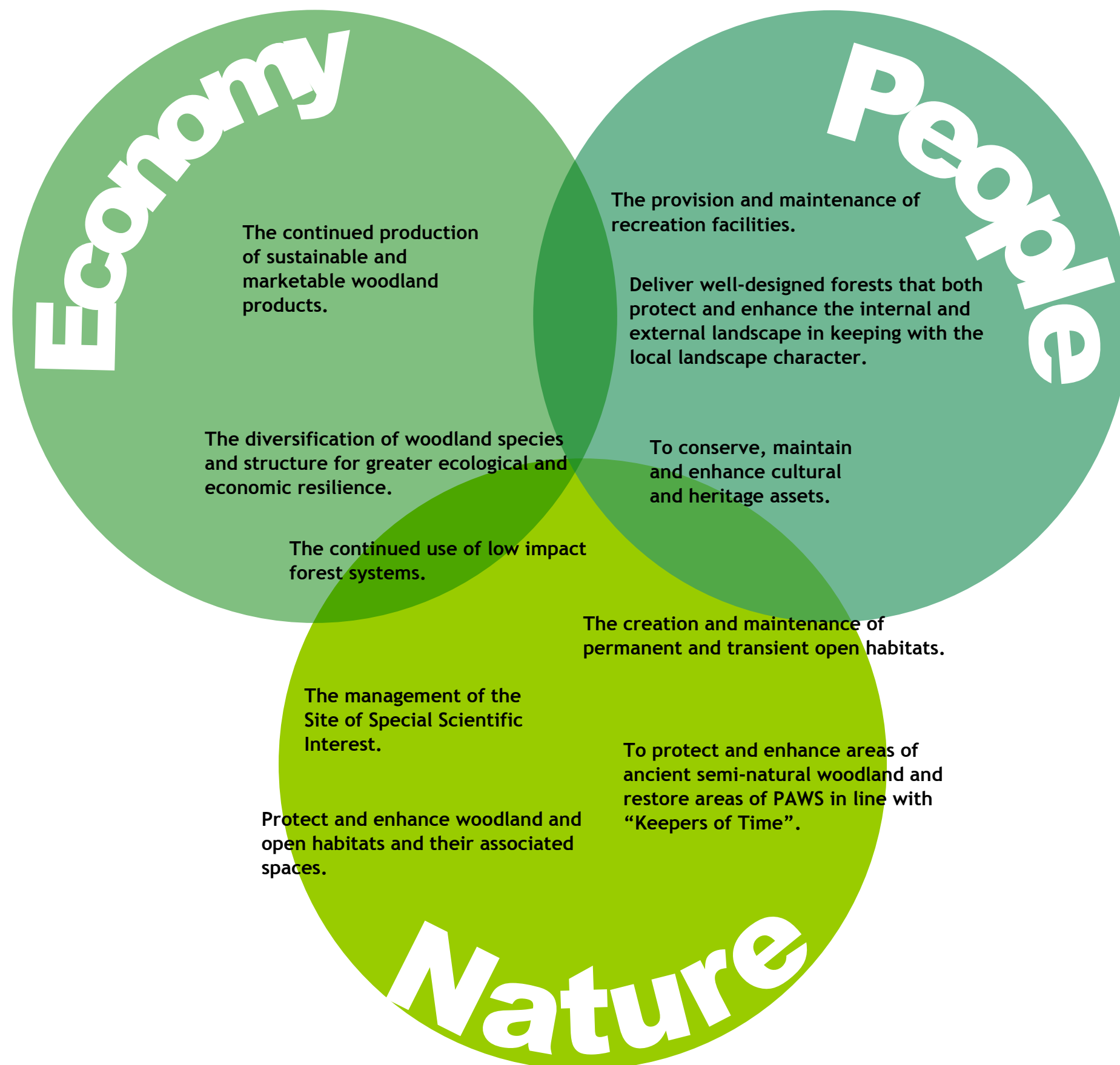
The Haugh Forest Plan covers 353.9 ha of land in central Herefordshire. It lies 5.5 miles to the east of Hereford and 7.5 miles to the west of Ledbury.

Haugh Woods is split into two woodland blocks known as Haugh North and Haugh South and separated by the Woolhope to Mordiford public road.

The car park is located on the plateau, approximately 190 meters above sea level and overlooks the surrounding communities of Fownhope, Mordiford and Woolhope.







## Management Objectives

### WEST ENGLAND FOREST DISTRICT

PROTECTING AND EXPANDING ENGLANDS FORESTS AND  
WOODLANDS AND INCREASING THEIR VALUE TO SOCIETY  
AND THE ENVIRONMENT.

The objectives of this Plan will, in part, deliver the *West England Forest District Strategic Plan* (2013a) and the national *Strategic Plan for the Public Forest Estate in England* (2013b).

Sustainable management of the woodland will be to the standards required to maintain FSC® and PEFC™ accreditation and therefore must deliver economic, environmental and social objectives.

The meeting and monitoring of these objectives is outlined on the following page.

**District Strategy**

**Forest Plan Objective**

**Meeting Objective**

**Monitoring**

**Economy**

Maintain the land within our stewardship under FSC/PEFC certification.

Improve the economic resilience of our woods and forests.

Encourage and support business activity on the Estate

**People**

Maintain existing established consultation panels in the West England District and engage with other consultative bodies such as National Park Authorities and AONBs.

Provide high quality woodland based recreational opportunities

**Nature**

Improve the resilience of the natural environment of the Estate under our stewardship.

Realise the potential of the Public Forest Estate for nature and wildlife.

Maintain and improve the cultural and heritage value of

The continued production of sustainable and marketable woodland products.

The plan will continue production through silvicultural practices which will generate coppice, thinnings and clearfell products.

Indicative production forecast within the Forest Plan will be reviewed against actual produce output at the 5 and 10 year reviews. Pre and post thinning control and site supervision will assist with monitoring the productivity of Haugh Wood.

The continued use of continuous cover forest systems.

Continuous cover and low impact silvicultural systems will be utilised within the Forest Plan. All areas of broadleaf will be managed in this manner.

Natural regeneration will be monitored at the 5 and 10 year forest plan review stage. Thinning operations will also be monitored through operational site planning.

The diversification of woodland species structure for greater ecological and economic resilience.

The woodland species will be diversified through the promotion of alternative species. Species diversity will be encouraged within CCF and LISS systems. and enrichment planting considered where appropriate.

Species diversity will be monitored through the forest plan reviews. This will be monitored through the sub-compartment database and site visits.

The provision and maintenance of recreation facilities.

Recreation equipment will be maintained by the Recreation team and replaced as and when necessary.

Recreation facilities will be monitored by both the Recreation Manager and the Beat Forester to ensure that facilities are maintained to an adequate standard.

To conserve, maintain and enhance cultural and heritage assets.

Heritage assets will continue to be identified and mapped.

Heritage assets will appear on all constraints maps which will be monitored during site operational planning.

Deliver well-designed forests that both protect and enhance the internal and external landscape in keeping with the local landscape character.

Implication of the proposed plan will soften internal landscaping. Wider ride margins and wavy edges will further enhance the aesthetic value of the site.

Fixed point photography at Forest Plan review stage.

The creation and maintenance of permanent and transient open habitats.

Transient open space will be enhanced through on-going cyclic coppice management. This will create a myriad of ecological benefits.

Transient open space will be monitored through the sub-compartment database. This will also be monitored through the Forest Plan reviews.

To protect and enhance areas of ancient semi-natural woodland and restore areas of PAWS in line with "Keepers of Time".

Conifer crops will be targeted for removal in line with the Keepers of Time policy. Native natural regeneration will be favoured and encouraged.

Crop composition will be monitored through the sub-compartment database at the Forest Plan review stage. Conifer removal will also be identified through the OPS1 process.

The management of the Site of Special Scientific Interest.

Haugh Woods will be managed for the designated features associated with the SSSI.

Condition Assessment monitoring will be undertaken by Natural England.

Protect and enhance woodland and open habitats and their associated spaces.

Operational site planning will identify opportunities to enhance conservation benefits.

Transient open space will be managed through coppicing and conifer crops pulled back from ride edges.

Natural England will conduct condition assessment monitoring. Operational site planning records will allow the monitoring of this objective.

Transient open space management will be monitored through operational site planning and at the forest plan review stage.



## 50 Year Vision

In fifty years time Haugh Woods SSSI will be dominated by native broadleaf tree species such as sessile and pedunculate oak, wild cherry, maple, alder, elm, small-leaved lime and hazel. Small areas of mixed coniferous woodland will remain scattered throughout the Forest Plan area— many of these will support mature conifer managed as long-term retention which will provide resilience and diversity within the wooded landscape as well as breeding habitat for birds such as goshawk and crossbill. High forest will be managed to produce sustainable timber through a variety of low impact silvicultural systems (LISS) including group felling to promote natural regeneration of the under-storey and increased structure and diversity.

Wild service , holly, alder buckthorn, spindle, privet and guelder rose will provide diverse food and nectar sources for a variety of species and will further diversify the native woodland elements to provide a woodland supporting a mosaic of different species and age structures. Coppicing will be prevalent throughout Haugh Woods, providing increased woodland structure and connectivity for a range of species including pearl-bordered fritillary, wood white, glowworm and dormice. Coppice coupes will be alongside roads and rides, small in size and irregular in shape to fit in with the woodland landscape and worked on a rotational basis to maximise their ecological benefit and connectivity . The network of interlinked successional habitat will benefit both wildlife and people, helping to create open sunny rides and a wealth of wildlife that depends on the conditions this management system provides.

With the loss of opportunities to clearfell conifer, open habitat will mainly be in the form of transitional open space created through coppicing. Rides and road sides will be open in nature with the surrounding high forest stands set back and softened by native graded broadleaf edges and open grassland verges to create plentiful, inter-linked habitat throughout the woodland area. An area of wet heathland on the central plateau will provide habitat for species of acidic open ground and scrub including tree pipit and nightjar and will further diversify the suite of habitats within this woodland area.

This Forest Plan represents the first ten years of the 50 year vision continuing to enhance and increase efforts that have been made have been made over the last ten years to maximise ecological benefits in this flagship Site of Special Scientific Interest.





## Designations

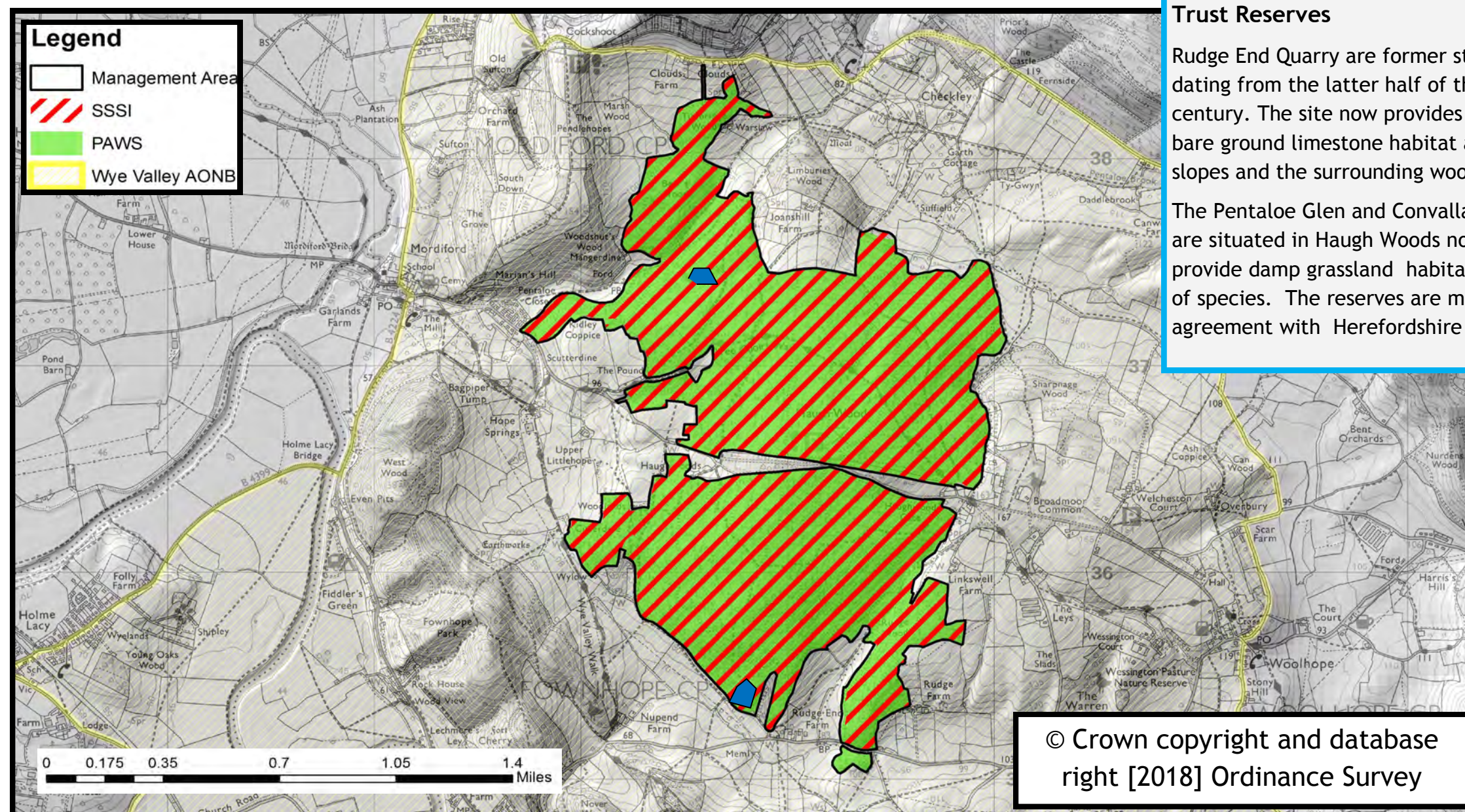
### Wye Valley Area of Outstanding Natural Beauty (AONB)

The Wye Valley AONB extends for 58 miles from the lower reaches of the River Wye and encompasses Haugh Woods at its northern extremity. The primary purpose of the Wye Valley AONB is to conserve and enhance the natural beauty of the area.

### Rudge End Quarry and Pentaloe Glen and Convallaria Herefordshire Wildlife Trust Reserves

Rudge End Quarry are former stone workings dating from the latter half of the 19th century. The site now provides important bare ground limestone habitat across scree slopes and the surrounding woodland margins.

The Pentaloe Glen and Convallaria Reserves are situated in Haugh Woods north and provide damp grassland habitat for a range of species. The reserves are managed under agreement with Herefordshire Wildlife Trust.



### Haugh Woods SSSI

Haugh Woods is designated as a Site of Special Scientific Interest. The site is remarkable for its invertebrate fauna, including the rare wood white and pearl-bordered fritillary butterflies.

Haugh Woods also contains woodland types which are of limited national distribution with regards to their species composition.

### Plantation on Ancient Woodland (PAWS)

Haugh Woods is all ancient woodland indicating that site has been continuously wooded since 1600. Much of the woodland is Plantation on Ancient Woodland due to the conifer planting that has occurred in the twentieth century.

In accordance with the Keepers of Time policy forest management will gradually reduce the conifer component to restore native broadleaf ancient woodland.



## Analysis and Concept

### Area Of Outstanding Natural Beauty (AONB)

**Analysis:** Haugh Woods is located within the Wye Valley Area of Outstanding Natural Beauty.

**Concept:** 353 hectares in size, Haugh Wood SSSI provides an extensive and well connected range of semi natural habitats which will be enhanced throughout the course of this Forest Plan through sustainable woodland management, ride widening, open and transitional habitat management and natural flood measures.

### Broadleaved Retention

**Analysis:** Haugh Woods has a well developed broadleaved component, supporting significant components of high quality oak.

**Concept:** Mature broadleaves will generally be retained through low impact silvicultural systems (LISS) on a ten yearly cycle with the objective of diversifying woodland structure and composition and improving resilience and habitat quality for a range of woodland species, including the retention of Trees of Special Interest and deadwood.

### Coppice

**Analysis:** Productive working coppice currently accounts for around 12.5ha (3.5%) of the total land holding at Haugh Woods.

**Concept:** Within this Forest Plan the percentage of woodland managed under coppice systems will increase to 37ha to ensure key invertebrate habitat is better connected and management can be carried out more sustainably over the larger areas.

### Ride Widening

**Analysis:** Haugh Woods has a well developed network of wide forest roads and rides habitat however connectivity is sometimes lacking.

**Concept:** Further ride side widening will occur, targeted at those rides with the highest conservation value and where most gains can be made in terms of connectivity. A strip felling system will be implemented within the conifer plantations to increase transitional open habitat and allow mature broadleaves to thrive and develop.

### SSSI

**Analysis:** Haugh Wood is designated as SSSI primarily for its invertebrate assemblage. Haugh Wood is currently in favourable condition as assessed by Natural England.

**Concept:** The plan will ensure that the SSSI status of the woodland is maintained as favourable and that the habitat quality and size is enhanced for the range of species for which the site is designated.

### Thinning of Conifers

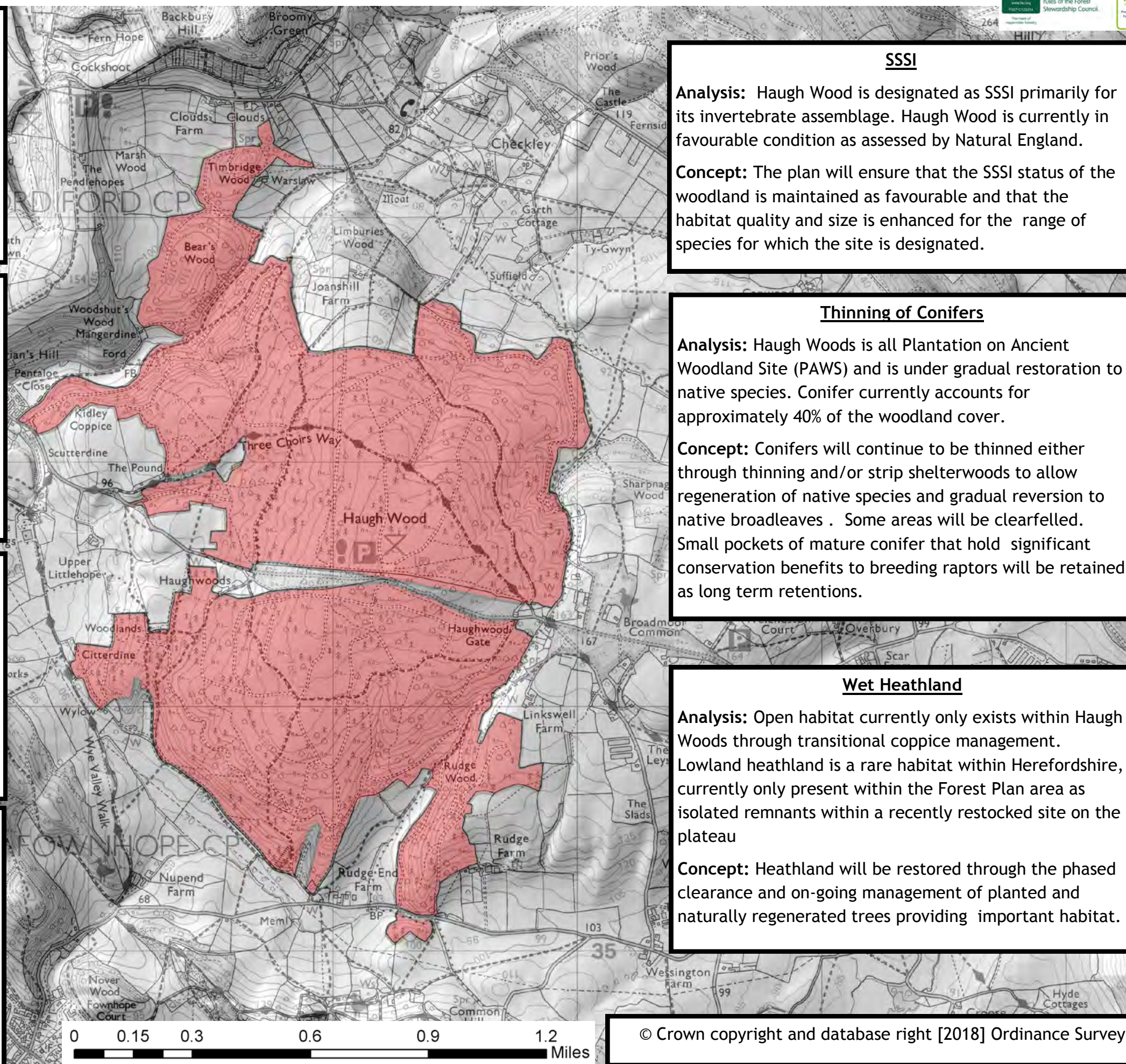
**Analysis:** Haugh Woods is all Plantation on Ancient Woodland Site (PAWS) and is under gradual restoration to native species. Conifer currently accounts for approximately 40% of the woodland cover.

**Concept:** Conifers will continue to be thinned either through thinning and/or strip shelterwoods to allow regeneration of native species and gradual reversion to native broadleaves. Some areas will be clearfelled. Small pockets of mature conifer that hold significant conservation benefits to breeding raptors will be retained as long term retentions.

### Wet Heathland

**Analysis:** Open habitat currently only exists within Haugh Woods through transitional coppice management. Lowland heathland is a rare habitat within Herefordshire, currently only present within the Forest Plan area as isolated remnants within a recently restocked site on the plateau

**Concept:** Heathland will be restored through the phased clearance and on-going management of planted and naturally regenerated trees providing important habitat.





## Naturalness on PAWS

Naturalness is the measure to show the percentage of site native tree species in a given area. This measure is used to record and monitor the condition and restoration of Ancient Woodland Sites previously planted with non-native species.

Classes 2, 3 and 4 are classified as Plantations on Ancient Woodland Sites (PAWS). Areas of Semi-Natural Woodland (Class 1 - > 80% site native species) are mostly found towards the bottom of valleys, in wetter riparian areas where the soils are richer.

The transformation of Classes 2, 3 and 4 AWS towards Class 1 is a key objective of this Plan and is in line with the *Keepers of Time* Policy (Forestry Commission, 2005).

### Class 4 - Plantation Woodland



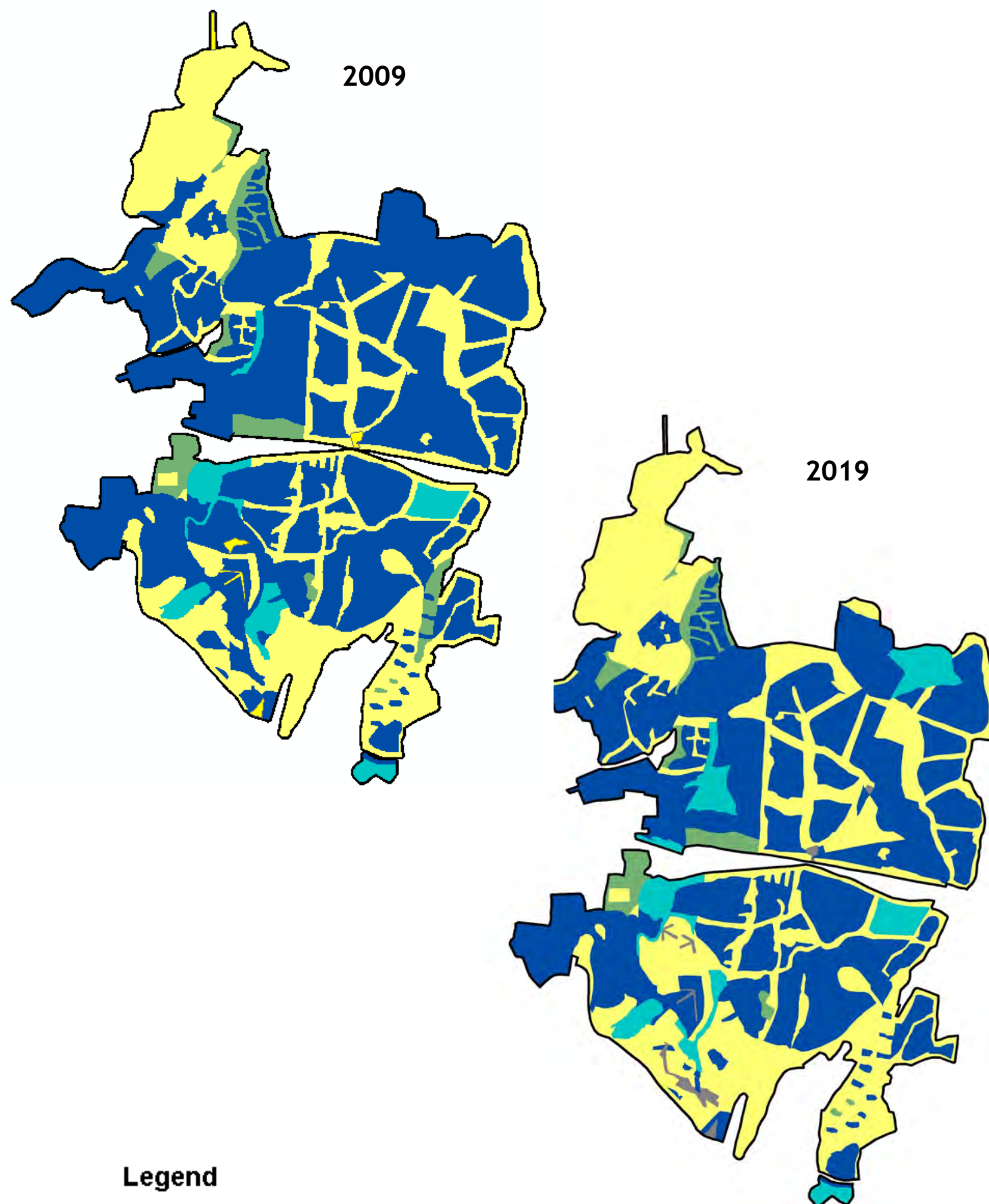
### Class 3 - Plantation Woodland



### Class 2 - Plantation Woodland



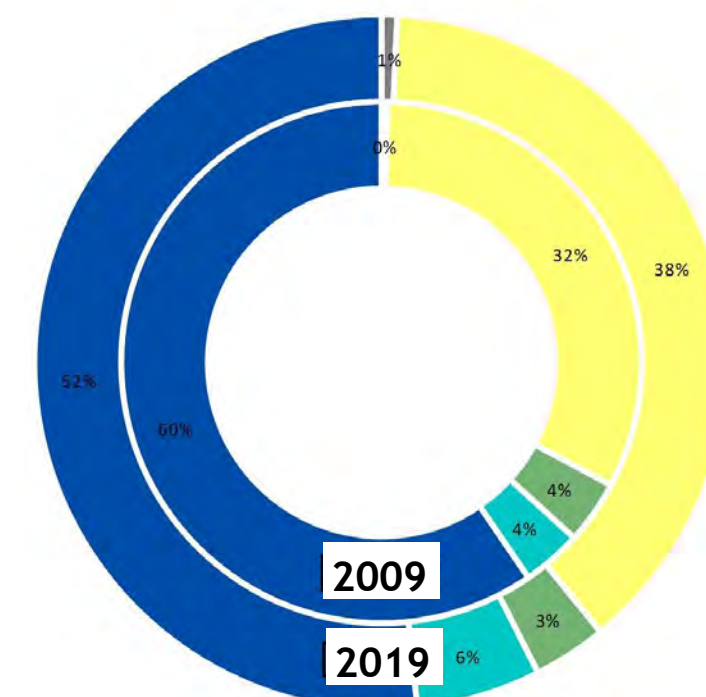
### Class 1 - Semi-Natural Woodland



#### Legend

- Open/Felled/Bare Ground
- >80% site native species
- 50-80% site native species
- 20-50% site native species
- <20% site native species

#### Comparative Naturalness 2009-2019





## Felling and Restock 2020-2030

### Coupe 26056 (2.56ha)

Fell 2019-2021 (Japanese larch and grand fir)

### Restock 26056a (2.56ha)

80% Native broadleaves

20% Beech

### Coupe 26004 (2.48ha)

Fell 2022-2026 (Western hemlock, Douglas fir and grand fir)

### Restock 26004a (2.48ha)

80% Native broadleaves

20% Beech

### Coupe 26039 (2.60ha)

Fell 2019-2021 (Birch and oak)

### Restock 26056a (2.60ha)

Retain as wet/lowland heath.

### Coupe 26106 (0.86ha )

Fell 2020-2021 (Birch and oak)

### Restock 26106 (a) (0.86ha)

80% Native broadleaves

20% Open habitat alongside ride

### Coupe 26018 (4.55ha)

Fell 2027-2029 (Norway spruce and Japanese fir)

### Restock 26018a (4.55ha)

80% Native broadleaves

20% Beech

### Coupe 26010 (2.36ha)

Fell 2022-2026 (Norway spruce and Japanese fir)

### Restock 26010a (2.36ha)

80% Native broadleaves

20% Beech

### Coupe 26059 (4.53ha)

Fell 2027-2029 (Norway spruce and Scots pine)

### Restock 26059a (4.53ha)

80% Native broadleaves

20% Beech

### Coupe 26019 (25ha)

Coppice, approximately 2.5ha of this coupe will be coppiced annually. Coppice panels will be no larger than 0.5ha in size.

### Forest Roads

A

B

C

Restricted

Transfer Point

Unclassified

### Management Coupes

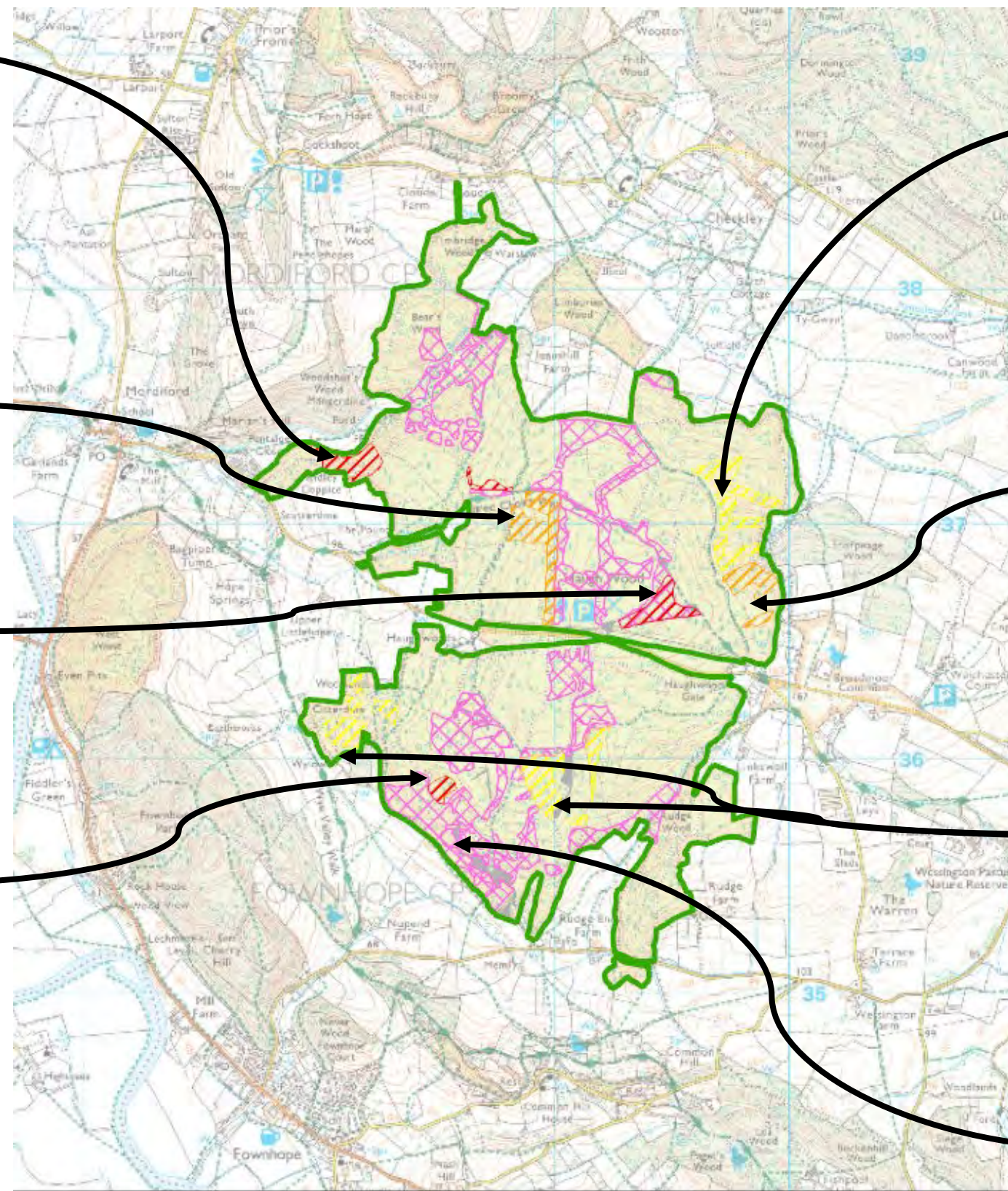
Fell 2019 - 2021

Fell 2022 - 2026

Fell 2027 - 2031

Coppice

Open





## Clearfelling

These conifer blocks have been identified for clearfelling due to their adjacency to mature broadleaf and the impact they are having on the rideside habitat extent and quality. These areas will be worked in two phases during the Forest Plan period.

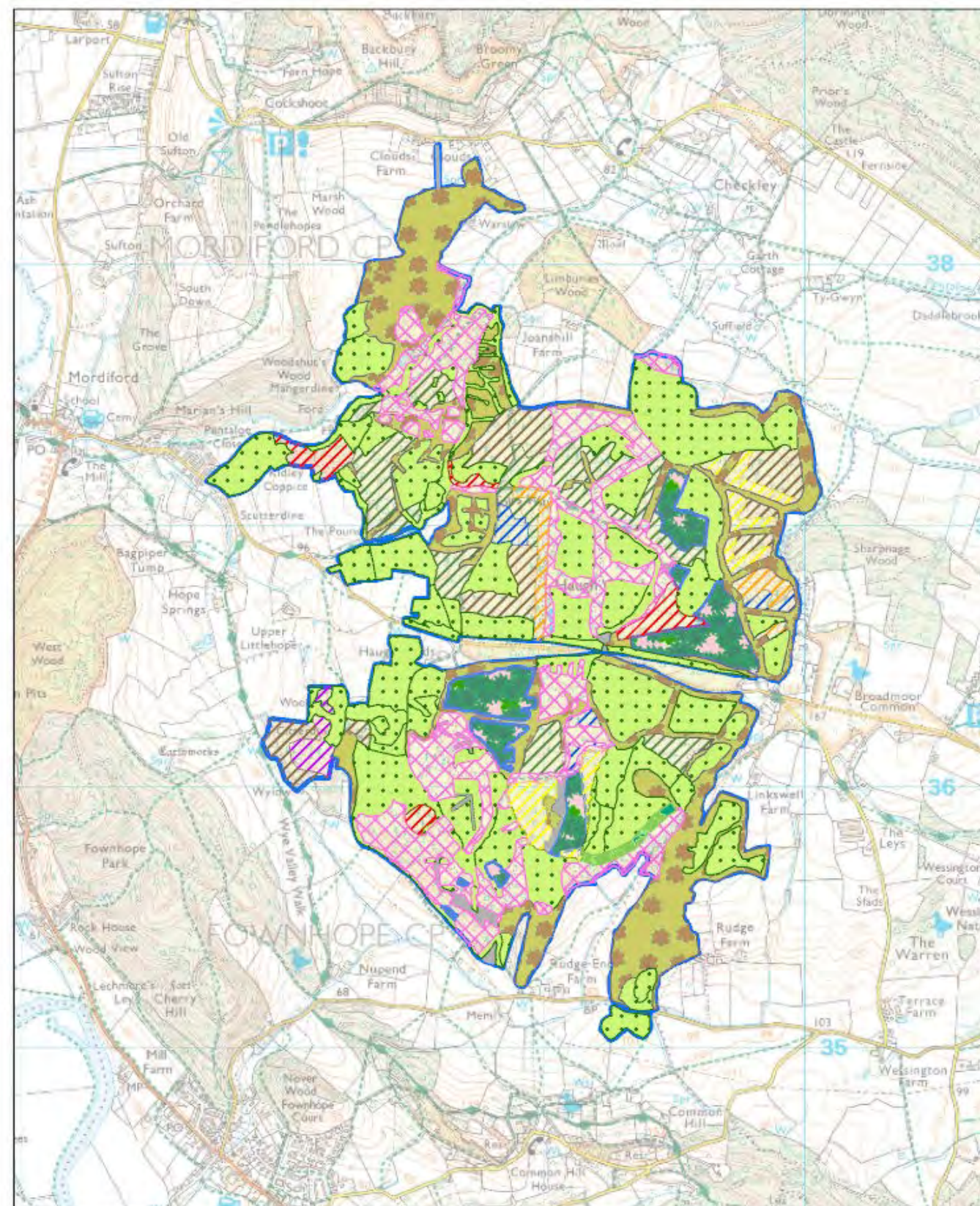
This will reduce the overall conifer content in line with the “Keepers of Time” policy, open up mature broadleaves and provide increased mixed broadleaf and open habitat along the ride margins for a range of species.

## Group Selection

Areas of woodland to be managed under group selection have been identified within broadleaf stands and along ride edges. These areas will be felled under group selection systems to create more complex edges alongside woodland rides and roads, again enhancing habitat for a variety of invertebrates

### Scenario Management Coupes

- Fell 2019 - 2021
- Fell 2022 - 2026
- Fell 2027 - 2031
- Fell 2032 - 2036
- Fell 2037 - 2041
- Fell 2042 - 2046
- Fell 2047 - 2051
- Fell beyond 2051
- Conifer Retention
- Mature Broadleaf Habitat
- LISS - Conifer/Broadleaf Shelterwoods
- Group selection - Broadleaf/Conifer
- Coppice
- Wood Pasture
- Minimum Intervention
- Natural Reserve
- Open
- Low Impact Silvicultural System



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## Mature Broadleaf Habitat

Supporting important mature oak habitat, these areas of Haugh Woods will be managed through LISS, predominantly through single tree selection, to provide space for crowns to develop and to encourage natural regeneration of the understorey. Where the health and vigour of the oak is being impacted by adjacent conifer plantations, the impact will be reduced through thinning or clearfelling adjacent conifer.

## Coppice

The total area of coppice will be increased over the Forest Plan period with coupes of around 0.25-0.5ha in size cut, with an aim to cut 2.5ha annually. The areas designated as coppice will be managed through rotational cutting, creating a mosaic of successional habitat across Haugh Woods and important successional habitat alongside important rides.

## Low Impact Silvicultural Systems (LISS)

The majority of Haugh Woods will be managed under LISS, gradually thinning mixed stands to favour the broadleaf components, opening up Trees of Special Interest and other important features. Where stands are predominantly conifer, thinning will be carried out with the aim of promoting existing broadleaf components and the natural regeneration of native woodland.

## Conifer Retention

Specific stands, representing 4.8% of the Forest Plan area have been identified as conifer retention. Management throughout will be focussed on improving structural diversity and edge habitat.

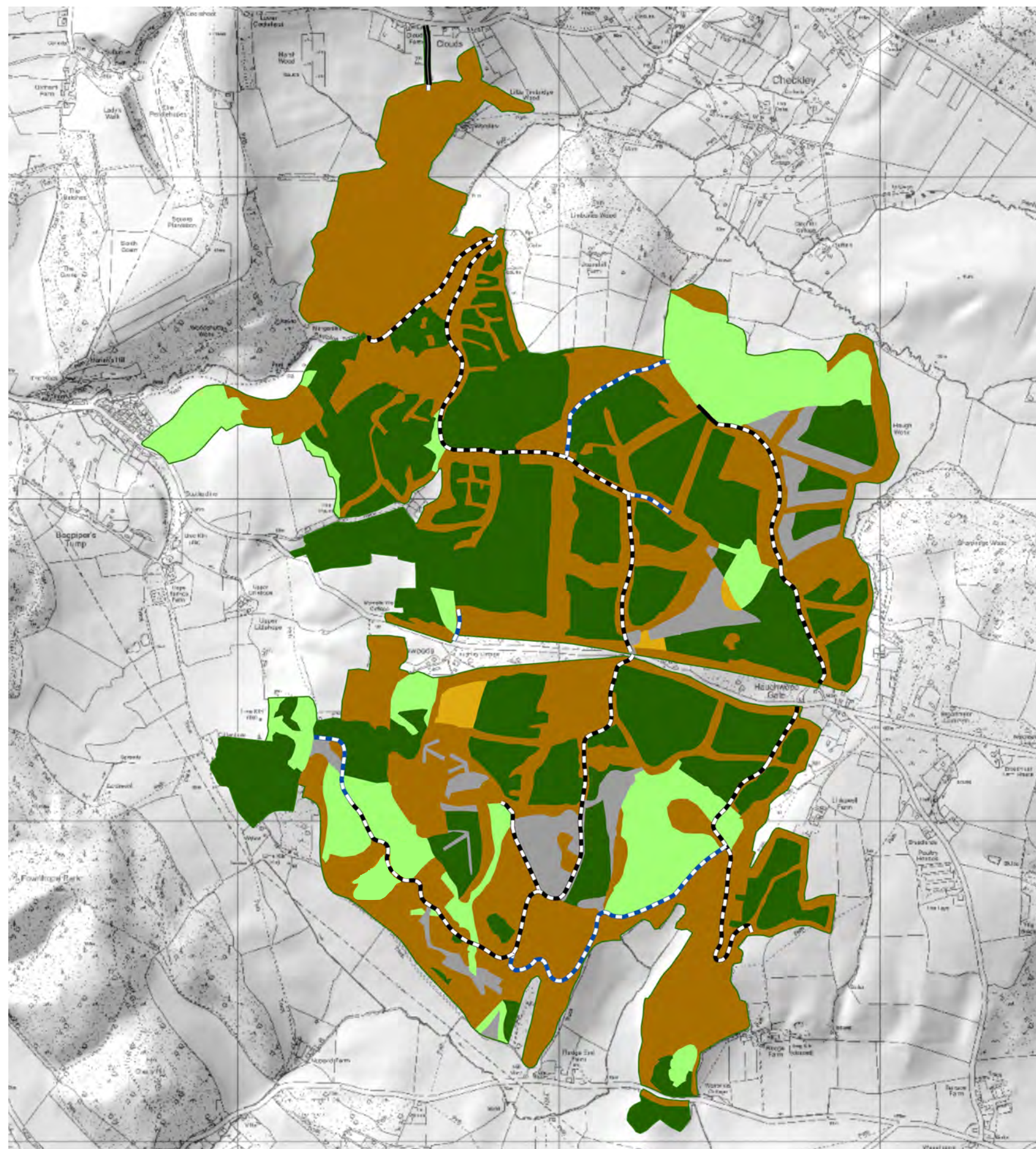
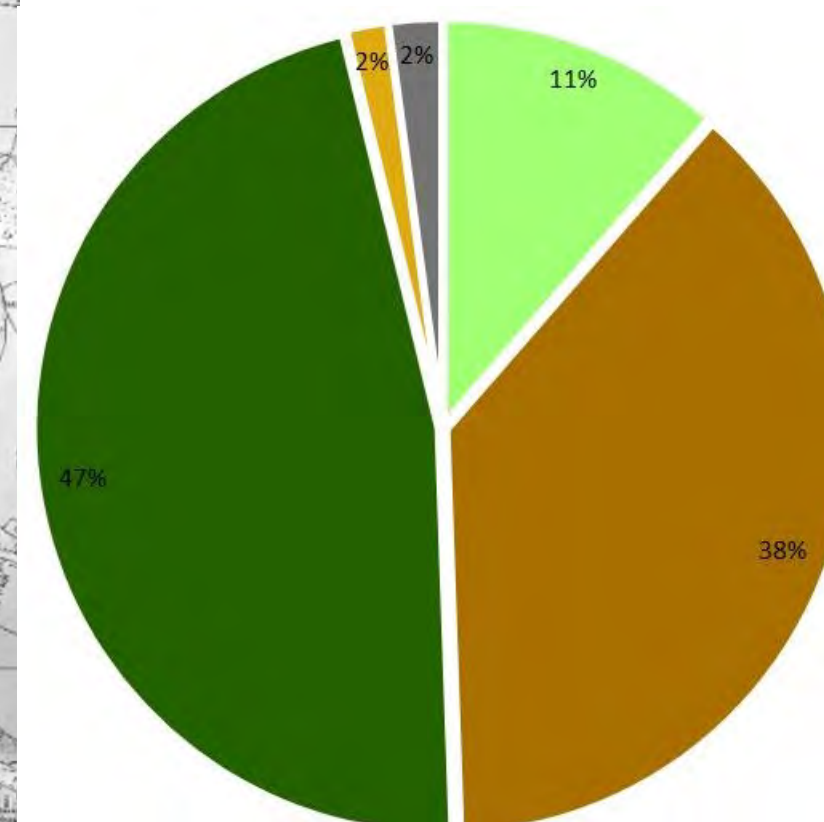
These stands will be retained beyond economic maturity to provide breeding habitat for raptors, firecrest and crossbill and contrasting colour and texture in the landscape.



## Indicative Future Species 2030

The projections made are indicative of the species composition of Haugh Woods in ten years time as the woodland management outlined within this Forest Plan is delivered over the ten year plan period.

In reality, greater larch removal is anticipated and a greater proportion of open space delivered, due to *Phytophthora ramorum* and dynamic internal space fluxes.



### Main Species

- Non Native Broadleaf
- Native and Naturalised Broadleaf
- Evergreen Conifer
- Deciduous Conifer
- Open or Other

### Forest Roads

- A
- B
- C
- Restricted
- Transfer Point
- Unclassified

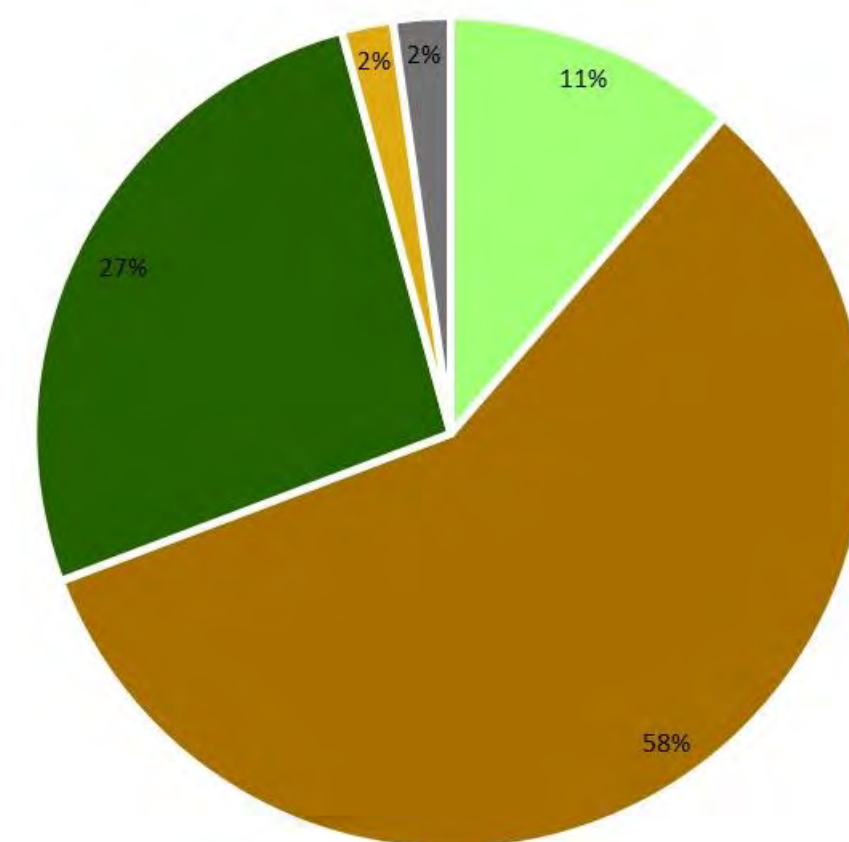
0 0.17 0.35 0.7 1.05 1.4 Miles



## Indicative Future Species 2050

The projections made are indicative of the species composition of Haugh Woods in ten years time as the woodland management outlined within this Forest Plan is delivered over the ten year plan period.

In reality, greater larch removal is anticipated and a greater proportion of open space delivered, due to *Phytophthora ramorum* and dynamic internal space fluxes.

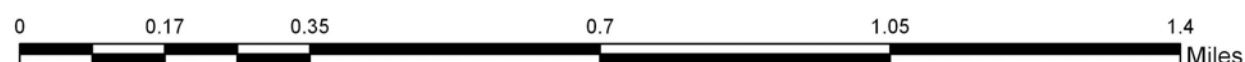
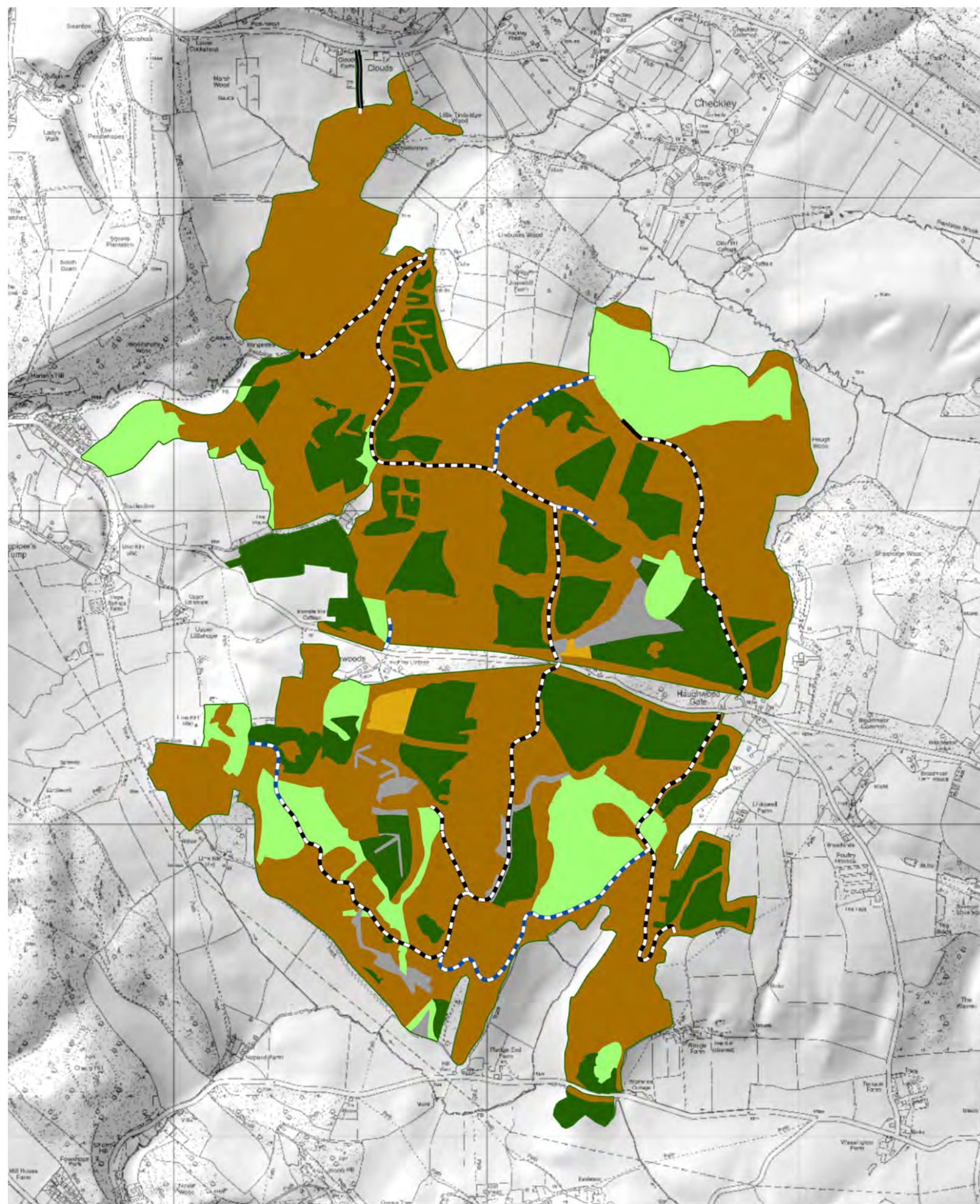


### Main Species

- Non Native Broadleaf
- Native and Naturalised Broadleaf
- Evergreen Conifer
- Deciduous Conifer
- Open or Other

### Forest Roads

- A
- B
- C
- Restricted
- Transfer Point
- Unclassified





## Woodland habitat

As ancient woodland, Haugh Woods will continue to be managed with the objective of gradual reversion to native species, focussed on maximising biodiversity gains alongside the network of rides. This will be achieved through strip clearfelling conifer high forest whilst gradually reducing the amount of conifer through thinning economically immature conifer within the pure stands.

Woodland management throughout mixed and coniferous high forest will be through LISS with the aim of increasing their structural and species diversity, opening up mature broadleaves, and providing increased light to encourage natural regeneration and further opportunities for enrichment planting.

A total of 19.08 ha conifer plantation will be clearfelled to remove prolifically regenerating western hemlock or to reduce the impacts of conifer plantations on important ride-sides.

Standing deadwood will be retained where safe to do so. Fallen deadwood will be retained in situ, with special contract conditions applying with regard to the retention of broadleaf timber after felling operations have taken place.

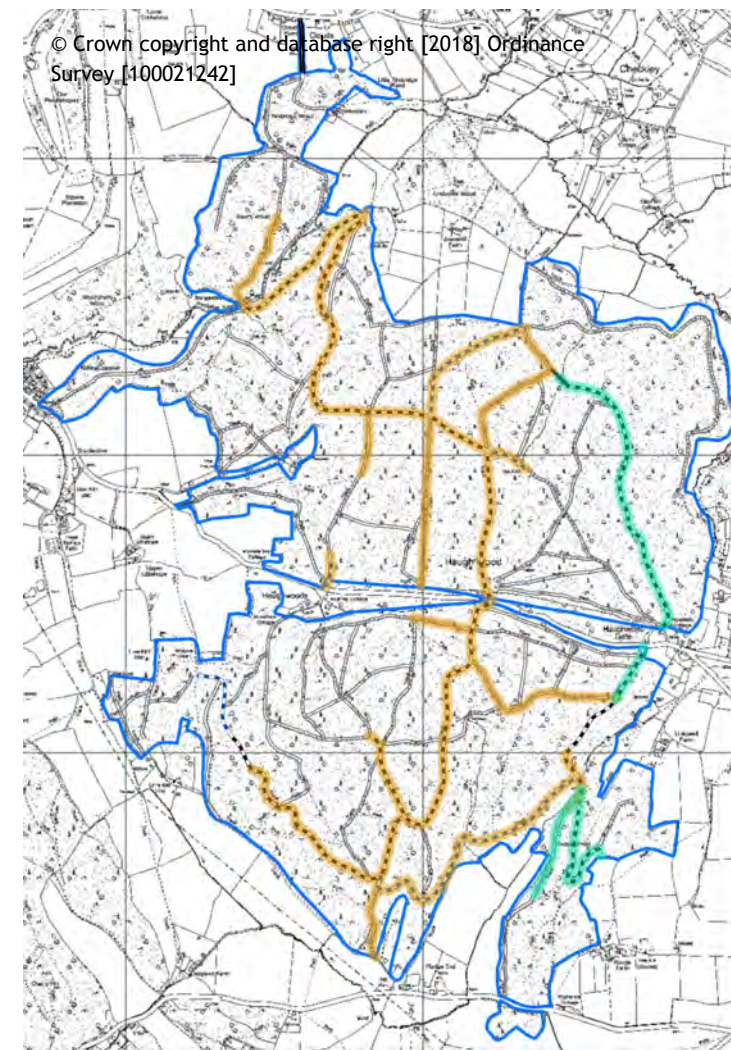
## Woodland road and ride-side habitat

There is significant invertebrate interest at Haugh Woods with many species such as the wood white, the pearl-bordered fritillary and glowworms now confined to Haugh Woods and a handful of other well-managed ancient woodlands within Herefordshire.

Many other species, such as the high-brown fritillary, once common across this wooded landscape, are now locally extinct. Rare moth species still present within Haugh Woods include the drab looper and the speckled footman. All of these species depend on extensive and appropriately managed woodland rides where opportunities for their specific food-plants to flourish are abundant and linkages to other areas of suitable habitat are provided through rotational management.

Management of Haugh Woods over the next ten years will increase the amount and quality of rideside habitat for these and many other important species, through clearfelling ride-side coupes selected specifically to widen ride margins to maximise ecological benefit. By pulling back the conifer plantations and allowing a graduated edge to develop, rich in nectar sources and wide enough to not be impacted either by shading conifer or road management, vital habitat will be provided for these species.

Coppice coupes, to be managed on a rotational cycle, have also been identified alongside rides and roads will provide an important network of transitional open habitat and regenerating coppice which again will benefit many of these species. Disease resistant elm will continue to be planted at key locations to benefit the white-letter hairstreak butterfly. Ash die-back will be managed in line with West England Forest District policy, felling trees within the highest usage zones along tracks, rides and public rights of way and, wherever possible, retaining ash within stands.



### Lepidoptera Rides

Lepidoptera Rides

### Dormouse Rides

Dormouse Rides

### Forest Roads

A

B

C

Restricted

Transfer Point

Unclassified



Dead-hedged coppice coupe, Haugh Woods



## Conservation - Aquatic and open Habitats

### Watercourses

The Pentaloe Brook arises from the Pentaloe Well to the north-east of Haugh Woods and flows through pasture and woodland into the River Wye at Mordiford.

The watercourse will continue to be managed sensitively to protect water quality during forestry operations and the surrounding wet woodland and open habitat riparian habitat. Natural flood management measures including the use of woody debris dams at key points within the watercourses will be encouraged to slow the flow and to create in-stream habitat.

Tufa, the formation of limestone from fluvial deposits, is present within some of the smaller tributaries adjoining the Pentaloe Brook. Habitat for a unique plant assemblage, areas of tufa will be recorded on the conservation database to ensure they are not impacted during forestry operations.



Pentaloe Brook

### Ponds

There are a number of ponds throughout Haugh Woods which provide a more diverse habitat for a range of species as well as breeding habitat for invertebrates and amphibians. Existing ponds will be managed sensitively to ensure they do not become over-shaded with scrub or impacted by invasive or non-native plants.

### Lowland heathland

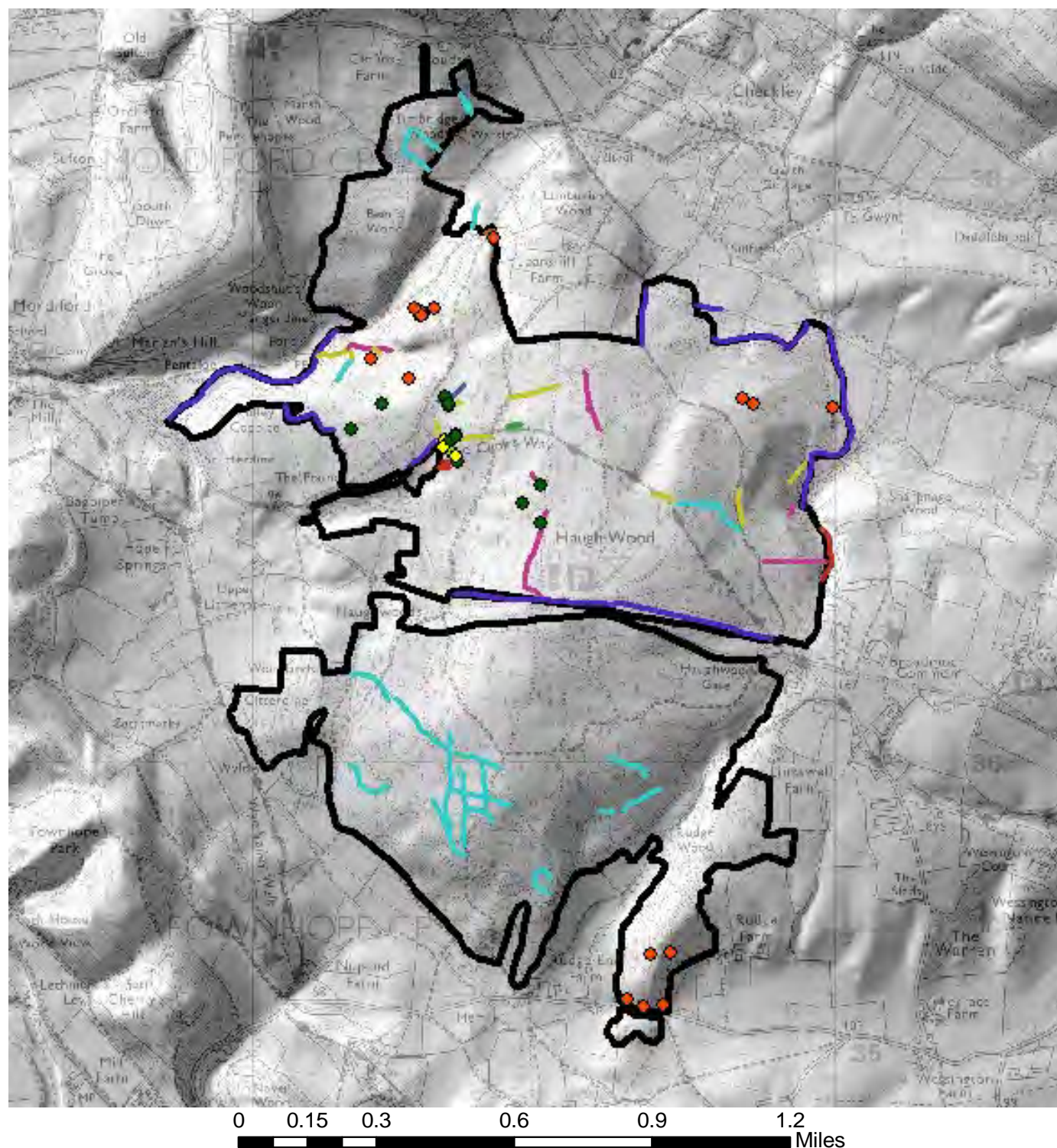
2.6 hectares of mixed woodland high on the plateau of Haugh Woods has been identified for restoration back to lowland heathland, a rare habitat in Herefordshire.

Through the phased removal of woodland cover, lowland heathland vegetation including ling, bilberry and broom will be allowed to flourish alongside pockets of birch and oak scrub to provide a mosaic of sheltered open habitat, bare ground and scrub.



Lowland heathland restoration site





## Legend

- Charcoal Hearth
- Clay Extraction Pit
- Pit
- Platform collection/storage
- Non-Descript Heritage Feature
- Bank
- Ditch
- Holloway
- Holloway/trackway
- Post medieval trackway
- Trackway
- Woodbank

Haugh has been extensively surveyed for archaeological features by the Herefordshire Archaeology department of Herefordshire Council. Haugh Woodland is registered on the ancient woodland register and as such is likely to have been constantly wooded since before 1600. Haugh Wood contains a plethora of ancient woodland indicators attesting to this claim. The woodland also contains a wealth of heritage and archaeological features which have been surveyed on several occasions since 2000.

The woodland contains a number of heritage features relating to the long history of woodland management on the site, these predominantly relate to charcoal hearths. These indicate a strong history of coppicing as a form of woodland management throughout the area. These hearths are generally 4-8m in diameter and roughly round and are created on sloping ground, some contain evidence of burning act ivies through remnants of charcoal or scorched earth within them. Other platforms and storage features where also identified within the woodland which also likely related to charcoal production. Two possible saw pits where also identified within the woodland in a cluster of charcoal burning and storage platforms.

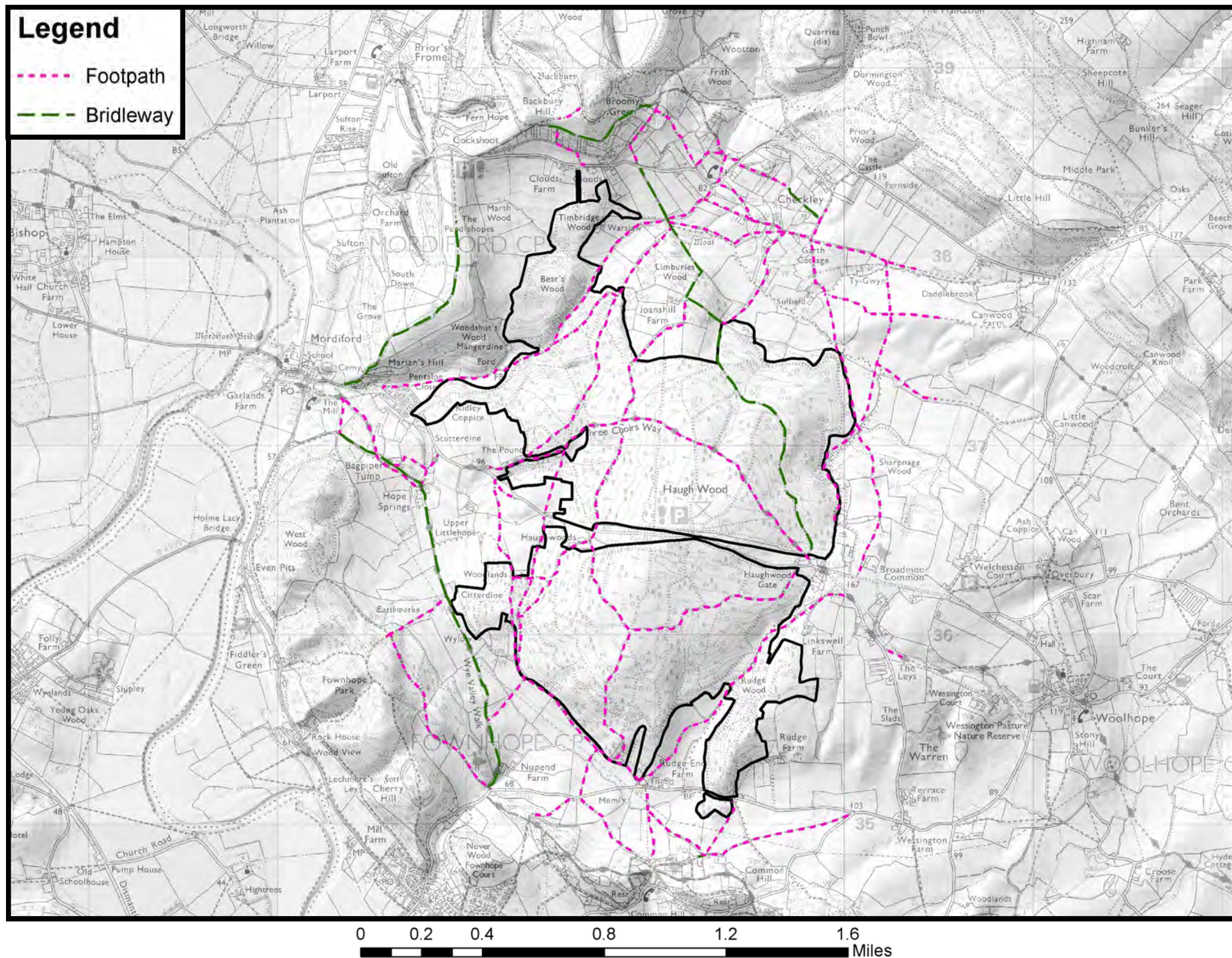
Woodland boundaries are also prevalent within Haugh Woods, these are generally in the form of ditches and earth banks. Many of these ditches and banks still mark the extent of the current woodland as keen be seen on the north-eastern edge of the woodland. Some of these boundaries would have also historically marked the parish boundaries. It is thought that some of the shallower ditches within the woodland also mark historical compartment boundaries.

Trackways and holloways are also present throughout the entirety of the woodland, these likely provided access to the area of charcoal production and storage within the woodland. Indeed many of the current forestry roads, rides and tracks follow old tracks and holloways.

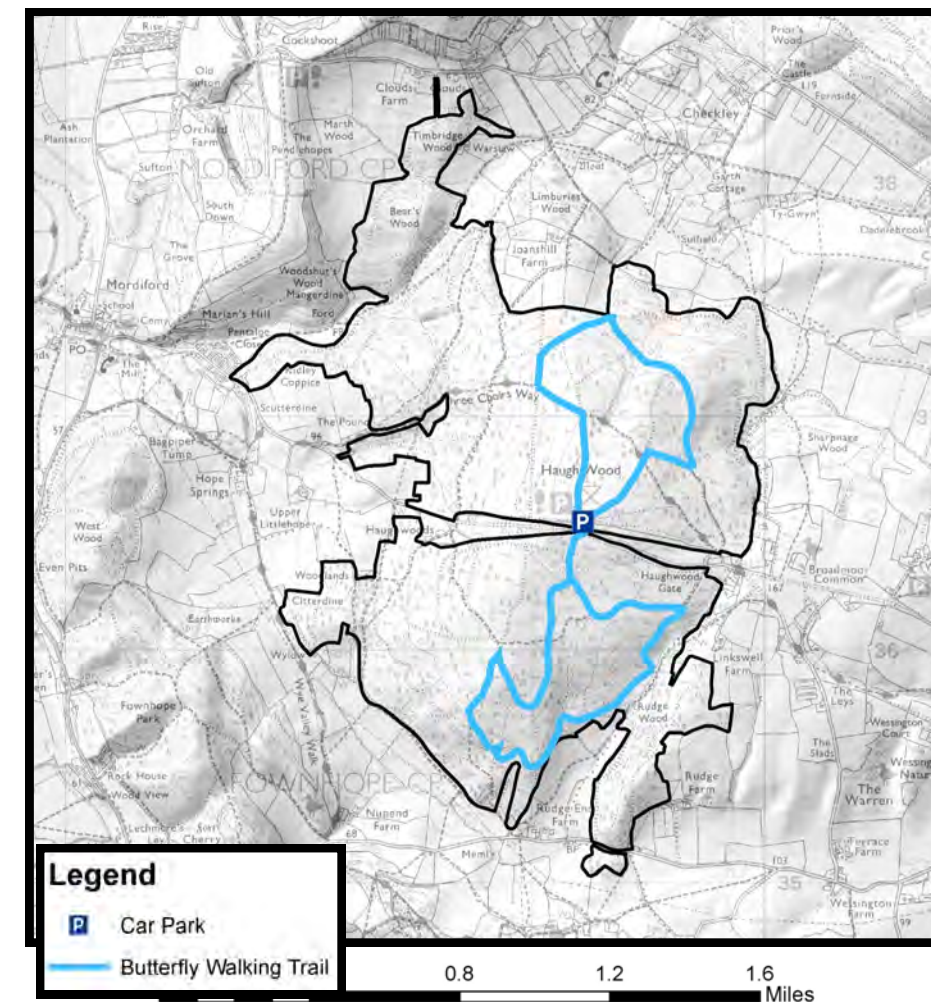
Industrial features in the form of mineral extraction pits, these extraction pits occur in a variety of sizes with the largest being approximately 35m in diameter and 5m in depth. Again many of these industrial mineral/ clay extraction pits are linked by trackways and holloways to allow access and extraction of materials. Most of these pits occur within the western edge of the woodland where clay enriched sub-soils are located.

From the surveys undertaken it is understood that many of the heritage features are eroded but generally well preserved. It is also discussed that forestry operations pose a potential risk to the longevity of these features. These features are mapped within the GIS database and are carefully considered during any forestry operations. Features will be adequately protected from any future operations on the site and any further features which are found will be added to the GIS database and treated accordingly.





## Recreation and Public Access



Haugh Woods contains a range of recreational facilities, this includes way marked trails, information boards, a car park and picnic benches. The main waymarked trails is the butterfly walking trail which is split into a two circular routes, one in north and one in south Haugh. Other important footpaths run through the woodland including the long distance footpath “Three Choirs Way” which is a circular route encompassing Gloucester, Hereford and Worcester. The Wye Valley walk also passes along the western edge of the woodland, this walk follows the Wye Valley through Gloucestershire, Herefordshire and Wales. The smaller Mordiford Loop which is a circular route around the neighbouring village of Mordiford also passes through the wood.



## Glossary

Term	Abbreviation	Description
<b>Ancient Semi-Natural Woodland</b>	ASNW	An ancient woodland site, where trees and other plant species appear to of established naturally rather than having been planted. Predominantly these sites will contain 80% or over of site native species or species native to the surrounding area.
<b>Alternatives to Clearfell</b>	ATC	Alternative to Clearfell is similar to CCF and refers to management systems where stands are regenerated without clearfelling.
<b>Ancient Woodland Site</b>	AWS	A site that has technically been wooded since 1600AD and is unlikely to have been converted to farmland in the last few centuries.
<b>Continuous Cover Forestry</b>	CCF	Continuous Cover Forestry is an approach to forest management that enables an owner of woodland to manage the woodland without the need for clearfelling. This enables tree cover to be maintained, usually with one or more levels and can be applied to both conifer or broadleaf stands. With Conifer it is possible to regenerate the crop a lot faster than in broadleaf crops, where the canopy is generally removed a lot slower and over a much longer time span. A decision to use CCF must be driven by management objectives and will have long-term vision often aimed at creating a more diverse forest, both structurally and in terms of species composition. There are no standard prescriptions meaning CCF is very flexible in ensuring opportunities can be taken advantage of as they arise. This development of a more diverse forest is a sensible way to reduce the risks posed by future changes in the climate and biotic threats.
<b>Clearfell</b>	C/F or CF	To cut and remove all trees from a certain area of woodland.
<b>Crop</b>		A stand of trees. Often associated with stands completely or partially managed for its timber.  Just as farmers manage crops so does forestry the only difference is a farmers' rotation is shorter and often realised in 1 year. Trees are a much longer term crop with rotations varying from 6 years to 400 years. (also see definition for rotation)
<b>Enrichment planting</b>		Planting different species within areas of regen that helps diversify the range of species in a wood and in doing so can make it more resilient to future climate change and future threats from disease.  Enrichment may be desirable in areas where success of regeneration is uneven, patchy or where a regen crop is limited by the number of species present.
<b>Group felling / group planting</b>		This is where small areas of woodland are felled hence the name "group felling" and then either allowed to develop through the use of nat-regen or in this case planted hence "group planting". These techniques can help to develop structure* within a wood over a given length of time and is often used in conjunction with continuous cover. *Either in terms of age or number of tree species present, since shelter and shade are provided by the remaining upper storey one can consider a larger number of tree species when deciding what to plant.
<b>Hectare</b>	Ha	Unit of area equating to 2.47 acres.
<b>Native (and honorary native)</b>		The trees making up the woodland are part of England's natural, or naturalised flora. Determined by whether the trees colonised Britain without assistance from humans since the last ice age (or in the case of 'honorary natives' were brought here by people but have naturalised in historic times); and whether they would naturally be found in this part of England.
<b>Natural Regeneration</b>	Regen or nat-regen	Trees growing on a site as a result of natural seed fall, and can be used as a management process and can allow cleared areas of woodland to germinate, grow and develop naturally. This process can happen anywhere and woods can be managed to encourage nat-regen although there is no guarantee of success. In these instances, or if nat-regen is unlikely for a variety of reasons, one can use enrichment planting or group planting to achieve the same affect.  The process usually relies on an overstorey of "parent trees" being present or on parent trees being close by to provide the seed. These parent trees will usually of been thinned and managed with natural regeneration in mind.  Existing areas of nat-regen are then usually developed through carefully thinning the surrounding woodland over a number of years, to give more light and space to ensure the young trees can establish themselves into larger trees eventually allowing them to be incorporated ('recruited') into the main crop for the next rotation at some point in the future.  Usually done in small groups or in strips this system can allow a varied woodland structure to develop over time.  Protection from competing plant species and mammal browsing might be required in the early stages by fencing or using tree shelters.



Rotation		<p>Generally a commercial term used to describe the length of time an area of trees is growing for, from the time of planting to the time of felling. For broadleaves a rotation is generally a lot longer than that of conifer species* and can broadly speaking be anywhere between 80 years to 3-400 years, as opposed to conifer crops whose rotation is generally shorter but can vary from 20-25 years to 120 years plus.</p> <p>*The exception being that of coppice where rotation length can vary from 5 or 6 years up to 30 years plus depending on management objectives.</p> <p>“First rotation” would refer to an area of wood planted on open ground not previously wooded. And so “second rotation” is one where woodland has been cleared and replanted.</p>
Shelterwood		<p>A management system that is applicable to conifer or broadleaf, where tree canopy is maintained at one or more levels without the need to clearfell the whole site. Felling can occur, but generally in small “groups” whose size shape and spatial distribution will vary depending on site conditions. The “groups” are then either: allowed to develop and establish by the use of natural regeneration, are planted or are established using a mixture of both techniques. This known as a “group shelterwood system”</p> <p>A variation on this is “Single tree selection”. This variation removes individual trees of all size classes more or less uniformly throughout the stand to maintain an uneven-aged stand and achieve other stand structural objectives. While it is easier to apply such a system to a stand that is naturally close to the uneven-aged condition, single tree selection systems can be prescribed for even-aged stands, although numerous preparatory thinning interventions must be made to create a stand structure where the system can truly be applied.</p>
Silviculture		<p>A term coined during late 19th century from the Latin <i>silva</i> meaning 'wood' and the French <i>culture</i> meaning 'cultivation' and so Silviculture is the art and science of controlling the establishment, growth, composition, and quality of forest vegetation to achieve a full range of forest resource objectives.</p>
Stand		<p>A group or area of trees that are more or less homogeneous with regard to species composition, density, size, and sometimes habitat.</p>
Thin	TH	<p>Selective removal of trees from a wooded area, giving remaining trees more space to grow into larger trees. Thinning is done to:</p> <ul style="list-style-type: none"> <li>Improve the quality and vigour of remaining trees.</li> <li>Remove trees interfering with mature or veteran broadleaf trees.</li> <li>Give space for tops (or “crowns”) of broadleaf trees to develop and potentially act as a future seed source.</li> <li>Give space for natural regeneration to grow and develop with the intention of recruiting these younger naturally grown trees as a part of the future woodland structure.</li> <li>Create gaps for group planting or enrichment.</li> <li>Remove species of tree that may compromise the intended management objective of the woodland eg: non-native or invasive species such as Sycamore, Western Hemlock or birch.</li> <li>Improve the economic value of a wood.</li> <li>Help realise opportunities to enhance ecological value.</li> </ul> <p><b>NOTE:</b> This list is not in any order of priority and will vary depending on management objectives.</p>
Yield Class	YC	<p>A method of measuring the growth rate or “increment” of a crop of trees by age and height; measured in m<sup>3</sup> per Ha per annum. E.g. A crop with a YC of 16 is one that has an annual increment of more than 16m<sup>3</sup> but less than 17m<sup>3</sup>, although generally only even numbers are used when stating YC.</p>



# Site of Special Scientific Interest, Management Plan for Haugh Woods SSSI

January 2020—January 2030

## 1. Agreement and Consent

Name of SSSI	Haugh Woods SSSI SO591367
Period of Plan	January 2020 - January 2030
Kevin Stannard Forest Management Director Forestry England	_____
Date	_____
Katey Stephen Lead Advisor West Midlands Landscape team Natura England	_____
Date	_____

The signing of this plan by Natural England gives the necessary consent under Section 28 of the Wildlife and Countryside Act (1981), as amended, for the management prescriptions detailed in this plan and to be undertaken without necessity to consult prior to each operation during the plan.

Forestry England will keep a written record of work carried out during the period of this plan.

## 2. SSSI Notification

County	Herefordshire
Site Name	Haugh Woods SSSI
District	West England Forest District
Status	Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 as amended
Local Planning Authority	Herefordshire County Council
National Grid Reference	SO591367
Area	353.77ha
Ordnance Survey Sheet	1:50,000: 149 1:10,000: SO 53 NE
Date Notified (Under 1981 Act)	1989

Forestry England manages 6 units of SSSI at Haugh Woods. At the time of writing all the woodland units (001, 002, 003, 004, 006 and 008) are in favourable condition with a medium condition threat risk.



### 3. Operations Likely to damage the Special interest

- 2) The introduction of grazing and changes in the grazing regime (including type of stock, intensity or seasonal pattern of grazing and cessation of grazing).
- 3) The introduction of stock feeding and changes in stock feeding practice.
- 5) Application of manure, fertilisers and lime.
- 6) Application of pesticides, including herbicides (weedkillers).
- 7) Dumping, spreading or discharge of any materials.
- 8) Burning.
- 9) The release into the site of any wild, feral or domestic animal\*, plant or seed.
- 10) The killing or removal of any wild animal\*, other than pest control.
- 11) The destruction, displacement, removal or cutting of any plant or plant remains, including tree, shrub, herb, dead or decaying wood, moss and leaf-mould.
- 12) The introduction of tree and/or woodland management+ and changes in tree and/or woodland management+.
- 13a) Drainage (including the use of mole, tile, tunnel or other artificial drains).
- 13b) Modification of the structure of watercourses (eg streams, springs, ditches), including their banks and beds, as by re-alignment, re-grading and dredging.
- 13c) Management of aquatic and bank vegetation for drainage purposes.
- 14) The changing of water levels and tables and water utilisation (including irrigation, storage and abstraction from existing water bodies and through boreholes).
- 15) Infilling of ditches or marshes.
- 16a) The introduction of freshwater fishery production and/or management and changes in freshwater fishery production and/or management, including sporting fishing and angling.
- 20) Extraction of minerals, including sand and gravel, topsoil, subsoil, limestone and spoil.
- 21) Construction, removal or destruction of roads, tracks, walls, fences, hardstands, banks, ditches or other earthworks, or the laying, maintenance or removal of pipelines and cables, above or below ground.
- 22) Storage of materials.
- 23) Erection of permanent or temporary structures, or the undertaking of engineering works, including drilling.
- 26) Use of vehicles likely to damage or disturb features of interest.
- 27) Recreational or other activities likely to damage the woodland.
- 28) Changes in game management and hunting practice.

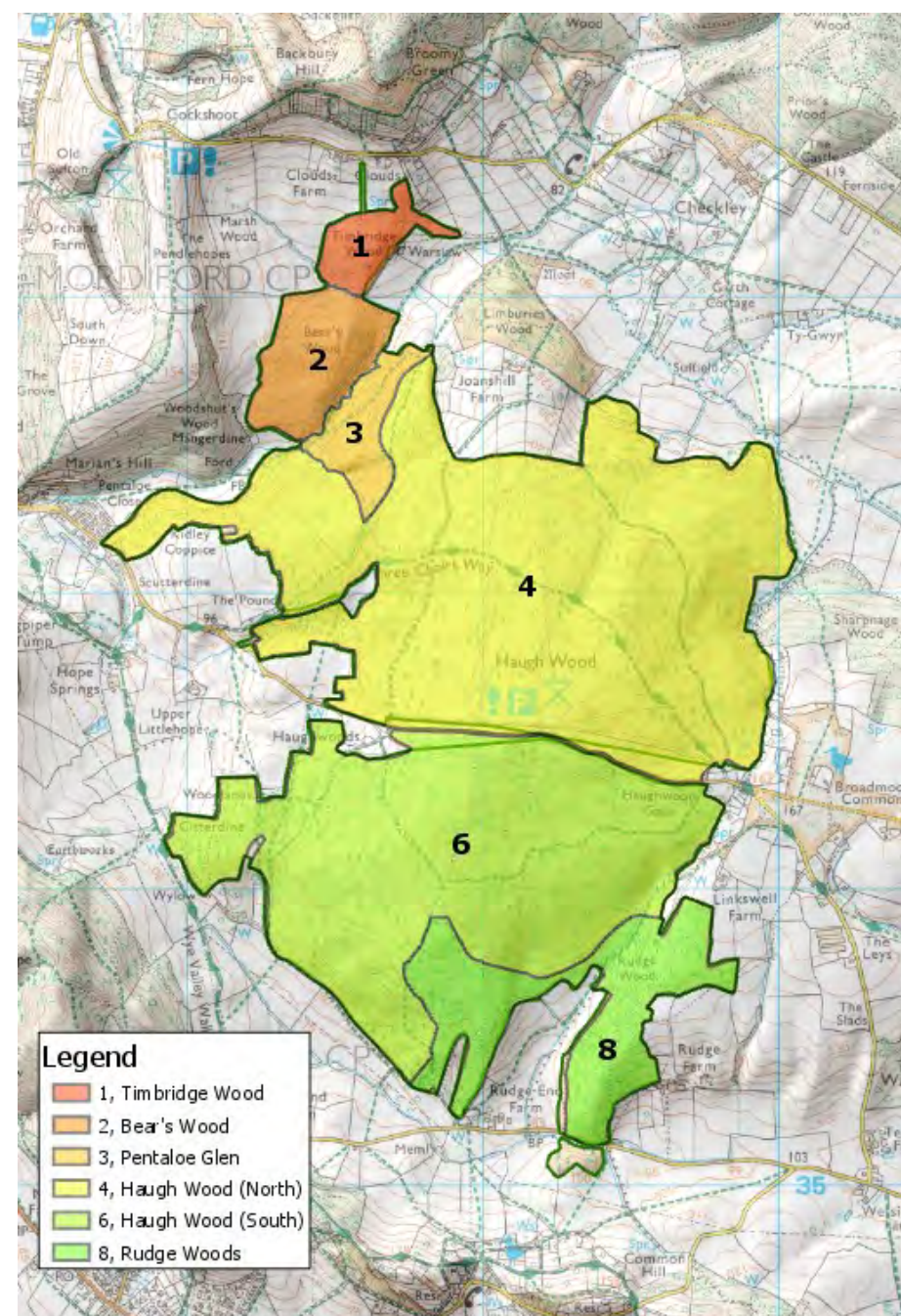
\* 'animal' includes any mammal, reptile, amphibian, bird, fish or invertebrate.

+ including afforestation, planting, clear and selective felling, thinning, coppicing, modification of the stand or underwood, changes in species composition, cessation of management.

### 4. Summary Description

Haugh SSSI is 353ha of woodland situated on the Woolhope Dome in Herefordshire. The SSSI is situated to the east of Hereford and straddles the Mordiford to Woolhope road. The SSSI encompasses almost all of the woodland apart from the most southerly tip.

Haugh is not the only SSSI in the landscape with other significant areas contained in the adjoining landscape. These include Sharpnag Wood, Cherry Hill Wood, Wood Shuts Wood and the meandering River Wye. Haugh is primarily designated for its rich woodland and grassland invertebrate assemblage for which most of the works outlined in this management plan are focused on.





## 5. Citation

Haugh Wood is a large block of woodland situated in a prominent position on the top of the Woolhope Dome to the south-east of Hereford. The soils which are derived from Silurian limestones, shales and sandstones, are largely light textured and acidic on the higher ground, with heavier, base-rich soils on the slopes. The site has been selected primarily for its exceptionally rich invertebrate fauna which is of national importance. It is the best woodland in Herefordshire for butterflies and moths Lepidoptera with over six hundred and fifty species recorded, including twenty-nine species which do not occur anywhere else in the county.

Much of Haugh Wood has been converted to conifer or hardwood plantation but, as at other nationally important invertebrate sites, such as Bernwood Forest in Oxfordshire and Bentley Woods in Wiltshire, the interest is largely associated with small blocks of remnant semi-natural woodland and the broadleaved edges of the extensive ride systems. These scattered small blocks of woodland include a number of types which are nationally scarce (see below).

Of the invertebrates in the wood the butterflies include several nationally rare or scarce species such as wood white *Leptidea sinapis*, pearl bordered fritillary *Boloria euphrosyne* and white letter hairstreak *Strymonidia w-album*. Amongst the large number of moths, many are nationally or locally rare, such as lunar hornet clearwing *Sesia bembiformis*, drab looper *Minoa murinata*, triple spotted pug *Eupithecia trisignaria* and barred hook-tip *Drepana cultraria*. Other groups are also well represented and include three nationally rare species. These are two crane flies, *Ormosia bicornis* and *Gonomyia alboscuteolata*, the latter known from only two other sites in Britain, and a bee, *Osmia pilicornis*. Within the small blocks of woodland, that dominated by sessile oak *Quercus petraea* and silver birch *Betula pendula* is the predominant type.

The shrub layer is generally sparse but some areas have an understorey of coppiced hazel *Corylus avellana*. The uncommon wild service-tree *Sorbus torminalis* is also a feature of these blocks. The ground flora is dominated by bramble *Rubus fruticosus*, with male-fern *Dryopteris filix-mas*, tufted hairgrass *Deschampsia cespitosa* and great wood-rush *Luzula sylvatica*. In the more acidic areas the dominant species are bracken *Pteridium aquilinum* and creeping soft-grass *Holcus mollis*. In the northern part of the site are two types of woodland which are of limited national distribution. These are sessile oak - small-leaved lime *Tilia cordata* and ash *Fraxinus excelsior* - maple *Acer campestre*. Within the latter are several locally uncommon species such as meadow saffron *Colchicum autumnale*, columbine *Aquilegia vulgaris*, herb-Paris *Paris quadrifolia* and greater butterfly-orchid *Platanthera chlorantha*. Alder *Alnus glutinosa* woodland is found in the wetter areas, bordering Pentoloe Brook. Here a rich ground flora includes pendulous sedge *Carex pendula*, hard fern *Blechnum spicant*, wild daffodil *Narcissus pseudonarcissus* and opposite-leaved golden-saxifrage *Chrysosplenium oppositifolium*.

Adjoining the brook is a small, base rich flush with a strong colony of marsh helleborine *Epipactis palustris* with common twayblade *Listera ovata*, fragrant orchid *Gymnadenia conopsea* and wood small-reed *Calamagrostis epigejos*. At the southern end of the site is a small, disused limestone quarry with scree slopes supporting a rich community of lime-loving plants such as yellow-wort *Blackstonia perfoliata*, carline thistle *Carlina vulgaris*, wild liquorice *Astragalus glycyphyllos* and the nationally scarce stinking hellebore *Helleborus foetidus*.

The wood has a rich mammal fauna which includes fallow deer *Dama dama*, badger *Meles meles*, dormouse *Muscardinus avellanarius* and pole cat *Putorius putorius*. The site is also of considerable ornithological interest with species such as sparrowhawk *Accipiter nissus*, tawny owl *Strix aluco*, woodcock *Scolopax musticola*, nightingale *Luscinia megarhynchos* and lesser spotted woodpecker *Dendrocopus minor*.

## 6. Conservation Objectives and Management Aims

### 6.1 Conservation Objective

Maintain the designated units in their current condition and carry out any necessary management practices as required by Natural England to maintain the SSSI units into/in favourable condition.

### 6.2 Management Aims

To maintain the designated features in favourable condition, which is defined in part in relation to habitat extent.



## 7. Agreed Habitat Management

### 7.1 Woodland Management

Woodland type is a designated SSSI feature within the citation for Haugh Woods with a particular focus on the sessile oak and small leaved lime and ash and maple woodland types that are found in the north of the woodland. Native woodland habitat will be maintained and enhanced through a variety of silvicultural interventions including clearfelling, thinning and coppicing with the objective of gradually removing conifer from PAWS, diversifying age structure and creating successional open habitat and woodland edge.

Clearfell and thinning operations are scheduled within Haugh Woods for the duration of the plan period. It is likely that most of the woodland within the plan area will be thinned over the next ten years to fit in with standard silvicultural interventions.

Clearfell operations will be targeted at removing late rotation conifer plantations with the intention of restocking with broadleaf species including sessile and pedunculated oak, wild cherry, wild service tree and minor species such as field maple, hazel, wych elm, hawthorn and alder buckthorn.

Thinning of broadleaf and conifer will be aimed at gradually reducing the amount of conifer within the crop to allow space for broadleaf regeneration or to provide space and light for understorey to develop with the overall intention of restoring Plantation on Ancient Woodland Sites to ancient woodland. During these thinning operations, opportunities to widen rides and forest roads will be taken. The clearfell area during the plan amounts to 16.5ha of conifer, 2.6ha of broadleaf and 25ha of coppice.

Ash trees suffering from Ash dieback (*Hymenoscyphus fraxineus*), which are present within tree safety usage zone 1 and 2 (zones around car parks, roads or forest roads, rides and paths) will be inspected as per Forestry England tree safety inspections. Those areas containing a component of ash will be mapped and if impacted by ash dieback prioritised for removal through felling. Deadwood will be retained on site wherever possible.

### 7.2 Coppicing

Coppicing will be carried out across Haugh Woods to provide structural diversity throughout the woodland, creating a connected network of transitional open habitat and short rotation scrub habitat for breeding birds, dormice, invertebrates, adders and ground flora. Most of the coppice coupes identified within the Forest Plan are already managed under established coppice regimes, often with standards present to provide added structure. Coppice coupes will be between 0.25 and 0.5ha in size with approximately 2.5ha total area coppiced on annual basis.

Where important minor species are identified within the coppice coupes these will be retained as future standards adding to the ecological diversity within the site. Coppice coupes will be managed by volunteers and contractors using either hand tools or motor manual, with tree shears trialled in Haugh Woods. All marketable material will be removed from site and sold to support the costs of the operations with smaller produce left on site to create dead hedges and habitat piles. Coppice management will follow “A protocol for undertaking woodland management in England where dormice are present, May 2019”.

In order to protect coppice stools the use of temporary plastic deer fencing will be used, this combined with dead hedging will help to ensure sustainability and regrowth of coppice coupes. Coppice is defined as stems with a diameter at breast height (DBH) of less than 15cm.

### 7.3 Ride-side Management

Rides and forests roads are key habitat within Haugh Woods providing valuable habitat for much of the woodland invertebrate assemblage. Verge widening was achieved in many areas throughout the duration of the last Forest Plan and this plan looks to build on this work by pulling the edge of plantations back from the ride edges during thinning operations and through coppicing ride-side habitat.

The aim is to create a well-connected network of rides which are maintained sustainably over the longer term to link areas of open space and serve as wildlife corridors throughout the Forest plan area. Rides with specific conservation benefits have been identified within the Forest Plan, and these will be the focus of the ride widening programs with additional work carried out during thinning operations.

Forest road grading will only be undertaken after an internal consultation has occurred with the ecologists to ensure that the timing and method of cutting back of roadside vegetation and road grading has minimal impact on important roadside habitats. Works will be undertaken at the least sensitive times of year and an excavator will be used to remove spoil to areas with little or no invertebrate value, well off the forest road, but where the spoil can be spread to imitate future forest road with no requirement for management in the future.

The exact location will be agreed with Natural England at the time of grading as species composition changes with time. The dormice protocol will help ensure best practice is carried out, including the maintenance of dormice crossing points.





## 7.4 Watercourses

Watercourses will be managed alongside forestry operations and in line with UKFS Forest and Water Guidelines. Haugh Woods supports tufa dams of reasonable size and scale, these areas are identified within the Forestry England GIS database and will be flagged during harvesting operations to prevent damage taking place.

Some small drains and watercourses leading into the Penteloe Brook may be allowed to accumulate debris as part of a project in partnership with Herefordshire County Council to slow the flow during peak rainfall periods. The waters of the Penteloe Brook are well-oxygenated and unpolluted, and contain a number of interesting species, including bullhead, river limpet and a variety of stonefly and mayfly larvae.

## 7.5 Lowland Heathland

Lowland heathland habitat is a rare habitat in Herefordshire, only existing where the underlying acidic sandstone geology supports such habitat. The upper slopes of Haugh Wood is one such place exhibiting typical heathland flora of ling, bilberry and broom. 2.6 hectares will be restored to lowland heathland through mulching half of the site during the winter of 2019/2020, and carrying out the remainder over the preceding two winters. Cut stools will be treated with glyphosate to prevent regeneration to woodland. The heathland will be managed on periodic basis through brush-cutting 25% of the site each year to remove regenerating conifer and broadleaf with the objective of maintaining the site >80% open with a small component of woodland cover to provide shelter and diversity.

## 7.6 Bare Open ground Habitat

Three areas across the Forest Plan area have been identified in liaison with Butterfly Conservation for the creation of bare-ground scrapes during the winter of 2019/20. These scrapes, varying from 2 metres wide to between 15 and 50 metres in length, the objective of which is to encourage regeneration of food plant species, will be created in floristically poor areas using an excavator. 3 scrapes will be created annually throughout the duration of this SSSI Plan to maintain continuity of this important habitat.

## 7.7 Deer Management

Within the citation for Haugh Woods is mention of its rich and diverse mammal population, including that of deer. However, in order to effectively establish natural regeneration on both felled areas and coppice coupes it is important that the deer population is sustainably managed across the Forest Plan area. One Forestry England wildlife ranger currently covers Haugh, Dymock, Frith & Coneygree Woods managing muntjac deer throughout the year and fallow (and roe, should they become resident in Haugh Woods) throughout the shooting seasons. Deer are managed through stalking on foot, from vehicles and from deer seats positioned on deer lawns and throughout the wider forest.

Deer lawns can provide important open habitat for species such as the pearl-bordered fritillary and will be managed by coppicing, mulching or mowing the whole area on a short term rotation to provide continuous open habitat. Where possible, arisings should be piled in discrete piles on the edge of the area to allow deer to access the lawns and to prevent enrichment and growth of rank vegetation.

Occasionally new deer glades will need to be made. Their location and specification will be discussed and consented with Natural England prior to creation, ensuring they are focussed in areas that will provide the best opportunities to manage deer, that do not conflict with species requirements and that provide most opportunity in terms of open/transitional habitat gains.

## 7.8 Rudge End Quarry, Penteloe Glen and Convallaria Area (HWT Reserves)

These diverse Herefordshire Wildlife Trust reserves support a variety of plants typical of base-rich soils including carline thistle, stinking hellebore and yellow wort in the limestone quarry, marsh hellebore and fragrant orchid at Penteloe Glen fen and plants of moist woodland edge, such as marsh thistle, bluebell and nettle-leaved bellflower within the Convallaria Reserve.

These reserves will continue to be managed and in the case of the Penteloe Glen and Convallaria Reserve, enlarged under agreement with Herefordshire Wildlife Trust to prevent succession to woodland and shading or drying out of the habitat by managing as open, botanically rich reserves.

## 7.9 Recreation Infrastructure

Haugh Woods continues to be highly well visited woodland and efforts to maintain the value of the woodland for biodiversity alongside the encouragement of people into the woodland is a Forestry England priority.

The small official car-park provides the main access into the woodland, from which visitors can walk the butterfly trail. This trail, marked by interpretation boards, will continue to be maintained by spraying a 30 by 30 cm area around the base of the boards to prevent vegetation encroaching.

Increasingly used by dog walkers, signage on the car park notice board will be used to encourage people to clear up after their dogs.