Forestry Commission England

WEST ENGLAND FOREST DISTRICT

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

FOREST PLAN

Onny (Clun)

Marches

Plan period 2014-2024

Forestry Commission woodlands have been certified in accordance with the rules of the Forest Stewardship Council.

FCE File Ref: OP10/13 (old PL15)

FS File Ref: GL1/5/3.82

Onny (Clun)
Ben Robinson
Planning Forester
July 2014

Forestry Commission England

Application for Forest Plan Approval

Forest District:	West England
Woodland or property name:	Strefford Wood, Berry Mill, Callow Hill, Saddle Hill & May Hill
Nearest town, village or locality:	Craven Arms, Onibury
OS Grid reference:	Strefford Wood SO 450 854 Berry Mill SO 444 843 Callow Hill SO 461 852 May Hill SO 412 790 Saddle Hill SO 412 785
Local Authority District/Unitary Authority:	South Shropshire

Plan Area:	Onny (Clun): 153 Ha
Conifer Felling:	7.4 ha (2014 – 24)
Broadleaved Felling:	0 ha

1. I apply for Forest Plan approval for the property described above and in the enclosed Forest Plan.

2. I confirm that the scoping, carried out and documented in the Consultation Record attached, incorporated those stakeholders that the FC agreed must be included. Where it has not been possible to resolve specific issues associated with the plan to the satisfaction of consultees, this is highlighted in the Consultation Record.

3. I confirm that the proposals contained in this plan comply with the UK Forestry Standard.

4. I undertake to obtain any permissions necessary for the implementation of the approved Plan.

Signed……..
Forest Management Director

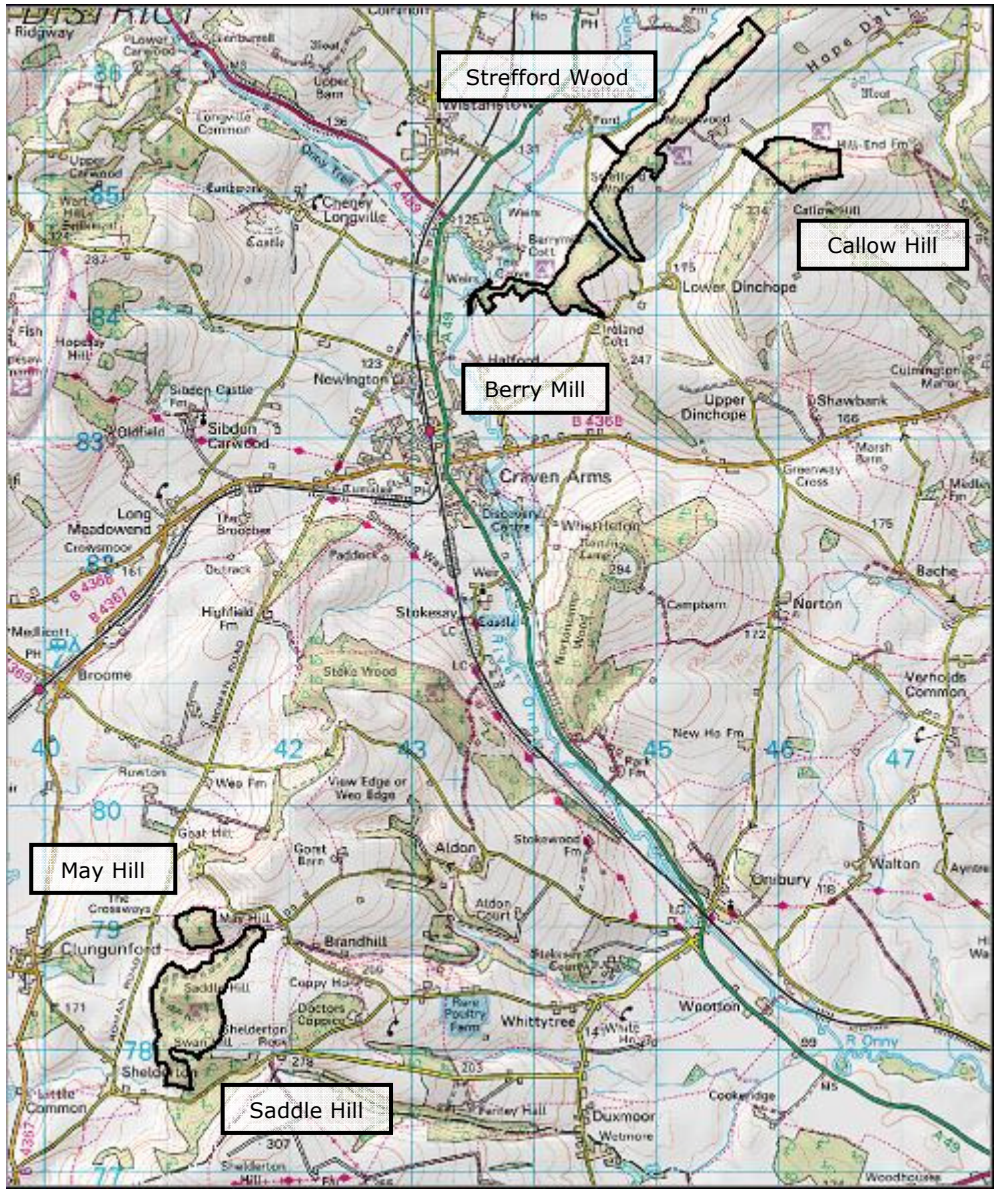
Date……

Signed……
Area Director

Date of approval……

Date approval ends……

Forest Plan Contents



Introduction

The Onny Forest Plan (FP) comprises of 5 woodlands: Strefford Wood, Callow Hill, Berry Mill, Saddle Hill and May Hill. Whilst sitting within a lowland landscape in an intimate mix of other small woodlands and agricultural land, all of the woods maintain prominent positions within the surrounding landscape that act as focal points along the main transport corridors through the area.

The five woodlands cover a total of 153 ha and all sit within a 2.5 mile radius of Craven Arms with the first three lying within the Shropshire Hills AONB. A large proportion of the Plan area is designated Ancient Woodland Site (AWS), the majority of which is Plantation on an Ancient Woodland Site (PAWS).

The woodlands are predominantly on steep slopes with a north-westerly aspect. Elevations vary between 240m to 280m at the highest points to between 120 and 130m at the lowest elevation. The woodlands enjoy rich brown earth soils with a rainfall of around 800-1000mm per year.

The 2002-2012 FP focussed on the removal of conifer elements through thinning, beginning the process of AW restoration with enhancements for both biodiversity and structural diversity and the restoration of Flounders Folly as a prominent cultural feature within the landscape.

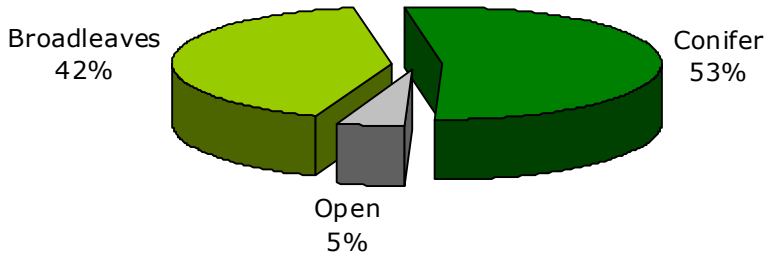
Plan Summary

The main threads for the 2014-2024 FP are to:

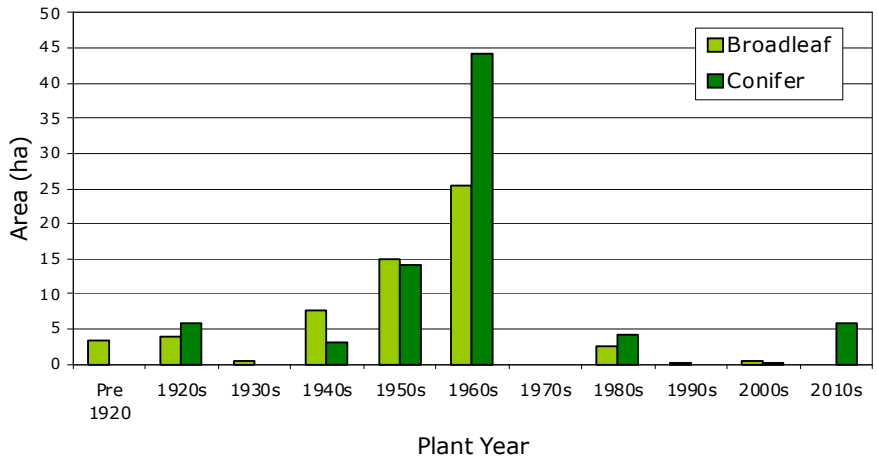
- Continue with the protection and restoration of AWS through the removal of conifers by thinning and group selection felling.
- Protect and maintain existing veteran and notable trees in Strefford Wood.
- Diversify the woodland structure to develop greater resilience to future threats from pests, diseases and climate change.

Woodland Structure

Onny Species Composition, July 2014



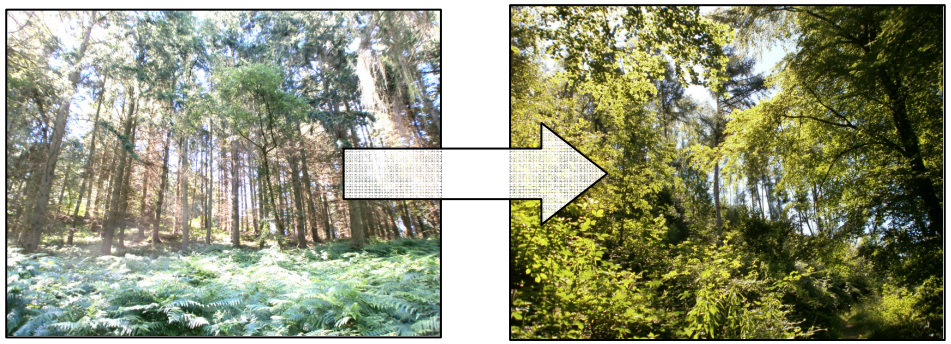
Age Class distribution, July 2014



Previous Structure

The Onny woodlands are species diverse, 53% of which are coniferous dominated cover and 42% broadleaf dominated cover. The majority of both broadleaf and conifer planting occurred between the 1940s and 1960s meaning the woodlands are relatively even-aged.

The majority of conifer cover is made up of Red cedar and larch in Strefford Wood and Douglas fir and Norway spruce in Saddle Hill. Broadleaf cover is dominated by ash (internationally important within the Shropshire Hills Natural Area) and beech together with strong birch and oak components.



Future structure

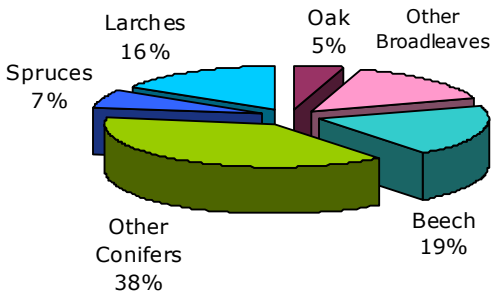
Following alternatives to clearfell (ATC), native broadleaves will be allowed to regenerate across the AW, PAWS and Secondary Woodland sites recreating the appropriate woodland typical of the region of varying age. Regeneration will be removed from allocated open areas, rides and watercourses to create additional transitional/permanent open space and woodland habitats, thus creating a continuously covered forest (CCF).

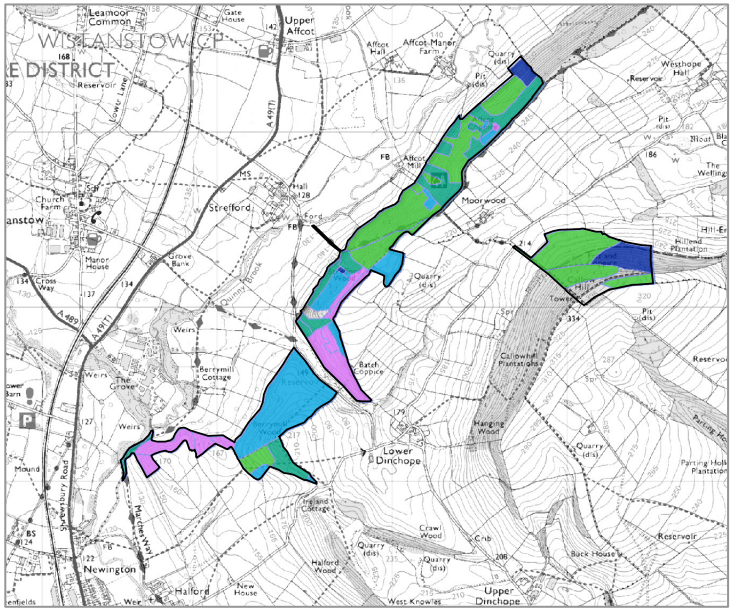
The threat of *Chalara fraxinea* and other diseases as well as projected climate change significantly threaten the current condition and future prospects for this woodland and its value within the greater environment and thus needs mitigating against through species diversification.

Callow Hill will remain an area of productive conifer secondary woodland stocked with Douglas fir and Sitka spruce where it produces good quality timber.

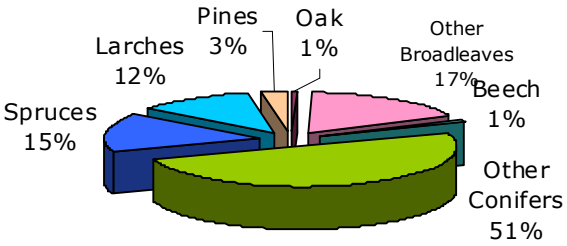
Existing Species

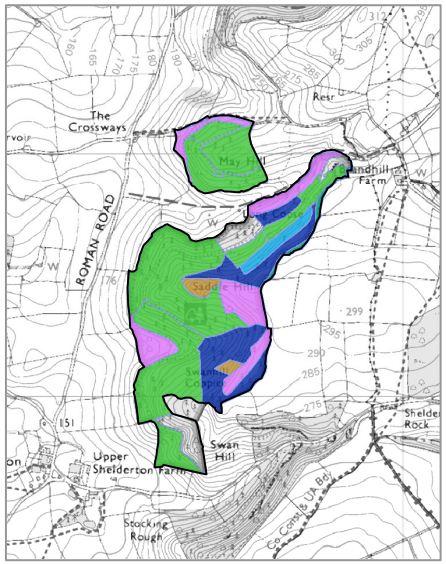
Strefford Wood, Berry Mill & Callow Hill



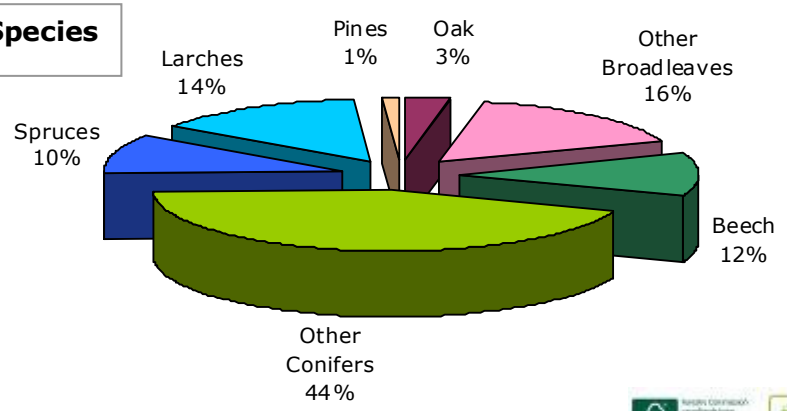


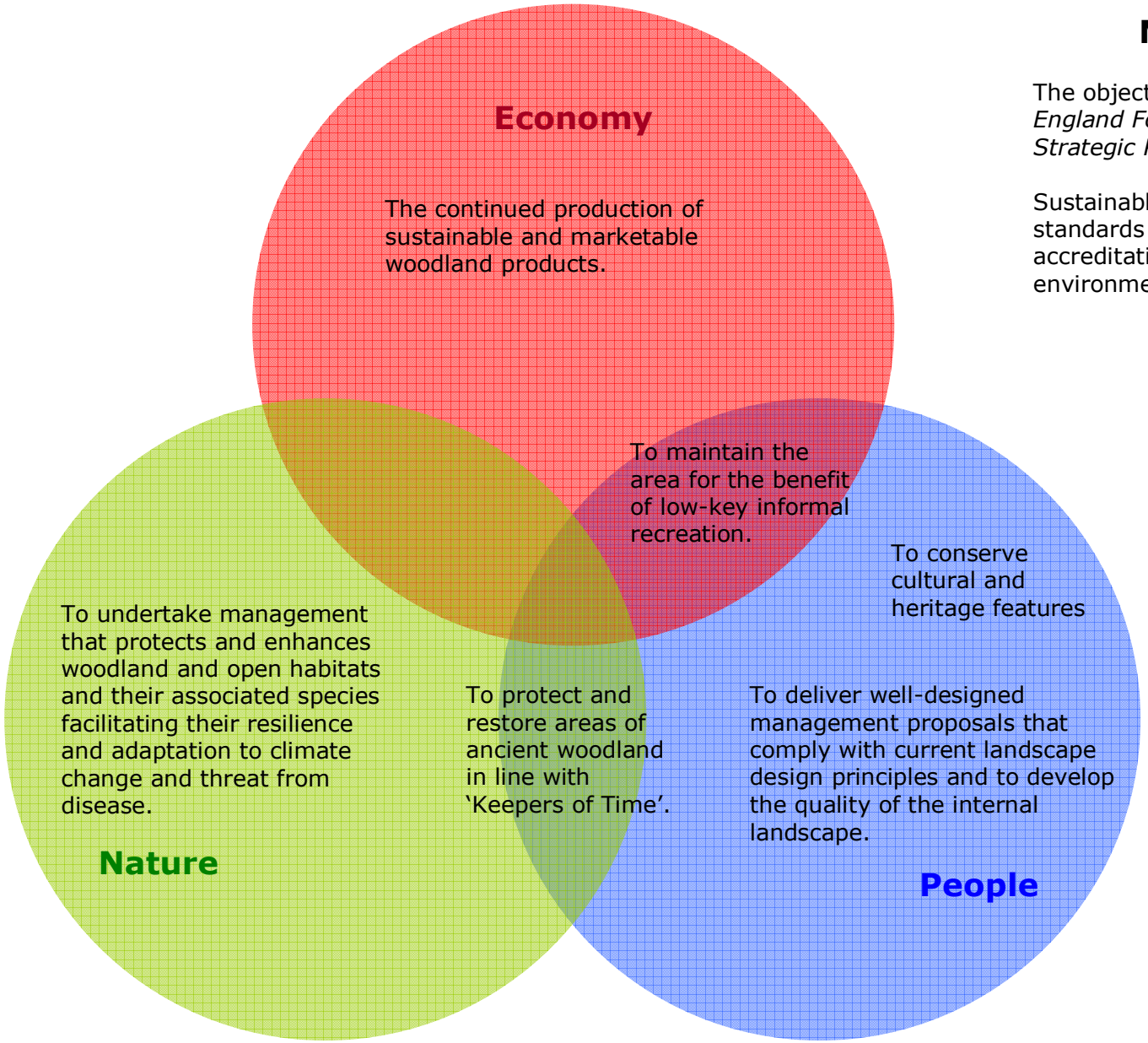
Saddle Hill & May Hill





Overall Existing Species





Management Objectives

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

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

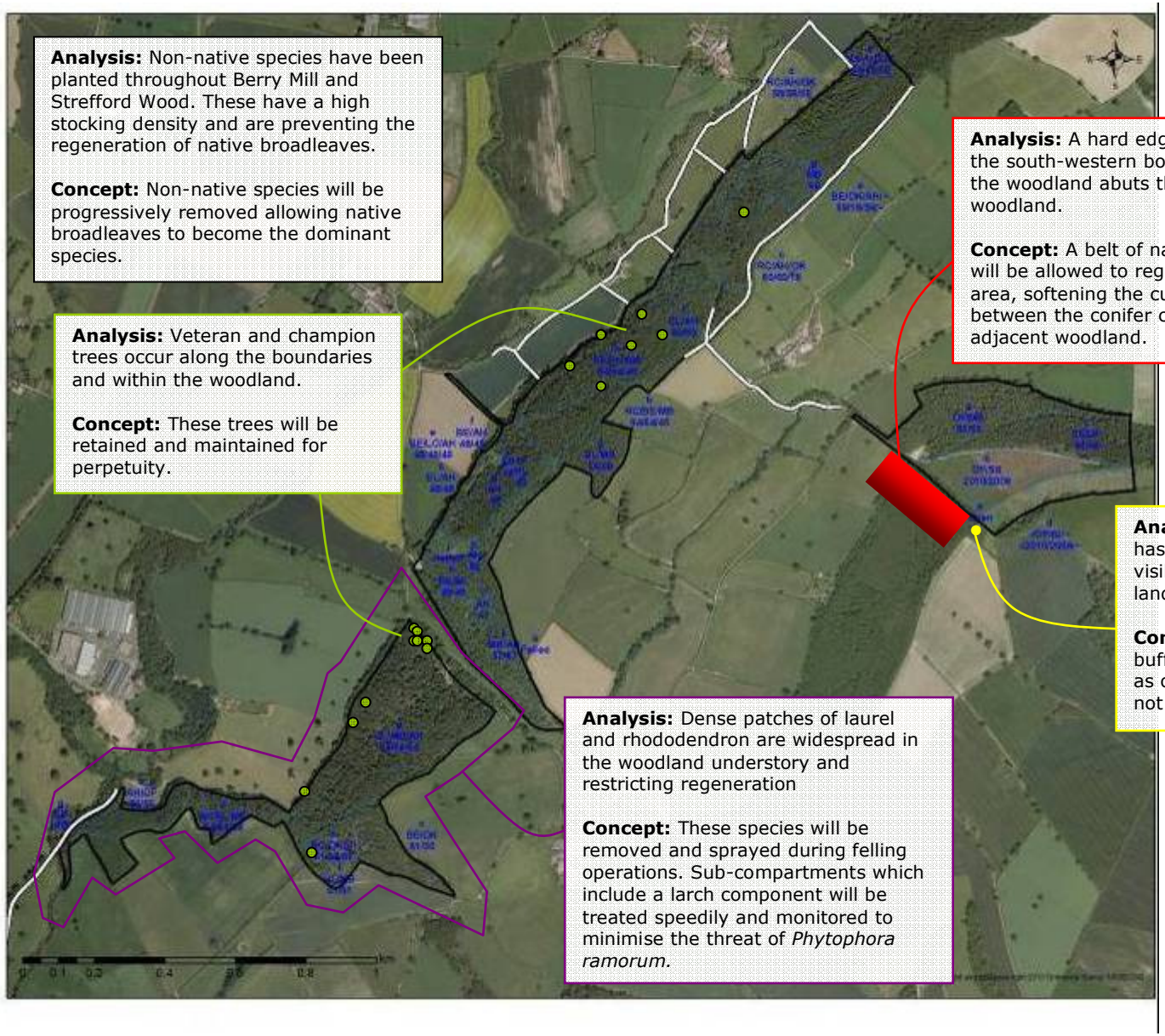
Site Analysis and Design Concept

Strefford Wood, Callow Hill & Berry Mill

Strefford Wood and Berry Mill lie on Wenlock Edge which forms part of a larger landscape. Its current planting pattern of non-native species detracts from the natural appearance of this major topographical feature

These woods will revert back to native broadleaved woodland in keeping with the natural habitats associated with Wenlock Edge. The move towards hardwood timber production will meet the growing demand in the local woodfuel market.

High quality conifer timber is produced in Callow Hill and it is intended that this will continue into the future in line with economic demand. Callow Hill is divided into three coupes and felling operations will be staggered over 20 years. This will increase the structural diversity and reduce the impact future felling operations will have on biodiversity, particularly raptor nesting.



Analysis: Non-native species have been planted throughout Berry Mill and Strefford Wood. These have a high stocking density and are preventing the regeneration of native broadleaves.

Concept: Non-native species will be progressively removed allowing native broadleaves to become the dominant species.

Analysis: Veteran and champion trees occur along the boundaries and within the woodland.

Concept: These trees will be retained and maintained for perpetuity.

Analysis: Dense patches of laurel and rhododendron are widespread in the woodland understory and restricting regeneration

Concept: These species will be removed and sprayed during felling operations. Sub-compartments which include a larch component will be treated speedily and monitored to minimise the threat of *Phytophora ramorum*.

Analysis: A hard edge is visible along the south-western boundary where the woodland abuts the adjacent woodland.

Concept: A belt of native broadleaves will be allowed to regenerate in this area, softening the current hard lines between the conifer crop and the adjacent woodland.

Analysis: Flounders Folly has been restored as easily visible prominent cultural landmark.

Concept: A 25 metre buffer will be maintained as open (vegetation will not exceed 2m in height).

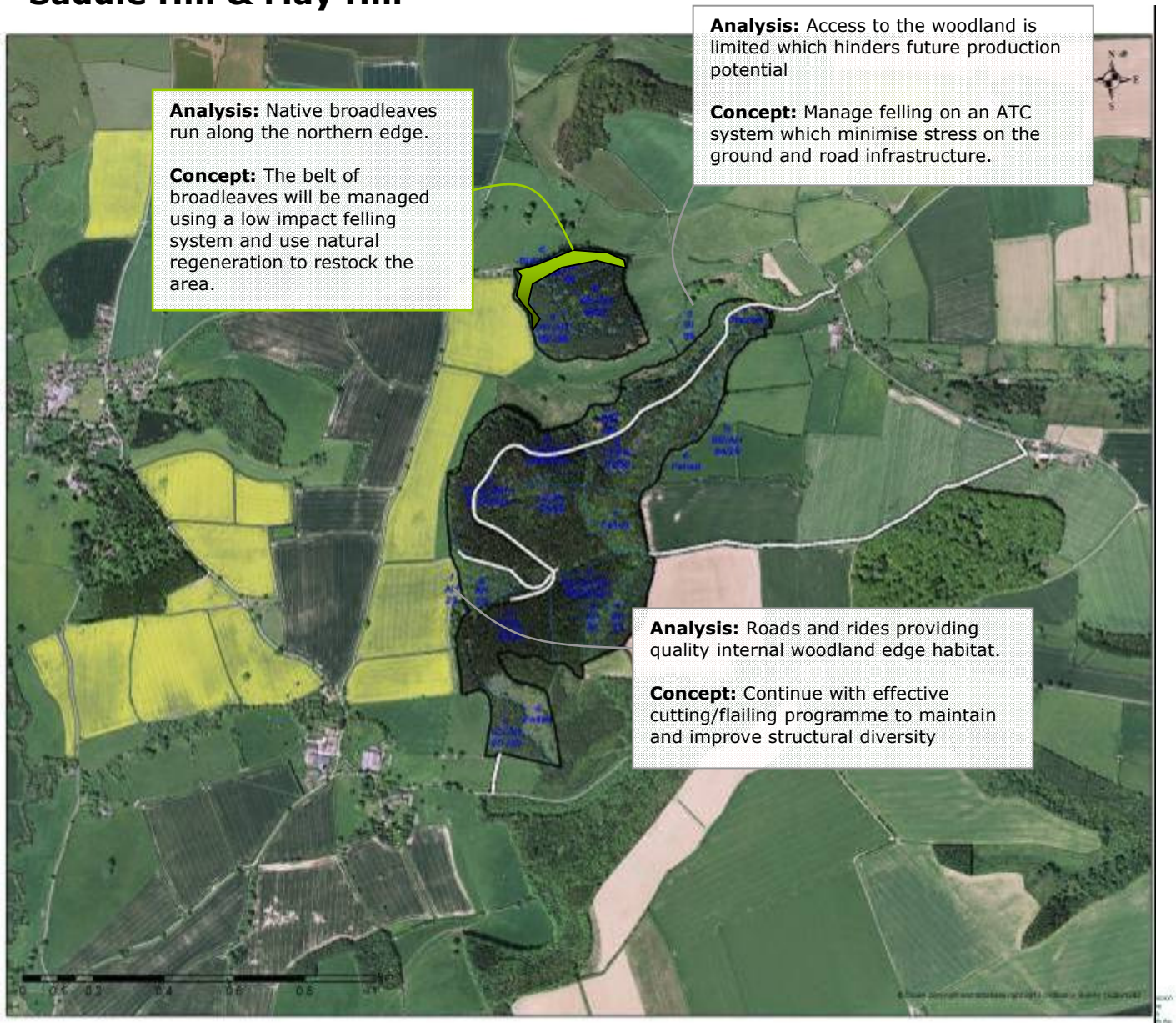
Site Analysis and Design Concept

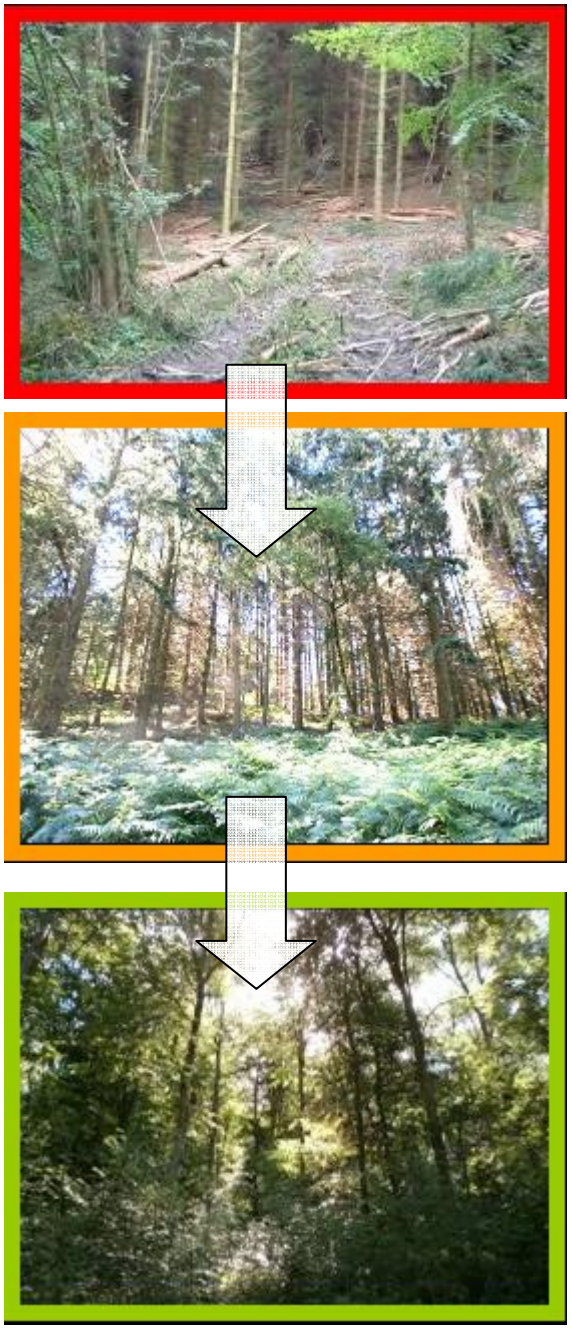
Saddle Hill is covered by a variety of different conifer crops of varying age and density. Native broadleaves are regenerating freely where light levels permit.

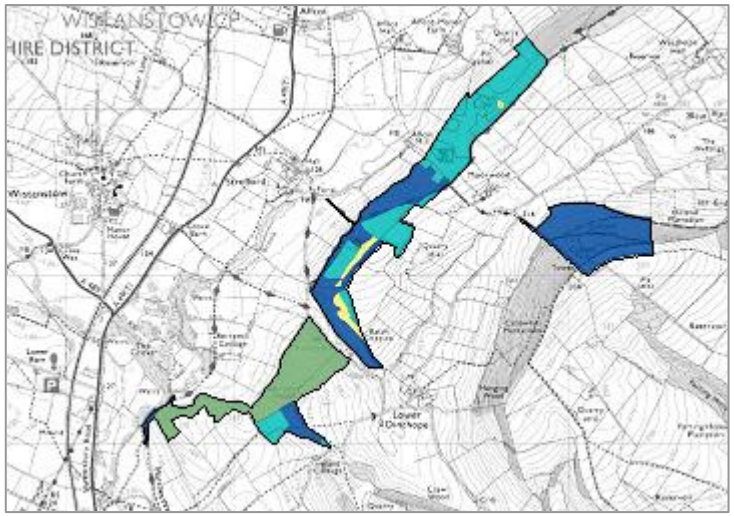
The conifer crops will be crown thinned and existing native broadleaves released, encouraging natural regeneration. The conifer crop will be removed through progressive thinning operations over the next 20 year period at five year intervals.

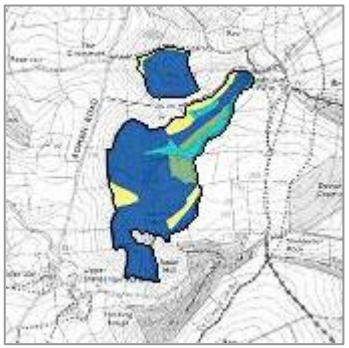
Young conifer crops cover most of May Hill. Due to their stocking density there is limited natural regeneration of broadleaves except along ride sides and around woodland edges. In the last 20 years of the rotation, crown thinning will take place to increase light levels and allow natural; regeneration of native broadleaves utilising existing native species seed trees.

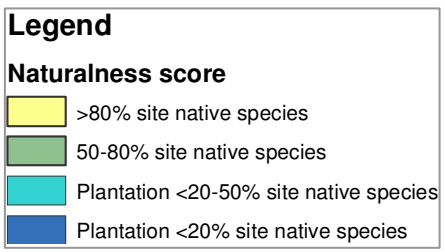
Saddle Hill & May Hill

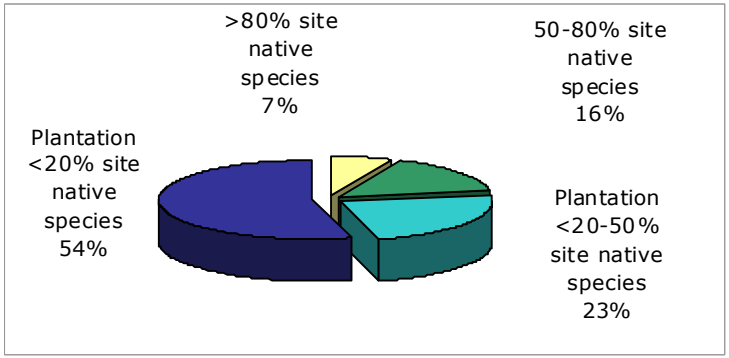












PAWS Restoration

At the time of writing the extent of the Plan area designated as AWS on the (Provisional) Ancient Woodland Register is under review and the overall area is expected to decrease. This proposed amendment makes little difference to the vision or implementation of this Plan.

121ha (79 %) of the Plan area is designated AWS, of which 96% is PAWS. Protection and restoration of these areas is a key aim of the plan.

The restoration of the PAWS will be through an alternative to clearfell system (ATC) followed by natural regeneration and enrichment planting.

Existing PAWS will be restored through **heavy crown thinning or group felling** to encourage **native broadleaf regeneration**.

Where diseases, such as *Phytophora ramorum* occur these trees will be removed in-line with guidance and replaced with appropriate resilient native trees.

The speed of reversion will be dictated by the age and structure of the current crops, with a complete reversion expected over the coming decades.

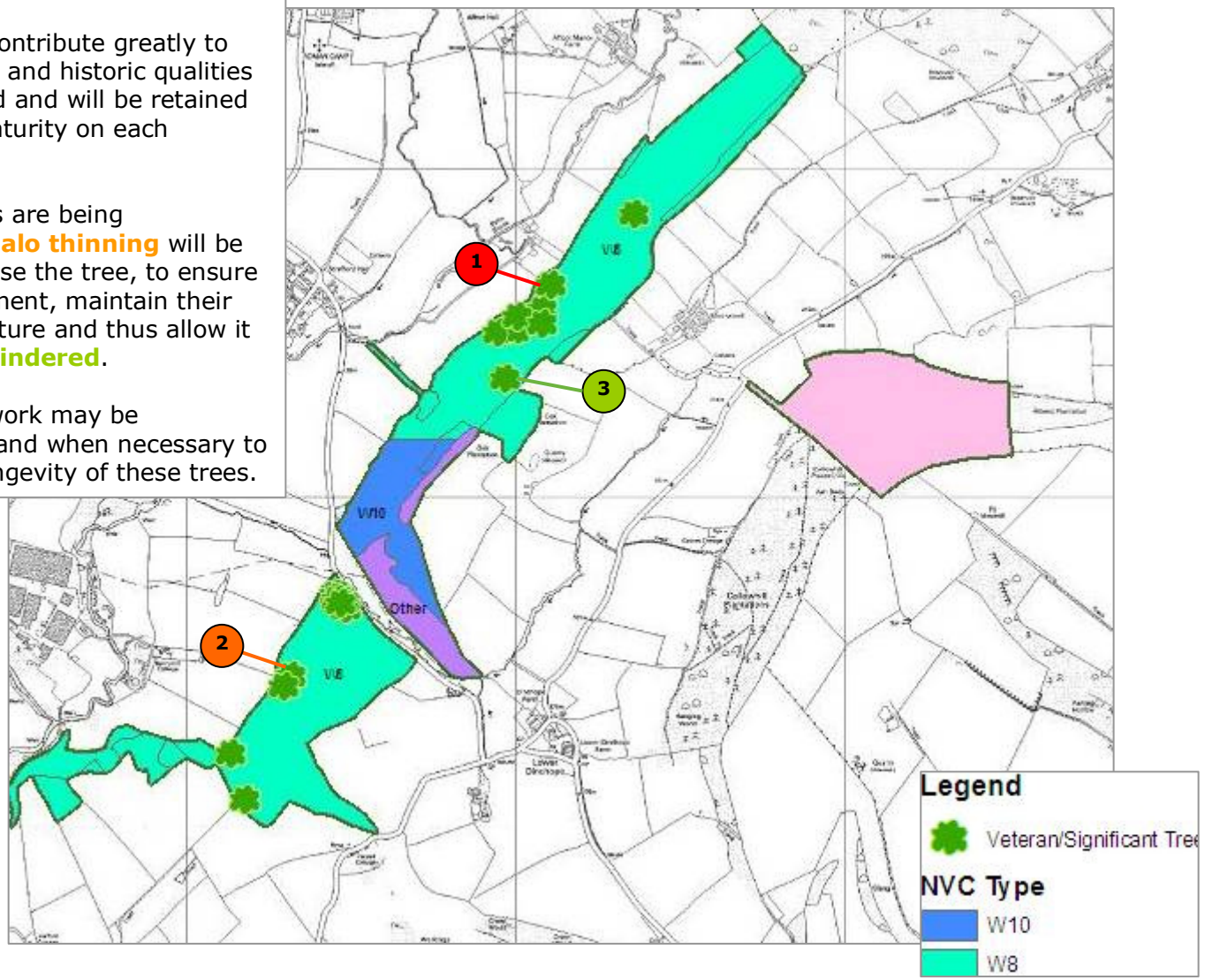
Veteran Trees

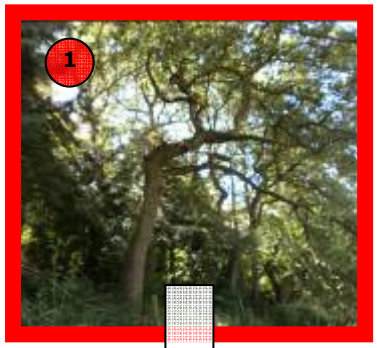
Veteran and dominant trees occur within Strefford Wood and Berry Mill and along the boundaries.

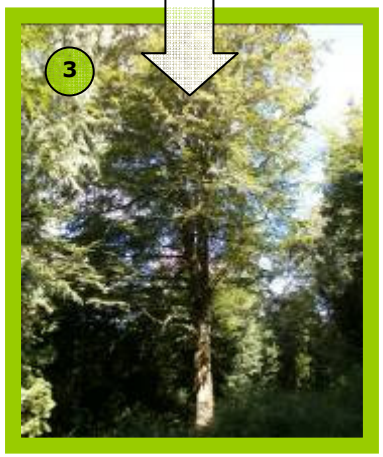
Veteran trees contribute greatly to the biodiversity and historic qualities of the woodland and will be retained to biological maturity on each woodland site.

Where veterans are being **suppressed**, **halo thinning** will be applied to release the tree, to ensure crown development, maintain their health in the future and thus allow it to **remain unhindered**.

Arboricultural work may be undertaken as and when necessary to increase the longevity of these trees.







Building Resilience to Future Threats

Threats

With the climate predicted to increase by 3 - 4°C by 2080 together with more extreme weather events such as drought and intense rainfall events, the resilience of the woodlands will need to meet these changing conditions. Beech occurs abundantly in Strefford Wood and is a species of particular concern, as climate change scenario predictions place it as a 'marginally suitable' species by 2080.

The ever increasing threat of tree disease is placing stress on the Plan area. Onny is particularly susceptible to *Chalara fraxinea*, and acute oak decline because of the large components of oak and ash. However *Phythophora ramorum* and other disease also have the potential to significantly alter the woodland composition.

By increasing the structural diversity through thinning and the species diversity of the woodland through enrichment planting, the prospect of retaining a healthy and productive woodland is strengthened, so whilst the threat will not be eliminated, the extent of its impact can be limited.

Response

If disease does appear in the woodland area, as expected, the infected specimens and any appropriate neighbours will be removed to limit its spread. Rhododendron will be removed to minimise the threat of *Phytophora ramorum*. Standard biosecurity measures will be adhered t, to minimise further contamination.

Enrichment planting in larger felled areas of upto 0.5 ha/per year (or 5 ha/10 years) with species such as oak, hornbeam, cherry, hazel and small leafed lime will deliver greater species diversity. These species are proposed but have been highlighted for their suitability in the predicted climate change scenarios for the woodlands. The use of a greater variety of genetic and provenance stock will also enable a more diverse and thus resilient woodland.

The continued thinning programme and delivery of CCF will ensure that the woodland structure will become more varied and therefore more resilient over time.

Current distribution of *Chalara fraxinea* in ash, as of July 2014

Proposed enrichment planting at 2500 stems/ha

Species	Component Percentage
Oak	30%
Hornbeam	20%
Wild Cherry	20%
Hazel	20%
Small-leaved lime	10%

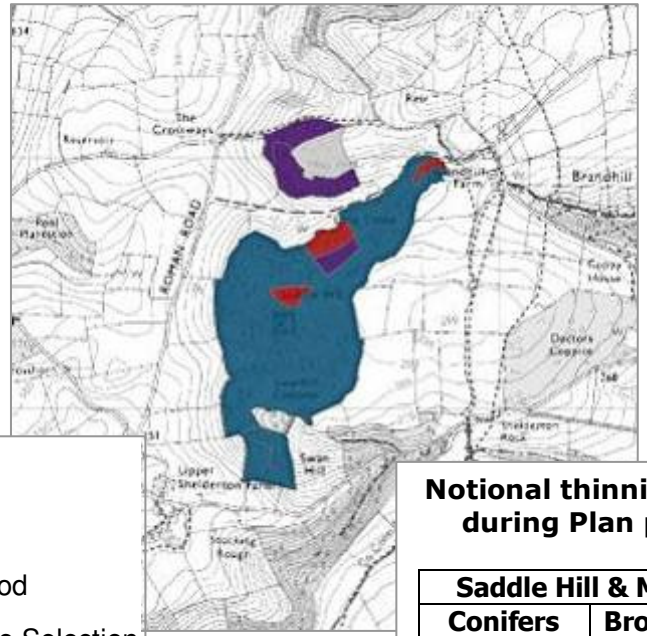
Acute oak decline in Warwickshire

Silviculture

Existing broadleaves on AWS will be managed through continuous cover forestry systems (CCF), through shelterwood, minimal intervention or single tree selection felling and natural regeneration.

Enrichment planting of 0.5ha per year of native broadleaves will diversify the species composition and prepare for the loss of ash expected as a result of *Chalara fraxinea.*

Natural regeneration of native broadleaves will be used to restock felled areas. Where natural regeneration is not sufficiently prolific, i.e. less than 2000 stems/ha, enrichment planting at 2500 stems/ha will ensure no net loss of forest cover will occur.

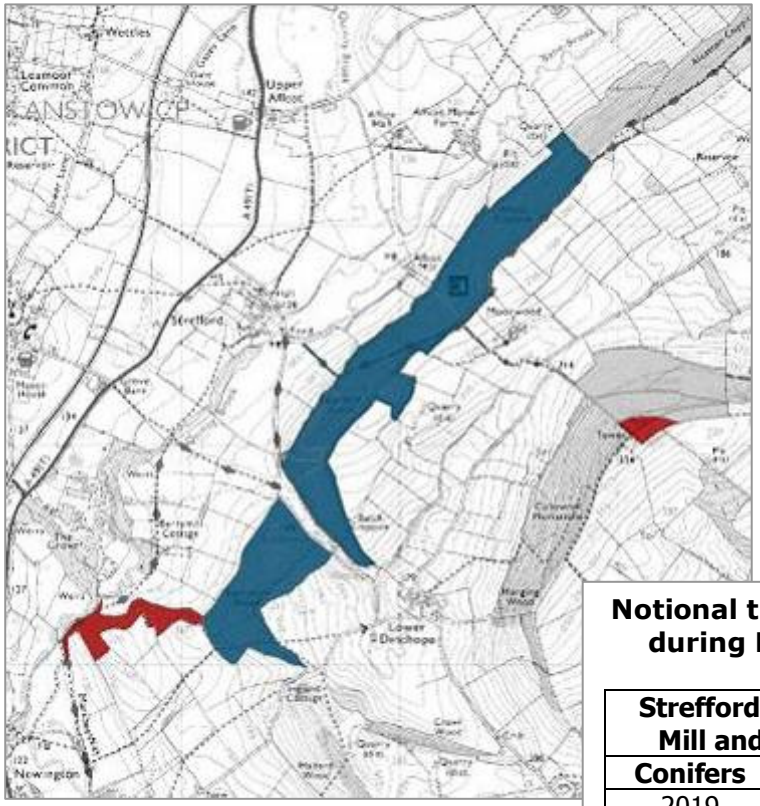


Legend

- Clearfell
- Shelterwood
- Single Tree Selection
- Minimal Intervention

Notional thinning years during Plan period

Saddle Hill & May Hill	
Conifers	**Broadleaves**
2016	2016
2021	



Notional thinning years during Plan period

Strefford Wood, Berry Mill and Callow Hill	
Conifers	**Broadleaves**
2019	2019
2024	

Callow Hill is the only area of secondary woodland that will be retained as a conifer crop and managed on a clearfell system.

Secondary woodlands will be managed through clearfell, group selection and group shelterwood to allow native broadleaves to regenerate.

Felling Plan 2014-2042

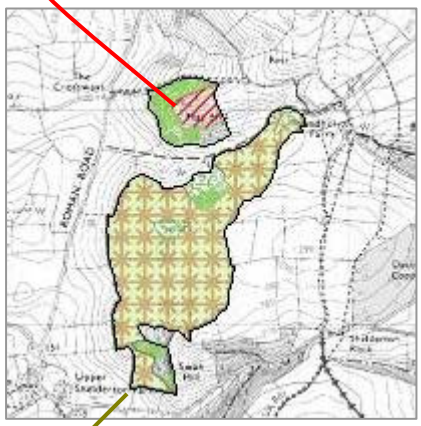
Legend

Fell Year/ Management Type

- Fell 2006-2011
- Fell 2012-2016
- Fell 2017-2021
- Fell 2022-2026
- Fell 2027-2031
- Fell 2032-2036
- Fell 2037-2041
- Removal of conifer by thinning
- Conifer Continuous Cover
- Wood pasture
- Broadleaved shelterwood
- Broadleaves Mature Habitat
- Minimum Intervention
- Open land
- Mixed Amenity Woodlands

Coupe 13516
2017 – 2021

Western hemlock, p.1968 will be clearfelled and left 'open' for natural regeneration, enrichment planting will occur if necessary

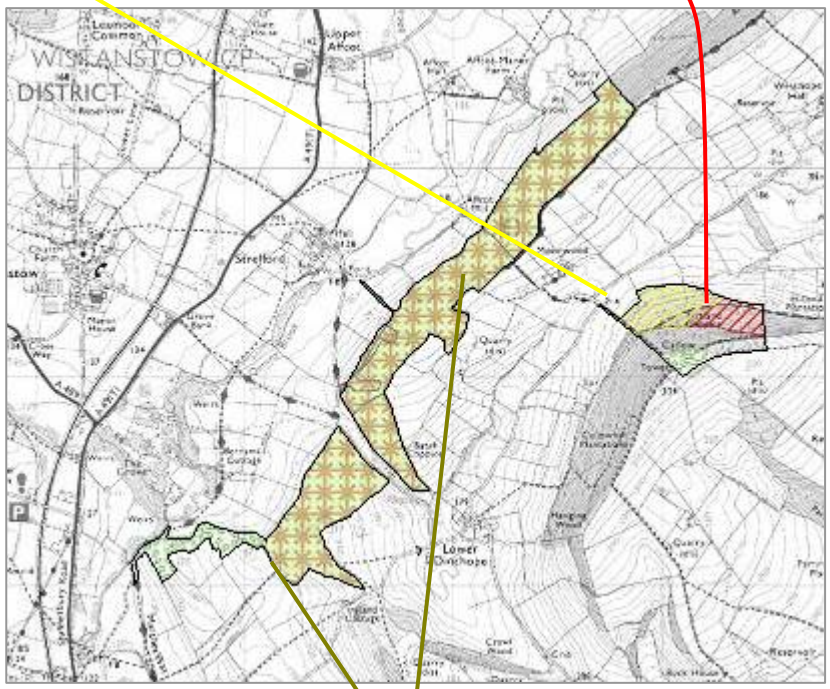


Coupe 13516
2027 – 2031

Douglas fir, p1956 will be clearfelled, and restocked with similar

Coupe 13510
2017 – 2021

Sitka spruce and Douglas fir, both p.1956 will be clearfelled and stocked with similar



Coupe 13517
Removal of conifer by thinning

Regular thinning, halo/crown thinning and up to 3 group fells (of up to 0.5 ha each) every five years will be used to remove the conifer components with a proposed completion by around year 2059.

Coupes 13507 13518 & 13519
Minimum intervention

Operations will only take place when required to protect the woodland from external forces, for safety reasons or to ensure succession of key habitats and species.

Coupes 13515, 13520, 13522
Broadleaved shelterwood

Developed areas of diverse broadleaved woodland managed through thinning

Coupes 13503, 13504 & 13508
Removal of conifer by thinning

Regular thinning, halo/crown thinning and up to 3 group fells (of up to 0.5 ha each) every five years (per Coupe) will be used to remove the conifer components with a proposed completion by around year 2059. Heavy thinning will be applied where Red cedar is prolific.

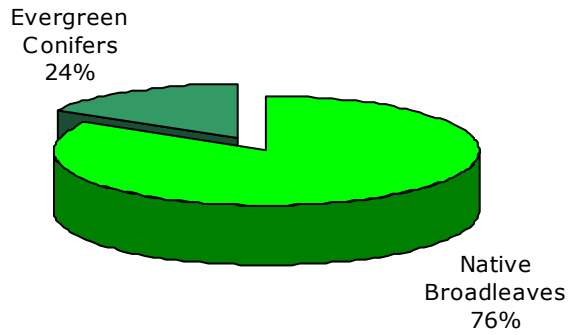
Indicative Future Species, by 2075

The majority of the woodland will be dominated by mixed broadleaves, typical to the local woodland type. Predominantly classified as NVC W8 and W10 woodlands, oak should make up a large component together with other native broadleaves. With the decline of ash due to *Chalara fraxinea* and successful species enrichment, the woodland will be more species diverse with hazel, wild cherry and hornbeam components.

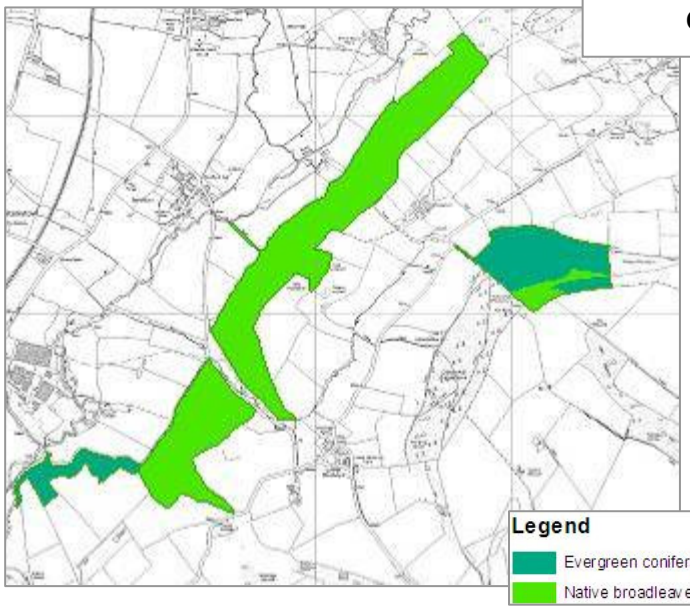
Callow Hill will remain an area of conifer production stocked at 2500 stems/ha with appropriate timber producing species, i.e. Douglas fir and Sitka spruce

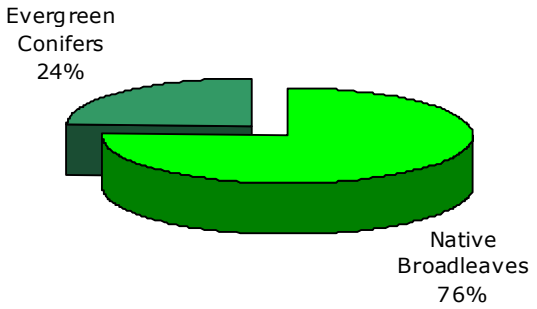
A conifer element will be tolerated up to a maximum of 20% on AWS – providing it does not have an adverse impact on AW flora and is not planted. Conifer regeneration will be removed at the time of operational thinning.

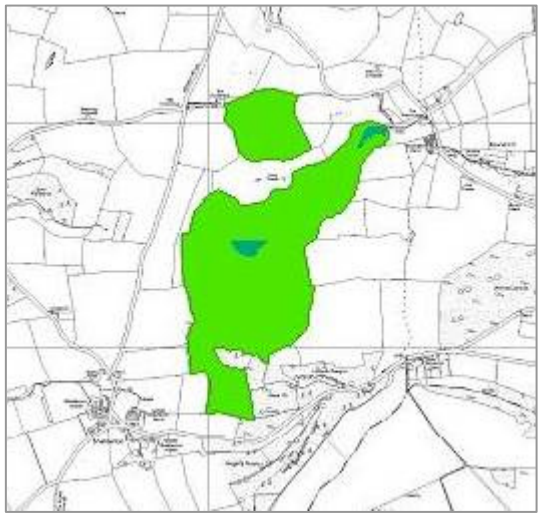
Overall Future Species, by 2075



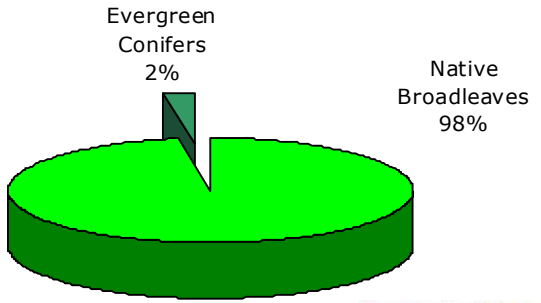
Strefford Wood, Berry Mill & Callow Hill, by 2075







Saddle Hill & May Hill, by 2075

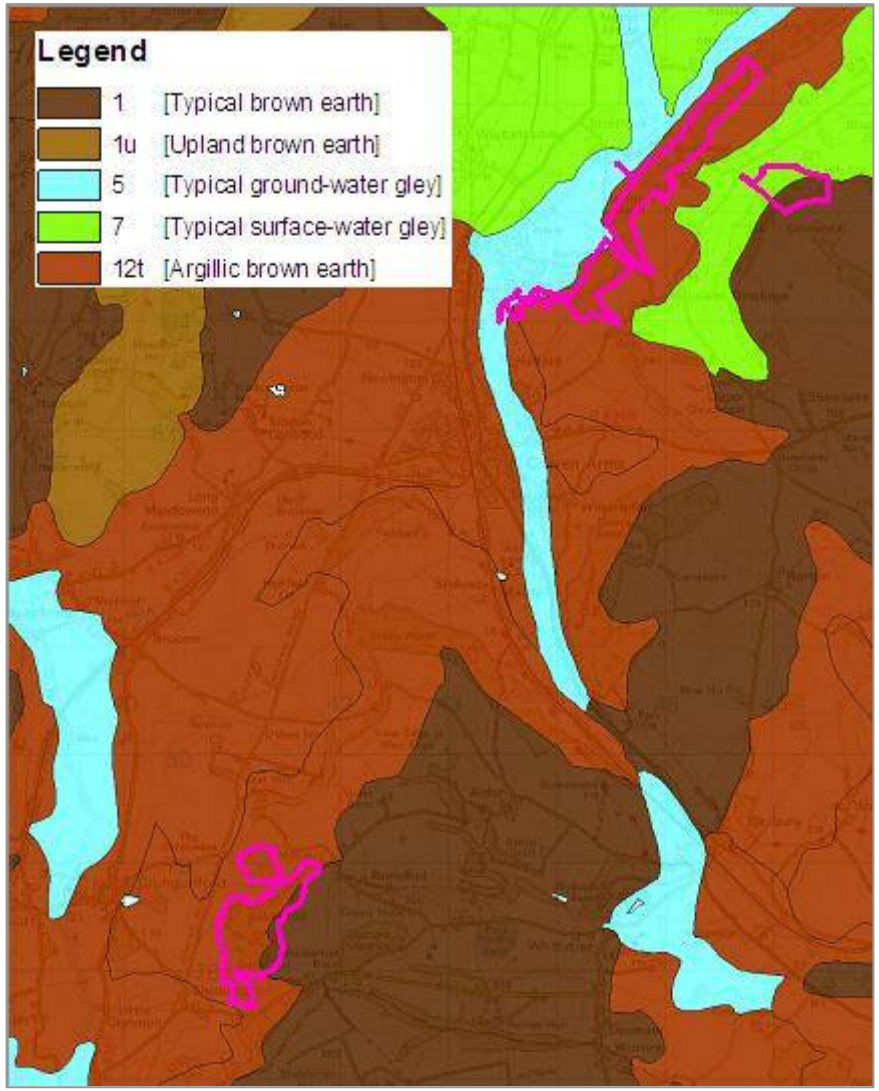


Management Objectives	Meeting Objectives	Monitoring
❖ Management of the woodland will be to the standards required to maintain FSC and PEFC accreditation.	Management of the district's woodlands is undertaken to the standards required under UKWAS as endorsed by the Forest Stewardship Council and to maintain PEFC accreditation.	Compliance to these standards is monitored through various national and district guidance, field surveys (including NFI), use of GIS and other IT software, internal support audits and external audits carried out by SGS (an independent auditing company) Monitoring can also be achieved through: site planning, contract supervision and the Forest Plan review process.
❖ The continued production of sustainable and marketable woodland products	Management of the district's woodlands is undertaken to the standards required under UKWAS as endorsed and certified by the Forest Stewardship Council and to maintain PEFC accreditation. As part of the Forest District's business plan and the organisation's customers' charter, the forest district is committed to financial and sustainable timber marketing targets. Growing quality timber in so far as this is consistent with other objectives.	Sustainable production will be monitored as part of the forest district's marketing plan, five year production forecast and at the Forest Plan (FP) five-year review. This process is audited as part of the FSC forest certification process. Annual pre-thinning survey. Production forecast comparison with actual output to assess accuracy of forecast. Annual Customer Liaison meetings.
❖ To protect and restore areas of ancient woodland in line with 'Keepers of Time'.	Felling of conifer crops over time and suppression of non-native regeneration to aid natural native regeneration in line with FC Policy Framework.	Analysis and comparison of SCDB through the Forest Plan review process
❖ To undertake management that protects and enhances woodland and open habitats and their associated	Diversify the woodland so as to develop a better variety of species, age structures, habitat types and open spaces.	The sustainable programme of thinning and proposed felling together with a varied delayed restock program will continue to diversify stand

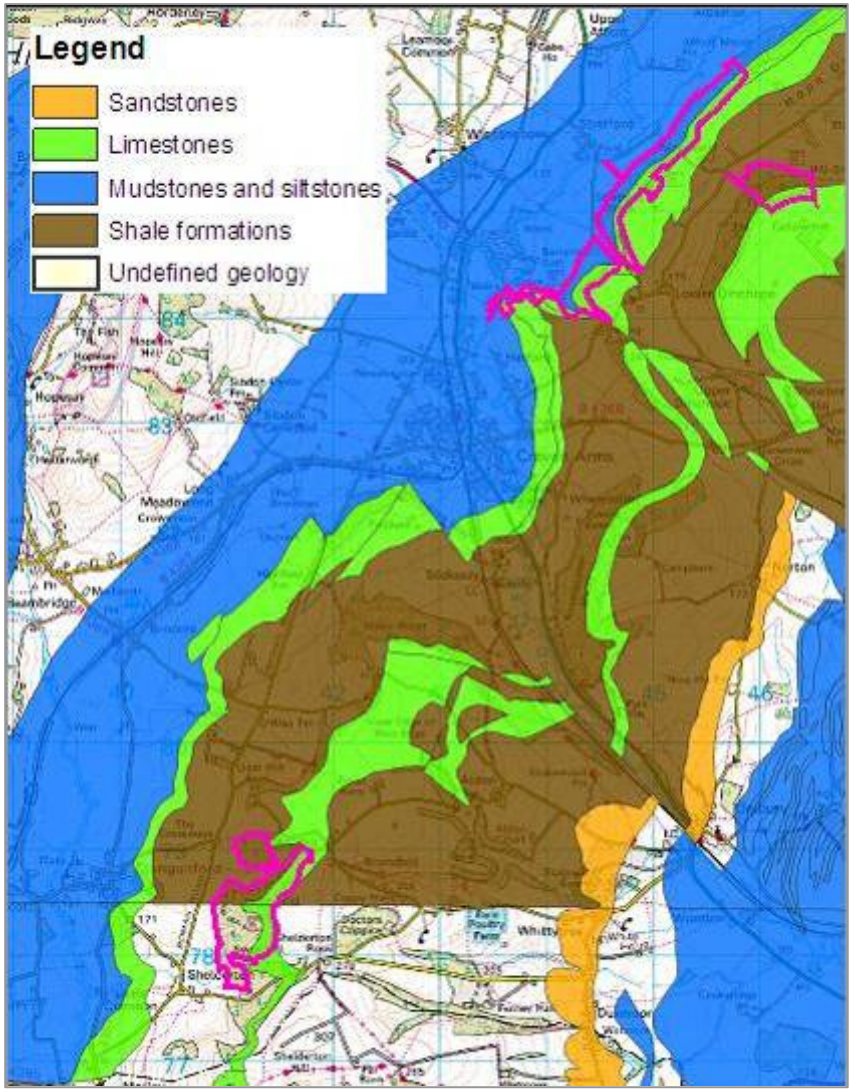
species facilitating their resilience and adaptation to climate change and threat from disease	Implementation of the plan will also see a better integration within the wider landscape and linking of habitat types	and age structure, enhance the landscape and benefit a wide range of species. Results can be monitored during plan reviews. Operational site planning of harvesting and restocking operations should account for landscape enhancements where appropriate minimising the risk of adverse impact resulting from forest operations whilst at the same time highlighting opportunities where conservation benefits can be delivered. Appropriate reinstatement works will be carried out once operations have been concluded.
❖ To conserve cultural and heritage features	Management during the plan period will refer to the relevant management plans during the planning of operations and will if necessary consult with the county archaeologist.	Operational site planning of harvesting and restocking operations will help monitor the effect of management.
❖ To deliver well-designed management proposals that comply with current landscape design principles and to develop the quality of the internal landscape.	Implementation of proposals within this plan will soften and better integrate the woodland with the surrounding landscape	Through the Forest Plan review process.
❖ To maintain the area for the benefit of low-key informal recreation.	Management of footpaths and access point during the plan period will be monitored and maintained at by the Beat team.	Beat team will monitor usage and ensure the up keep of the signage.

Appendix 1: Physical maps

Soil



Geology

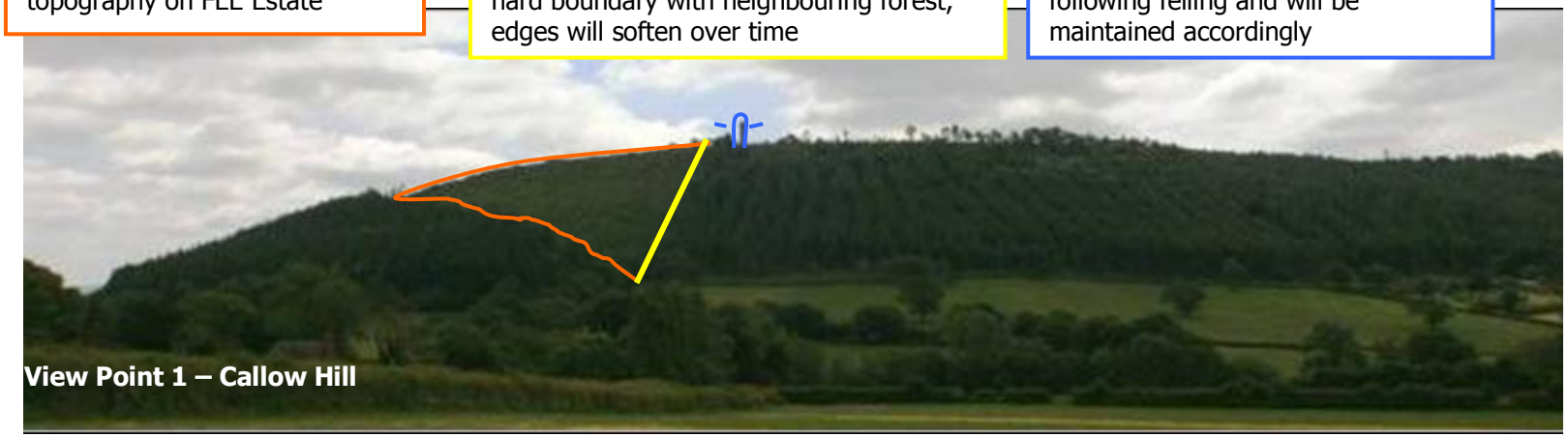


Appendix 2: Landscape Analysis, 2014

Coupe well integrated into topography on FEE Estate

Coupe design compromised by issues with hard boundary with neighbouring forest; edges will soften over time

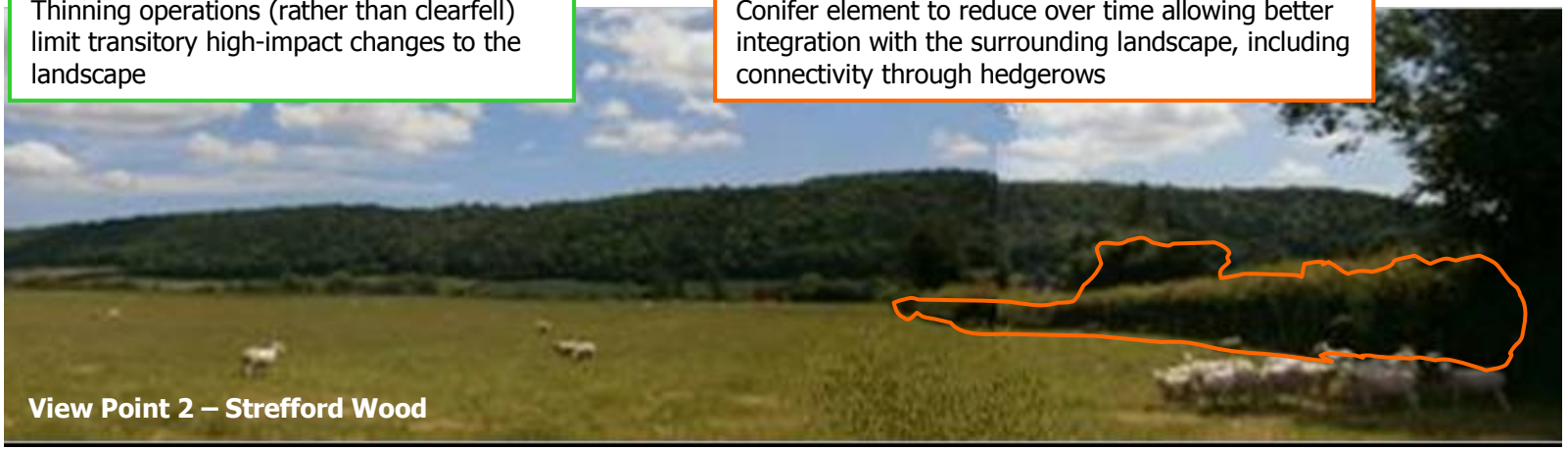
Flounders Folly clearly visible following felling and will be maintained accordingly



View Point 1 – Callow Hill

Thinning operations (rather than clearfell) limit transitory high-impact changes to the landscape

Conifer element to reduce over time allowing better integration with the surrounding landscape, including connectivity through hedgerows



View Point 2 – Strefford Wood

Planned clearfell relatively obscured and thinning operations limit transitory high-impact changes to the landscape

Large conifer components to reduce over time allowing better integration with the surrounding landscape

ew Point 3 – Saddle & May Hill

Viewpoint 1 (of Callow Hill)
Moorwood Farm

Viewpoint 2 (of Strefford Wood)
Strefford Junction with A49

Viewpoint 3 (of Saddle & May Hill)
Little Common (Clungunford)

Appendix 3: Landscape Designations

Part of the Plan area lies within the **Shropshire Hills Area of Outstanding Natural Beauty (AONB)** the implementation Plan will maintain and deliver some core objectives of the AONB Management Plan:

Manage site to high standards and optimising connections with the wider landscape

Promote the uptake and supply chain development of woodfuel linked where possible to improved management of woodlands.

Shropshire Hills
Area of Outstanding Natural Beauty

Support the management of existing woodlands and their wildlife, including restoring Plantations on Ancient Woodland Sites.

Provide and promote opportunities to experience the distinctive landscapes and heritage of different parts of the Hills. This includes improving the experience at the Wrekin, and promoting areas with more potential such as the Wenlock Edge.

Onny Forest Plan Area in makes up part of, and contributes to the **Shropshire Hills, National Character Area**:

- A series of ridges, scarps and intervening valleys running south-west to north-east distributed with many smaller steep and rounded hills. A geologically significant, complex and diverse area, comprising Precambrian to Permian rocks, as well as a variety of sedimentary and igneous rocks.

- Coniferous and mixed woods are a significant feature, comprising almost half the woodland area. Along Wenlock Edge, characterised by ash-elm-oak stands, and significant areas of conifer are a prominent feature. This near continuous block connects with ancient woodlands in the Severn Valley that link to the Wyre Forest.

- Numerous woods are in decline caused by livestock and deer grazing within woodlands, preventing regeneration and damaging woodland flora. Over half of ancient woodland sites have been replanted with conifer and non-native broadleaves.

- Rivers and streams, with associated lines of alder trees, are prominent features of the landscape. The major watercourses are the rivers Onny, Corve and Rea Brook, which are home to important species such as dipper, white-clawed crayfish and otter.

Appendix 4: Management considerations

Landform Analysis

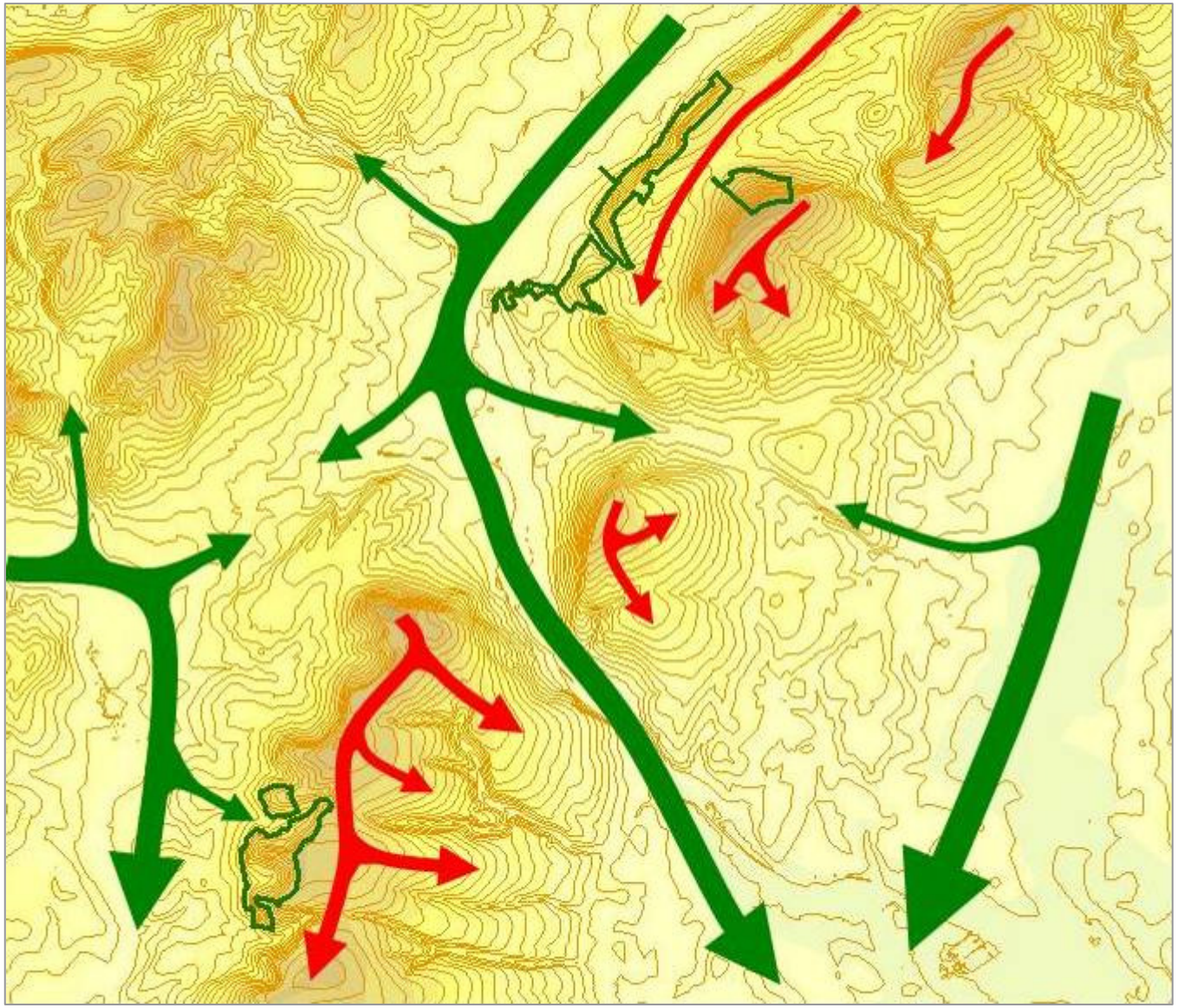
The Onny woodlands sit in raised positions and on steep western slopes, this makes them highly visible throughout the local landscape.

Key

Lines of Force

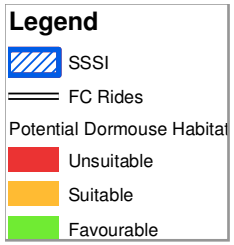
Upwards (valleys) →

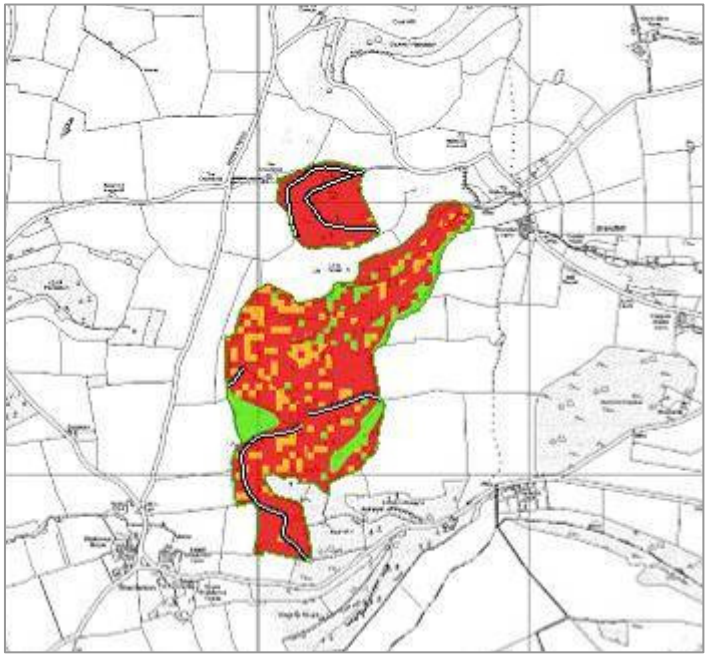
Downwards (ridges) →

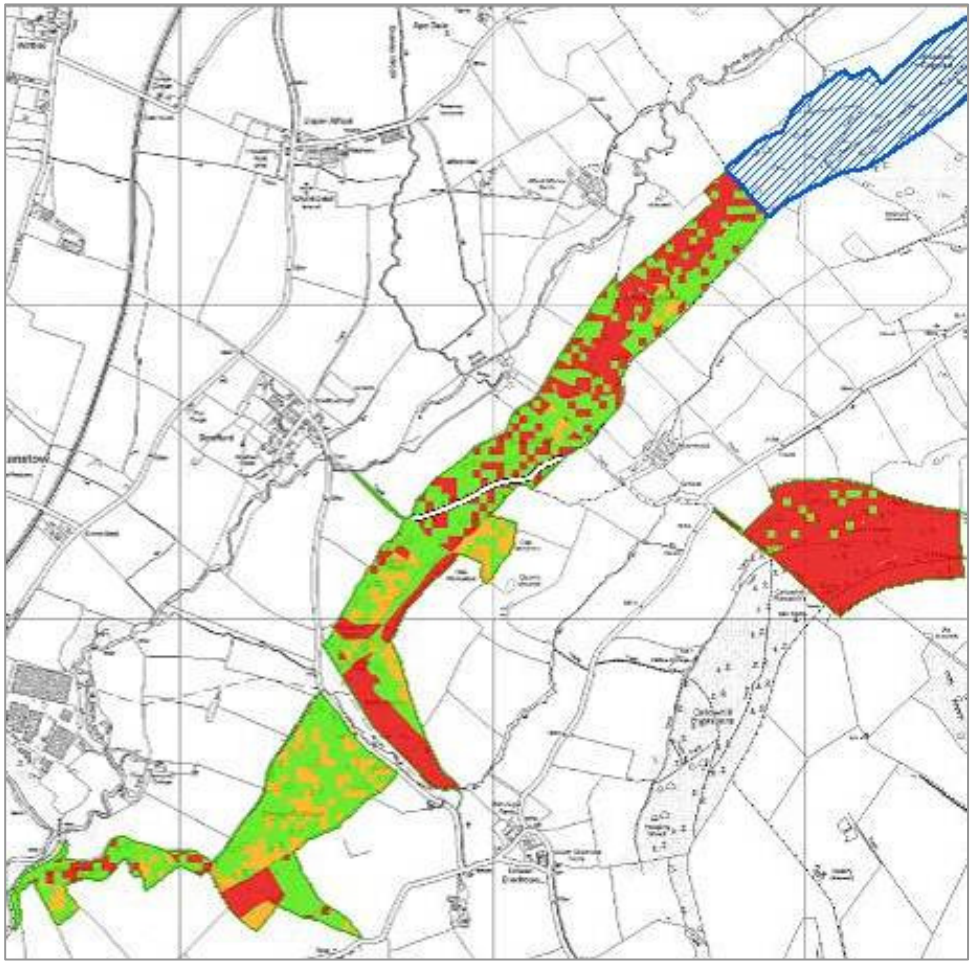


Conservation features

Dormice have been repeatedly recorded in the Onny woodlands. The Plan has ensured that prescriptions favour and enhance the viability of this European Protected Species.

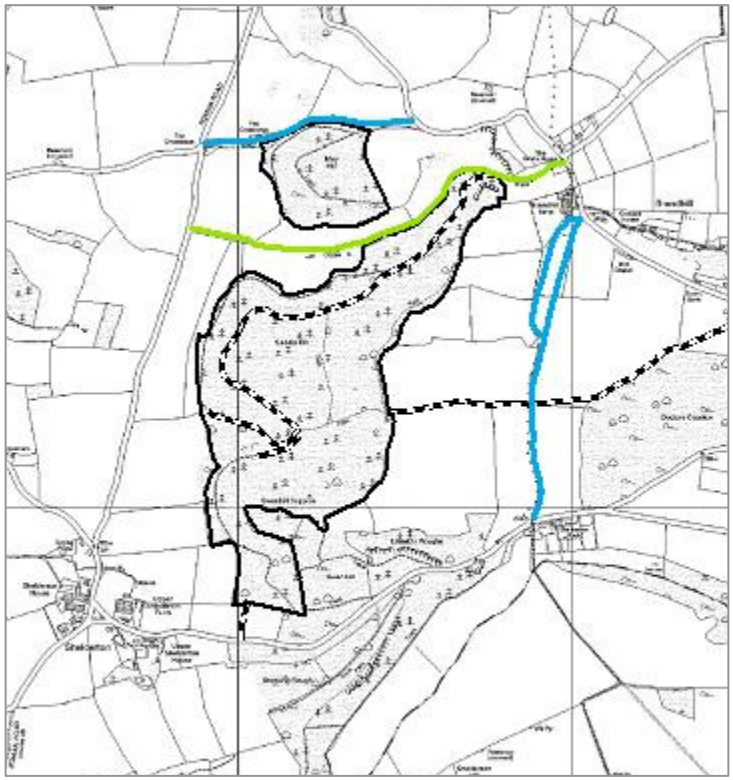


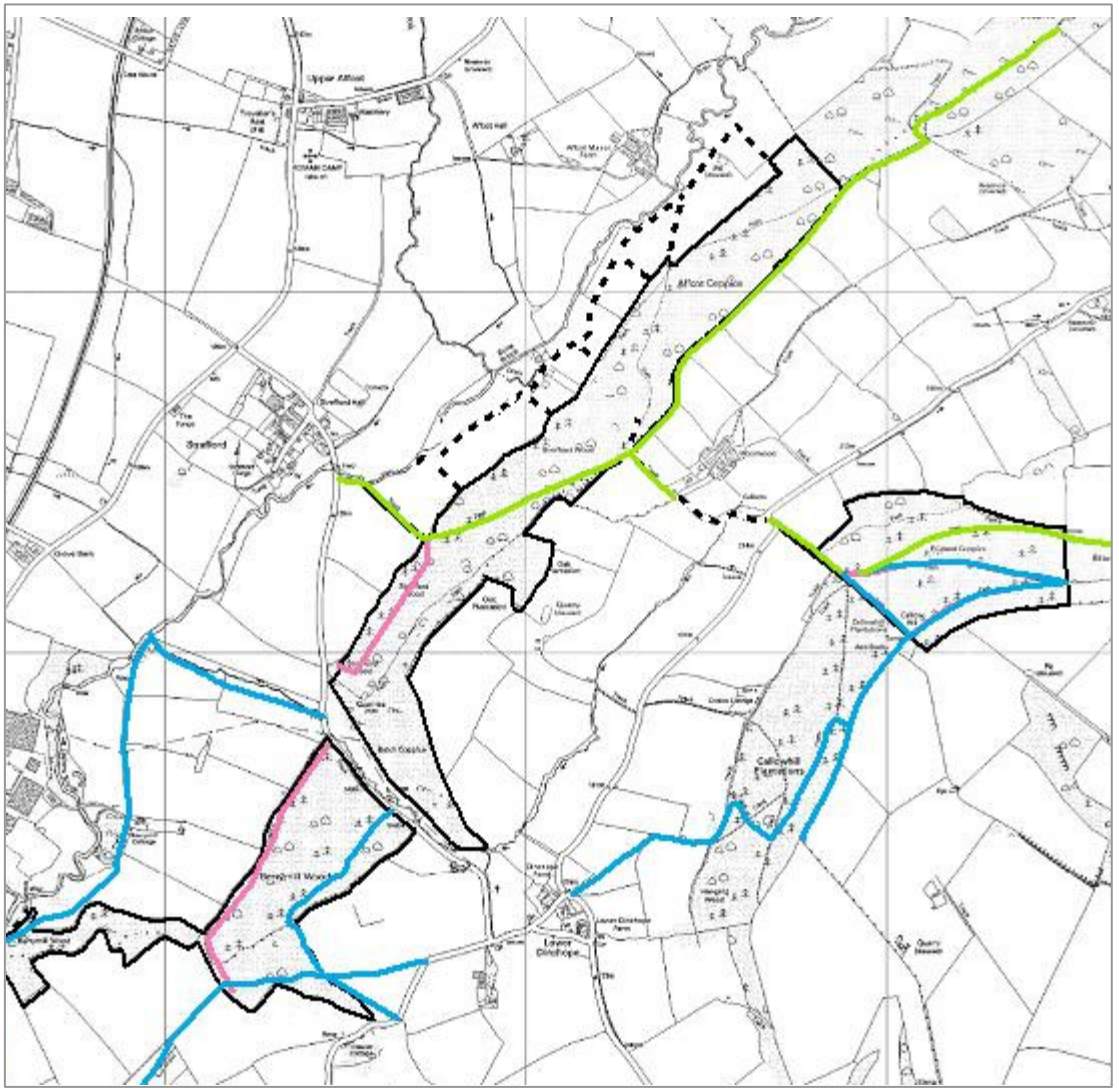




Access

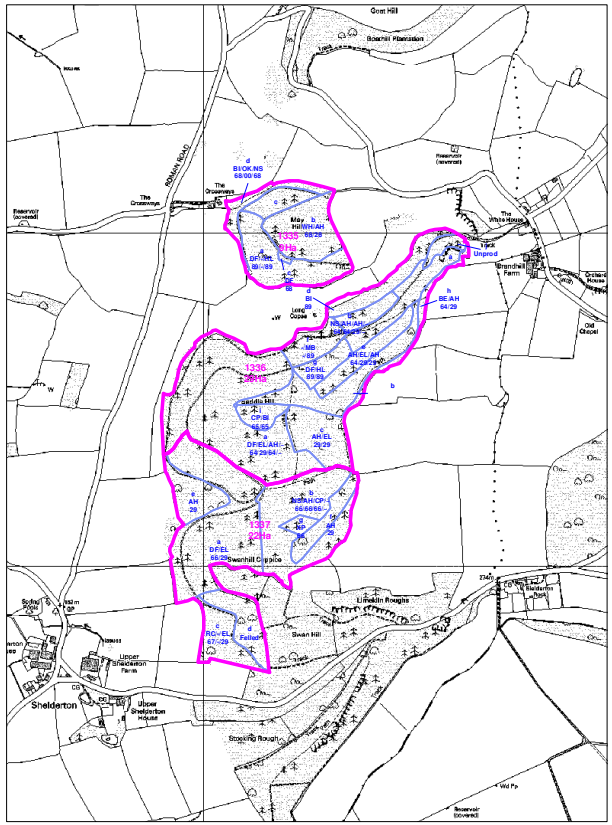
A number of formal and informal access routes traverse the woodland blocks. The vast majority of usage is by foot with minimal car parking and facility provision. Three sets of game and deer shooting rights are leased on the blocks and this Plan has been written accordingly.



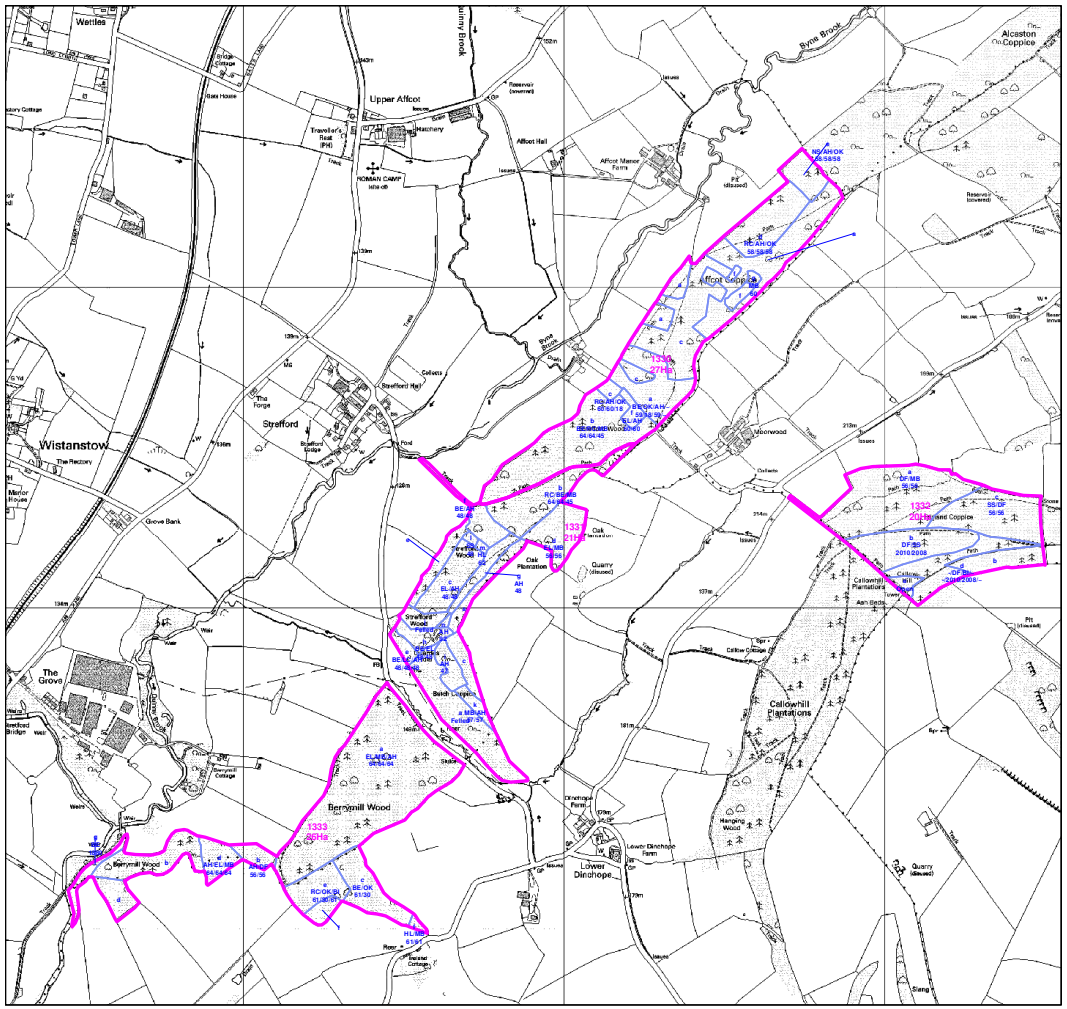


Appendix 5: Stocking data,
August 2014

Saddle Hill & May Hill



Strefford Wood, Berry Mill & Callow Hill



Appendix 6: Pests and Diseases

- **Name:** Dothistroma Needle Blight (DBN)
  First appearance: mid 1990s
  Attacks: Pine species

Often referred to as Red Band Needle Blight (RBN) and can reduce growth rates by between 70 and 90%. Effects of RBN are managed through thinning the wood more heavily than you would normally to introduce higher levels of air flow through the remaining crop.

- **Name:** Phytopththora ramorum (PR)
  First appearance: 2012
  Attacks: Oaks and Larches

Found originally in broadleaves in Cornwall in 2009, and in 2012 found to of infected Larch. It is a notifiable disease dealt with by felling the infected area under a statutory plant health notice (SPHN) issued by DEFRA. At present there is no PR on Oak in this part of the West England Forest District, however, around 12% of all larch within the Dean was felled in 2012 to eradicate the disease with regular aerial flyovers to keep track of hot spots. Luckily flyovers in 2013 have shown no reinfection. This is not to say there will not be a need for further fellings of infected larch required in the future.

- **Name:** Oak 'dieback' or 'decline'
  First appearance: unknown
  Affects: Oak

Oak 'dieback' or 'decline' is the name used to describe poor health in oak trees and can be split into Chronic decline and Acute decline. Chronic decline is protracted taking effect on the Oak over a number of decades whilst Acute decline is much swifter acting over much shorter periods usually five years or so. Symptoms can be caused by a range of living agents e.g. insect and fungal attack, or non-living factors, e.g. poor soil and drought. Factors causing decline can vary between sites, as can the effects of the factors through time. Oak decline is not new; oak trees in Britain have been affected for the most part of the past century. Both native species of oak are affected, but Pedunculate oak (*Quercus robur*) more so than Sessile oak (*Quercus petraea*). Successive exposure any of these agents on a yearly/seasonal basis further reduces the health of the tree and predisposes it to other living (Biotic) agents that can often spell the final death knell for the tree.

- **Name: Chalara fraxinea**
  First appearance: currently N/A
  Attacks: Ash

Pretty rampant in Europe, showing up in 2012 mainly in East Anglia and along the East coast of England. To date no infection has been found within this part of the West England Forest District and let us hope it stays that way!

Appendix 7: Glossary of terms

Term	Abbreviation	Description
Alternatives to Clearfell	ATC	Alternative to Clearfell is similar to CCF and refers to management systems where stands are regenerated without clearfelling.
Ancient Semi-Natural Woodland	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.
Ancient Woodland Site	AWS	A site that has technically been wooded since 1600AD and is unlikely to have been converted to farmland in the last few centuries.
Continuous Cover Forestry	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 opputunities 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.
Clearfell or clearfall	C/F or CF	To cut and remove all trees from a certain area of woodland.
Crop		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)
Enrichment planting		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.
Group felling / group planting		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.

Hectare	Ha	Unit of area equating to 2.47 acres.
Mixed Wood		Woodland consisting of both conifer and broadleaf species.
Native (and honorary native)		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.
Natural Regeneration	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		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. *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. "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.
Shelterwood		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" 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.
Silviculture		A term coined during late 19th century from the Latin *silva* meaning 'wood' and the French *culture* 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.
Silvicultural systems		These refer to a wide range of complete regimes for the regenerating, tending, and harvesting of forests and are called "silvicultural systems".
Stand		A group or area of trees that are more or less homogeneous with regard to species composition, density, size, and sometimes habitat.
Thin	TH	Selective removal of trees from a wooded area, giving remaining trees more space to grow into larger trees. Thinning is done to: 1. Improve the quality and vigour of remaining trees. 2. Remove trees interfering with mature or veteran broadleaf trees. 3. Give space for tops (or "crowns") of broadleaf trees to develop and potentially act as a future seed source. 4. 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. 5. Create gaps for group planting or enrichment. 6. 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. 7. Improve the economic value of a wood. 8. Help realise opportunities to enhance ecological value. **NOTE:** This list is not in any order of priority and will vary depending on management objectives.
Yield Class	YC	A method of measuring the growth rate or "increment" of a crop of trees by age and height; measured in m3 per Ha per annum. E.g. A crop with a YC of 16 is one that has an annual increment of more than 16m3 but less than 17m3, although generally only even numbers are used when stating YC.