

Shobdon & Wigmore Rolls

Forest Plan

2017- 2027

West England Forest District



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



Declaration by FC as an Operator.
All timber arising from the Forest Enterprise estate
represents a negligible risk under EUTR (No 995/210).

Francis Raymond-Barker
FCE File Ref: OP10/18
FS File Ref: GL1/5/3.29
GL1/5/3.11

List of Contents

PART 1 – Description, summary & objectives

Application for Forest Plan Approval	1
Contents	2
Location and description	3
Tenure & Management Agreements	4
Management Objectives	5
Meeting Objectives	6
Plan Summary	7

PART 2 – Character, analysis & concept

Landscape Character	8
Designations	9
Analysis & Concept	10

PART 3 – Composition and future management

Woodland Composition	11-12
Woodland Naturalness	13
PAWs Management	14
Broadleaf Management	15

PART 4 – Thinning, felling and future composition

Silviculture	16
Alternatives to Clearfell	17
Felling and Restocking 2017-2027	18-22
Emergency felling of diseased areas	23
Management Prescriptions 2017-2047	24-28
Indicative Future Species, year 10 - 2027	29
Indicative Future Species beyond 2050	30
Ecological Site Classification	31

PART 5 – Conservation, heritage and recreation

Conservation Features	32
Conservation Habitats	33
Water & Riparian Management	34
Heritage features	35
Recreation and Public Access	36

APPENDIX 1: Physical environment

Geology	37
Soils	37
Landform	38
Landscape Analysis	39-41

APPENDIX 2: Management considerations

Option Testing	42
Pests and Diseases	43
Utilities	44
Stock data – 2015	45-48

APPENDIX 3: Supporting Information

Glossary of Terms	49-50
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APPENDIX 4: Consultation

Consultation Record	51-
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Location and description

Situated within the county of Herefordshire, 1.5 miles from Welsh border, the plan consists of eight woodlands that lie predominantly on higher elevations and slopes that are comprised of mixed woodland with around two thirds conifer and a third broadleaf covering a total of 844Ha.

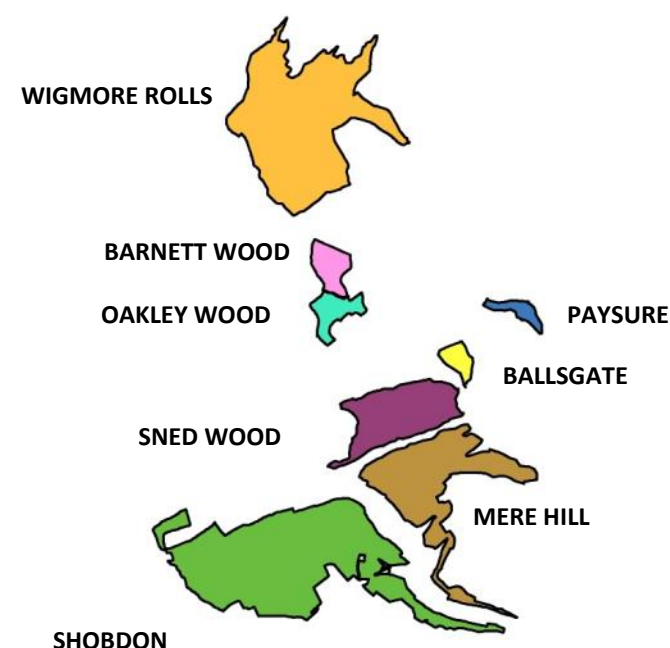
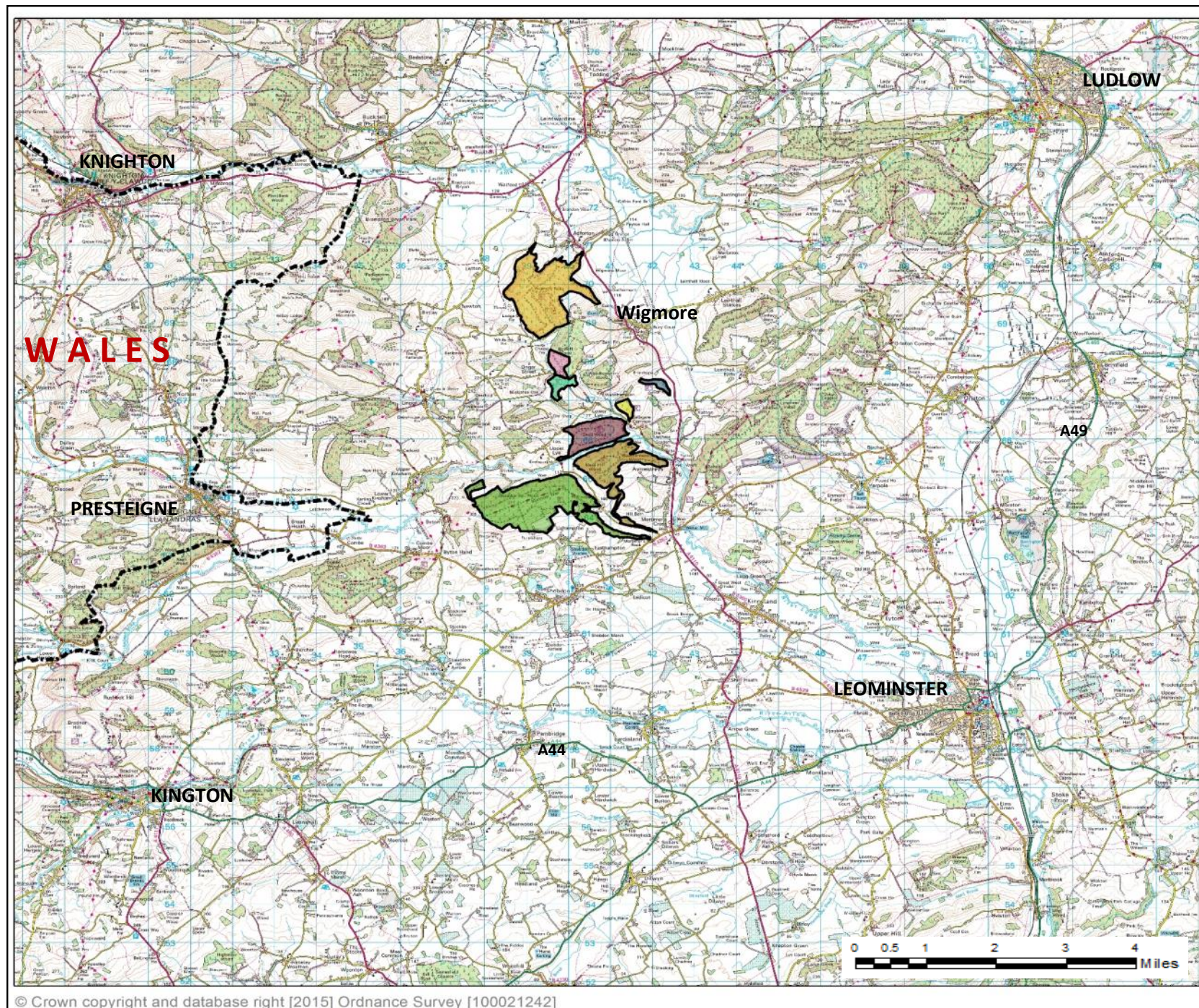
The topography within the plan and surrounding landscape has been heavily influenced by the glacial periods that have given rise to the steep nature of the ground experienced within the woodland and illustrated both in the wider landscape and woodlands by a huge variation in altitude, varying anywhere from between 5m to 325m above sea level that enjoy on average 650mm of rainfall per year.








The plan comprises of siltstone and mudstone geology that give rise to rich soils that are predominantly brown earths with surface water gleys to the north. Soil types generally enable growth rates for conifer to be achieved in the range of Yield Class 12-24 and for Broadleaves YC of between 4-8.

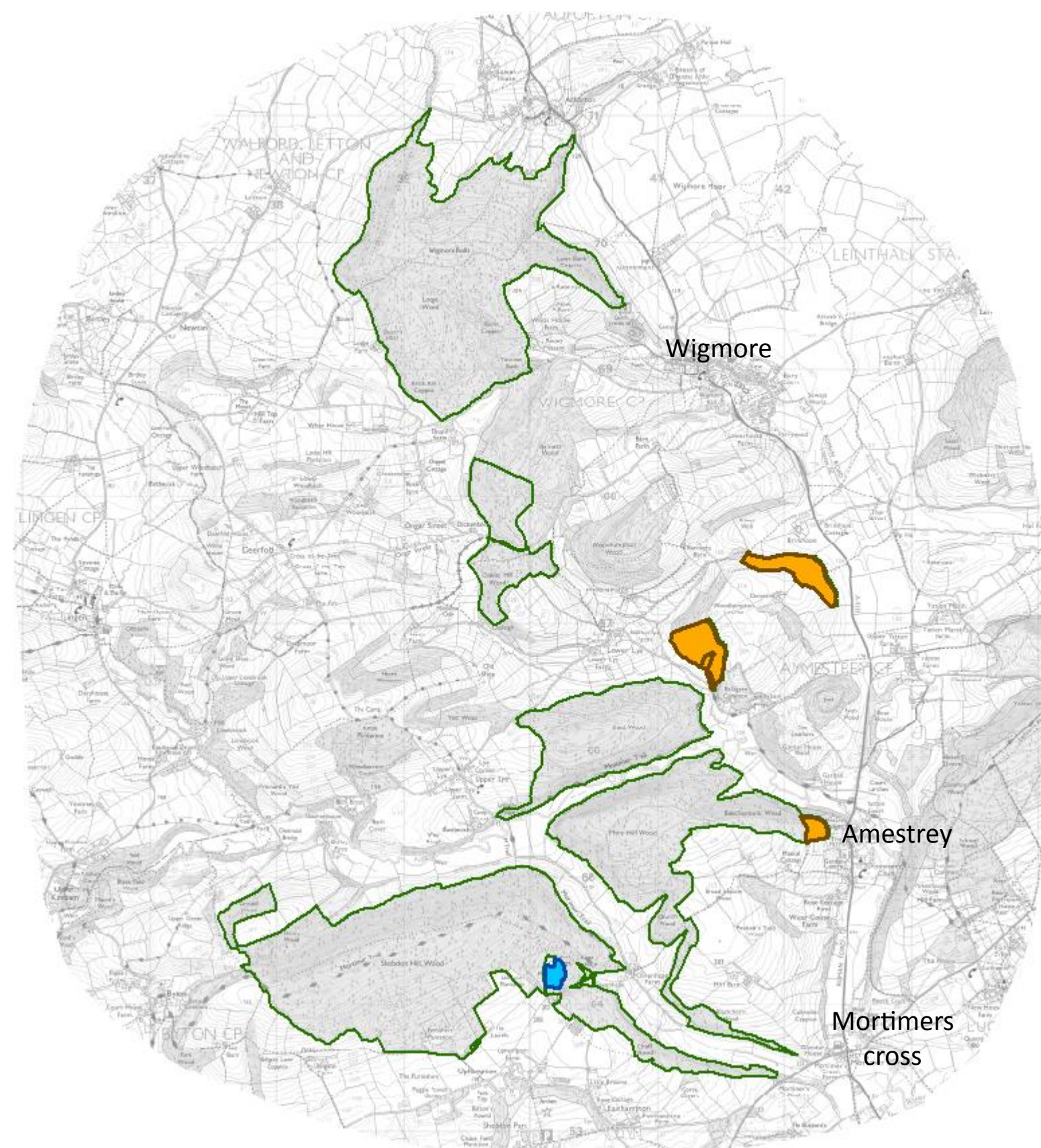
Shobdon Wood is the largest most southerly and westerly wood, lying 4 miles east of the Welsh border town of Presteigne that provides thriving markets for timber. The second largest and most northerly is Wigmore, 7.5 miles southwest of the medieval market town of Ludlow and 6 miles southeast of Knighton. Next is Mere Hill Wood, almost mirroring Shobdon Wood, it sits less than half a mile to the northeast of Shobdon Wood and 6 miles northwest of the historic 7th century market town of Leominster with a population of 11000 people.

Carrying SSSI status, the River Lugg is an important feature within the plans landscape. Flowing west to east its floodplains adjoin Mere Hill Wood to the south and Sned Wood to the north which is the forth largest wood. To the north of Sned wood lie the 4 smallest woodlands of Ballsgate, Oakley and Barnett with Paysure being the smallest most easterly wood within the plan area. All four of which lie less than 1.5 miles southwest of the busy farming village of Wigmore.

The wooded hilltops, ridges and surrounding matrix of smaller woods are often steeped in and support a rich variety of historical and cultural interest and together with the fertile glaciated valleys that form an integral part of the present day rural landscape.



	Forest name	Area	% of plan area
	Shobdon Wood	297Ha	35 %
	Wigmore Rolls	253Ha	30 %
	Mere Hill	139Ha	17 %
	Sned Wood	86Ha	10 %
	Oakley & Barnett Wood	43Ha	5 %
	Ballsgate	12Ha	2 %
	Paysure	10Ha	1 %
	840 Ha		100 %



Legend

- Leasehold land
- Farm Business Tenancy Agreement
- Forest Plan management area

Tenure & Management Agreements

The majority of the Shobdon and Wigmore plan is Freehold. Only Paysure Wood, Ballsgate Wood and the eastern tip of Shobdon wood are leasehold from the Yatton estate, amounting to 26Ha.

There are minimal management Agreements affecting the plan area with only a Farm Business Tenancy Agreement existing within Shobdon wood, leased to a local farmer.

In the past there have been 1 or 2 shooting leases which have now expired with no plans to renew them.



Management Objectives

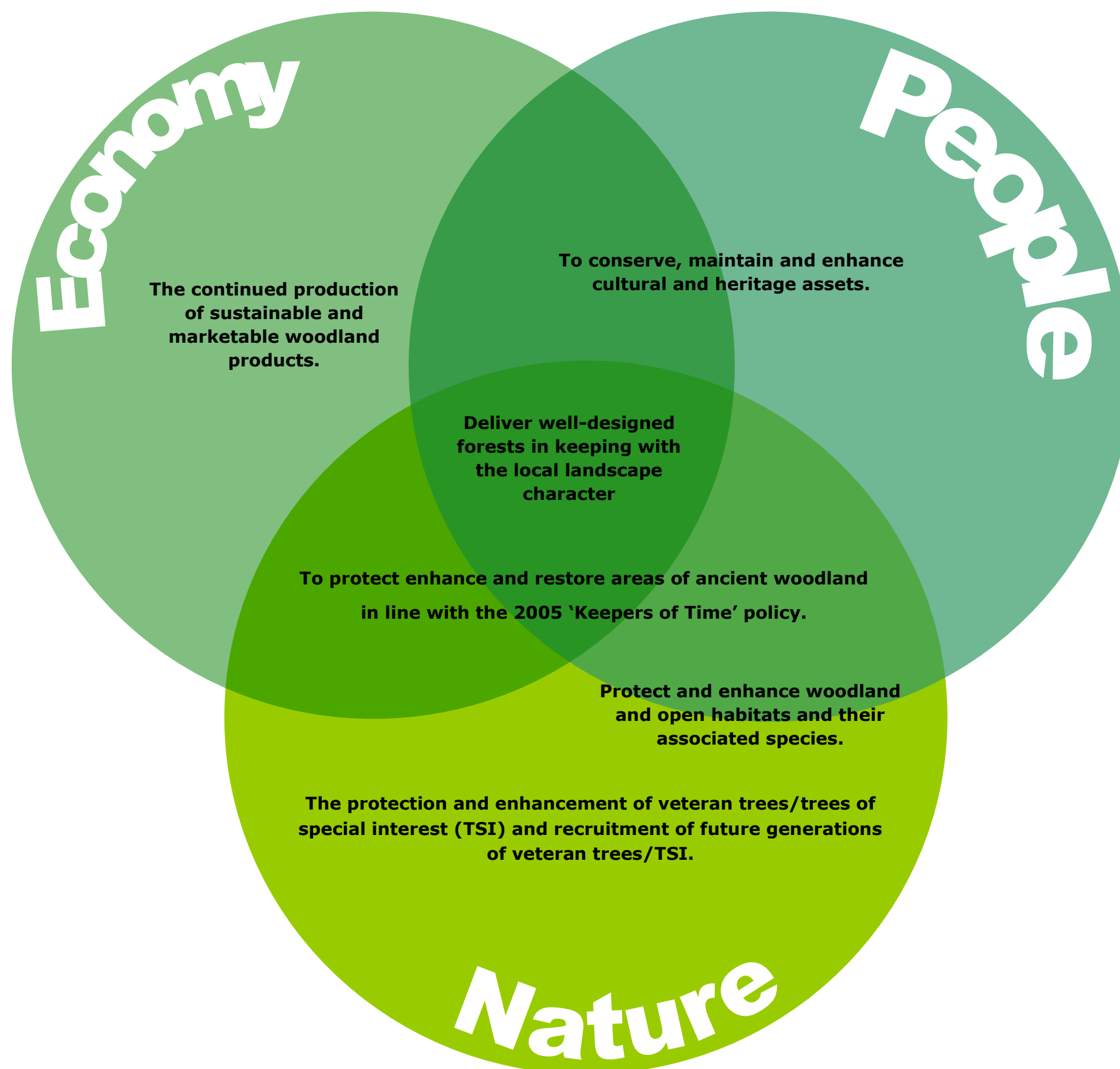
WEST ENGLAND FOREST DISTRICT

**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.



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



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

The continued production of sustainable and marketable woodland products.

Plan delivery achieved through thinning and clearfelling will continue to produce a mixture of wood products, both conifer and broadleaf that will be in keeping with and help progress and or enhance other management objectives.

Comparison of total production forecast with actual production at the Forest Plan (FP) five and ten-year review:
2017-2022 = 21,535m³ (4307 annually)
2022-2026 = 26,775m³ (5355 annually)

Operational Site Planning (OSP) and contract supervision.

To protect enhance and restore areas of ancient woodland in line with the 2005 'Keepers of Time' policy.

Restoration of PAW sites will be a gradual process targeting removal of conifer crops and non-native regeneration through clearfelling & thinning to aid establishment of native species through regeneration and planting.

Analysis and comparison of naturalness scores derived from the Sub-Compartment Database (SCDB) through the FP review process.

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 for people and business focusing on the 3 principle Forest Centres.

The protection and enhancement of veteran trees (VT)/trees of special interest (TSI) and recruitment of future generations of veteran trees/TSI.

These woodlands contain numerous scattered TSI & VT of varying description, including old lime coppice stools. OSP should record TSI and VT; updating GIS layer files for future reference. At the same time the process should promote the retention of both standing and fallen deadwood.

The FP review process at years 5 and 10 should check data held on GIS. Site visits and operational site plans will help in verifying appropriate TSI and VT management.

Deliver well-designed forests in keeping with the local landscape character that also protect and safeguard adjoining SSSI sites.

Through a mixture of thinning & clearfelling the approach will be dependant upon steepness & awkwardness of terrain and prominence within the landscape. Operational site planning will help integrate the FP intentions minimising risk of adverse impact on the landscape and adjacent SSSI.

Fixed point photography will be used during the FP review process to help in the analysis of how the implementation of the plan is effecting external landscape and character. OSP will help identify opportunity for enhancement to character and identify safeguards for SSSI.

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 Estate.

Protect and enhance woodland, open habitats and their associated species.

Through a mixture of clearfelling, thinning and coppicing the provision for open habitats and associated species will be enhanced. Opportunities should be highlighted in the OSP process where conservation benefits can be delivered. Appropriate reinstatement works will be carried out once operations have been concluded.

Monitored through review process, looking at local records for updated sightings.
Analysis and comparison of SCDB open space through the Forest Plan review process.

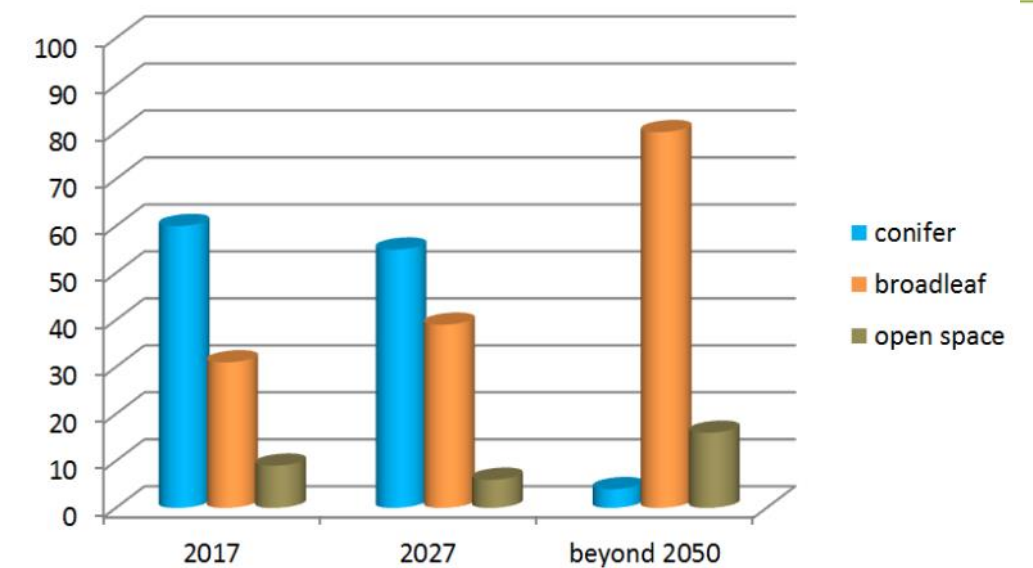
To conserve, maintain and enhance cultural and heritage assets.

The identifying and recording of any unscheduled features is an on-going process aimed at improving the quality of existing data sets that subsequently feed into the OSP of harvesting and restocking sites that should identify features of interest and outline appropriate measures to avoid and minimise damage.

Monitoring will be achieved through the OSP and contract supervision and the Forest Plan review process.

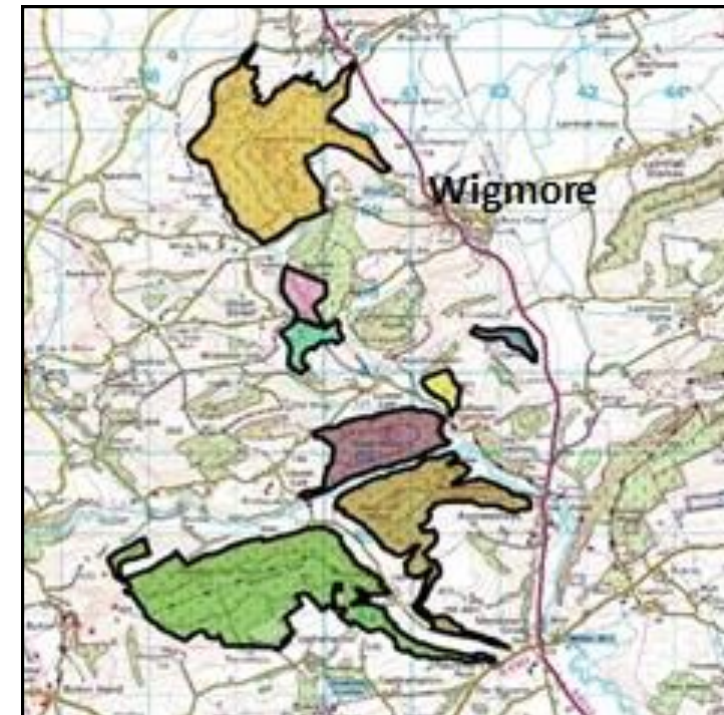


Plan Summary



Woodland composition through time

The vertical axis shows the % of total woodland cover within the plan, whilst the horizontal axis is the date.



	Forest name	Area	% of plan area
	Shobdon Wood	297Ha	35 %
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	Paysure	10Ha	1 %
	840 Ha	100 %	

About

This Plan covers the woodlands of Shobdon, Mere Hill, Sned Wood, Ballsgate, Paysure, Oakley and Barnett Woods and Wigmore Rolls; in an area that is undulating and tranquil. The valleys are narrow and deeply incised with woodland occurring on the steepest of slopes.

The plan accounts for nearly 850Ha of mixed coniferous and broadleaved woodland within North Herefordshire and is situated 1.5 miles from the Welsh border.

The woodlands are all within the Public Forest Estate of England with the majority being Freehold. Only Paysure Wood, Ballsgate Wood and the eastern tip of Shobdon wood are leasehold and amounts to 26Ha.

There are some 700Ha of conifer cover occurring on Ancient Woodland sites within the plan area. Of this figure over a quarter has already been restored to a native broadleaf. The remaining areas contain between 21% and 80% or more of conifer species and by 2027 the plan looks to restore a further 60Ha of conifer to native broadleaf.

The plan is high in conservation interest too and enjoys habitats ranging from wet woodland to semi-natural woodland, native broadleaf coppice, numerous notable veteran trees and a diverse mixture of indigenous ground flora. All supporting a wide range of flora and fauna including dormice, bats, lepidoptera and schedule one birds as well as contributing to habitat for Wood Warbler, Pied Flycatcher, Redstart and Tree Pipit. The Plan also contributes to the management of the River Lugg SSSI that runs down the steep sided valley between Sned Wood and Mere Hill that supports Otter, native freshwater White-Clawed Crayfish, Caddisflies, Shad and Twaite.

Aims and Objectives

The plan aims to protect and enhance existing habitats through sustainable management that is in context with the wider landscape and character whilst providing a sustainable flow of wood products to market throughout the plan duration. The objectives of the plan are:

- Deliver well-designed forests in keeping with the local landscape character.
- To protect enhance and restore areas of ancient woodland in line with the 2005 'Keepers of Time' policy.
- Protect and enhance woodland and open habitats and their associated species.
- The protection and enhancement of veteran trees/trees of special interest (TSI) and recruitment of future generations of veteran trees/TSI.
- The continued production of sustainable and marketable woodland products.
- To conserve, maintain and enhance cultural and heritage assets.

What We'll do

The current plan outlines management proposals including felling and restocking over several decades, with felling licence approval for operations up until 2027.

Crops will be managed for a mixture of objectives including timber production through the use of clearfelling and restocking supported with natural regeneration of native species. Some areas will be managed using continuous cover forestry prescriptions so as to create a diverse and resilient forest structure for the future.

The plan makes provision for the removal of trees to enable an improved provision of open space habitats, especially in Mere Hill, Sned Wood and Wigmore. Implementation and maintenance of an environmental corridor network will continue to increase the diversity of habitat and the quality of internal landscaping. Those on highly visible external edges will be restocked sympathetically to create a graded edge between the wider landscape and high forest.

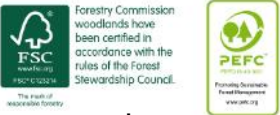
The planned areas of clearfelling, restocking and permanent open space creation during the ten years to 2027 are summarised in the chart below.

HECTARES	Conifers	Broadleaves	Open Space
Clearfelling	60	18	----
Restocking/ Regeneration	47	14	17

In addition to these defined operations, ongoing thinning and selective felling of both conifers and broadleaves will be carried out in the plan area at five to ten year intervals.

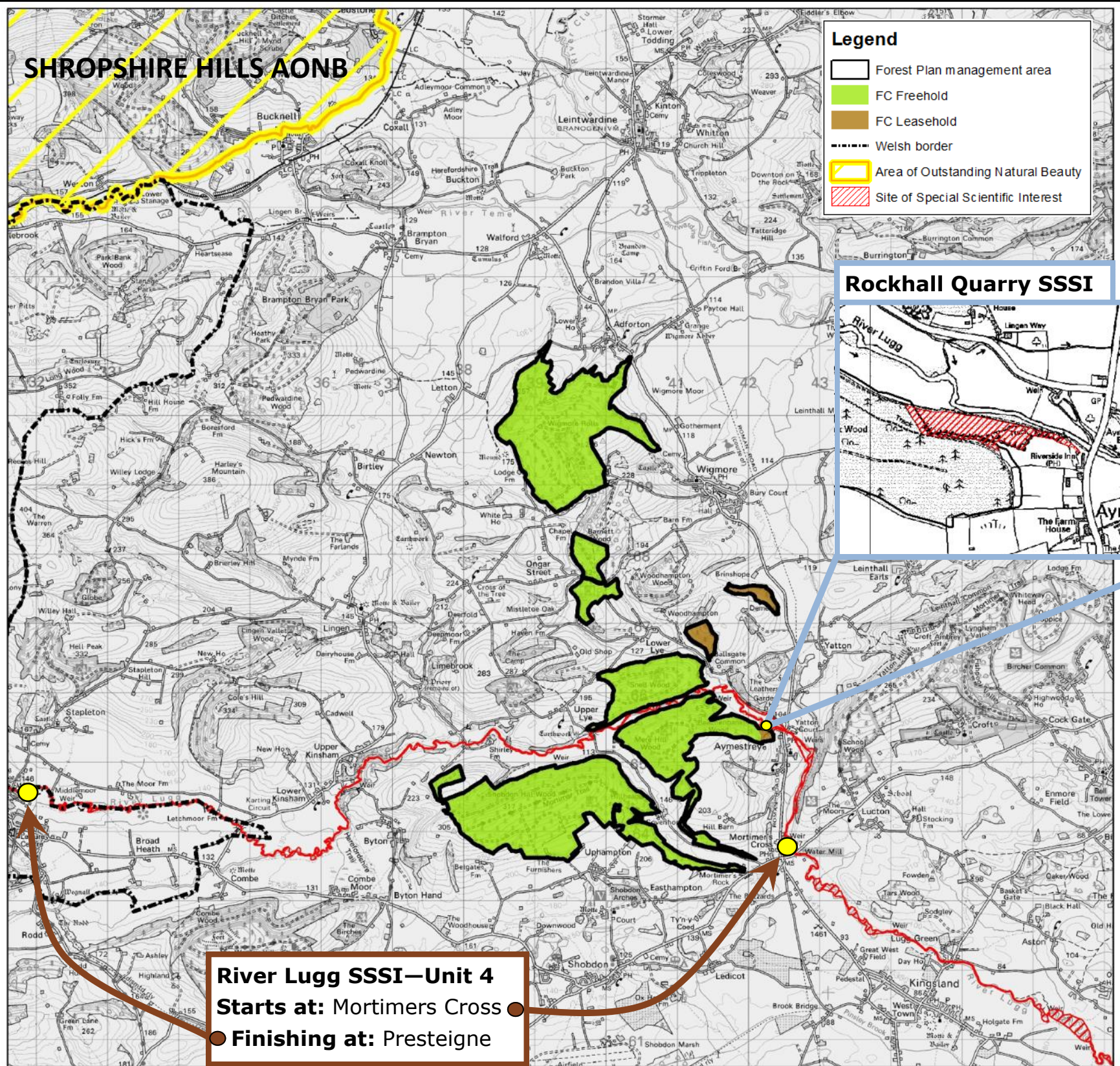
The proportions of conifer and broadleaved woodland and open space at the beginning of the plan period are shown in the bar chart. The increase in native broadleaves and open space expected within the plan period and over time is indicated in the middle and right hand columns of the chart.

Designations



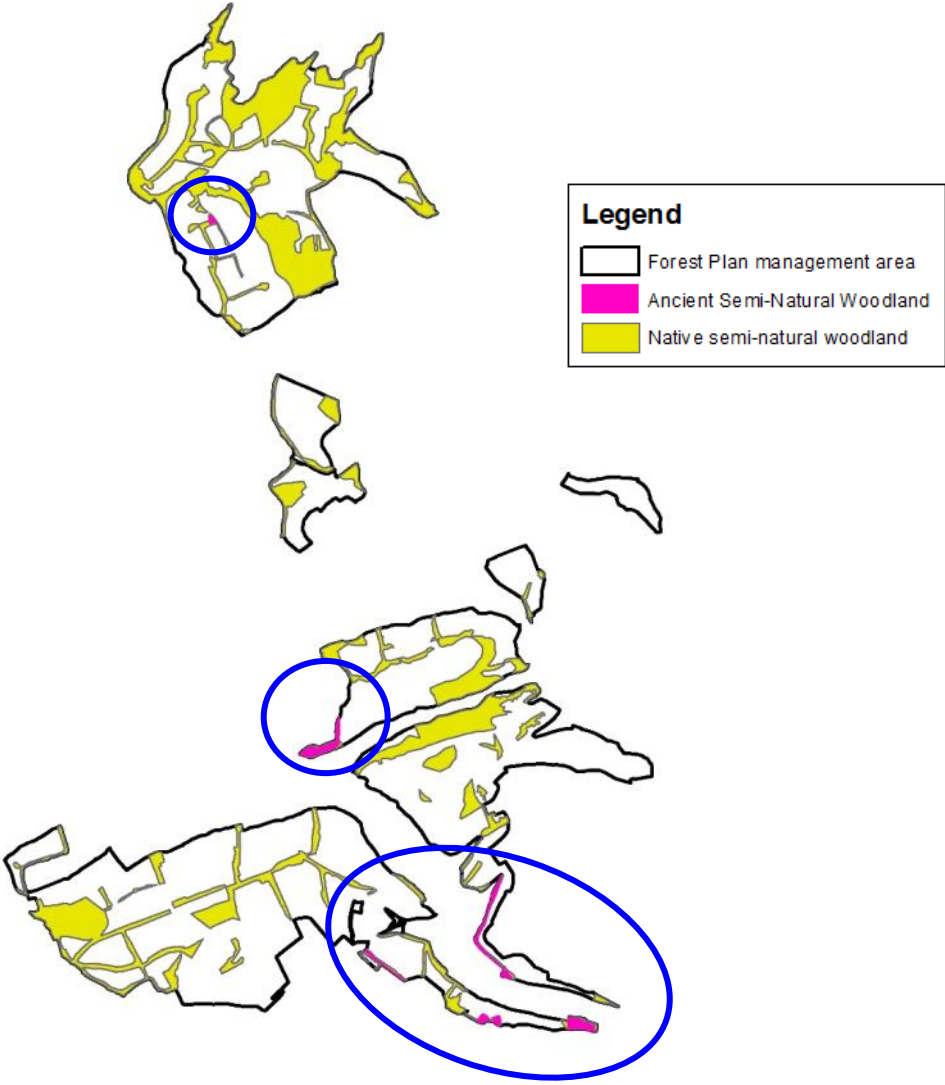
The Plan area lies 4 miles south of the Shropshire Hills AONB. The Forest Plan area contains 26Ha of Leasehold land consisting of Paysure Wood, Ballsgate Wood and the eastern tip of Mere Hill Wood that overlooks Amestrey, with an 819Ha majority being freehold that covers the remainder of Mere Hill, the whole of Shobdon wood, Sned wood, Oakley wood, Barnet wood and Wigmore Rolls. The Plan area contains only around 1% of Ancient Woodland equating to just over 7.5Ha, although there is a further 193ha of woodland that contain 80% of native species. (On the map below right, ASNW is shown pink & ringed in blue with further native wood shown coloured yellow. Further detail on naturalness can be found in the section for woodland naturalness.)

The River Lugg runs East west and is notified as SSSI. Unit 4 of the Lugg SSSI flows from Presteigne in the west to Mortimer’s Cross in the east passing through the main valley that separates Mere Hill and Sned Wood - it is currently in unfavourable recovering condition. The SSSI is notified for the quality of water that is slow flowing, base rich and for supporting a wide assemblage of important invertebrates as well as otter and White clawed crayfish.



Rockhall Quarry SSSI is situated just northwest of Amestrey adjoining Mere Hill, lying along the northern boundary of the western tip of Mere Hill. It is currently in favourable condition and is notified for its rock formation that, in places, is over 4 million years old and show lateral variation of rock type through time. It is also notified for its international importance in contributing to the understanding of the evolution of non-vascular plants. (A form of blue-green alga known as Silurian alga)

The proposals within the Forest Plan will need to ensure that water quality of the River Lugg is protected and will not be adversely affected. Proposals must also ensure operations are not detrimental to the site conditions within Rockhall Quarry SSSI that contribute to its international importance.



National Character Profile: 98 Clun and North West Herefordshire Hills

source: Natural England (April 2014)

This area is undulating tranquil, rural and sparsely populated. Heads of the valleys are narrow and deeply incised, with woodland on the steepest of slopes. The area is important for its fast-flowing rivers: The Teme, The Clun and The Lugg. Many watercourses are ‘unimproved’, retaining a great deal of physical and biological diversity, and are noted for their high water quality and associated riparian habitat. The River Lugg flows into the River Wye and is designated a SSSI for its important flora and invertebrate fauna - notably its populations of white-clawed freshwater crayfish and otter. Downstream the rivers widen to significant flood plains around the Teme and its tributaries, for example, the Wigmore basin.

Woodland is one of the most important habitats making up 17% of the NCA or 10,808Ha of which 5245Ha is AW. Both Ancient Woodland and PAWS being important features. Areas of Semi-natural woodland are mainly upland oak and wet woodland, (esp. on steep valley slopes) whilst the straight edges of large, conifer plantations often extend over the hilltops and are in contrast with the remnant, ancient, semi-natural woodland. Where ancient features survive this provides valuable areas of biodiversity, supporting species from both the coniferous and original broadleaved woodland. The Wooded habitats hold important assemblages of nationally declining bird species that include wood warbler, pied flycatcher, redstart and tree pipit.

The area has significant recreational assets that include a number of long-distance paths such as The Mortimer Trail together with an extensive network of rights of way.

National Character Area Profile Analysis	Ecosystem Service																
	Food provision	Timber provision	Water availability	Genetic diversity	Biomass provision	Climate regulation	Regulating water quality	Regulating water flow	Regulating soil quality	Regulating soil erosion	Pollination	Pest regulation	Regulating coastal erosion	Sense of place / Inspiration	Sense of history	Tranquility	Recreation
Statement of Environmental Opportunity																	
SEO 2: Protect, manage and enhance the valleys, to improve the habitat mosaic of semi-natural grasslands, meadows, woodlands, hedgerows and riparian habitats within the mosaic of improved pasture to enhance ecological networks, strengthen the distinctive landscape character and contribute to the delivery of ecosystem services such as food provision, wood supply, soil protection and improving water quality.	↗***	↗***	↗***	↗**	↗***	↗***	↗***	↗***	↗***	↗***	↗*	↗**	○	↗***	↗***	↔***	↗***
SEO 3: Protect and manage the rivers Teme, Clun and Lugg and associated watercourses, along with their flood plains, wetlands and woodlands, to maintain high water quality and enhance their nature conservation interest, to strengthen their contribution to landscape character, to help reduce the potential risk of flooding both within the NCA and downstream, and to increase the recreational opportunities they provide for public enjoyment.	↔**	↔**	↗**	↔**	↔**	↗***	↗***	↗***	↗***	↗***	↔***	↔*	○	↗**	↔**	↔**	↗**

Arrows shown in the table below left indicate anticipated impact on service delivery

↑ Increase
↗ Slight Increase
↔ No change
↘ Slight Decrease
↓ Decrease.

Asterisks denote confidence in projection
* low
** medium
*** high
○ = symbol denotes where insufficient information on the likely impact is available.
Dark plum = National Importance
Mid plum = Regional Importance
Light plum = Local Importance

LANDSCAPE CHARACTER ASSESSMENT (Character makes each part of the landscape distinct and gives each its particular sense of place, regardless of perceptions of quality or value)



7.6 Principle Wooded Hills

Steeply sloping topography is densely wooded and sits within hilly landscapes. The inherent character of the area has a strong sense of unity and visual integration derived from the pronounced relief and the dominant, flowing nature of the woodland cover. These landscapes retain a significant cover of ancient semi-natural woodland, typically occurring in extensive, linked belts. Where clearance has taken place in the past, the presence of strong hedge lines with a good representation of hedgerow tree cover contributes to the visual integration of the landscape.

The ancient semi-natural status of many of these woodlands confirms their high nature conservation value. Ancient woodlands tend to be large, irregularly shaped with wooded streamlines interlinking woodland to the surrounding landscape of hedged fields - the steepness of slope having inhibited clearance for agricultural use in the past. These landscapes are sparsely settled by farmsteads and wayside cottages. Views are usually framed between the woodland blocks.

CONSERVATION	RESTORATION	ENHANCEMENT
<ul style="list-style-type: none">Conserve and restore the ancient broadleaved character of the woodland		<ul style="list-style-type: none">Strengthen the wooded character of hedgerows and streams by additional planting and/or regeneration
<ul style="list-style-type: none">Conserve the organic, irregular pattern of assarted fields	<ul style="list-style-type: none">In areas where the interlocking pattern of woodland is no longer evident, seek to restore the wooded character through additional woodland planting, linking any fragmented existing woodland	<ul style="list-style-type: none">Forestry practices should respect the character of the landscape, promote traditional management techniques and take particular care when assessing the visual impact of new planting and felling coupes



Analysis & Concept

Native semi-natural woodland

Analysis: A substantial 200ha of woodland exist that contain 80% of native species in support of the 1% of AW that is somewhat fragmented across the plan area. There are also thin fragile ribbons of Native Woodland, mainly old hedgerow boundaries.

Concept: Felling and coppice work will be undertaken to bolster and safe guard these features with some areas of stored coppice bought back into rotation.

Trees of Significant Interest

Analysis: Numerous TSI exist within the plan area, although only a small percentage have been recorded. These range from veteran Oaks to veteran Lime stools and Yew trees.

Concept: Ensure that through the operational site planning process TSI are safeguarded and recorded to improve the quality of data held.

Landscape: Highlighted areas show parts of the wooded landscape that have high visual value and recognition within the surrounding countryside. Work on these areas tends to be hampered by steep terrain, although much clearfelling and replanting has already helped in softening the visual impact of evergreen conifer within this context.

Concept: A combination of continuous cover management, felling, thinning, coppice and planting will continue to sympathetically minimise impact of forestry operations and safeguard the landscape value.

Site of Special Scientific Interest

Analysis: the River Lugg runs east to west through the plan area between Mere Hill and Sned Wood. Woodland either side are somewhat even aged, contain a mix of conifer and broadleaf occurring on steep slopes.

Concept: management will enhance and safeguard the River Lugg SSSI and its riparian corridor through sensitive management in agreement and in keeping with NE guidance.

Open Space

Analysis: The current structure of the woods provide transitory open habitat, with a rolling programme of swiping/flailing to manage ride sides. Currently 71Ha are open with 46% recorded as open habitat and 54% currently felled.

Concept: Build on the existing open space especially ride-sides through, clearfelling, thinning and coppicing to perpetuate and boost the provision of open habitat for Lepidopteran interest.

Ancient Semi-Natural Woodland

Analysis: A few fragmented areas of remnant AW survive scattered through the plan area amounting to around 1% or just over 7.5Ha containing a mix of Oak, Hazel, Ash of varying age with a small quantity of Elm planted in the 70's.

Concept: The plan will look to promote and safeguard these fragmented areas through thinning, felling and regeneration, planting and recruitment of existing native natural regen in order to create linkage to existing areas of native woodland.

Restoration of PAWS

Analysis: There are some 700Ha of PAWS within the plan area of which 27% has already been restored. The remaining 430Ha fall in naturalness class 2 to 4 and contain between 21% and 80% or more of conifer species.

Concept: Restoration will continue for the time being through use of clearfelling, thinning and coppicing that will also safeguard existing native and semi-natural areas whilst improving conditions for natural regeneration and recruitment of existing native natural regeneration into future crops.

PAWS

Invasive species - Western Hemlock

Analysis: The quantity of WH has halved since 2005 with there now being around 24Ha in total and the majority of that is in Shobdon.

Concept: The plan will continue to reduce invasive conifer elements. Removing pure areas through clearfell, & component areas through thinning. around a third should be removed by year 5.

Secondary Woodland

Analysis: these generally consist of Fir, Spruce and Larch species. Some secondary woodland areas adjoin native semi-natural woodland.

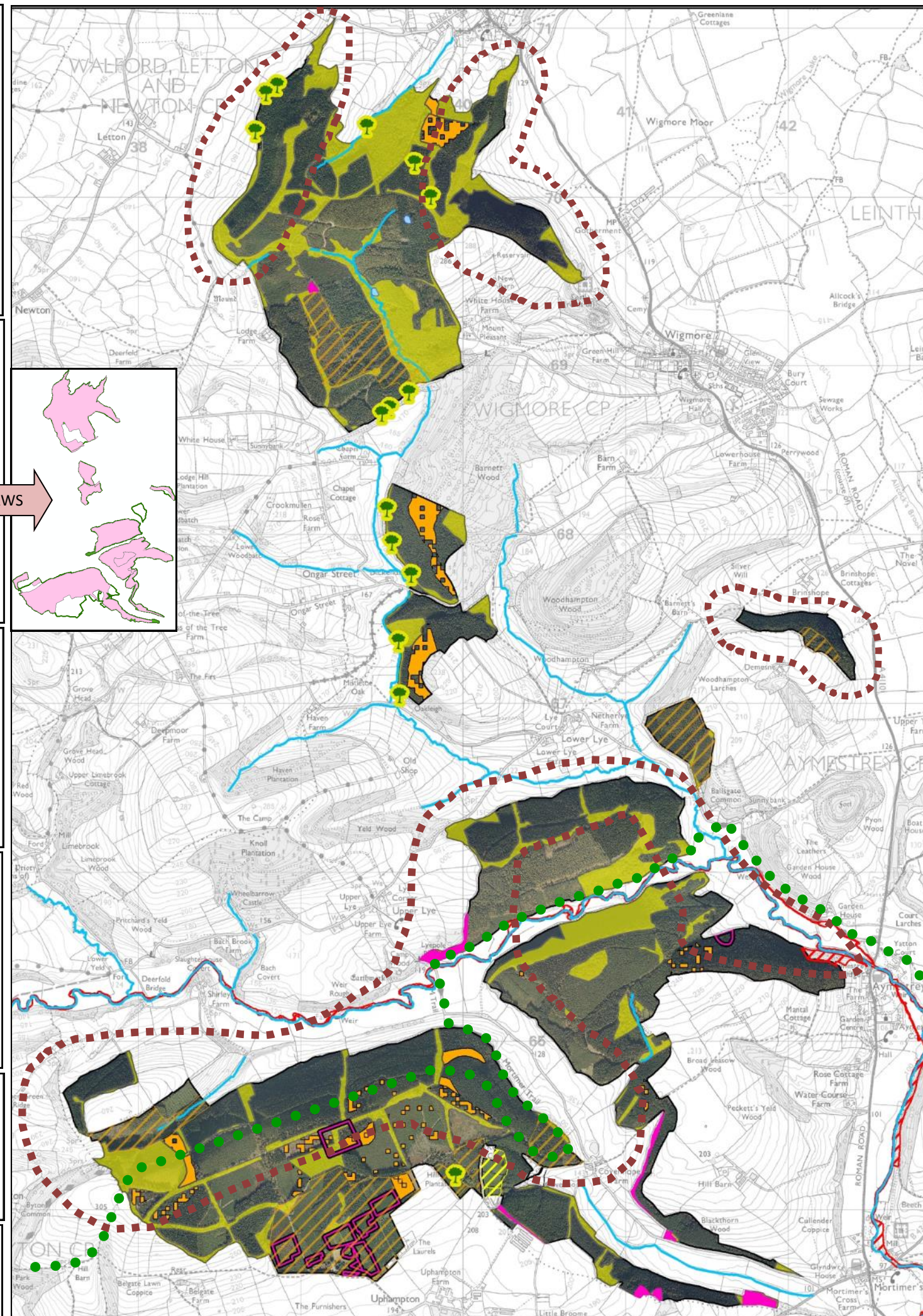
Concept: Some Secondary Woodland sites will continue to be managed as conifer. Whilst some e.g. Paysure, may best suit the landscape if they were returned to native species.

FC Research trial sites

Analysis: Research areas are currently managed by FC forest Research department.

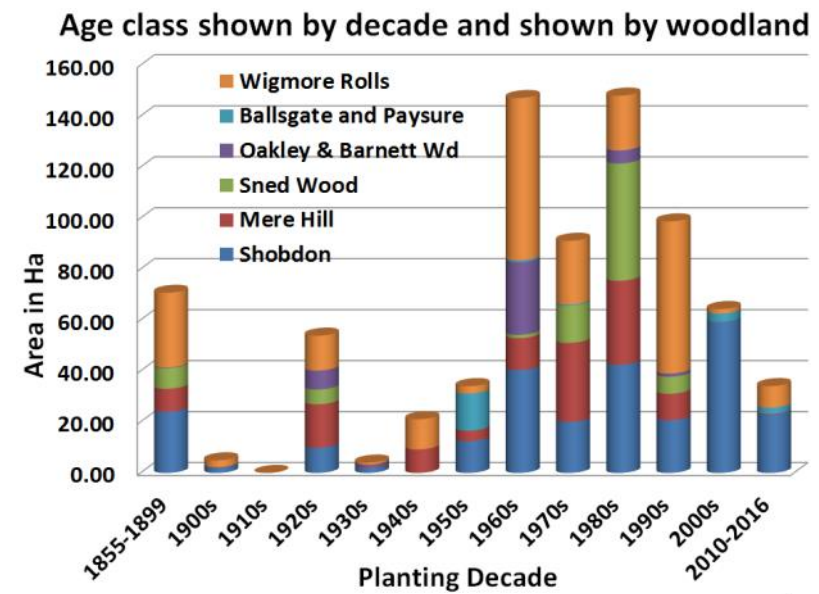
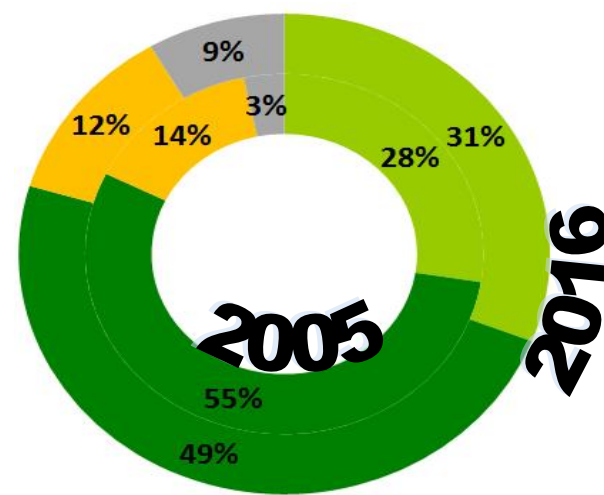
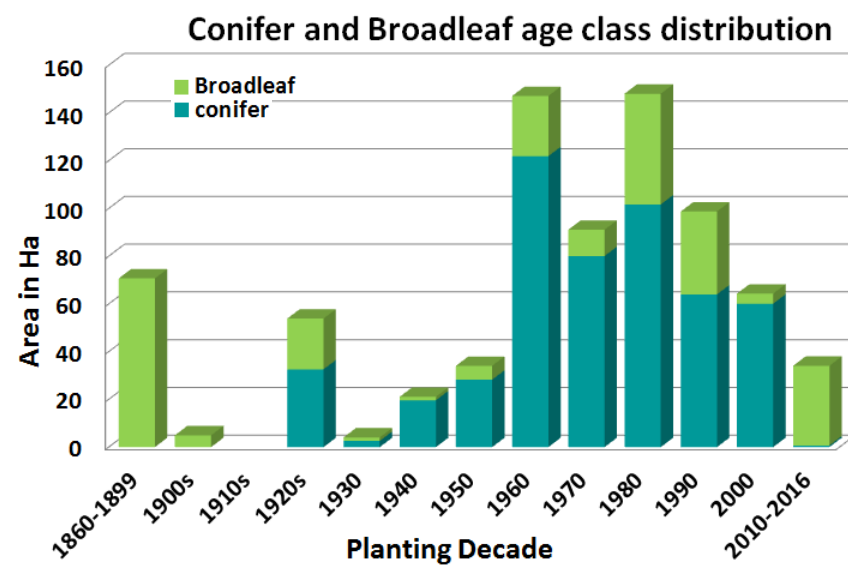
Concept: Forest Research will continue to manage these sites for a variety of purposes.

● ● ● The Mortimer Trail is a long distance path running between Ludlow Castle & Kington; passing through Shobdon Wood, the Lugg valley by Sned Wood and along the road to Amestrey that has views across the eastern slopes of Mere Hill wood.





Woodland Composition



Broadleaf cover already accounts for a third (31% or 260Ha) of the overall Forest Plan area with the majority residing in Wigmore where broadleaves account for 45% (113Ha) of tree cover. Minor broadleaf species include Hawthorn, Elm, Field Maple, Holly, Rowan and Small-leaved Lime.

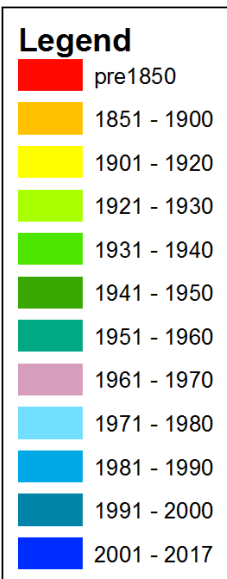
Planting of conifer began in the 1920's with 32.5Ha, 10Ha more than that of broadleaf. At the peak of the planting in the 1960's 147Ha was planted 17:83% in favour of conifer and again in the 1980's a similar peak where 148Ha was planted 31:69% in favour of conifer. Conifer dominated planting until the 1990's when the amount of conifer planted dropped by a third from 101Ha to 63Ha, but maintained dominance during the 2000's when conifer accounted for 93% of what was planted. However through the 80's and 90's 80Ha of broadleaves were planted and by 2010-2016 planting of broadleaf surpassed that of conifer for the first time in 90 years accounting for 98% (33.3Ha) of all planting with only 0.6Ha of conifer being planted.

In 2016, native broadleaf species account for 25% of the of the Forest Plan area and within areas of PAWs this figure is 26%. One of the objectives of the plan is to continue the restoration of the Forest Plan management area back to a native condition.

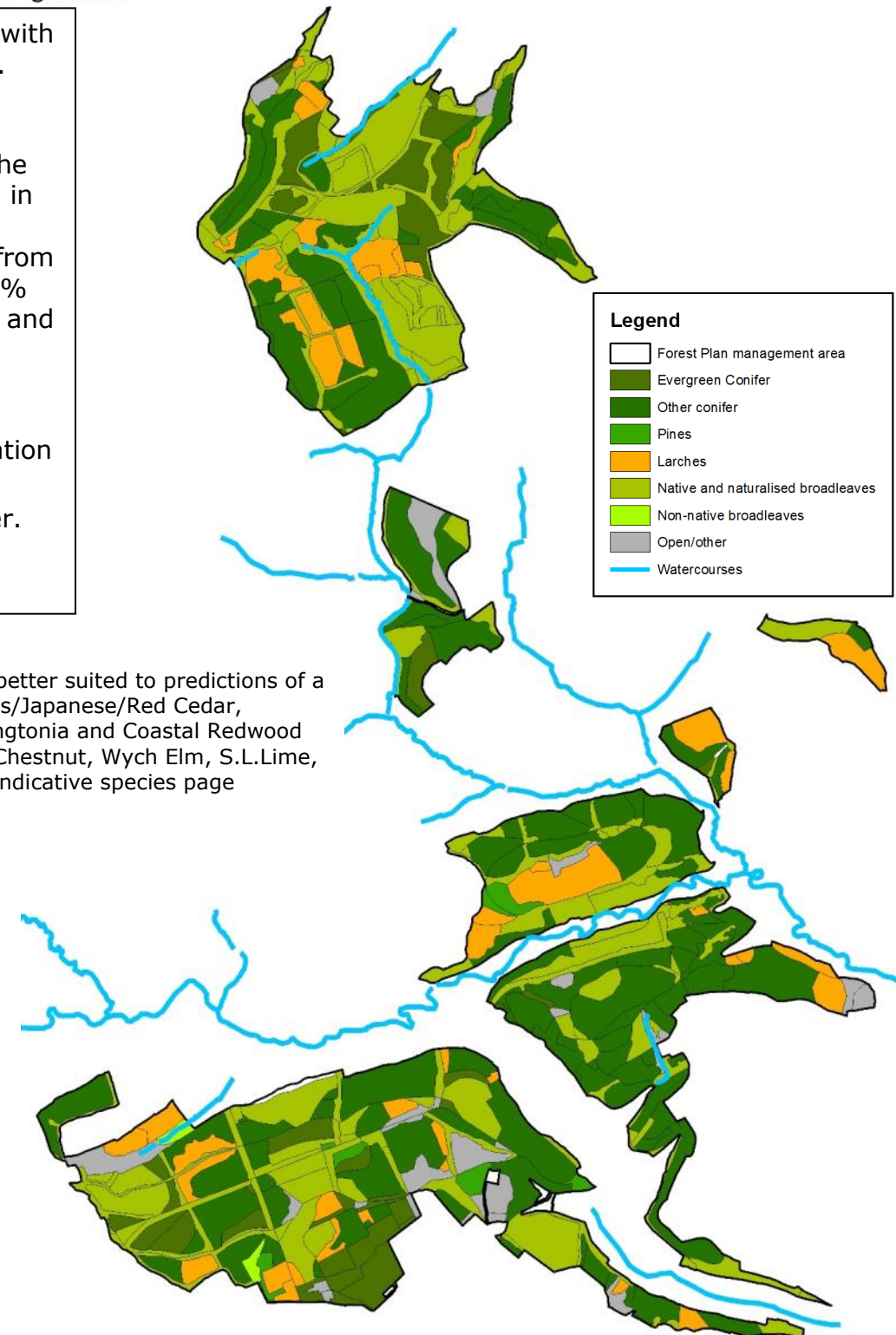
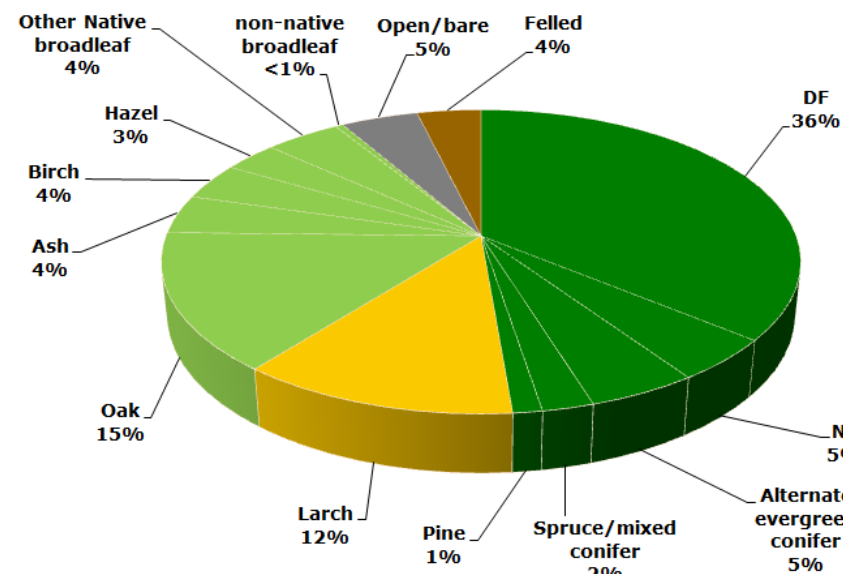
Native condition is considered to have been achieved once native content reaches 80% cover. It must be noted that this is a long term aspiration, so it is unlikely that all PAW sites will be restored within the time frame of this plan.

Note I: Beech, sycamore and sweet chestnut are considered 'naturalised'

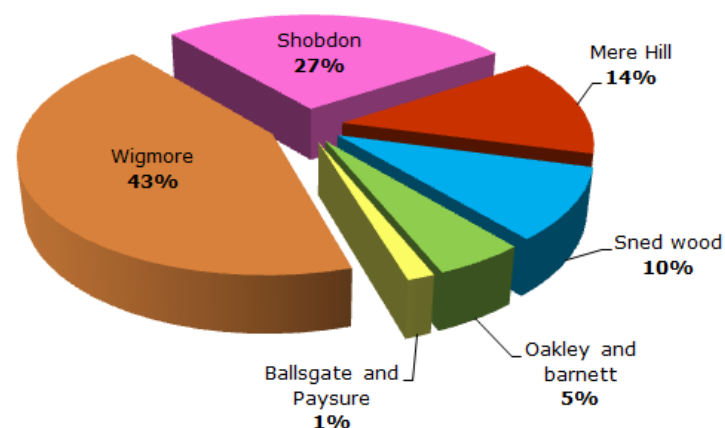
Note II: 'Alternate evergreen conifer' refers to predicted species that are likely to be better suited to predictions of a warming climate (2050/80 High) and future growing conditions, species include: Atlas/Japanese/Red Cedar, Douglas/European/Noble/Grand Fir, Lawson Cypress, Omorika/Oriental Spruce, Wellingtonia and Coastal Redwood For broadleaves this list would include: Hornbeam, Wild Service, Wild Cherry, Sweet Chestnut, Wych Elm, S.L.Lime, Rowan, Pedunculate Oak, Sessile Oak, Sycamore, Birch, Ash, Alder - Also see future indicative species page



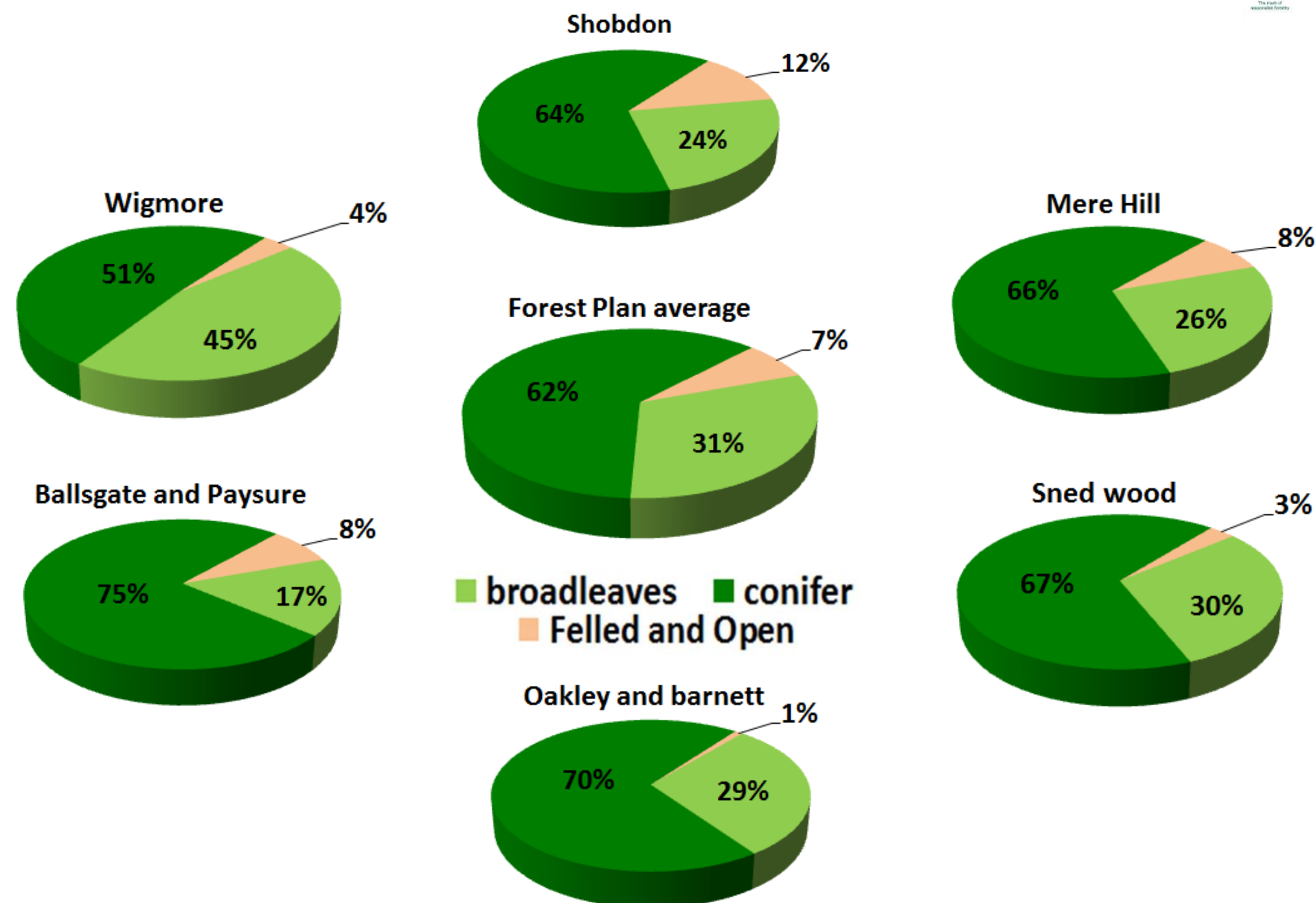
Species composition



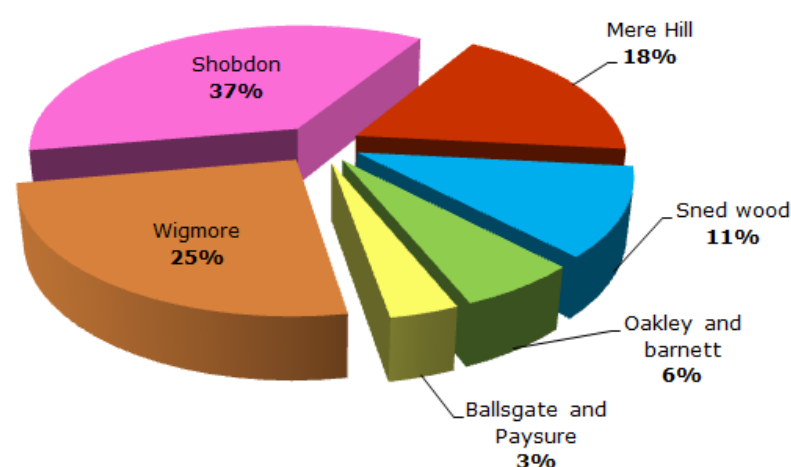
Overall Broadleaf cover within FP area split by woodland



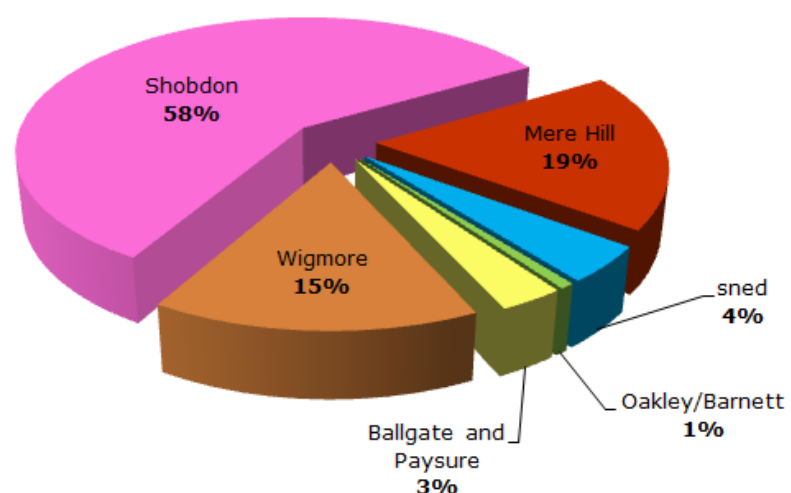
Individual Woodland composition within the Forest Plan



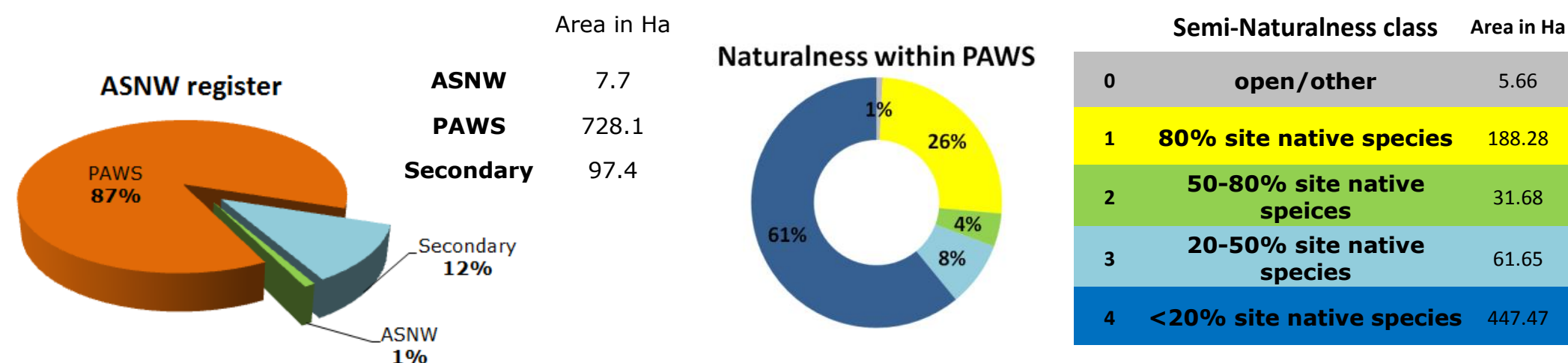
Overall Conifer cover within FP area split by woodland



Overall Open/felled ground within FP area split by woodland



Native Woodland composition within the Forest Plan



Class 1 – Semi-Natural Woodland
(> 80% site native species)



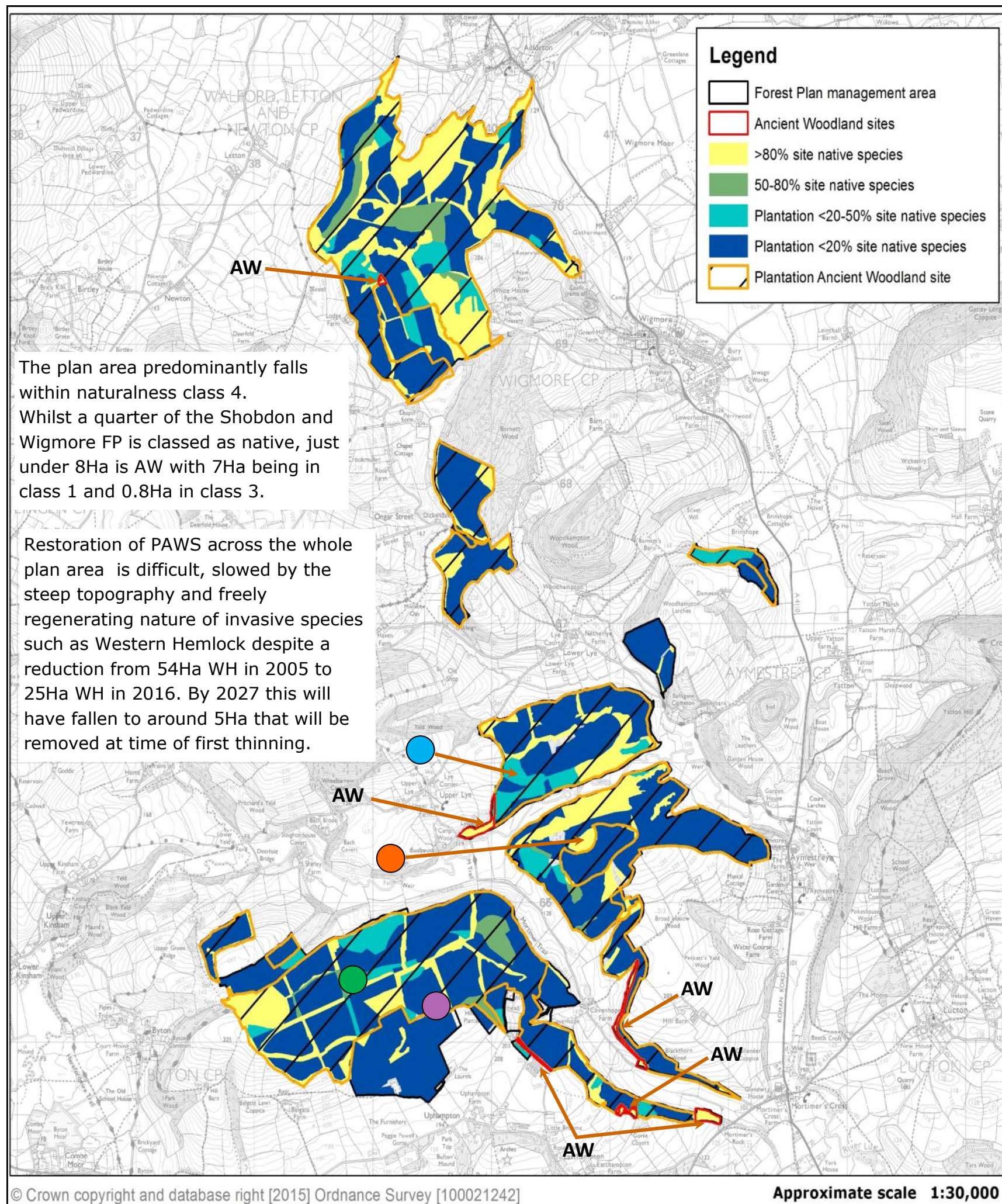
Class 2 – Plantation Woodland
(50 - 80% site native species)



Class 3 – Plantation Woodland
(20 - 50% site native species)



Class 4 – Plantation Woodland
(< 20% site native species)
Compartment 1837a



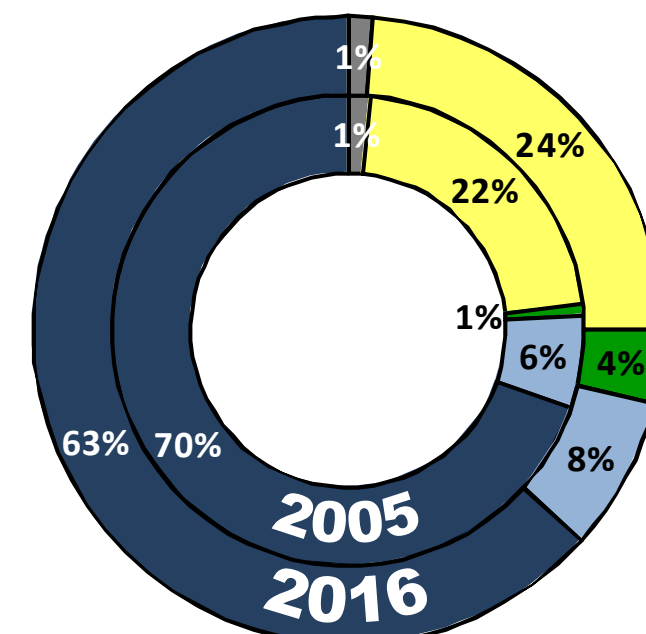
Woodland Naturalness

Naturalness measures the percentage of site native tree species in a given area. This naturalness score is used to record and monitor the condition and progress of restoration within Ancient Woodland Sites that have previously been planted with non-native species. These sites are referred to as Plantations on Ancient Woodland Sites or PAWS.

Any site having a native content of between 0-50% fall within class 3 or 4 and are classified as plantation PAWS. Class 2 will contain 50-80% native species and class 1 80% or over, with class 1 considered to be restored.

The FP will aim for a steady but gradual transition of PAWS towards Class 1 although class 4 sites may take longer. Areas of fragmented native woodland will be consolidated through a mixture of clearfelling, restocking, coppicing and natural regeneration. It is highly likely that there will remain a proportion of mature DF especially on some of the steeper more awkward terrain.

Transition of PAWS is a key objective of this Plan and is in line with the Forestry Commission England, *Keepers in Time* Policy (Forestry Commission, 2005).



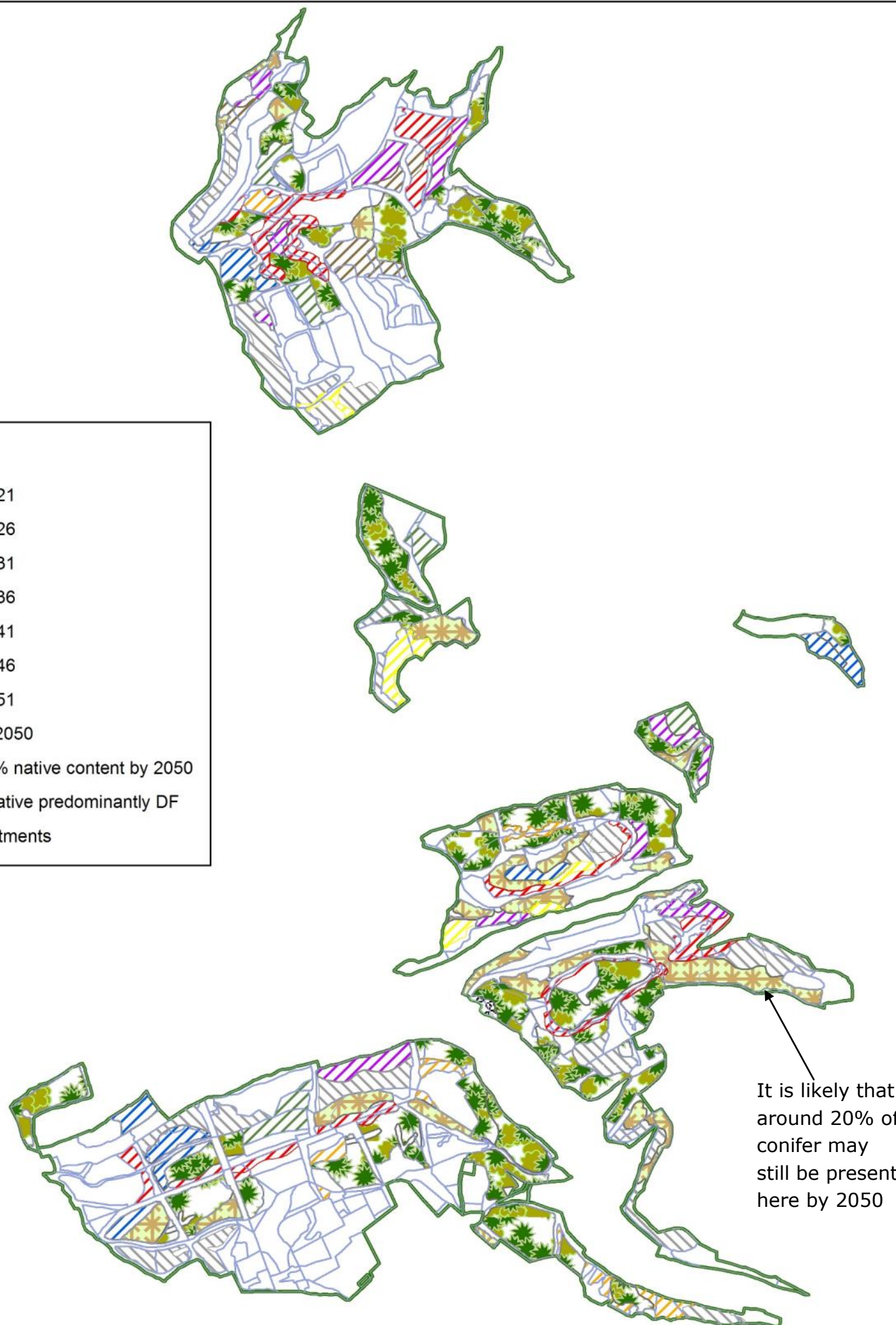
PAWS Management

Restoration of Plantations on Ancient Woodland Sites (PAWs) has already begun through thinning and felling during the previous plan period. Over time restoration of PAWs areas will continue towards a native condition through the use of thinning and targeted clearfelling. This will enable the development of the understory and may take a considerable amount of time/resource due to native remnants being fragmented and limited in places. But also in part to the terrain that in some places makes work extremely difficult and awkward, sometimes prohibitive. Therefore a proactive yet realistic approach will be used to transform these sites over a period of time with an eventual aim of PAWs transitioning to one that contains 80% or more of native species. This process will help achieve:

- a varied age structure with varying ratios of high canopy, secondary canopy and understory through out.
- transition that ensures a minimum future content of 3 native species, with 4 to 5 species being the preferable target.
- Minimal reliance on broadleaf monocultures should be encouraged especially of birch, ash, beech or oak. Within existing mid rotation broadleaf crops or in SN class 4 woodland where conditions are favourable, this objective may eventually mean considering either under-planting or group felling and planting.

Some areas may take longer to restore than others due to their composition and recent clearfelling activity but thinning practice will reflect the condition of the crops and how individual sites are responding to previous interventions. The key is flexibility as to the speed of restoration; with well established understories being recruited during thinning to form part of the future crop; giving opportunity for the development of an irregular structure that is both diverse in age class and species.

Areas containing western Hemlock have been prioritised for clearfelling and reversion to native woodland. By 2027 areas clearfelled and reverted back to a native condition will amount to around 55Ha. A further 5-10Ha will be managed through thinning aiming to achieve a native content of 80%+ by 2027. The remaining conifer PAW areas will take longer; containing predominantly Douglas Fir they too will be managed through thinning and are likely to sit within naturalness class 2 or 3 by 2050 with a longer term aim beyond 2050 of reducing the conifer content down to 20%; some of these sites may go on to be classed as long-term retention and in the mean time thinning will focus on areas of existing mature broadleaves as seed sources as well as opening up any natural regeneration for recruitment into the future crop.



Broadleaf Management

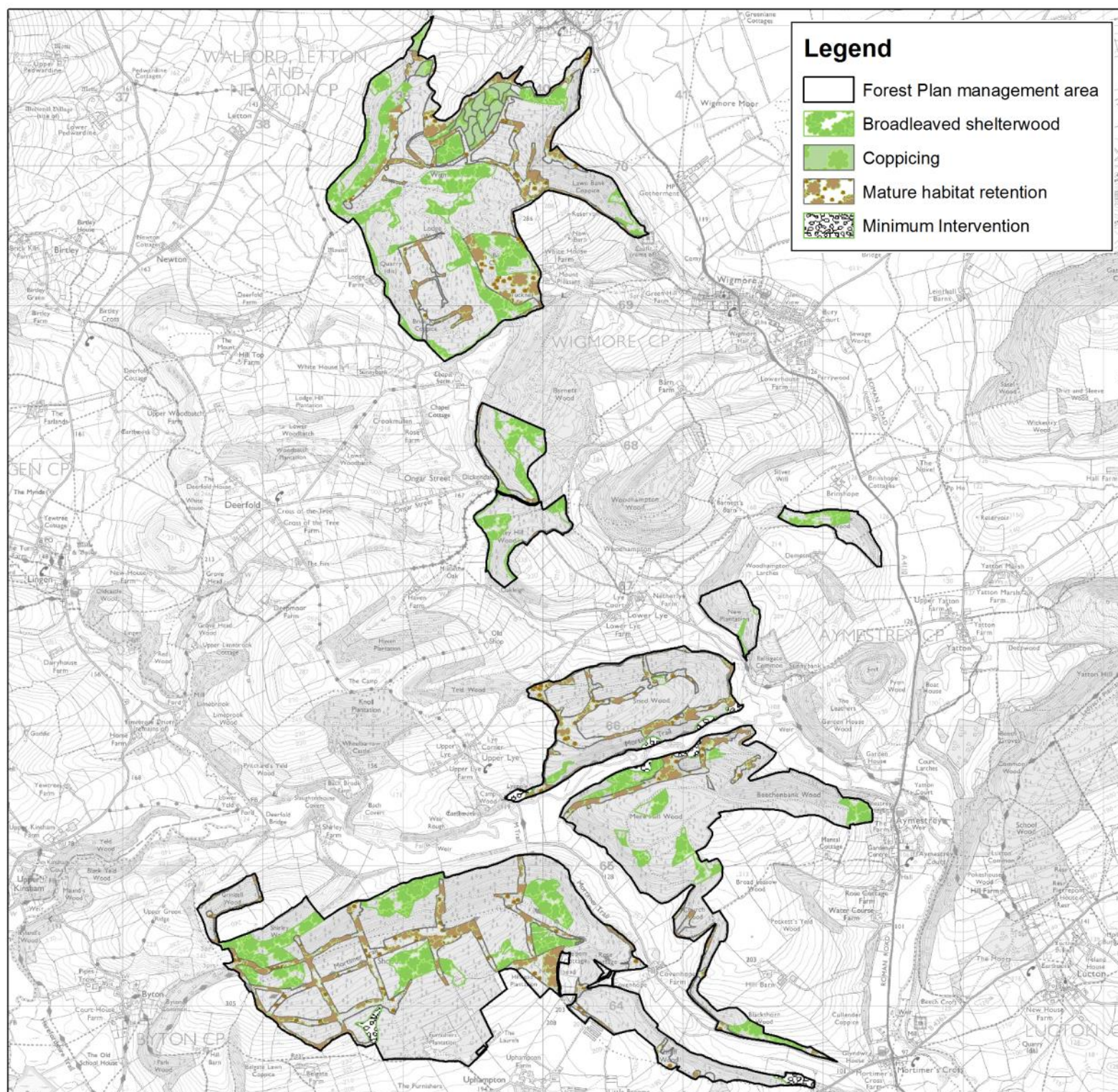
These sites will be managed using shelterwood/selection systems or coppice. The new crop will be instigated and recruited through thinning operations that will favour the best seed trees in order to promote natural regeneration. Or in the case of coppice using a mix of simple coppice and coppice with standards.

Thinning operations may also be used to provide opportunities for enrichment planting in order to diversify the species composition within or surrounding broadleaf areas. Light levels and grazing pressure from deer will be managed to minimise weed encroachment and regeneration predation following thinning operations. Under-planting and enrichment planting with species such as Lime and Hornbeam and Cherry may be considered to provide resilience to climate change and on Ash dominated sites to ensure greater resilience to *Chalara fraxinea*.

Where natural regeneration is struggling to become established, the site will be monitored and enrichment planting maybe considered. It maybe that further intervention is required through thinning to develop the broadleaf components before regeneration is successful or that there are limited seed sources available. Each site will be assessed on its own merits before deciding if under-planting, enrichment planting or further thinning and monitoring is appropriate.

Broadleaf areas will be thinned to develop their crowns and seeding potential in order to provide a more robust and viable seed source for surrounding conifer crops that are on PAWs. This will help encourage the spread of broadleaf regeneration into the surrounding conifer crops. This maybe a slow process and will be monitored. At some point in the future one may have to consider enrichment planting to ensure a diverse broadleaf composition is achieved.

Monitoring of these crops for regeneration will be an integral part of routine pre-thinning assessment and should inform how the crop is thinned; in combination with the Forest Plan review process.



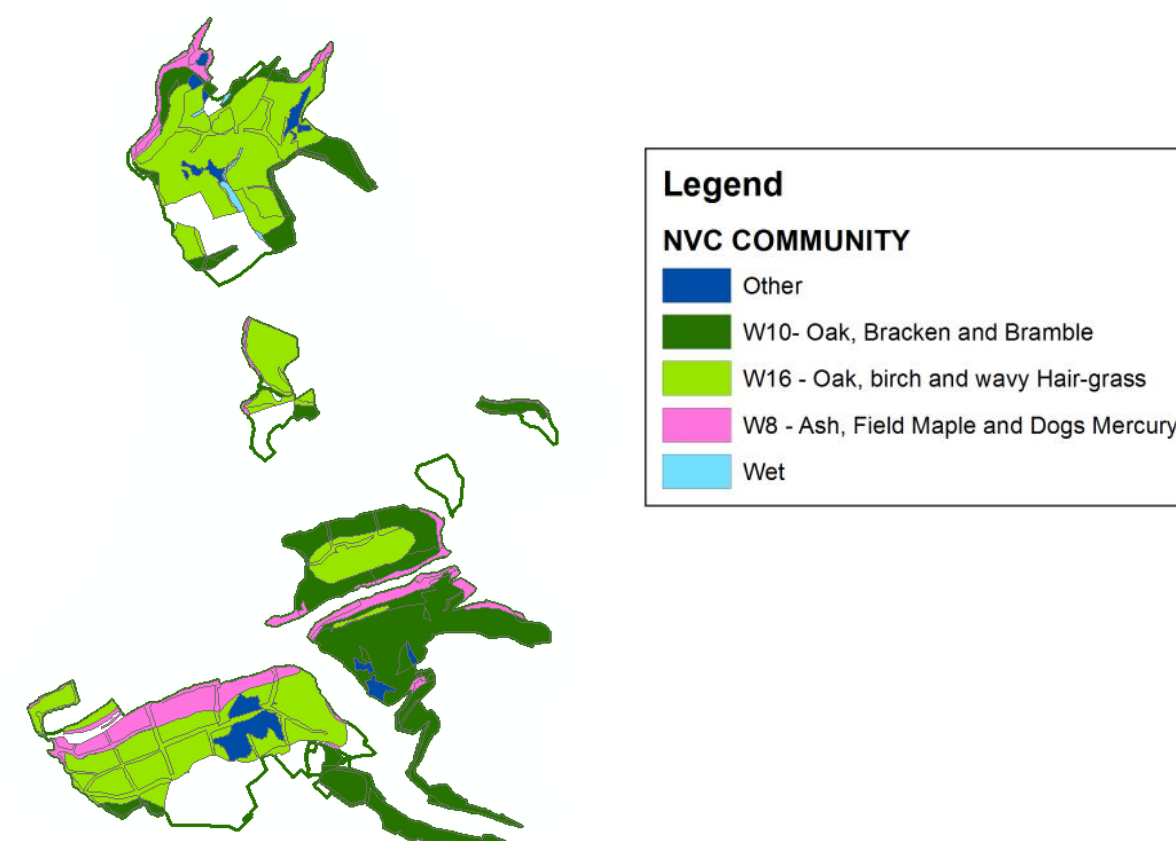
National Vegetation Classification (NVC)

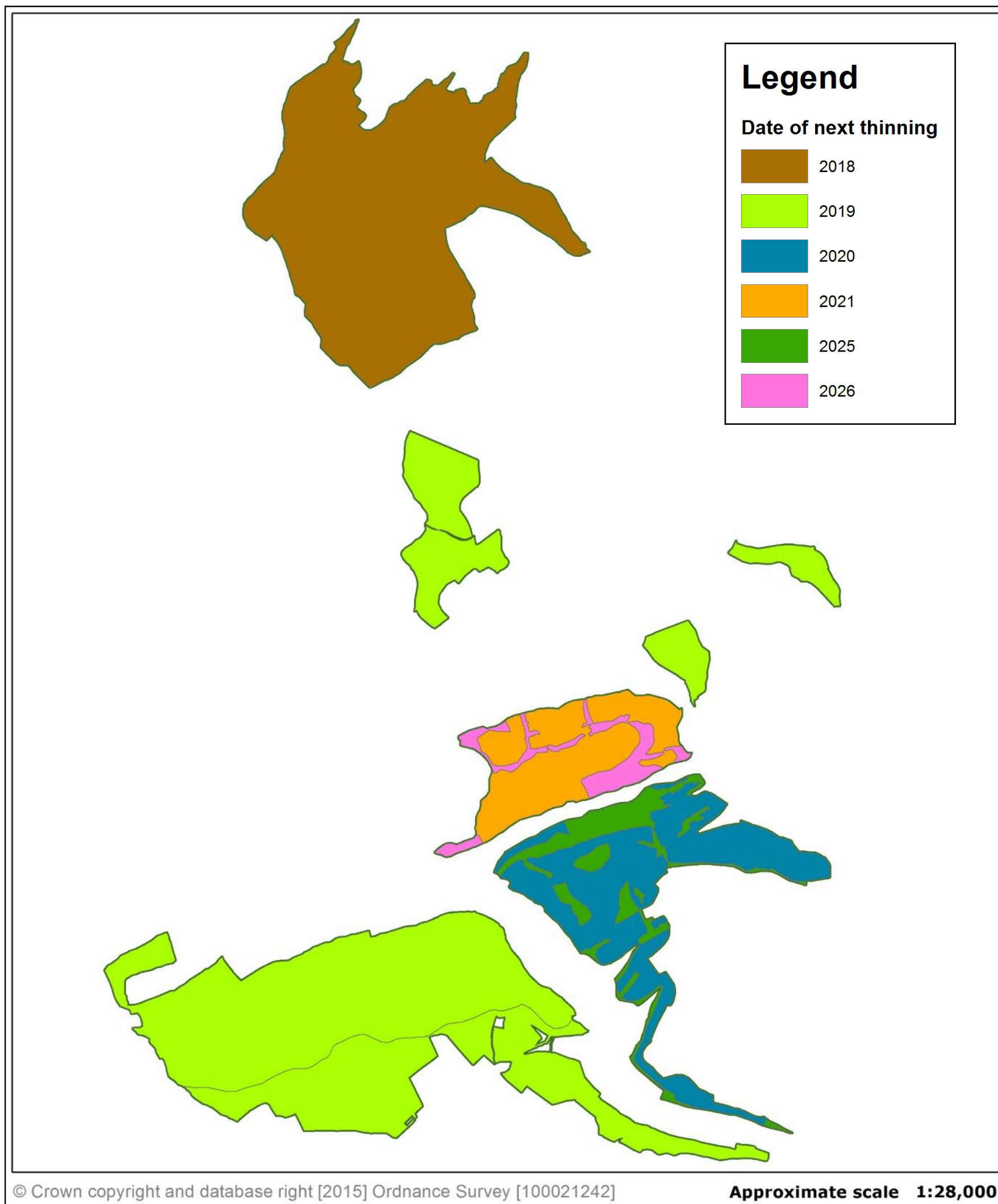
The woodland NVC describes and categorises the typical composition of semi-natural native woodlands including their associated flora and soil indicator species. These classifications give a good indication of the target future species for PAWs restoration if sites were left to natural succession.

The majority of the plan area consists of National Vegetation Classification (NVC) types W16 Oak, Birch and Wavy hair grass and W10 Oak Bracken and Bramble woodlands with some with W8 Ash/Dogs Mercury woodland too.

This information can be used to assist with managing woodlands towards greater naturalness through practices such as thinning and regeneration or choice of planting species.

However with the onset of diseases such as *Chalara fraxinea* that affects Ash, no Ash is currently being planted, although natural regeneration is being accepted and recruited into the future woodland cover.





Silviculture

Broadleaf Thinning

Broadleaf high forest will be assessed for thinning every 10 years with a visual inspection of the stand. Thinning will allow sub-dominant broadleaves sufficient light and space to mature or will release existing advanced regeneration. Younger patches of regeneration can be thinned to favour site native species with trees of good form and vigour being retained. Where broadleaves consist primarily of a single species, it may be possible to enlarge natural gaps through irregular thinning rather than create new gaps through group felling. However, in all cases the size of gap will be dependent on slope, aspect and site fertility and must not be detrimental to crop stability. Gaps will vary in size between 0.25-0.5Ha and offer opportunity for mix of natural regeneration/enrichment planting that will use a mix of native species other than those occurring in the overstorey to give both additional structure and diversity to the woodland.

Conifer Thinning

Areas of conifer will be assessed for thinning every 5 years or 10 years in the case of some CP sites. A targeted removal of larch species a key objective. Other factors such as the quantity, condition, age and distribution of any broadleaf content, will also help decide if an area of conifer is to be thinned or not, with light levels, existing ground vegetation and any evidence of natural regeneration also impacting on how many trees are marked for removal. Gaps can be created here too, following the guidance given above.

Clearfell

Coupes will simply be managed through clearcutting (of over 0.25ha) and restocked either through natural regeneration, replanting or a combination of the two. In some cases, clearcutting will remove the overstorey only once broadleaf content has developed through recruitment of natural regeneration that will minimise the visual impact of removing of the conifer overstorey from the coupe

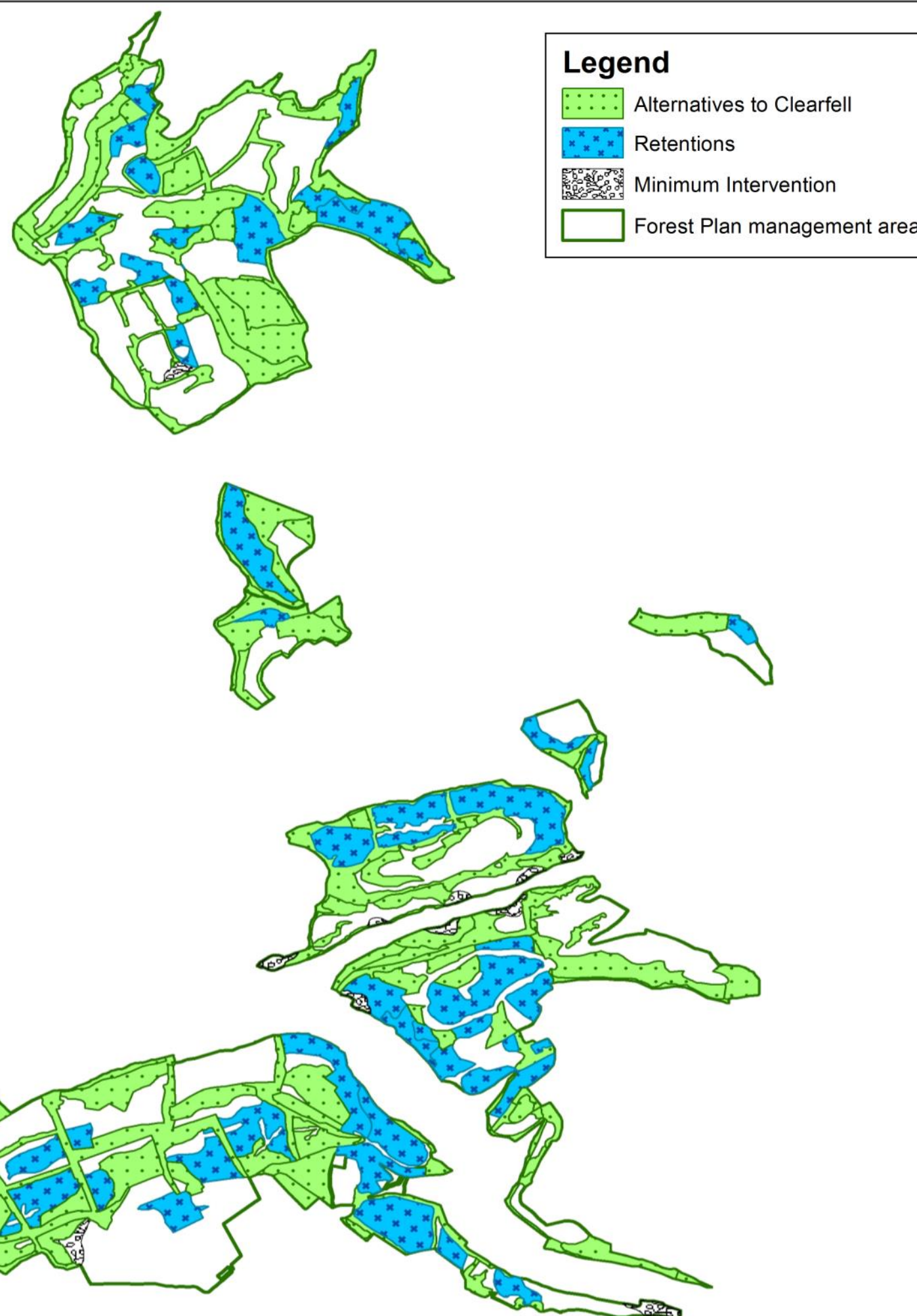
Minimum Interventions

These are generally ecologically valuable/sensitive or can be impracticable for harvesting due to terrain conditions. In the case of Sned Wood and Mere Hill these areas are adjacent to the River Lugg SSSI designated for its water quality that include priority species such as White Clawed Cray fish, Shad, Thwaite and Otter. Interventions only occur generally to protect and enhance, ensuring future succession of key habitats and species is successful.

Long term retentions (LTR)

LTR are in place where the landscape value of the woodland is of value and where it serves to develop the broadleaf content.

Open space is managed to ensure forest cover does not exceed 2m in height, with 20% tree cover being acceptable.



Alternatives to Clearfell (ATC)

PAWs managed under ATC systems will be thinned to favour broadleaf components. This, together with the targeted removal of larch and invasive species will increase the potential for employing natural regeneration or enrichment planting and will move sites towards having greater native broadleaf cover.

Broadleaf stands will generally be managed irregularly through thinning. Irregular shelterwoods on PAWs which will look to favour the development of native broadleaves and target the removal conifer components. Group selections will be used on windfirm, accessible crops on PAWs to proactively diversify the woodland structure and composition, possibly through the use of enrichment replanting with native broadleaves.

Areas of predominantly DF will be managed on long-term retention as irregular shelterwoods with the aim of producing complex CCF with a mixed woodland structure containing 80% native broadleaves and 20% DF and likely to be achieved beyond 2047, especially in DF crops not yet at the age of first thinning. With older complex structured stands or those managed for amenity purposes maintained through single-tree selections.

Single-tree selections are used on existing complex structured stands or sensitive sites often important for conservation or amenity value.

Group selections are used on windfirm, accessible crops and will proactively diversify the woodland structure and composition.

Uniform shelterwoods are predominately sites which will be managed using seeding fellings with possibilities for under planting of site suitable species to control light levels and develop good timber quality.

Irregular shelterwoods develop a complex CCF structure through the identification and to thinning quality trees for the future.

Strip shelterwoods It is most likely that uniform or irregular shelterwoods will be used but on wind vulnerable sites strip shelterwood may be used and are restocked through a combination of natural regeneration and planting.

All of the above methods of ATC can be employed in conifer or broadleaf and can utilise natural regeneration and or where required enrichment planting can be used ensuring a diverse species composition of desired nature is achieved for the following rotation.



Felling and Restocking 2017 - 2027

Thinning interventions may vary in their intensity which will further encourage a varied age structure and ensure compliance with FS regulation. Any opportunities for planting or natural regeneration created through thinning with the above in mind will be dependant on site conditions but typically would be in the range of 0.25-0.6Ha. Removal of any remaining overstory is solely dependant on successful establishment and growth rates of any natural regeneration and/or planted stock.

The same principals for establishment of the following rotation maybe applied where continuous cover is being used within PAW areas. This is especially the case where regeneration is restricted to one or two native species. This will ensure a robust and diverse mix of native species is achieved avoiding a future reliance on monocultures. (Birch, Ash, Hazel or Oak.)

Utilisation of clearfelling followed by planting and the use of natural regeneration/coppice with enrichment planting will hopefully achieve a future crop that is commercially viable and ecologically robust against future risks from climatic change and biotic sources.

Natural regeneration of Ash will be accepted and any Ash that is coppiced will be allowed to regenerate, although there will be no planting of Ash.

SHOBDON

Felling between 2017-2027 will concentrate on removal of invasive non-native conifers such as WH to secure successful establishment of native broadleaves on both existing and future restock sites. Felling also looks to provide additional open space habitat along tracks and rides complementing the existing open ride structure within Shobdon Wood and enhance Lepidopteran habitat.

Legend



Declaration by FC as an Operator.
All timber arising from the Forest Enterprise estate represents a negligible risk under EUTR (No 995/210).

Felling Coupe: 18354
Fell period: 2017-2021
Area: 2.5Ha
Restock Coupe: 18354a
Propagation: Nat-regen
Oak 50%
Ash 10%
Mixed Broadleaf 10%
OPEN 30%
Description:
Some group planting

Felling Coupe: 18144
Fell period: 2017-2021
Area: 2.5Ha
Restock Coupe: 18144a
Propagation: Null
OPEN 100%
Description:
Retain individual and small groups of shrubs to soften edges

Felling Coupe: 18745
Fell period: 2022-2026
Area: 4.2Ha
Restock Coupe: 18745a
Propagation: planted
Small leaved lime 40%
Oak 20%
Mixed Broadleaves 20%
Wild Service 10%
OPEN 10%

Felling Coupe: 18228
Fell period: 2022-2026
Area: 1.8Ha
Restock Coupe: 18228a
Propagation: planted
Douglas Fir 50%
Oak 20%
Scots Pine 10%
Mixed Broadleaves 10%
OPEN 10%

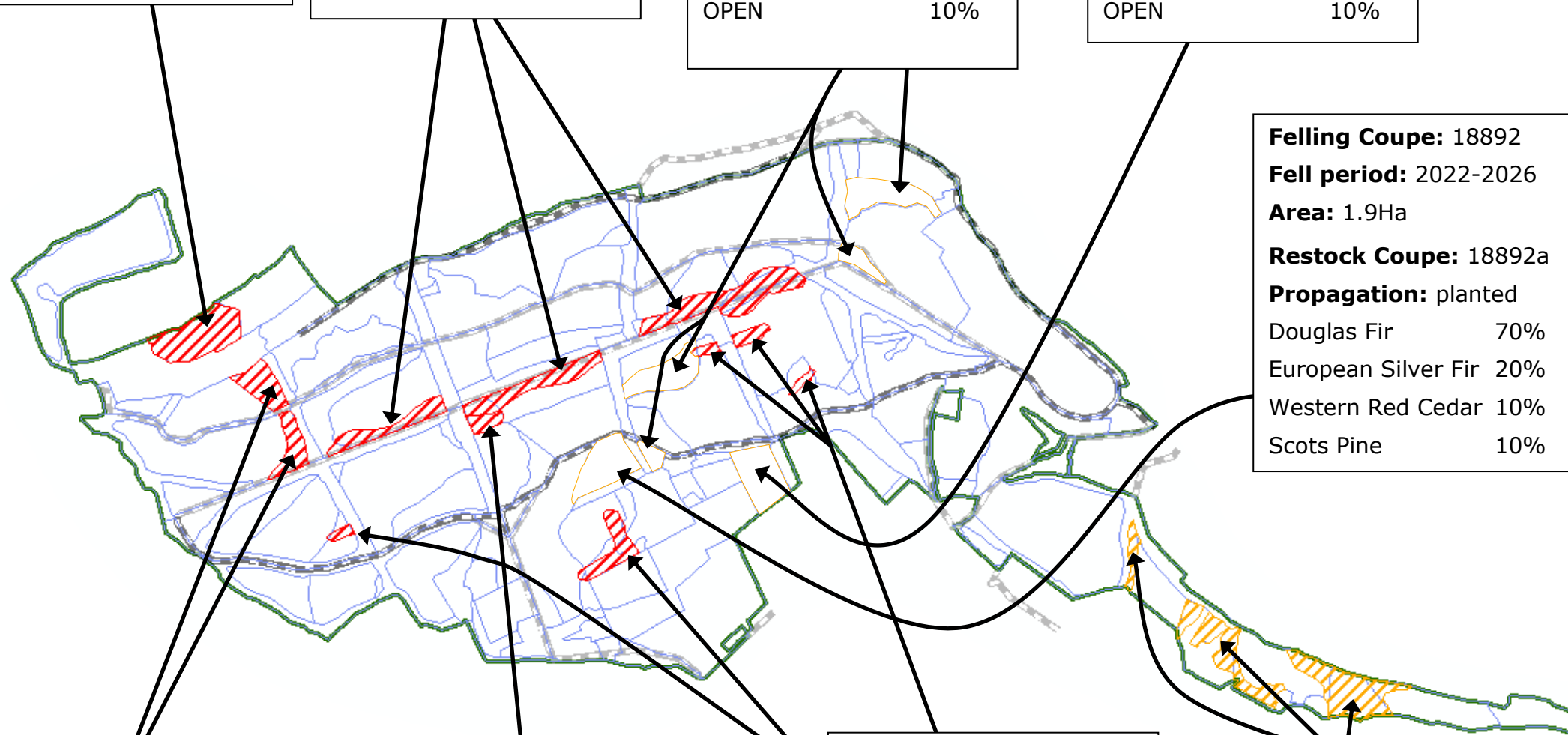
Felling Coupe: 18892
Fell period: 2022-2026
Area: 1.9Ha
Restock Coupe: 18892a
Propagation: planted
Douglas Fir 70%
European Silver Fir 20%
Western Red Cedar 10%
Scots Pine 10%

Felling Coupe: 18158
Fell period: 2017-2021
Area: 2.0Ha
Restock Coupe: 18158a
Propagation: Null
OPEN 100%
Description:
Deer lawn

Felling Coupe: 18628
Fell period: 2017-2021
Area: 5.1Ha
Restock Coupe: 18628a
Propagation: planted
Oak 40%
Hornbeam 20%
Mixed Broadleaves 20%
OPEN 20%
Description: Mixture of planting and nat-regen

Felling Coupe: 18807
Fell period: 2017-2021
Area: 0.4Ha
Restock Coupe: 18807a
Propagation: Nat-regen
Birch 20%
Oak 20%
Mixed Broadleaves 20%
Beech 10%
OPEN 30%

Felling Coupe: 18173
Fell period: 2017-2021
Area: 2.1Ha
Restock Coupe: 18173a
Propagation: Planted
Oak 60%
Hornbeam 20%
Mixed Broadleaf 20%

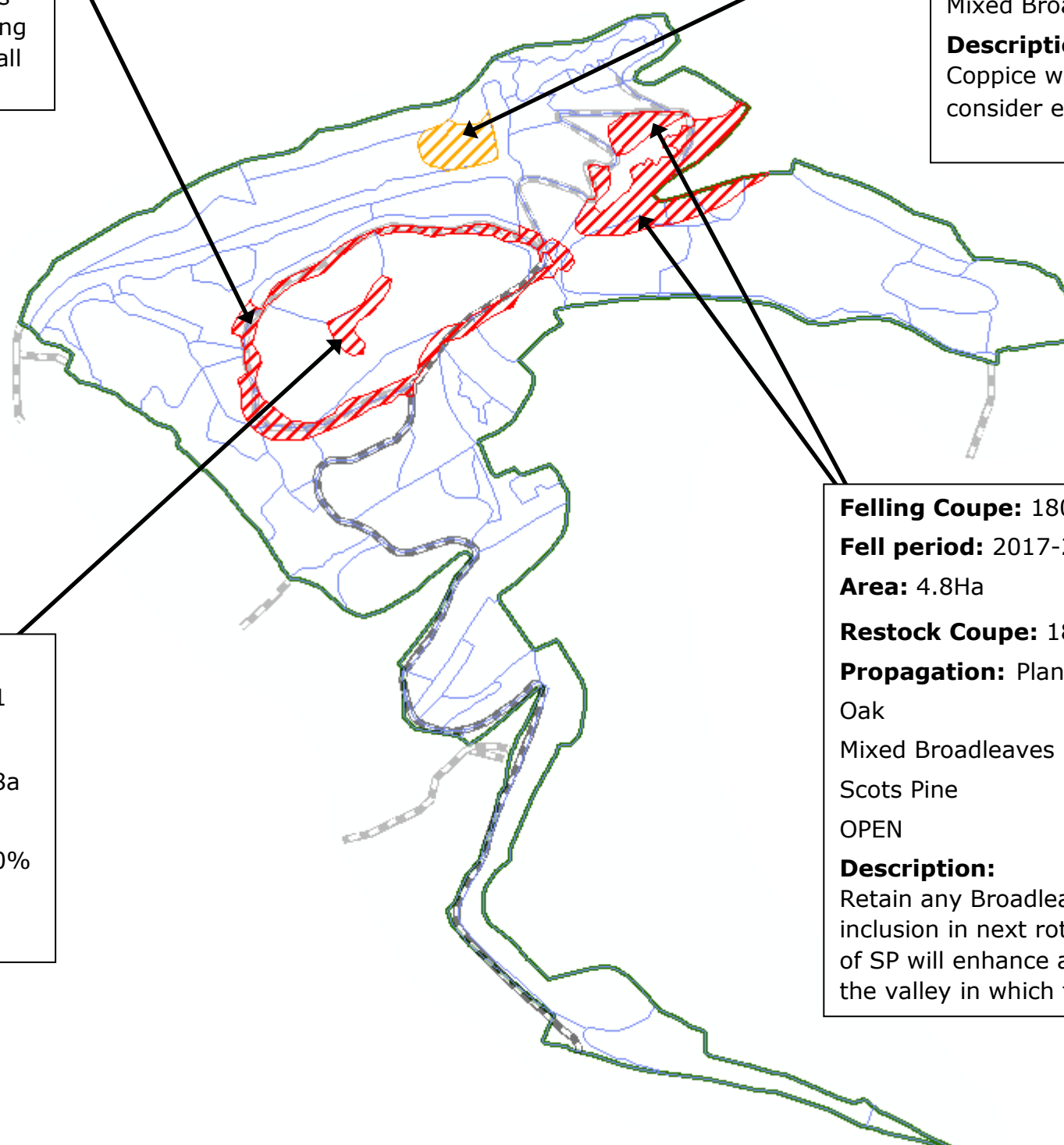


Felling Coupe: 18105
Fell period: 2017-2021
Area: 4.5Ha
Restock Coupe: 18105a
Propagation: Null
OPEN 100%
Description:
Enhancing open habitats along ride edges retaining individual trees and small groups of shrubs.

Felling Coupe: 18355
Fell period: 2022-2026
Area: 1.4Ha
Restock Coupe: 18355a
Propagation: Nat regen
Oak 70%
Ash 20%
Mixed Broadleaves 10%
Description:
Coppice with standards - consider enrichment with Hazel

Felling Coupe: 18108
Fell period: 2017-2021
Area: 0.8Ha
Restock Coupe: 18108a
Propagation: Null
OPEN 100%
Description:
Deer lawn

Felling Coupe: 18091
Fell period: 2017-2021
Area: 4.8Ha
Restock Coupe: 18091a
Propagation: Planted
Oak 50%
Mixed Broadleaves 20%
Scots Pine 20%
OPEN 10%
Description:
Retain any Broadleaf content for inclusion in next rotation. Inclusion of SP will enhance and complement the valley in which this coupe sits.



Felling and Restocking (cont) 2017 - 2027

MERE HILL

Work will continue through clearfelling to develop much needed open habitat along ride edges.

Felling coupe 18355 will begin the process of managing woodland along the River Lugg valley to complement the River Lugg SSSI. As this coupe is North facing, coppicing will retain standards that will help faster establishment through provision of shelter and a warmer microclimate.

Natural regeneration of Ash will be accepted and any Ash that is coppiced will be allowed to regenerate, although there will be no planting of Ash.

Legend

- Fell 2017-2021
- Fell 2022-2026
- Fell 2027-2031

Declaration by FC as an Operator.
All timber arising from the Forest Enterprise estate represents a negligible risk under EUTR (No 995/210).



Felling and Restocking (cont) 2017 - 2027

SNED WOOD

Sned Wood lacks open space. Work will continue through clearfelling to develop much needed open habitat along ride edges, providing habitat for Lepidoptera. The additional light and space gives opportunity for a diverse floral community to develop.

Felling coupe 18507 will begin the process of managing woodland along the northern side of the Lugg valley to complement the River Lugg SSSI. Being South facing this coupe will be warmer and simple coppicing will be used, coupe 18690 is south facing too and will use simple coppice along the woodland edge and blend back into the woodland using coppice with standards. This approach will soften the current corridor like aesthetics, imparting a softer more natural feel to the Lugg Valley.

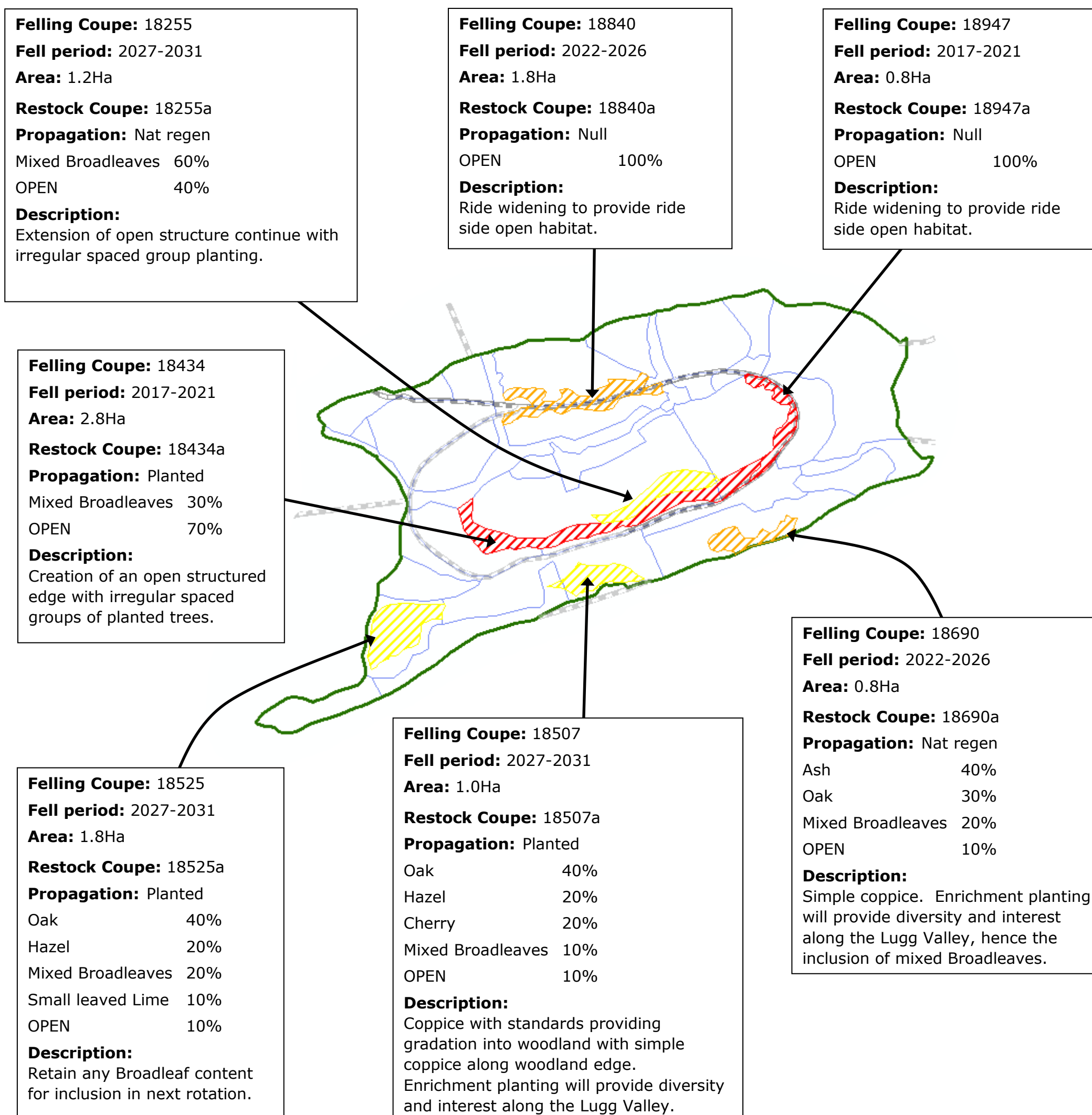
Enrichment planting using a variety of native broadleaves will enhance, soften and enrich the visual interest along the Lugg Valley.

Along the Lugg Valley, natural regeneration of Ash will be accepted and any Ash that is coppiced will be allowed to regenerate, although there will be no planting of Ash.

Legend



Declaration by FC as an Operator.
All timber arising from the Forest Enterprise estate represents a negligible risk under EUTR (No 995/210).



Felling and Restocking (cont) 2017 - 2027

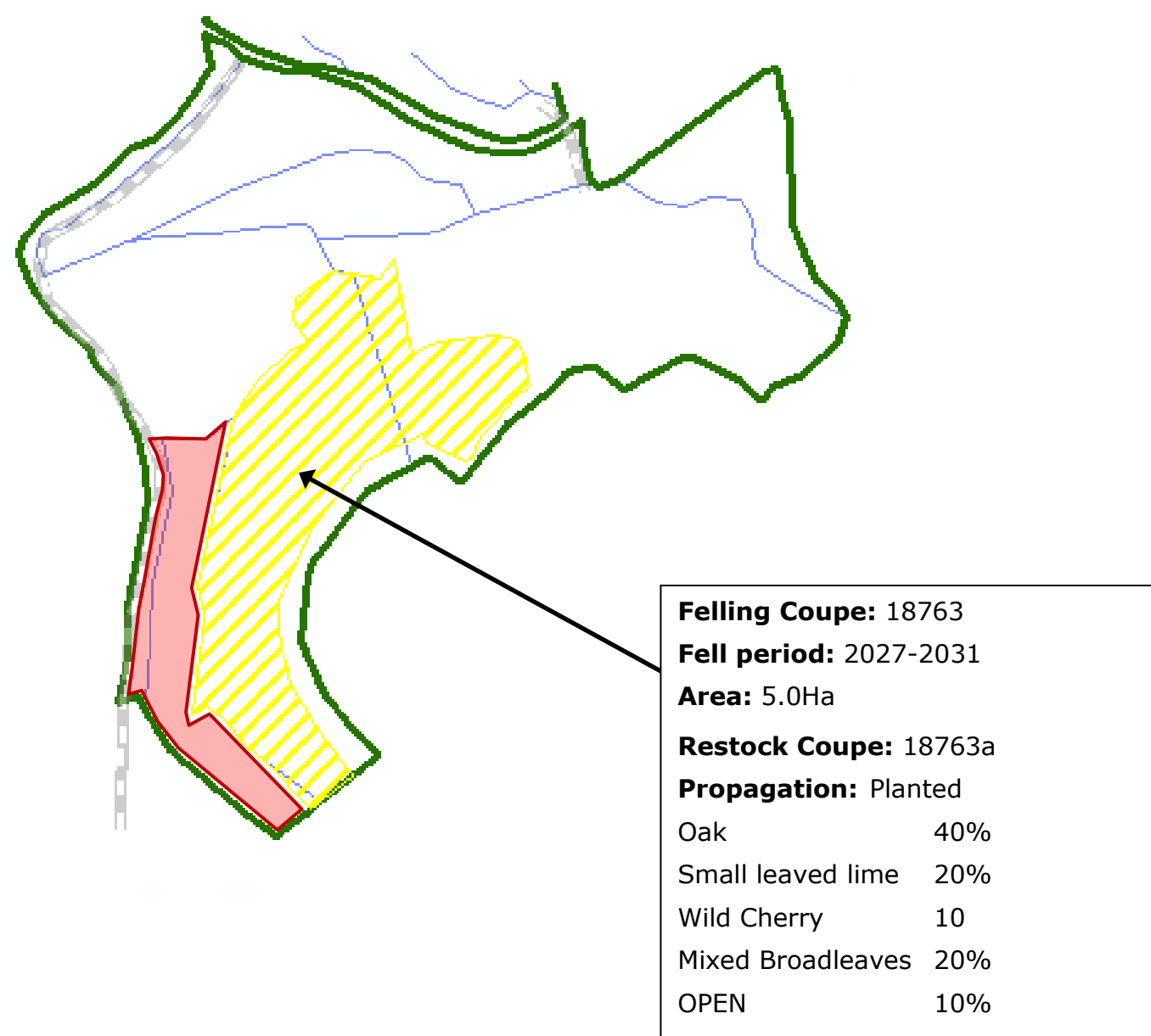
OAKLEY WOOD

This coupe in Oakley wood was meant to be felled under the last Forest Plan. However due to concerns over slope and stability the coupe was not felled. The coupe extended as far as the Western boundary to include the area highlighted in red. This red area contains Douglas Fir.

The yellow phase 2027-2031 coupe contains Western Hemlock and there is still an aspiration to remove the crop to ensure successful restoration back to native woodland.

Retaining tree cover highlighted in red will help overcome stability issues, providing a buffer between the clearfell and the adjacent land. The retained strip would only then be considered for felling once the broadleaves had successfully established into woodland cover in around 50 years time.

Natural regeneration of Ash will be accepted and any Ash that is coppiced will be allowed to regenerate, although there will be no planting of Ash.



Legend

-  Fell 2017-2021
-  Fell 2022-2026
-  Fell 2027-2031

Declaration by FC as an Operator.
All timber arising from the
Forest Enterprise estate
represents a negligible risk
under EUTR (No 995/210).




Felling and Restocking (cont) 2017 - 2027

WIGMORE ROLLS

Felling between 2017-2027 will concentrate on removal of invasive conifers such as WH to secure successful establishment of native broadleaves. Felling will also provide additional open space habitat along tracks and rides complementing any existing open ride structures within Wigmore Rolls.

Whilst there are large areas of broadleaves within Wigmore, existing thin ribbons of broadleaves need to be strengthened and consolidated and habitats need linking together. Through clearfelling/planting and coppicing the plan aspires to achieve this, and at the same time this work will begin the provision of a greater diversity within the age class and species structure of broadleaf elements within Wigmore.

Coppicing within existing younger stands of broadleaves will also begin to create a mosaic of transient open habitat enhancing suitable habitat for Dormice and Lepidoptera.

 In the area shaded in blue, 0.25-0.5Ha pockets will be felled; incorporated into thinning operations creating an irregular mosaic of wet woodland habitat along the riparian zone.

Felling Coupe: 18210
Fell period: 2027-2031
Area: 2.4Ha
Restock Coupe: 18210a
Propagation: Null

Oak	40%
Hazel	20%
Mixed Broadleaves	20%
Ash	10%
OPEN	10%

Description:
Coppice

Felling Coupe: 18937
Fell period: 2027-2031
Area: 1.0Ha
Restock Coupe: 18937a
Propagation: Null

Oak	40%
Hazel	20%
Mixed Broadleaves	20%
Ash	10%
OPEN	10%

Description:
Coppice

Felling Coupe: 18986
Fell period: 2027-2031
Area: 0.9Ha
Restock Coupe: 18986a
Propagation: Null

Oak	40%
Hazel	20%
Mixed Broadleaves	20%
Ash	10%
OPEN	10%

Description:
Coppice

Felling Coupe: 18796
Fell period: 2022-2026
Area: 2.0Ha
Restock Coupe: 18796a
Propagation: Planted

Oak	40%
Hazel	20%
Mixed Broadleaves	20%
Ash	10%
OPEN	10%

Description:
Future Coppice area to create habitat linkage.

Felling Coupe: 18327
Fell period: 2017-2021
Area: 8.1Ha
Restock Coupe: 18327a
Propagation: planted

Oak	40%
Hazel	20%
Mixed Broadleaves	20%
Ash	10%
OPEN	10%

Description:
Mixture of open space and planting. Open space should be placed where appropriate in a defined discrete block - possibly along eastern edges.

Felling Coupe: 18025
Fell period: 2017-2021
Area: 11.0Ha
Restock Coupe: 187025a
Propagation: Nat regen

Mixed Broadleaves	10%
OPEN	90%

Description:
Creation and enhancement of existing open habitat.

Felling Coupe: 18319
Fell period: 2027-2031
Area: 1.5Ha
Restock Coupe: 18319a
Propagation: Null

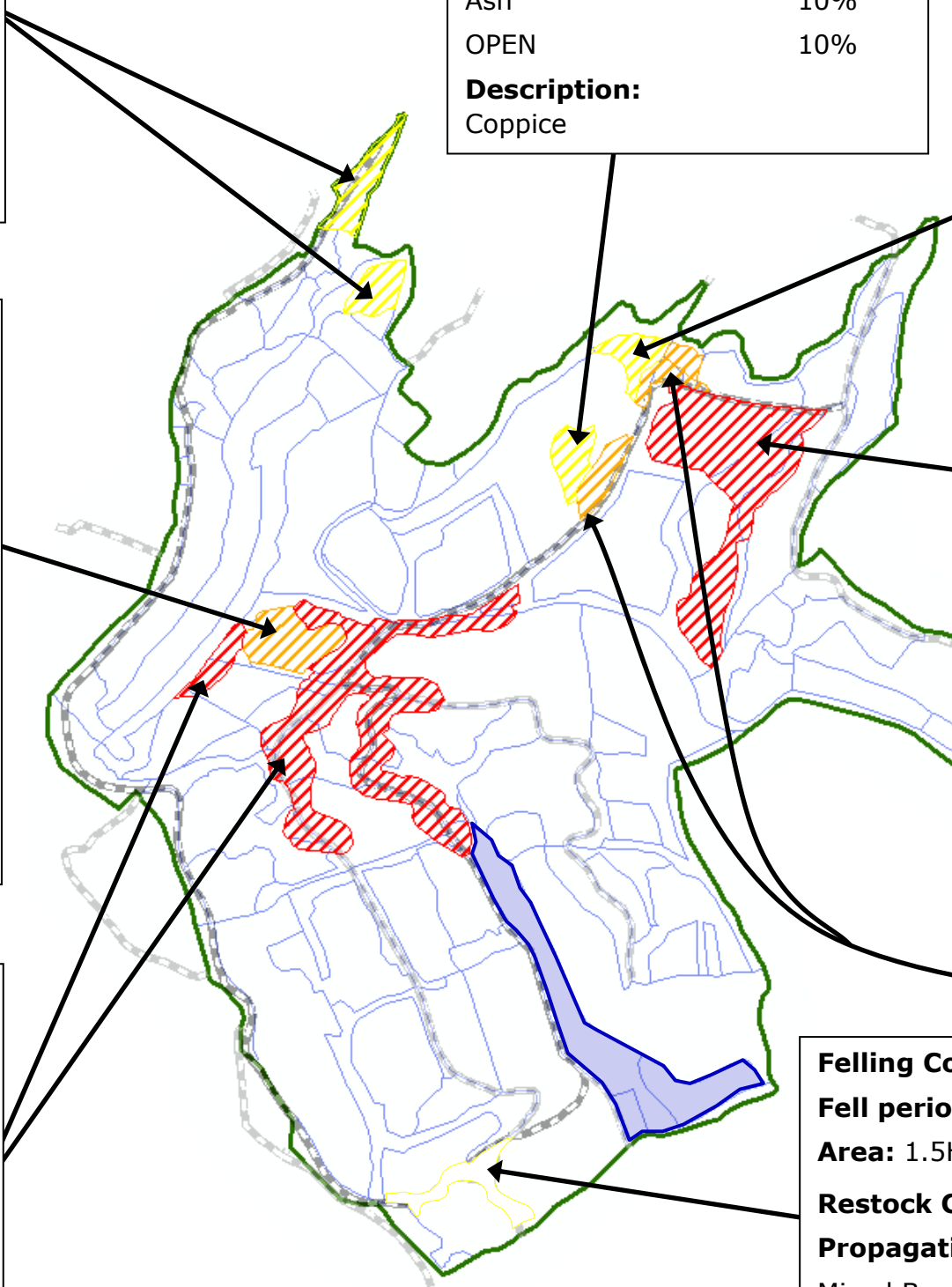
Mixed Broadleaves	10%
OPEN	90%

Description:
Ride widening to create irregularly shaped open woodland habitat.

Felling Coupe: 18009
Fell period: 2022-2026
Area: 1.5Ha
Restock Coupe: 18009a
Propagation: Null

Oak	40%
Hazel	20%
Mixed Broadleaves	20%
Ash	10%
OPEN	10%

Description:
Coppice



Declaration by FC as an Operator.
All timber arising from the Forest Enterprise estate represents a negligible risk under EUTR (No 995/210).

Legend

-  Fell 2017-2021
-  Fell 2022-2026
-  Fell 2027-2031

Emergency felling of diseased areas

Some tree diseases require statutory felling to take place under Statutory Plant Health Notice (SPHN). Issued from DEFRA it tells the owner they must fell the infected stand of trees within a given period to help containment and prevent further spreading of the disease.

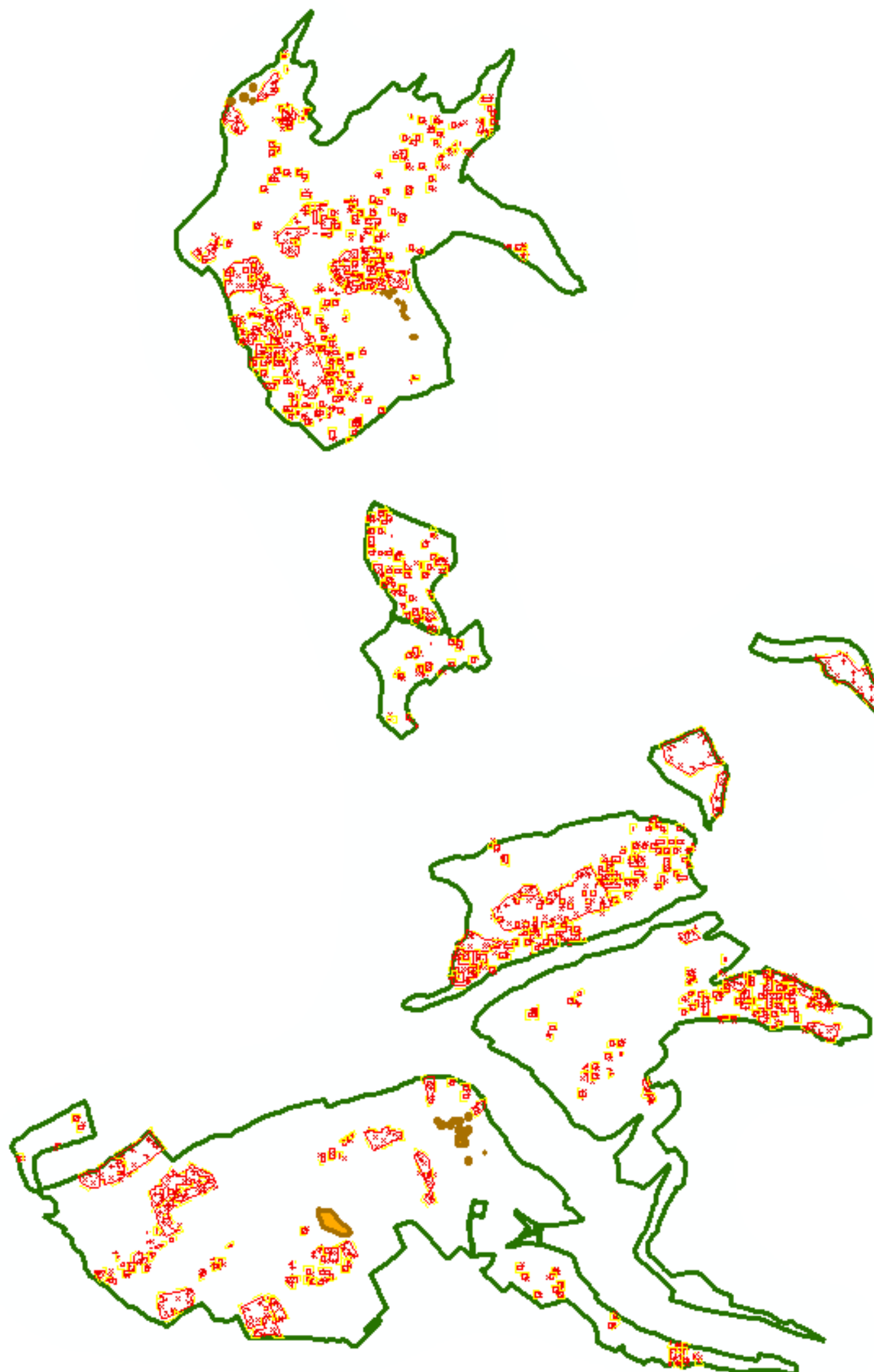
Currently SPHN are issued for Larch or Sweet Chestnut that are infected with ***Phytophthora ramorum***.

This map identifies areas that could be affected by such an outbreak that would result in an SPHN being issued. They consist of areas identified for clearfelling and some that are managed under continuous cover.



If any of these areas have to be felled under an SPHN then restocking would be carried out as per the Forest Plan.

Some areas of woodland may contain only a component that needs removal under SPHN and in this instance removal would be carried out through thinning.

Areas over 0.5Ha would need clear felling and where appropriate, will be managed either through allowing coppice regeneration and or natural regeneration to take place and in the case of larch areas, these will be planted and established using native broadleaves. Some areas may also need to be enriched in order to achieve a satisfactory native tree species composition.



Legend

-  Areas of Larch
-  Areas of Sweet Chestnut

Management Prescriptions 2017- 2047

SHOBDON

- Where Western Hemlock constitutes a component of the crop rather than a primary constituent it will be removed through thinning, this maybe achievable in one operation but could take 2 or 3 thinnings to complete this goal.
- In areas where Hemlock is the primary component removal will be by clearfelling and then restocking.



Legend

- Fell 2017-2021
- Fell 2022-2026
- Fell 2027-2031
- Fell 2032-2036
- Fell 2037-2041
- Fell 2042-2046
- Fell 2047-2051
- Fell beyond 2050
- Removal of conifers by thinning
- Conifer crop on extended rotation
- Broadleaved shelterwood
- Mature habitat retention
- Minimum Intervention
- Open land

Management Prescriptions 2017- 2047

SHOBDON and MERE HILL

For coupes adjacent to the River Lugg SSSI please see the next page

Where Western Hemlock constitutes a component of the crop rather than a primary constituent it will be prioritised for removal through thinning, this should be achievable in one or two operations.

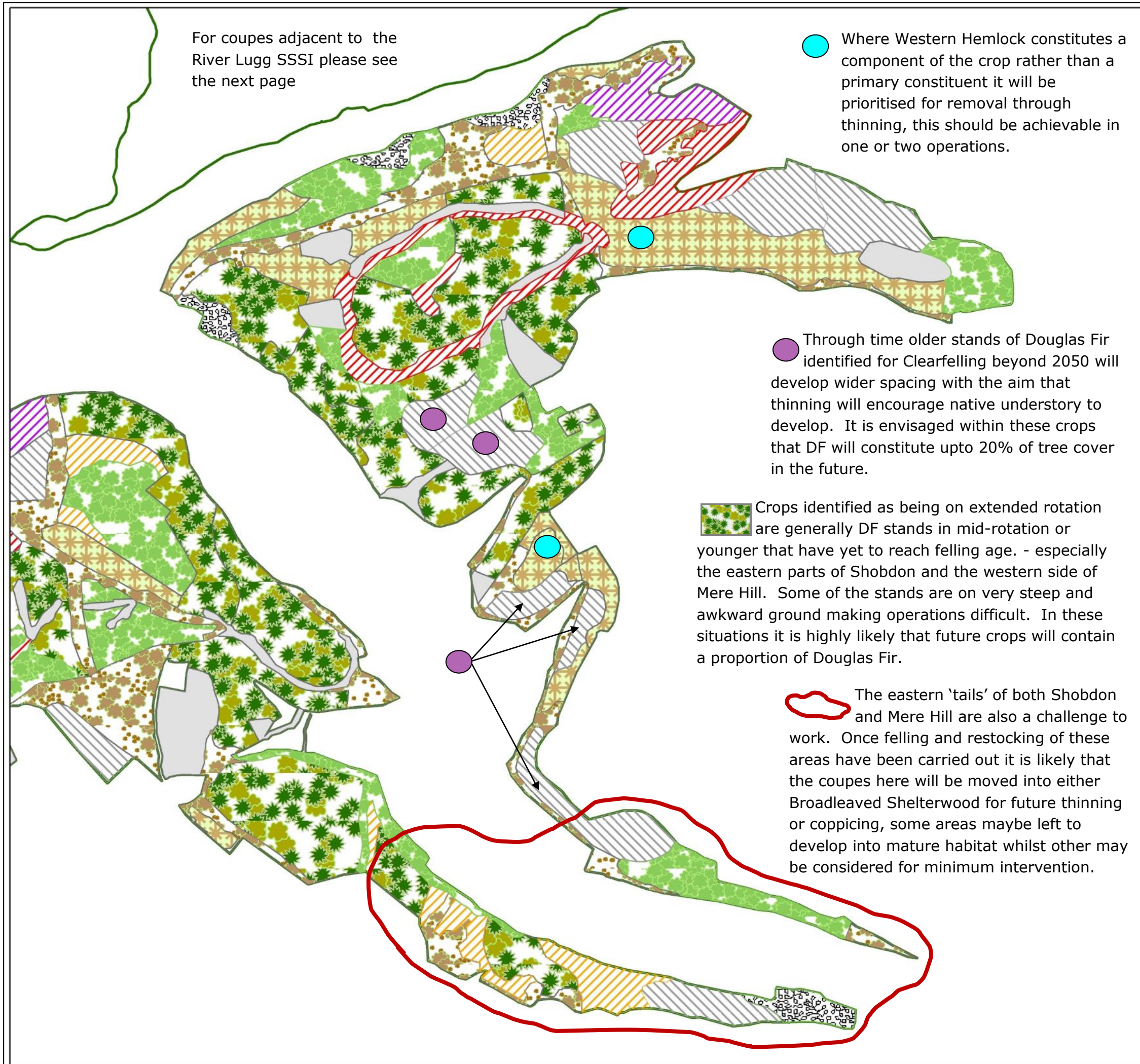
Through time older stands of Douglas Fir identified for Clearfelling beyond 2050 will develop wider spacing with the aim that thinning will encourage native understory to develop. It is envisaged within these crops that DF will constitute upto 20% of tree cover in the future.

Crops identified as being on extended rotation are generally DF stands in mid-rotation or younger that have yet to reach felling age. - especially the eastern parts of Shobdon and the western side of Mere Hill. Some of the stands are on very steep and awkward ground making operations difficult. In these situations it is highly likely that future crops will contain a proportion of Douglas Fir.

The eastern 'tails' of both Shobdon and Mere Hill are also a challenge to work. Once felling and restocking of these areas have been carried out it is likely that the coupes here will be moved into either Broadleaved Shelterwood for future thinning or coppicing, some areas maybe left to develop into mature habitat whilst other may be considered for minimum intervention.

Legend

- Fell 2017-2021
- Fell 2022-2026
- Fell 2027-2031
- Fell 2032-2036
- Fell 2037-2041
- Fell 2042-2046
- Fell 2047-2051
- Fell beyond 2050
- Removal of conifers by thinning
- Conifer crop on extended rotation
- Broadleaved shelterwood
- Mature habitat retention
- Minimum Intervention
- Open land



**Shobdon and Wigmore Rolls
Forest Plan proposals for
River Lugg
2017-2027**

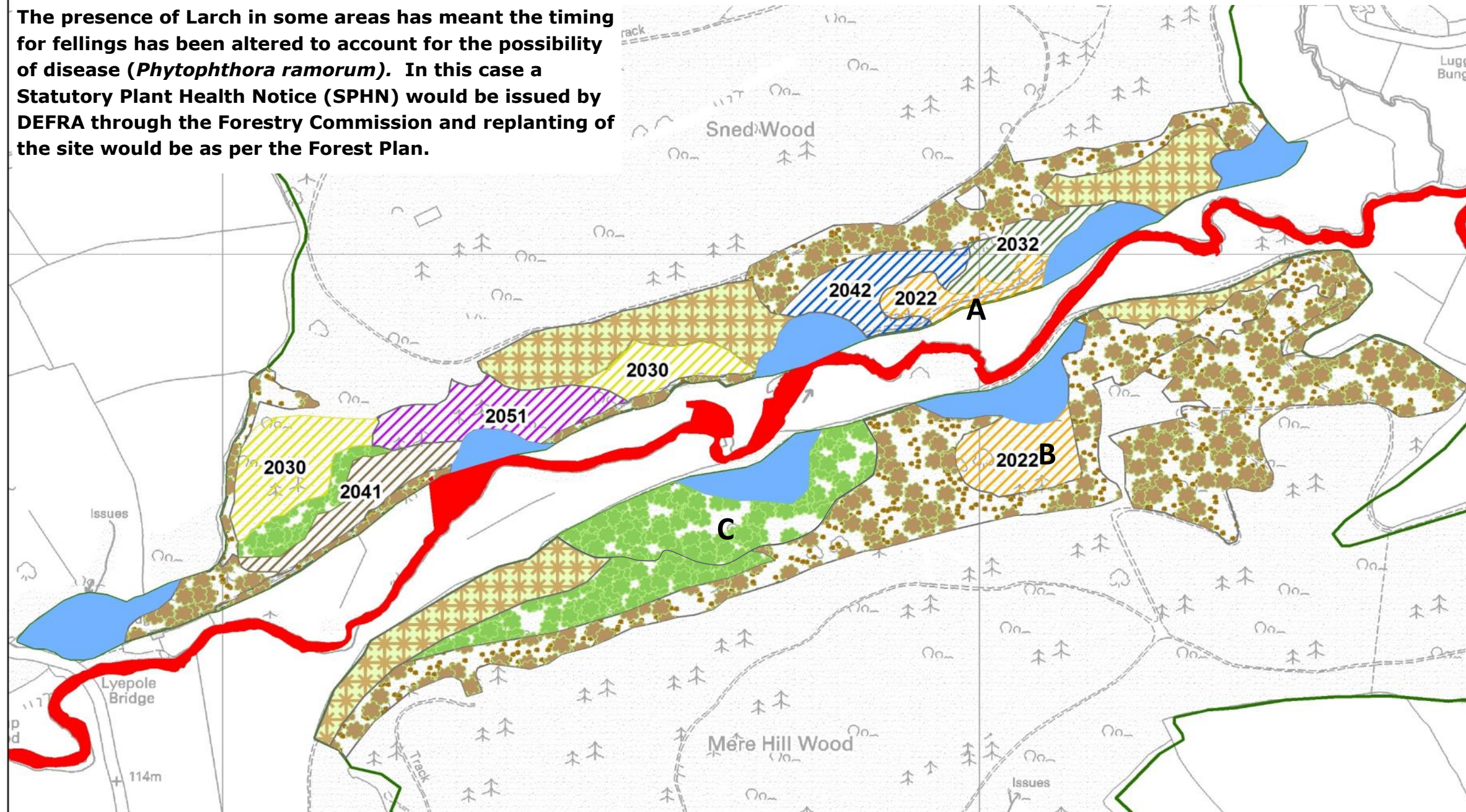
MANAGEMENT OF FC LAND ADJACENT TO THE RIVER LUGG SSSI

It is envisaged that where conifer currently exists that broadleaved planting will be required.

Where broadleaved sites exist they will be coppiced either using simple coppice technique as in coupe A or in other coupes a system of coppice with standards will be used. - This approach will soften the currently constrained corridor like aesthetics, imparting a softer more natural look to the valley bottom and fits with the "NE views on management" guidance for the River Lugg SSSI.

Some areas may contain a component of conifer within a broadleaved context and where this is the case conifer will be removed through thinning. In some areas converting to broadleaf in one operation will be practical whilst other areas may take longer.

The presence of Larch in some areas has meant the timing for fellings has been altered to account for the possibility of disease (*Phytophthora ramorum*). In this case a Statutory Plant Health Notice (SPHN) would be issued by DEFRA through the Forestry Commission and replanting of the site would be as per the Forest Plan.



Legend

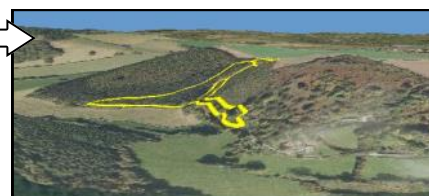
-  Management Area
-  River Lugg SSSI
-  Fell 2022-2026
-  Fell 2027-2031
-  Fell 2032-2036
-  Fell 2037-2041
-  Fell 2042-2046
-  Fell 2047-2051
-  Removal of conifers by thinning
-  Broadleaved shelterwood
-  Mature habitat retention
-  Minimum Intervention

South of the River Lugg, on the northern slopes of Mere Hill, it is likely that establishment will be a lot slower. (As evidenced on the northern slopes in Shobdon Wood.) With this in mind, proposals for area C outline the use of broadleaved shelterwood (thinned over time to around half to a third of the existing canopy allowing coppice to regrow and native broadleaf regeneration to occur) and the use of coppice with standards as in Coupe B. (Where thinning will encourage crown development of mature broadleaves and allow natural regeneration of a native broadleaf understory) Enrichment planting may be undertaken where the diversity of species is minimal. Using these approaches will provide shelter and a warmer micro-climate for coppice and enrichment planting to regenerate and establish the next rotation more swiftly.

Management Prescriptions 2017- 2047

SNED WOOD, BALLS GATE And PAYSURE

*Ballsgate viewed from the south
with existing broadleaf and the
thinning coupe outlined in yellow*



The coupe has been designed to enhance the valley in which the existing ribbon of broadleaf sits.

This coupe will have the conifer element gradually removed through thinning in order to develop a native broadleaf content through natural regeneration (with enrichment planting if needed) consolidating and linking existing broadleaf components.

To develop an open wooded habitat this first strip to be removed in 2017-2021 will create valuable additional Lepidopteran habitat along rides and within the wood itself. It will be extended northwards by felling a second coupe in 2027-2031. The first coupe will contain around 20-25% tree cover with the remaining 75-80% being managed as open space. The second coupe will have a higher proportion of tree cover in the region of 40% to give good gradation and structure, with the remaining 60% being managed as open, with any successional growth being treated as coppice in the future to maintain the desired structure and habitat.

For coupes adjacent to the River Lugg SSSI please see previous page

Legend

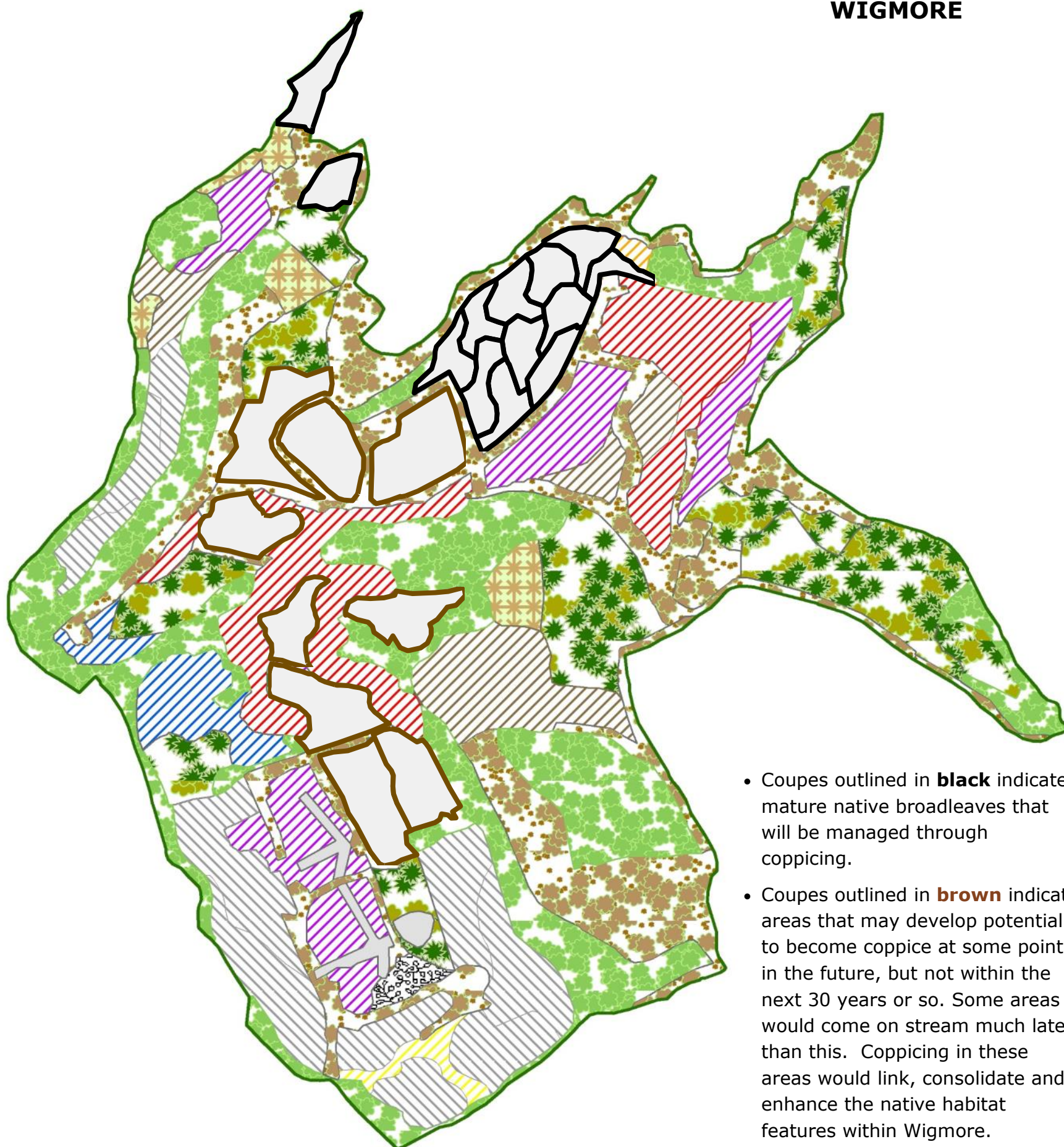
- Fell 2017-2021
- Fell 2022-2026
- Fell 2027-2031
- Fell 2032-2036
- Fell 2037-2041
- Fell 2042-2046
- Fell 2047-2051
- Fell beyond 2050
- Removal of conifers by thinning
- Conifer crop on extended rotation
- Broadleaved shelterwood
- Mature habitat retention
- Minimum Intervention
- Open land

Management Prescriptions 2017- 2047

WIGMORE, BARNETT WOOD and OAKLEY WOOD

Legend

	Fell 2017-2021		Fell beyond 2050
	Fell 2022-2026		Removal of conifers by thinning
	Fell 2027-2031		Conifer crop on extended rotation
	Fell 2032-2036		Broadleaved shelterwood
	Fell 2037-2041		Mature habitat retention
	Fell 2042-2046		Minimum Intervention
	Fell 2047-2051		Open land



- Coupes outlined in **black** indicate mature native broadleaves that will be managed through coppicing.
- Coupes outlined in **brown** indicate areas that may develop potential to become coppice at some point in the future, but not within the next 30 years or so. Some areas would come on stream much later than this. Coppicing in these areas would link, consolidate and enhance the native habitat features within Wigmore.

BARNETT WOOD

Western
Hemlock to be
removed
during the
next thinning.

OAKLEY WOOD

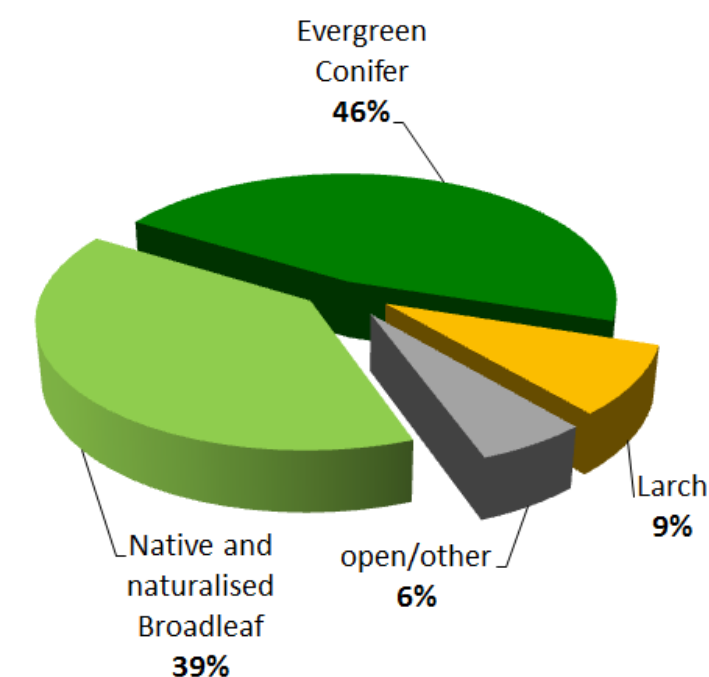


Indicative Future Species

Year 10 - 2027

The projections made are indicative of species composition in ten years time. They do not constitute a guarantee and merely serve to indicate a general vision for direction woodland composition will move towards within the plan area that will be delivered over time.

In reality the proportions of Larch, Spruce and Fir species will be reduced. Conversely the proportions of native tree cover will increase. Upto 70Ha will have been felled and will be in transition to native woodland and open space. Some coupes are already partially felled so this figure is liable to be lower. Areas of evergreen conifer within PAWs areas will have been thinned favouring broadleaf components, creating space for natural regeneration, enrichment planting or release of advance natural regeneration.



Legend

- Evergreen Conifer
- Deciduous Conifer
- Native & naturalized broadleaves
- Non-native broadleaves
- Open/other





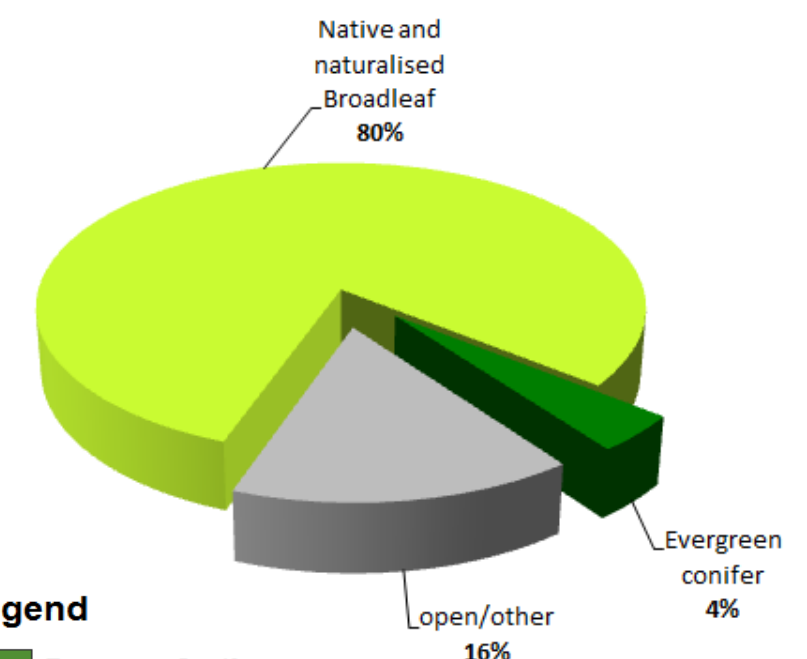
Indicative Future Species Beyond 2050

The projections made are indicative of species composition beyond 2050. They do not constitute a guarantee and merely serve to indicate a general vision for direction woodland composition will move towards within the plan area that will be delivered over time. Although any changes to government and FC policy in the future may influence this composition.

In reality the proportions of Larch, Fir and Spruce species will be greatly reduced. Conversely the proportions of native tree cover will greatly increase.

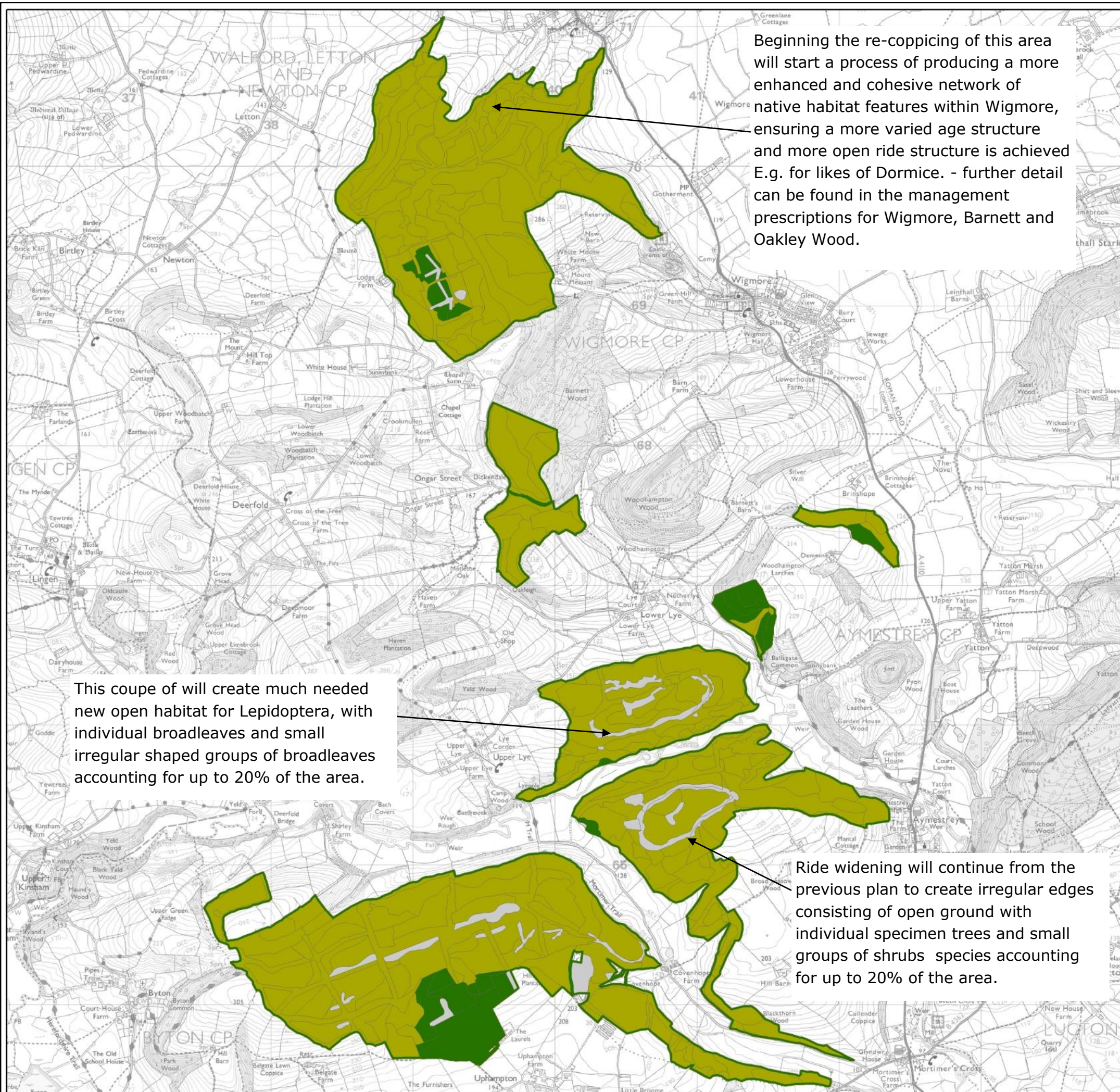
Although open habitat appears to remain relatively static at between 30-35Ha, delivery of open space as a component within a wider woodland context will amount to approximately a further 50-60Ha enhancing existing open habitats and improving ride/road and stream habitats.

Areas of fragmented native woodland will have been consolidated through a mixture of clearfelling, restocking, coppicing and natural regeneration. It is highly likely that there will remain pockets of mature DF especially on some of the steeper more awkward terrain.



Legend

- Evergreen Conifer
- Native & naturalized broadleaves
- Open/other





Ecological site Classification

Future Species - 2080 (high)

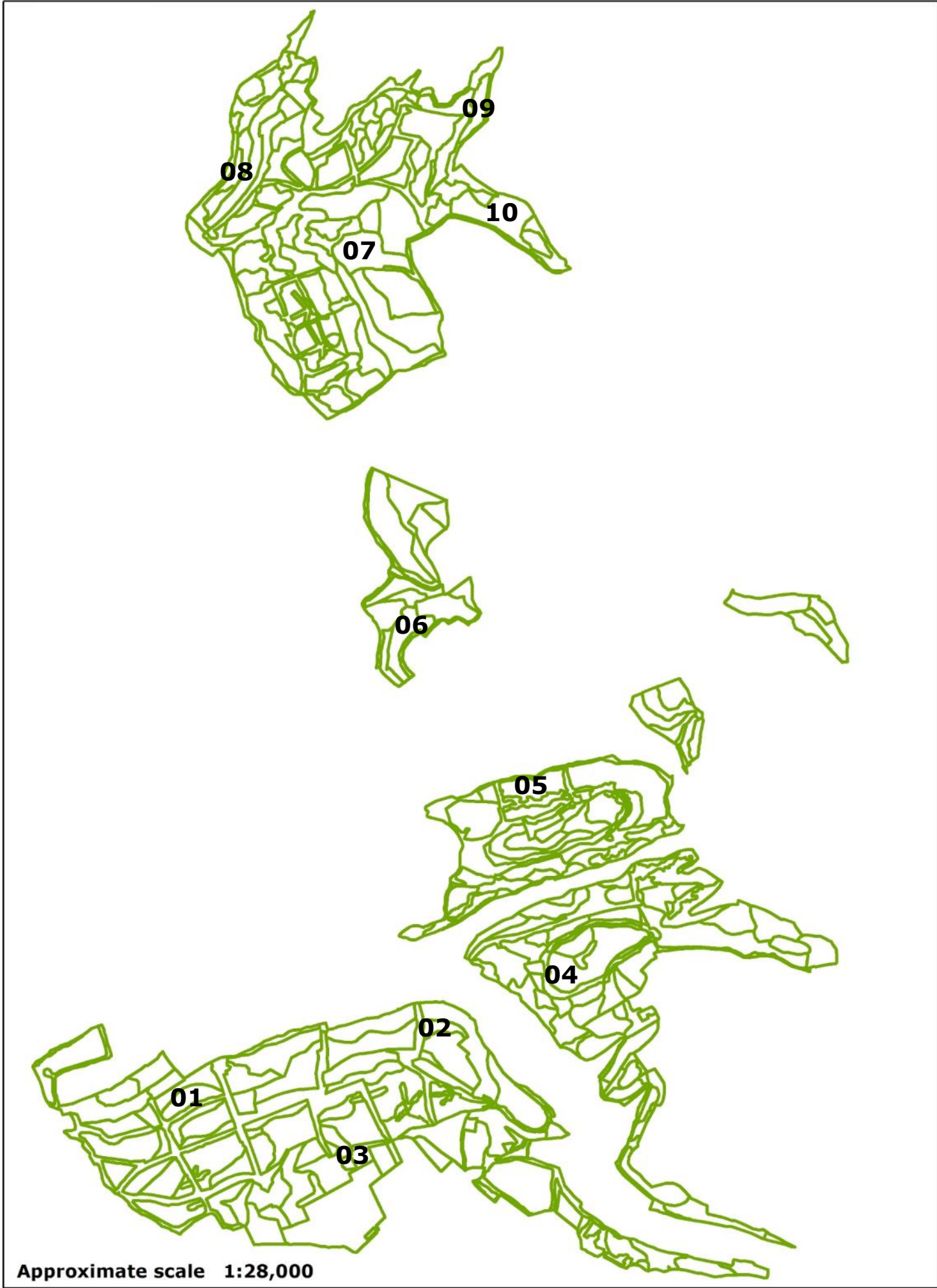
Due to the wide ranging aspects and levels of exposure the table below gives an indication across a range of site types of what Native broadleaf species maybe appropriate based on default settings. Further site analysis using site indicators nearer the time of planting may make this list subject to change.

Species	ESC SITE NUMBER									
	1	2	3	4	5	6	7	8	9	10
Alder	VS	VS	VS	X	X	X	X	S	S	S
Ash	S	S	S	X	X	X	X	X	X	X
Birch	VS	VS	VS	M	M	M	M	X	M	M
Wild Cherry	VS	VS	VS	S	S	S	S	X	S	S
Wych Elm	S	S	S	X	X	X	X	X	X	X
Hornbeam	VS	VS	VS	VS	VS	VS	VS	M	VS	VS
Oak (ped)	VS	VS	VS	S	S	S	S	M	S	S
Oak (ses)	VS	VS	VS	M	M	M	M	X	M	M
Rowan	VS	VS	VS	S	S	S	S	X	S	S
Small-leaved Lime	VS	VS	VS	S	S	S	S	X	S	S
Sweet Chestnut	VS	VS	VS	S	S	S	S	X	S	S
Sycamore	VS	VS	VS	S	S	S	S	X	S	S

- VS = Very Suitable
- S = Suitable
- M = Marginal
- X = Not Suitable

As one would expect the data clearly shows that not all species are suited to all sites. The decision as to what to plant where will be based on a site by site basis at the time of planting.



NOTE:- Species given in the previous pages of the felling and restocking plan are only indicative and operational site assessment at the time of planting may dictate a more suitable species.

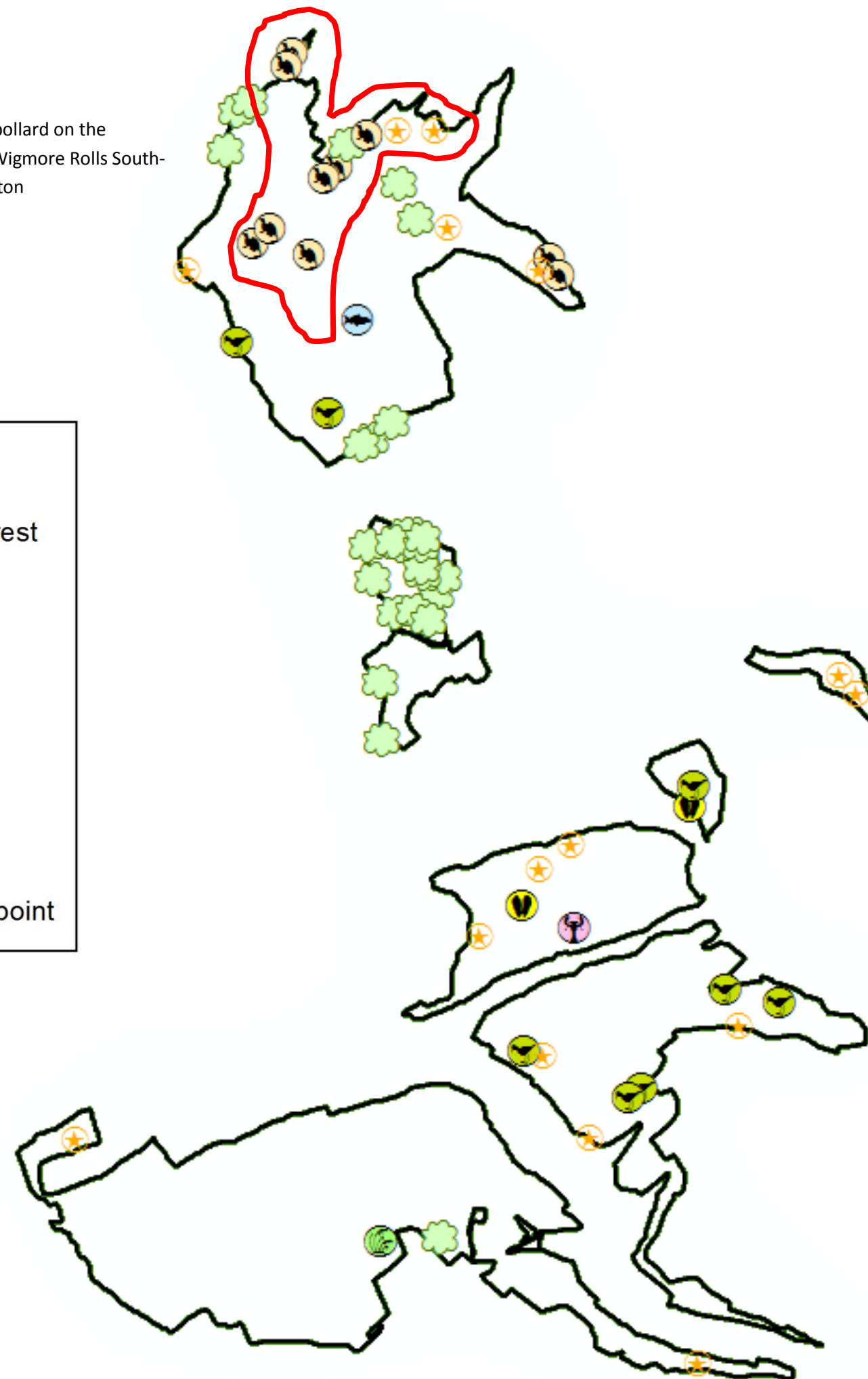




Veteran Oak pollard on the boundary of Wigmore Rolls South-west of Adforton

Legend

-  Tree of Special Interest
-  Invertebrate
-  Flora
-  Fish
-  Dormouse
-  Bird
-  Bat
-  Other conservation point



Conservation - Features

Plan objectives:

"Protect and enhance woodland and open habitats and their associated species."

"The protection and enhancement of veteran trees/trees of special interest (TSI) and recruitment of future generations of veteran trees/TSI."

Conservation is a high priority for the Forest Plan.

Through the planning of harvesting and restocking operations via the operational site planning process, any further findings will be recorded to inform future management practices.

The plan looks to safeguard and enhance the habitats for the following features such as

- Lepidoptera
- Dormice
- Schedule 1 species
- Bats
- Wet woodland and open water
- Areas of semi-natural broadleaf woodland
- Veteran trees
- Oak and Hazel coppice
- A diverse mixture of indigenous ground flora

Conservation - Habitats

● Maintenance of open areas of refuge away from the vulnerable roadside habitat regularly used by wood white. By creating these refuge areas we help mitigate when roadside work is carried out due to forest operations, rallying etc, where the grader would naturally remove all the roadside vegetation required by the butterfly. The areas are of varying size and shape dictated by landform, existing use, ease of work, but need to be large enough to allow light and heat. They will be created over a number of years, and should be implemented at three per year.

Open habitat will be developed within Sned Wood to enhance rideside structure. An irregular forest edge will be promoted through staged clearfells, increasing the available open space for Lepidoptera to take advantage of the east-west rides. Plan implementation will also provide good gradation of open space to woodland.

Water courses form an important part of the ecology within the area. Management prescriptions take into account the needs of the watercourse system. The next page specifically details management of the woodland along the River Lugg.



An area being developed and managed for wet woodland habitat.

Mature Woodland predominantly old Oak dating from around the mid to late 1800's and early 1900's. It includes some areas of Scots Pine that will be managed as mature habitat to develop structural diversity within the woodland and many plants, lichens, mosses, insects, birds and animals can benefit from the presence of Scots Pine.

Area identified as being locally important for geological interest within Hereford.

Ancient-Semi-Natural Woodland remnants. Within the Forest Plan there are 7.5 Ha of ASNW supported and enhanced by a further 200ha of native woodland. The Forest Plan continues in its management to promote the restoration of ASNW areas, with over 50Ha of restoration planned within the plan period.

Water and riparian management

The analysis shows that there are many steep slopes within the management plan area that may influence and impact on the water quality of the water system. This is especially the case when you look at the steep sided valley through which the River Lugg SSSI flows; with Shobdon and Mere Hill to the South and Sned Wood to the North.

Possible effects of any work on water quality where sedimentation maybe an issue further down stream has been taken into account during the coupe design. - This is especially the case for the banks of Mere Hill and Sned Wood that are adjacent to the River Lugg SSSI.

Coupe design throughout the plan area has minimised possible impacts to watercourses through:

- Reducing coupe sizes where clearfelling has been prescribed.
- Putting in place the use of simple coppice and coppicing with standards on appropriate scale.
- Maintaining existing broadleaved woodland along the woodland edge.
- Maintaining areas of minimum intervention.

Planning and implementation of any operations near to watercourses will follow the Forest Service UKFS forests and Water Guidelines.

Habitats for the likes of White-Clawed Crayfish along the River Lugg will further be protected by:

- Ensuring coupe design only affects small stretches of the river bank at any one time and due dates for felling are spread over a long period.
- Carrying work out between July and October, avoiding any work during May and June when Crayfish release their young.

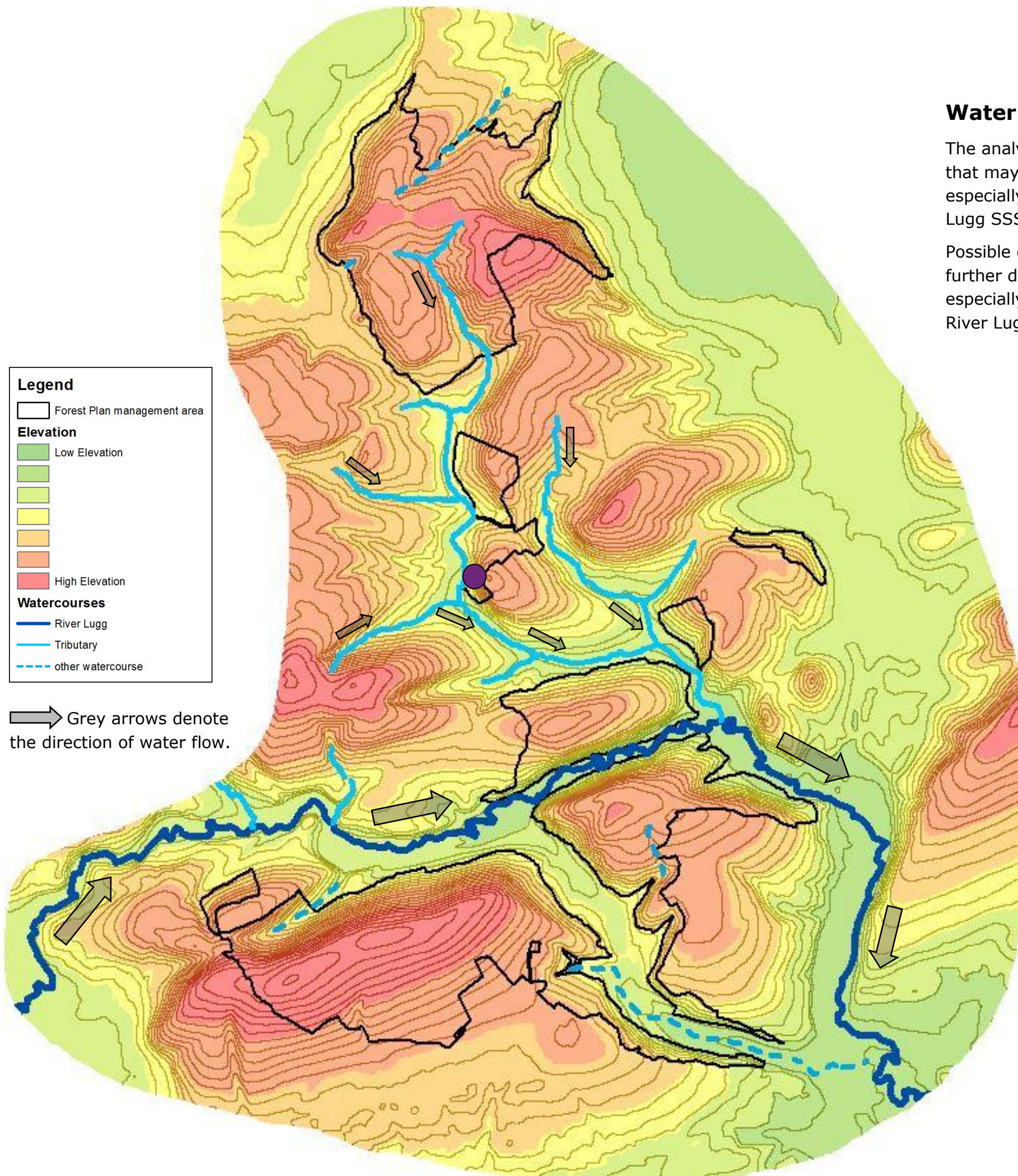
	Month											
Crayfish cycle	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Activity and growth												
Mating												
Females carrying eggs (barred)												
Can do surveys												

Key

Maximum	
Medium	
Minimum	

The use of these techniques will help safeguard against sedimentation, protecting both water quality and riparian habitats.

● In some instances, for example in Oakley wood, terrain dictates that clearfelling is the most practical way to achieve native woodland restoration. Here the felling has been split into two coupes in order to stagger the timing of the felling. This introduces a buffer zone to protect the river from concerns over sedimentation from the felling of the first coupe; the top of the slope being felled in 2030 and the lower slope being felled 50 years later in 2082. this gives time for tree cover to properly establish and stabilise the site before further felling.



Heritage Features

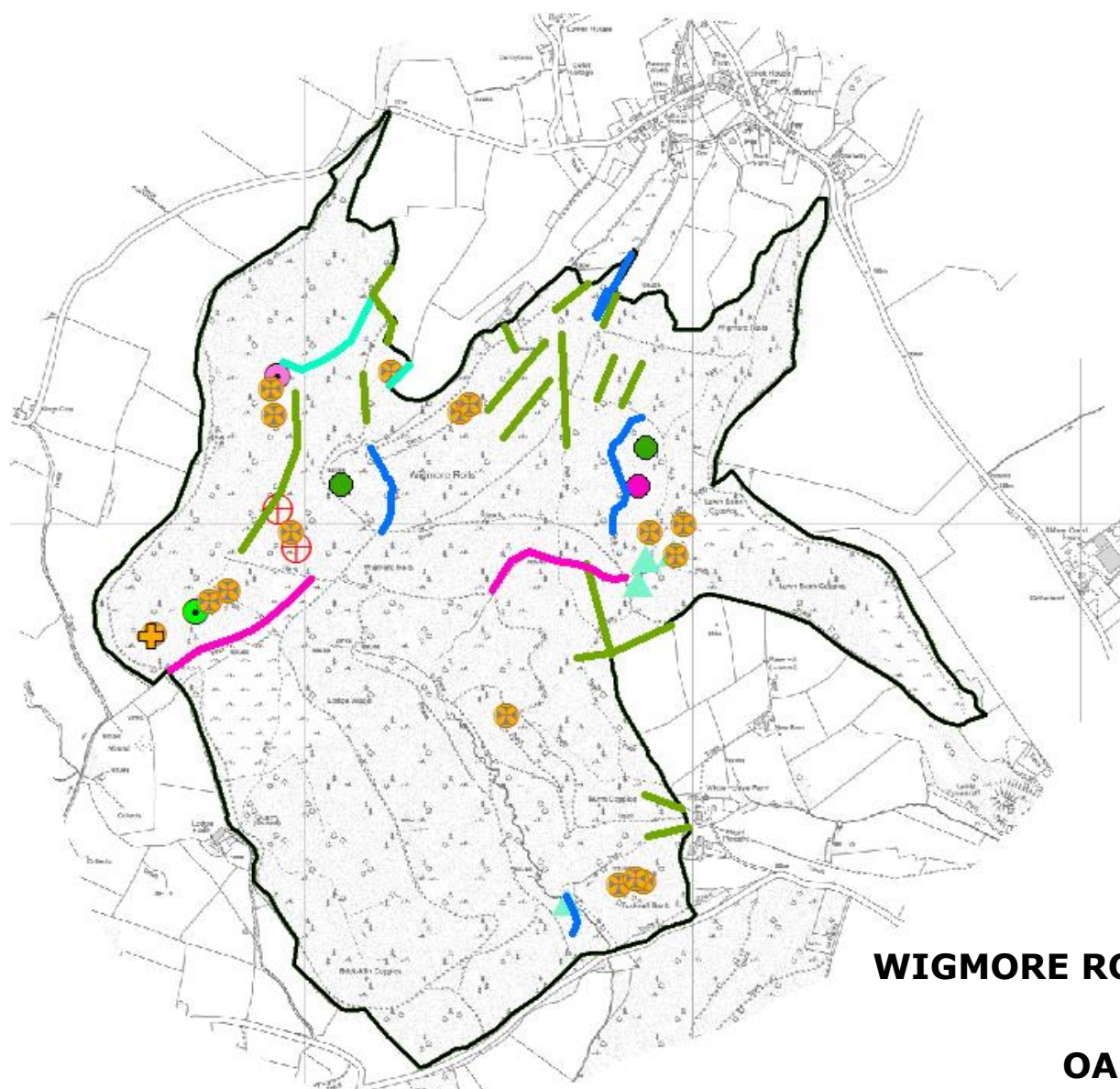
Plan objective:-

"To conserve, maintain and enhance cultural and heritage assets."

The woodlands contain numerous un-scheduled Ancient Monuments (UAMs) and historical features that include features such as wood banks, charcoal kilns, holloways and a network of enclosure banks which form links to local, social and industrial development.

All forest operations will avoid impact to these features and where appropriate seek advice from Herefordshire Council's archaeological department.

Work will continue in partnership with Herefordshire Council's Archaeology team to identify, record and protect archaeological features within the Forest Plan area. This will build on the understanding of heritage features gained from the Herefordshire Archaeology walk over survey 2002.

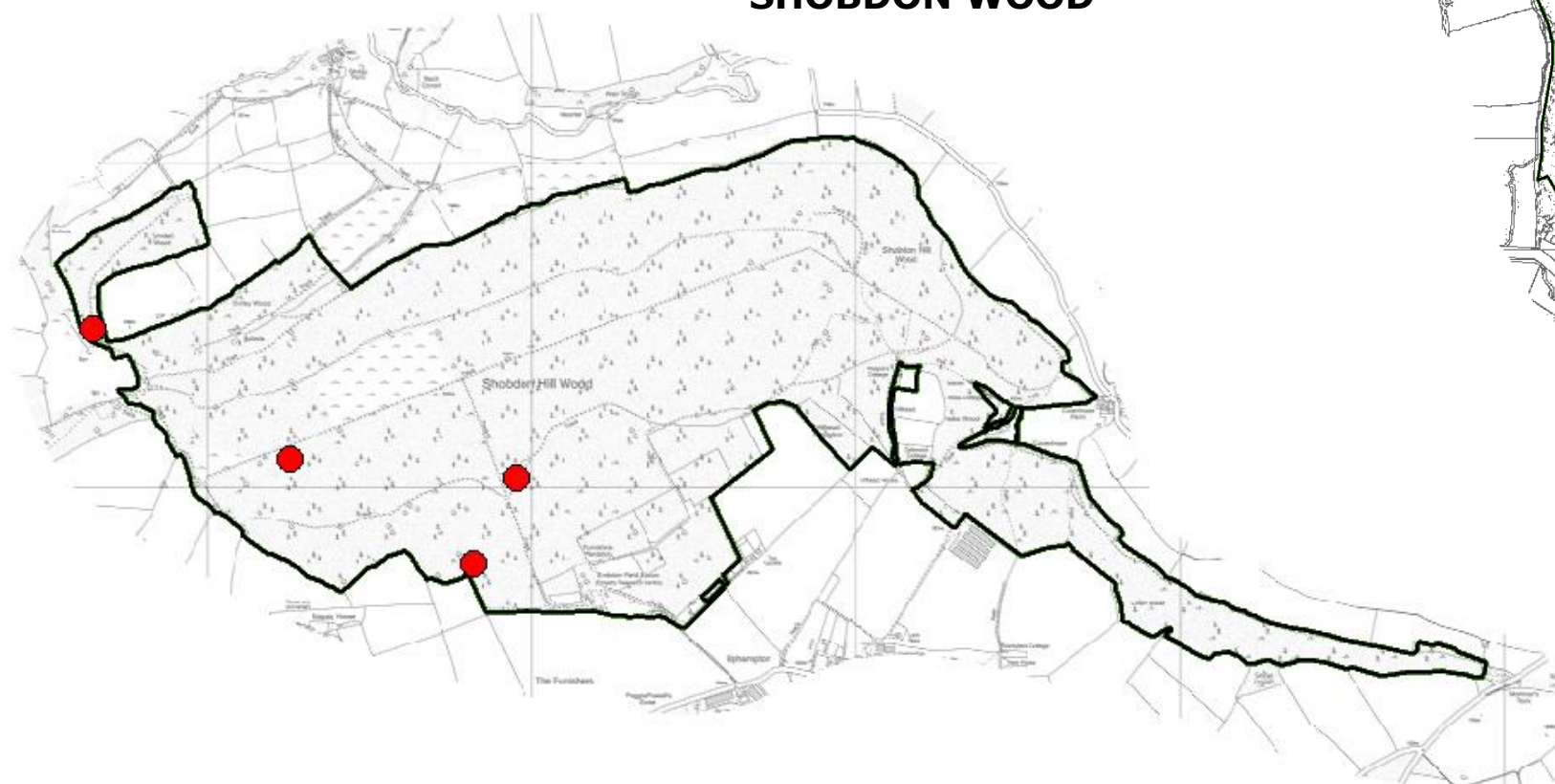


WIGMORE ROLLS

OAKLEY WOOD



SHOBDON WOOD



Legend

- Woodbank and ditch
- Boundary bank
- Holloway
- Park Pale fence
- Sunken track
- ⊕ Banking with ditch
- Holloway
- Lynchets
- ⊗ Charcoal hearth
- ▲ Platform
- Possible barrow
- Raised earth mound
- + Building
- FEATURE: No Site detail

Recreation and Public Access

The plan area sits within a rural context and is mainly served by single track country lanes that limit the extent of recreational usage that the woodlands could otherwise enjoy. Although there are no formal recreational trails provided by the Forestry Commission, the woods are regularly used by walkers and horse riders, but not as regularly by cyclists.

Access and provision of facilities is further compounded by the steep and awkward nature of the topography within these woods. These factors certainly limit the potential for future development and provision of any significant public access facilities.

There are only two public rights of way that cross FC land; one through Mere Hill and the other through Shobdon Wood.

The Mortimer Trail is a well known and promoted trail following permissive routes through the region and leads walkers along the River Lugg valley through Sned Wood and Shobdon Wood.

Car rallying is enjoyed in Wigmore annually whilst Shobdon and Mere Hill have a wide network of access routes with public enjoying access on foot, bicycle and horseback for which there is a commercial permit system in place for Shobdon Woods.

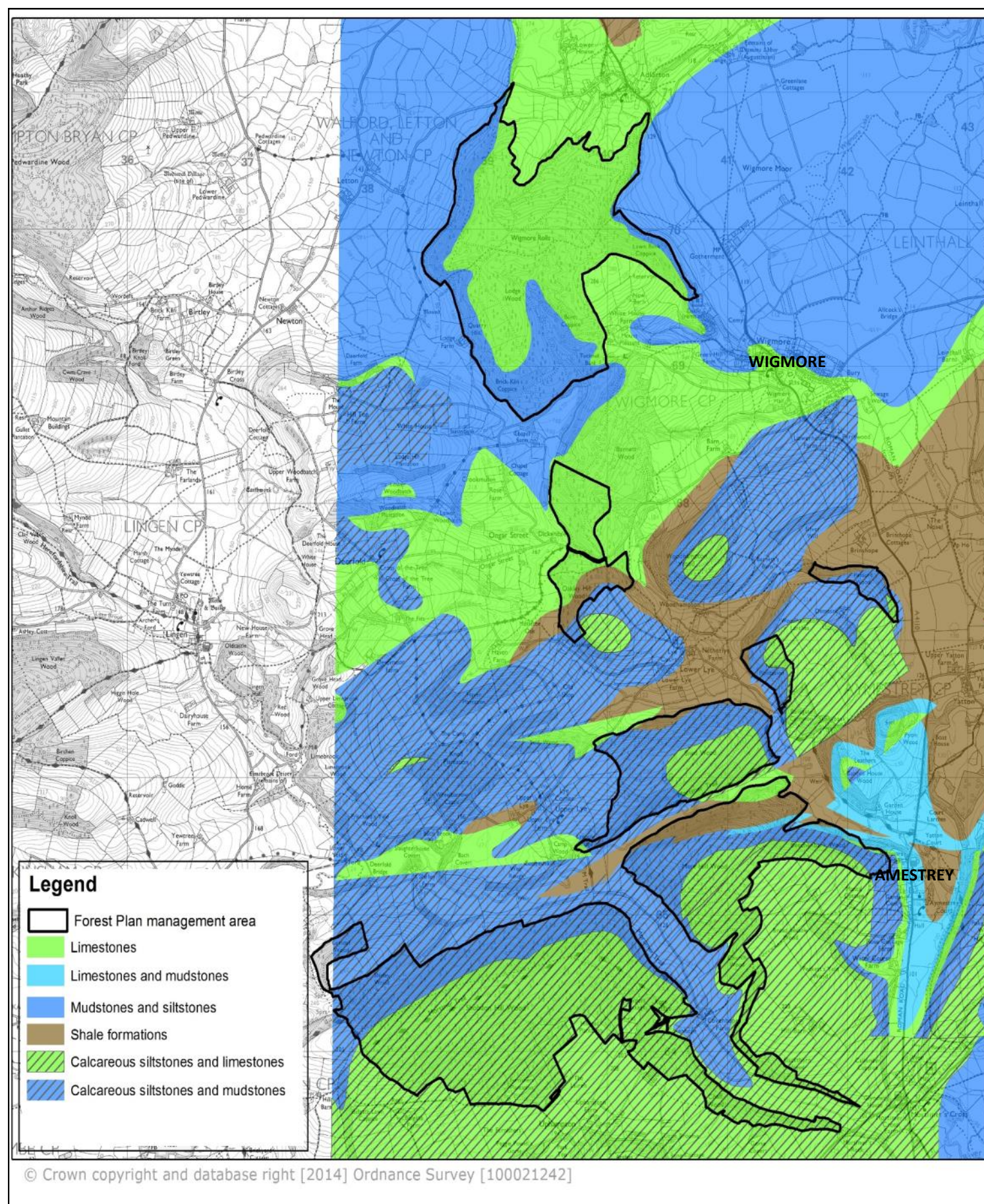
Legend

- Forest Plan management area
- Footpath
- Bridleway
- Mortimer Trail

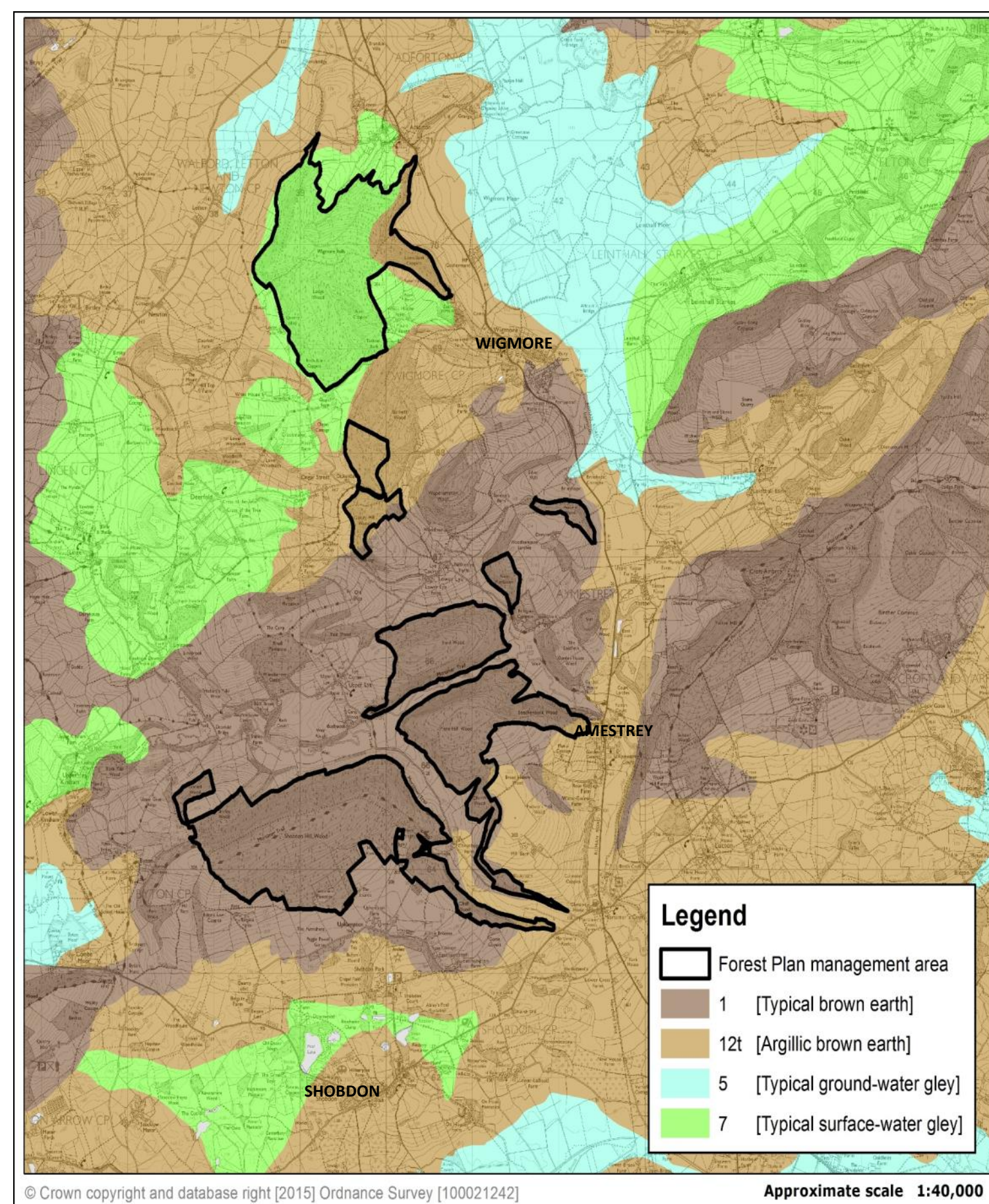
0 0.25 0.5 1 1.5 2 Miles

Approximate scale: 1:30,000

Geology



Soils

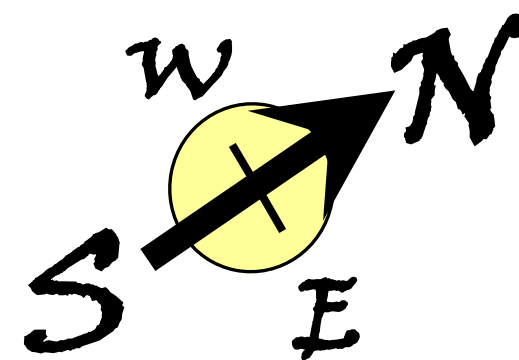
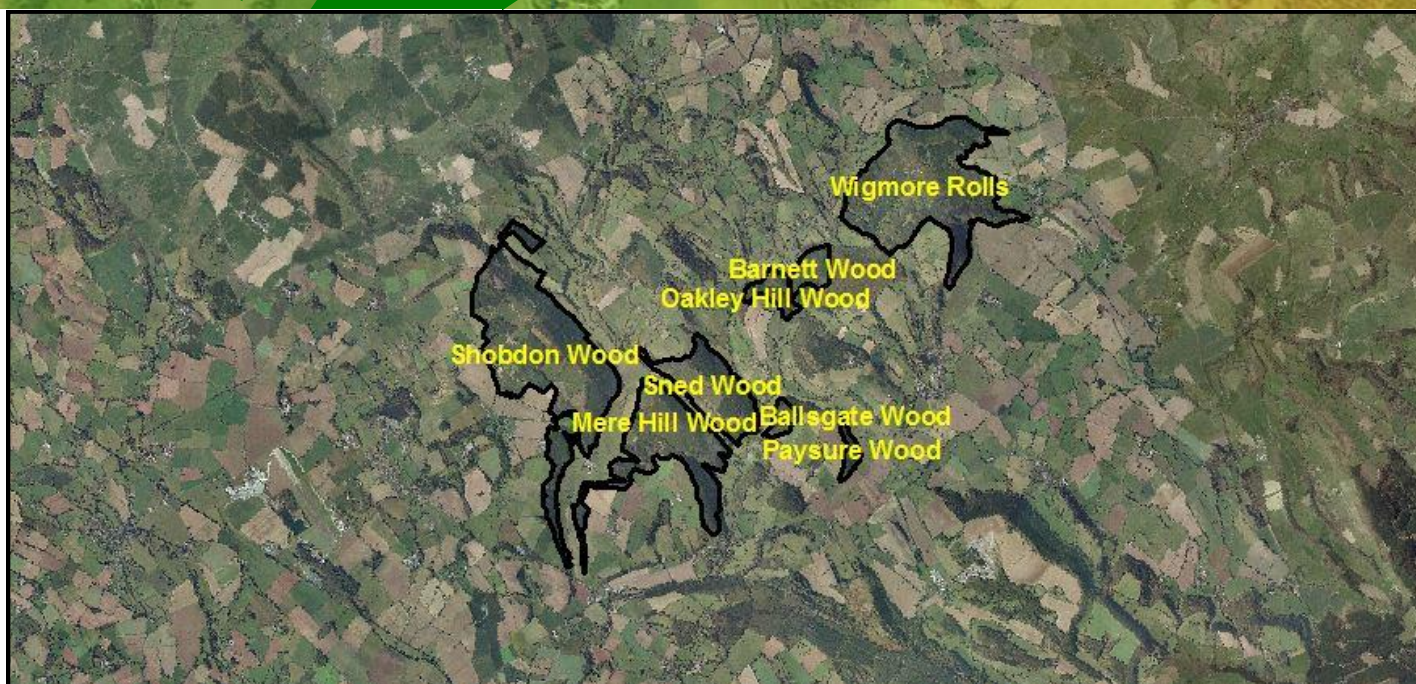
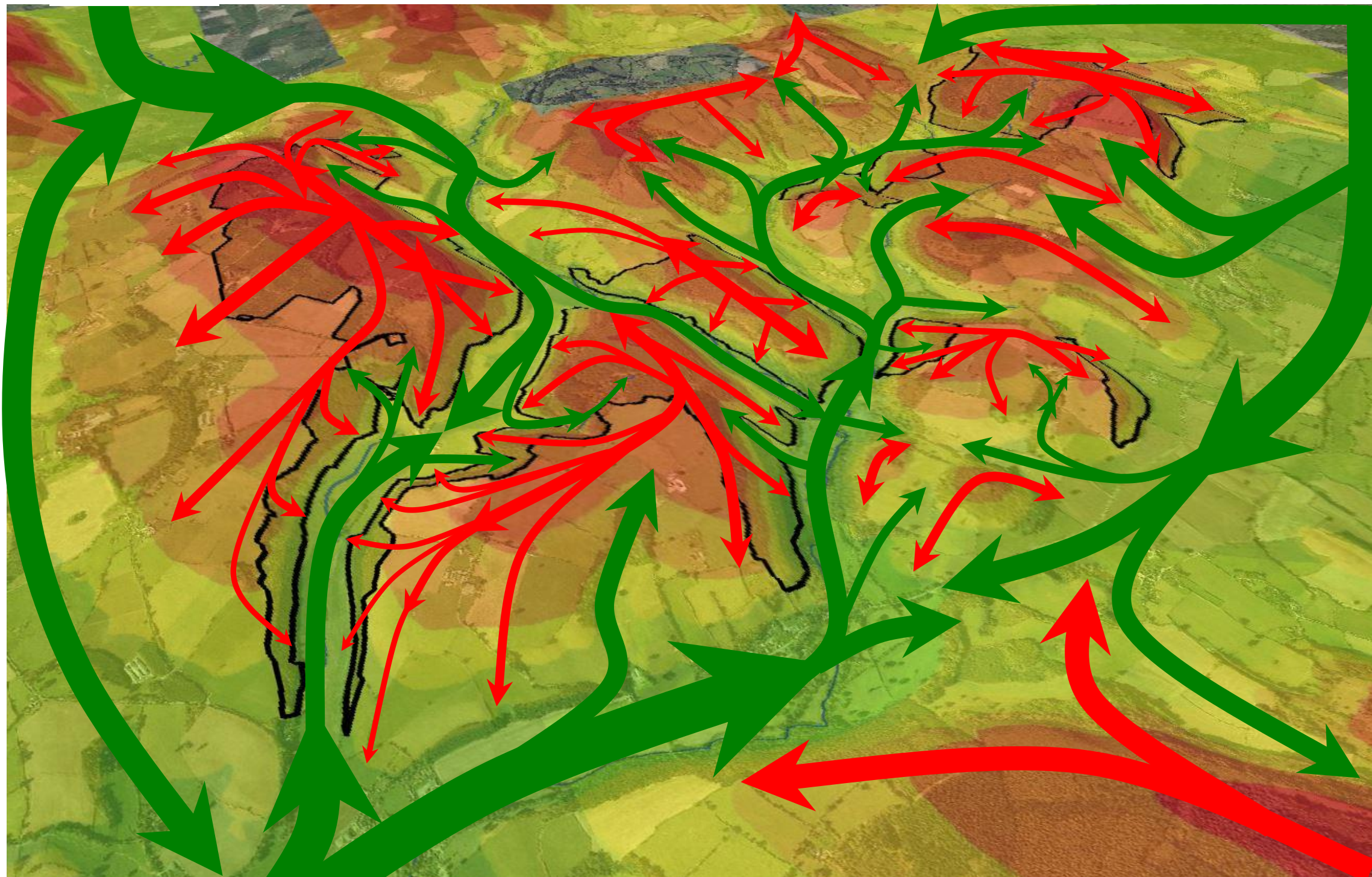
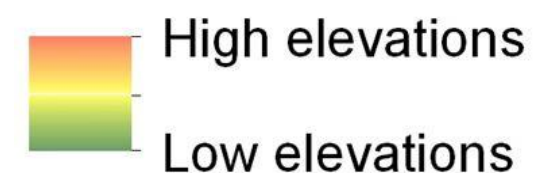


Landform Analysis

One can see that the landscape is heavily influenced by the dominance of an inter-woven complex of valleys and ridges.

The topography within the plan and surrounding landscape has been heavily influenced by the glacial periods that have given rise to the steep nature of the ground experienced within the woodland and illustrated both in the wider landscape and woodlands by a huge variation in altitude, varying anywhere from between 5m to 325m above sea level.

The analysis of landform is used to assess landform patterns in a landscape context, with one's eye naturally drawn along/up valleys and gullies indicated by green arrows and across/down plateaus and ridges marked in red. This process of analysis helps develop and create management coupe structures for felling and restocking that are of a size and shape in keeping with the surrounding landscape character.



Landscape Analysis

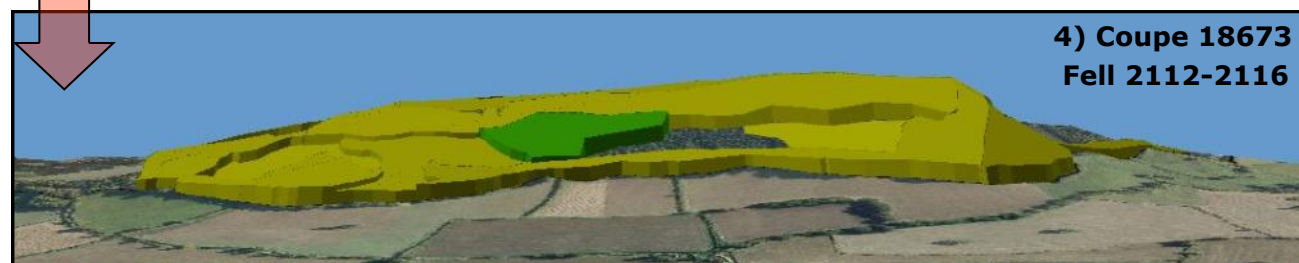
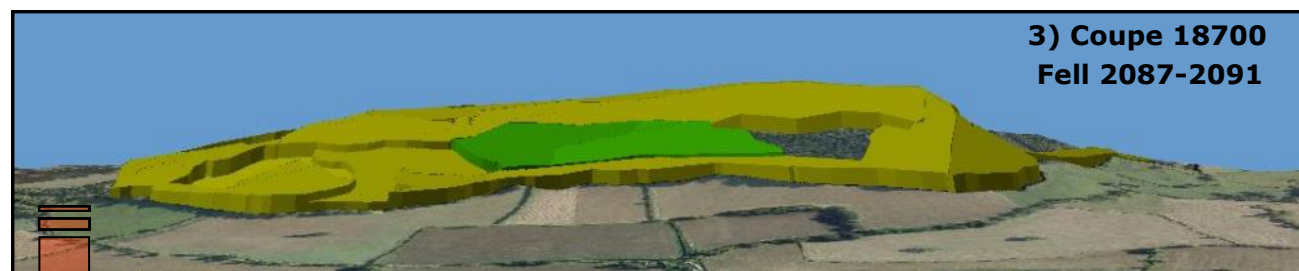
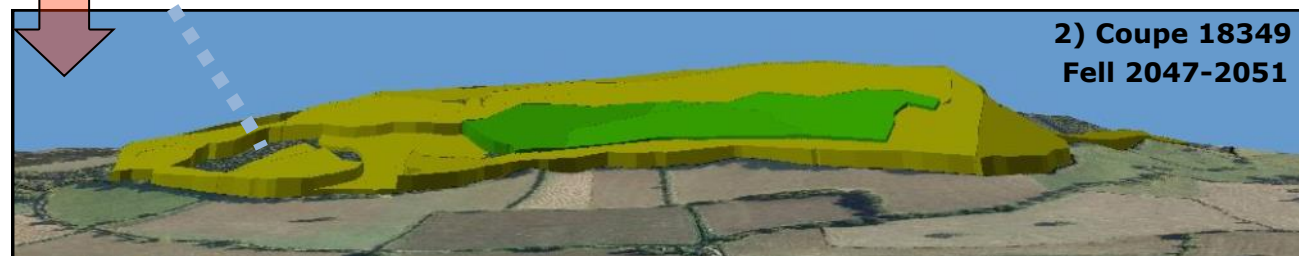
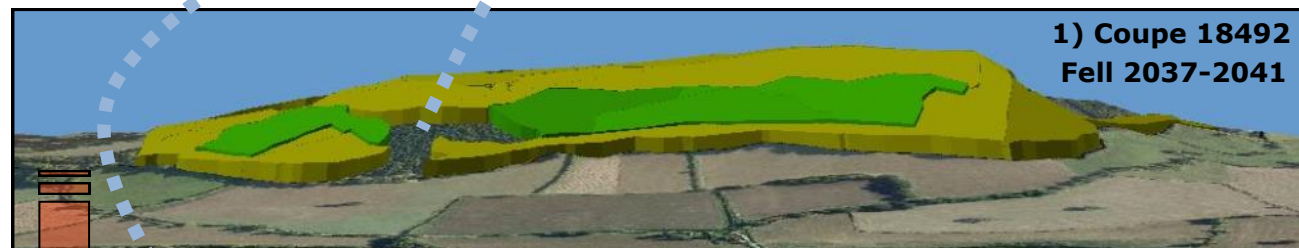


Photo above shows the Western banks of Wigmore overlooking the hamlet of Letton. Predominantly the landscape consists of Douglas Fir, Larches and Spruces planted in the early 1970's with mature broadleaves planted in the 1800's and mid 1960's.

The 3D images to the left show that the bank will be restructured in line with the end of plan review of 2016. Due to the terrain this will be achieved through clearfelling that will first of all target the removal of larch species (A and B).

Dark Green = Douglas Fir

Orange = Larches

Light Green = conifer tree cover

Olive Green = Native Broadleaf tree cover

View into Northern Slopes of Wigmore Rolls looking SW from Adforton - junction of A4110 and B4350



Coupe 18327 - clearfell 2017-2021

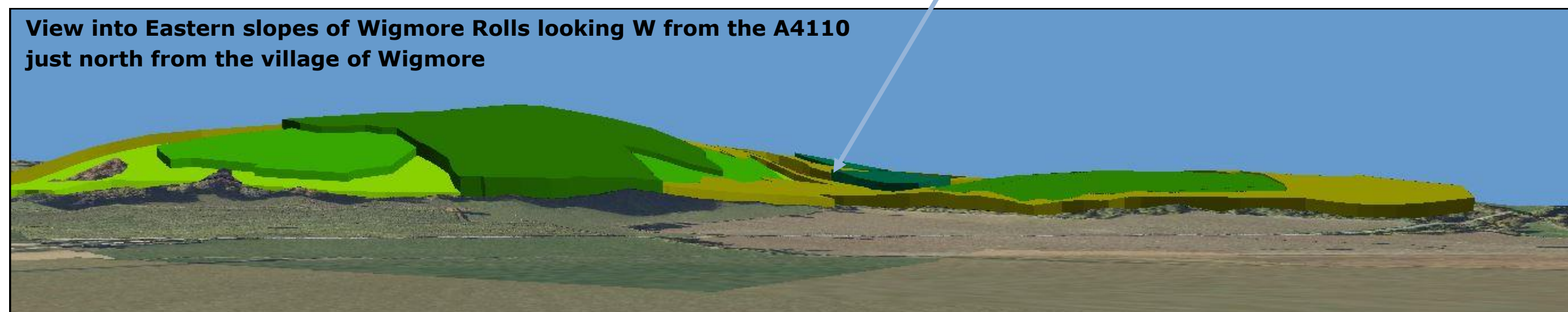
This clearfell will target priority removal of Western Hemlock and at the same time provide a valuable mixture of a more open wooded structure and open habitat along the northern and eastern boundaries.

One can see from the 3D imaging that the coupe design complements and is at a scale that sits comfortably within the landscape.

This skyline of broadleaf is mature habitat and with conifer behind being on an extended rotation there should not be any visual issues with 'feathering' effect along the skyline.

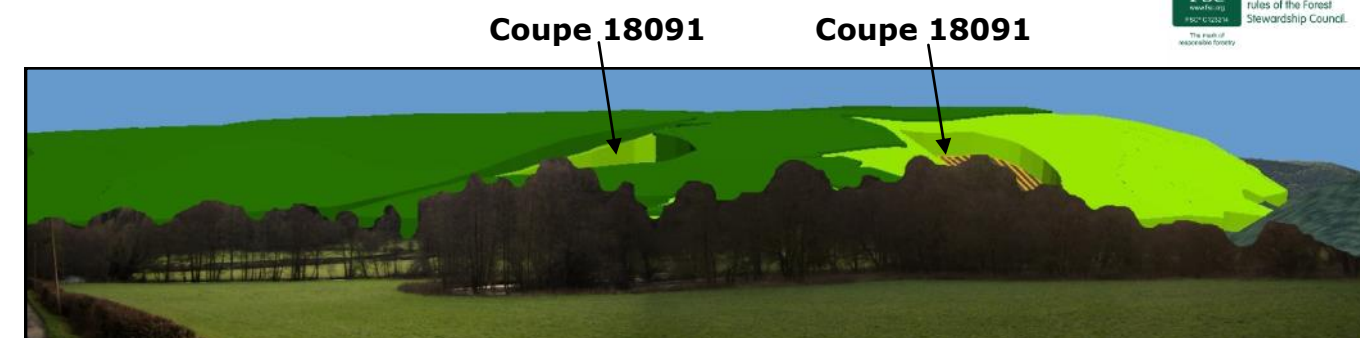
The 3D image below shows that the felling of this coupe is hardly noticeable from the A4110

View into Eastern slopes of Wigmore Rolls looking W from the A4110 just north from the village of Wigmore





Eastern Slopes of Mere Hill looking from roadside below Ballsgate Common (Luggside Bungalow) photo 2016

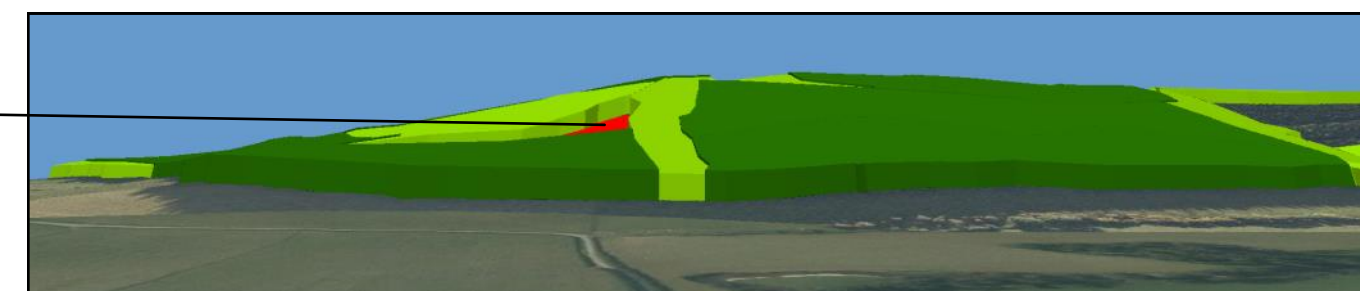


The 3d image above shows Mere Hill following the felling of coupe 18091 during the 2017 -2021 felling phase and subsequent to this the coppicing in coupe 18355.

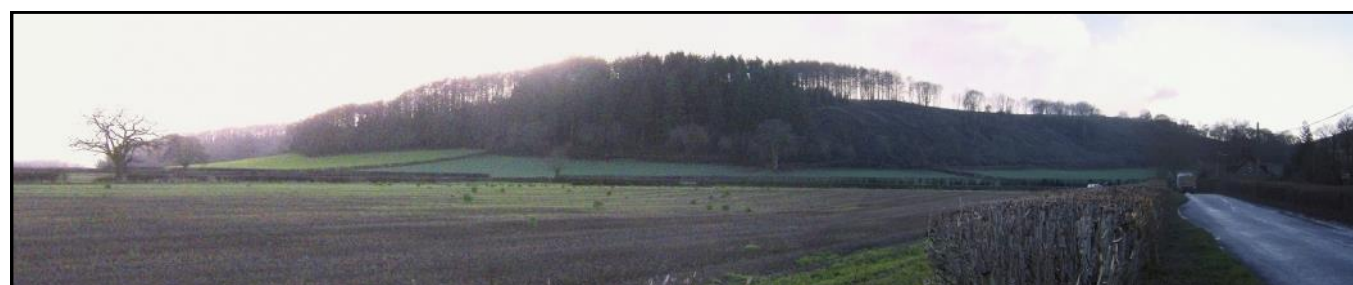
 = Broadleaves  = Evergreen conifer



Above: Northern slopes of Shobdon from Lyepole Bridge - Photo 2016



Above: 3d image showing removal of Western Hemlock in coupe 18140 that sits obscurely within the landscape with minimal visual impact.



Left: Paysure from Novel Farm East of the A4110 - photo 2016 - Other than thinning conifer components and ensuring the 2013 restock area is successfully established, no other work is planned during the 2017-2026 plan period.



Left: Ballsgate from the West (Netherlye Farm) photo 2016 - Thinning work will soften the hard edges and remove conifer from the valley to better integrate the conifer with the landscape.



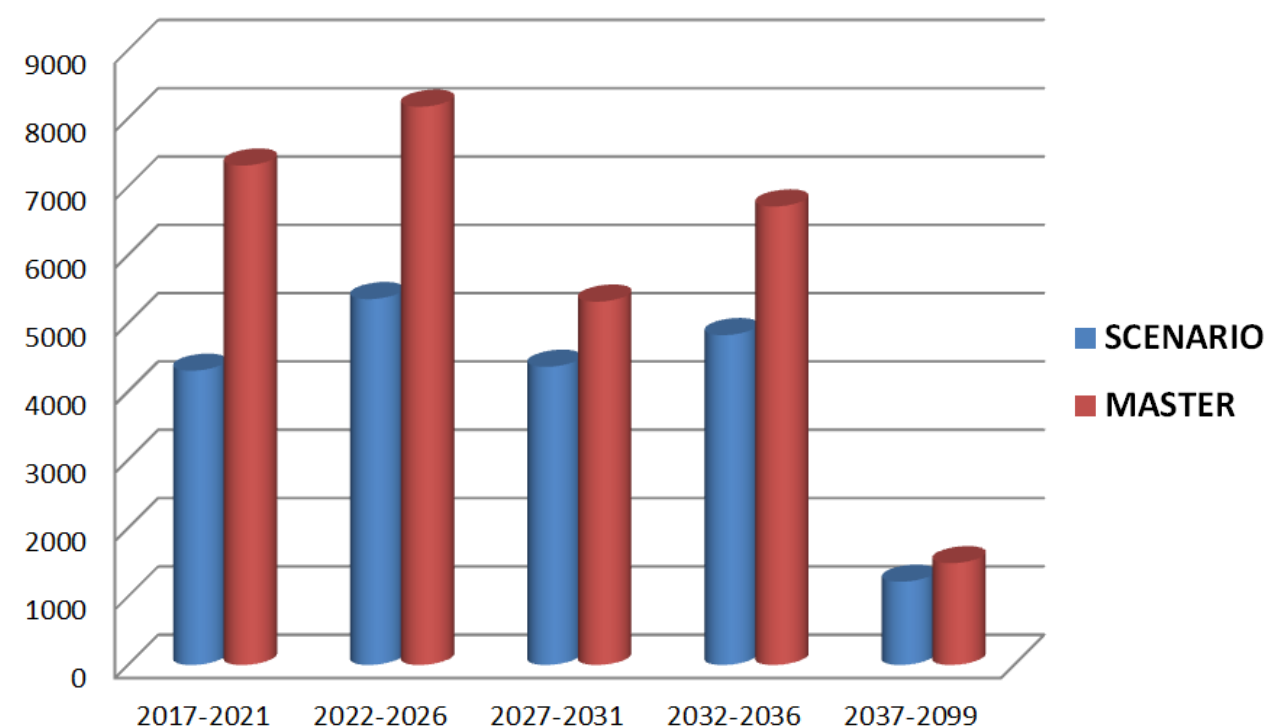
Left: East slopes of Mere Hill and South slopes of Sned Wood with the Lugg Valley in between - photo 2016 - The Western slopes of Mere Hill are to be managed under continuous cover so work will only entail thinning. Sned Wood has some clearfelling but with no visual impact from this focal point. Broadleaves to the left of the picture at the far end of the road will be managed using a mixture of minimum intervention and shelterwood, so visual impact will be negligible.



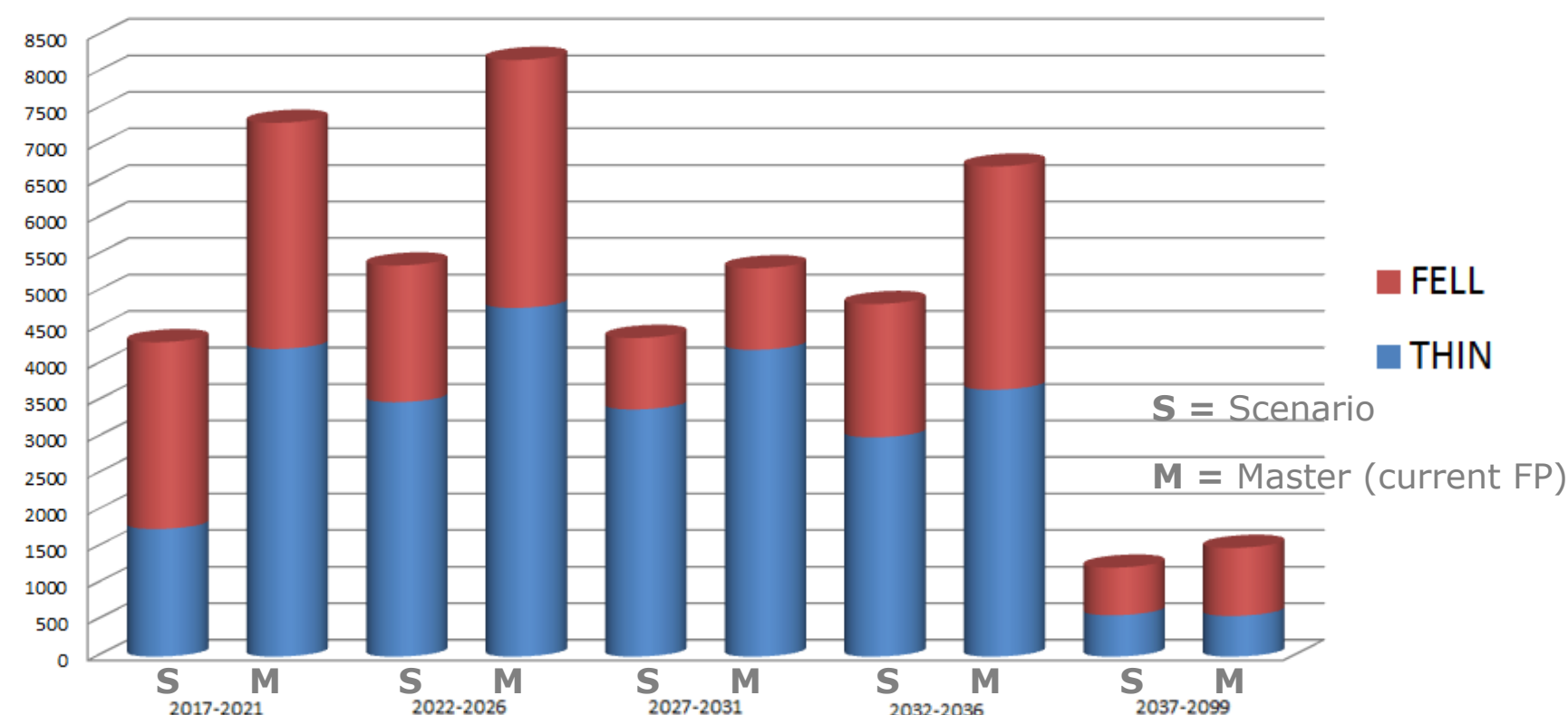
Option Testing

Option 1 – Current Forest Plan (Master)	Option 2 – Proposed Forest Plan (Scenario)
Deliver well-designed forests in keeping with the local landscape character	
Landscaping had thought about the context of prescriptions so that the future woodland would be 'softened' for better integration into the surrounding landscape, although some clearfells tended to be on the large side and not in keeping with local character.	Proposals have adapted previous prescriptions and coupe design, with some timings for felling and coupe design being changed so as to provide a more sympathetic restoration more in scale to surrounding woodland and landscape context.
To protect enhance and restore areas of ancient woodland in line with the 2005 'Keepers of Time' policy.	
Both original plans were very much at the beginning of 'Keepers in Time' policy and proposals reflected the need to see progress being made towards restoration through the use of clearfelling. A move towards restoration through use of continuous cover (CCF)systems was also introduced.	The new plan continues the use of both clearfelling and continuous cover systems in order to restore PAW areas to a native condition. With some timings for felling and coupe design being changed so as to provide a more sympathetic restoration, that prioritises the completion for the removal of invasive species such as Western Hemlock.
Protect and enhance woodland and open habitats and their associated species.	
Open space was identified within the plan as needing to be increased in order to provide improved habitat for lepidopteran species and a varied ride/track and road edge structure.	Areas not yet felled but previously identified for open space have been rolled over into the new plan, with some additions. In some cases to enhance existing open space and in others to consolidate and expand the available open space habitats.
The protection and enhancement of veteran trees/trees of special interest (TSI) and recruitment of future generations of veteran trees/TSI.	
Not formally identified as an objective but possibly implied through other objectives that cover the management of broadleaves and native woodland.	TSI will continue to be identified and recorded to improve the spatial data set currently held in conservation extension. The planning of harvesting should look to identify and record previously unrecorded TSI and harvesting operations will follow the England National TSI guidance brought out in 2015-2016.
To conserve, maintain and enhance cultural and heritage assets.	
Management proposals were in line with management intentions laid out within site specific management plans.	Management proposals will continue these intentions supported by the site planning process that will look to identify and record any previously unidentified heritage features within the Heritage Extension heritage features for future reference.
The continued production of sustainable and marketable woodland products.	
Timber production was sustained through a mixture of thinning and clearfelling. A clear shift was made in prescribing CCF to deliver PAW restoration.	The new plan rejigs the balance between CCF and Clearfelling, recognising that in some cases some areas previously identified for continuous cover would best be managed through clearfelling instead and visa-versa.

Total Production Forecast Comparison






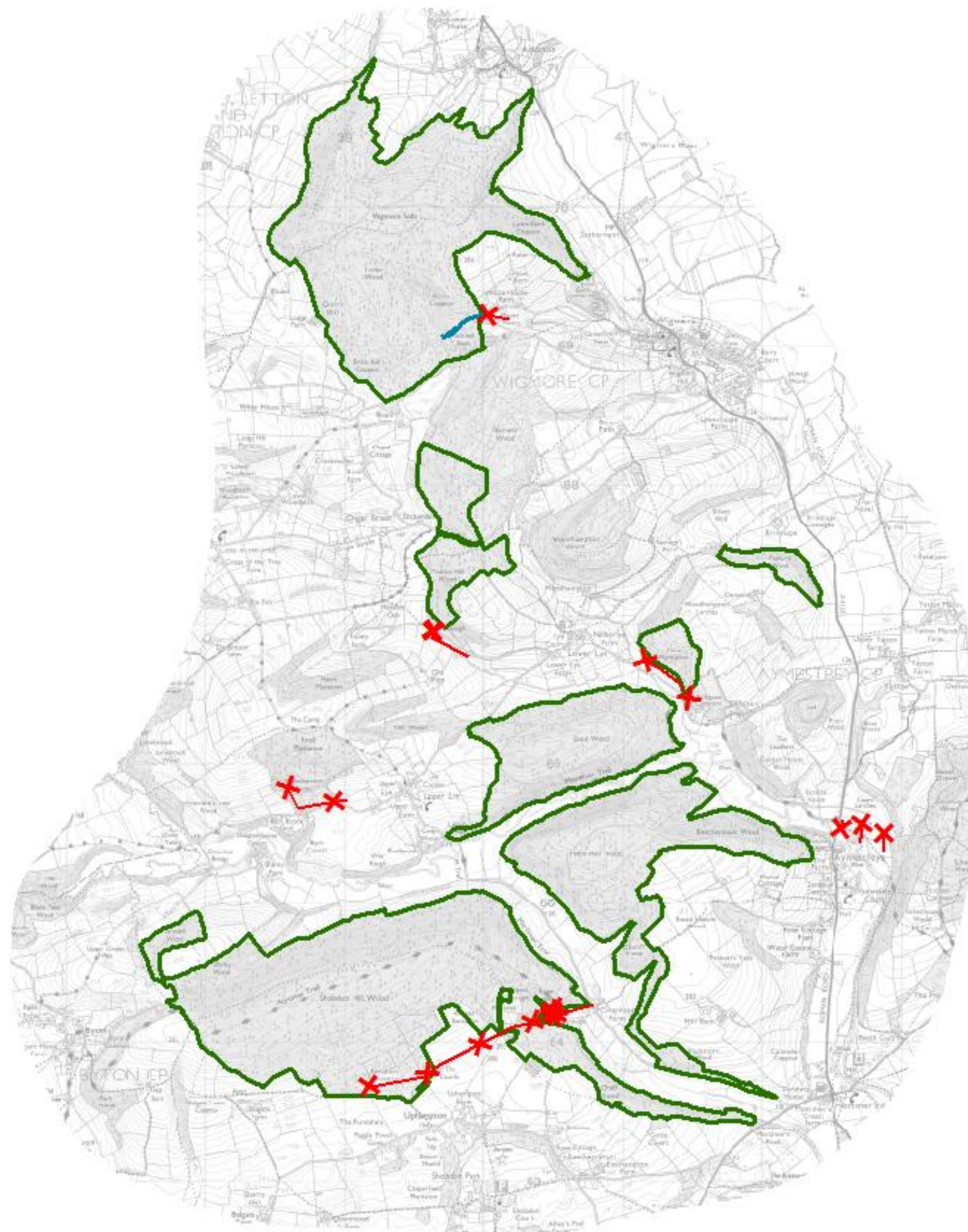
Scenario and master forecast comparing thinning and felling



Utilities

Legend

-  Forest Plan management area
-  Powerline Overhead
-  Water pipeline

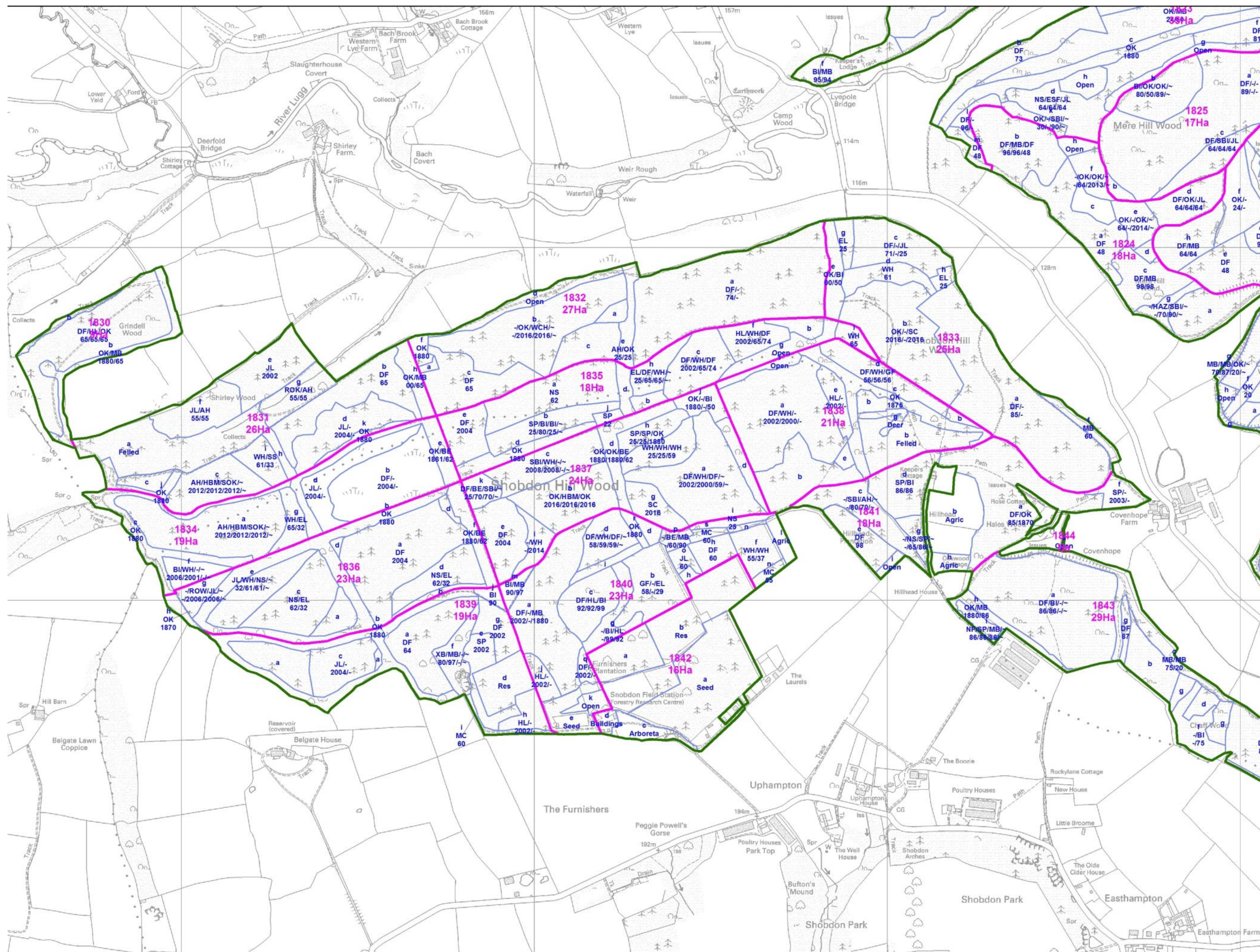


FSC
www.fsc.org
FSC® C123234
The mark of responsible forestry

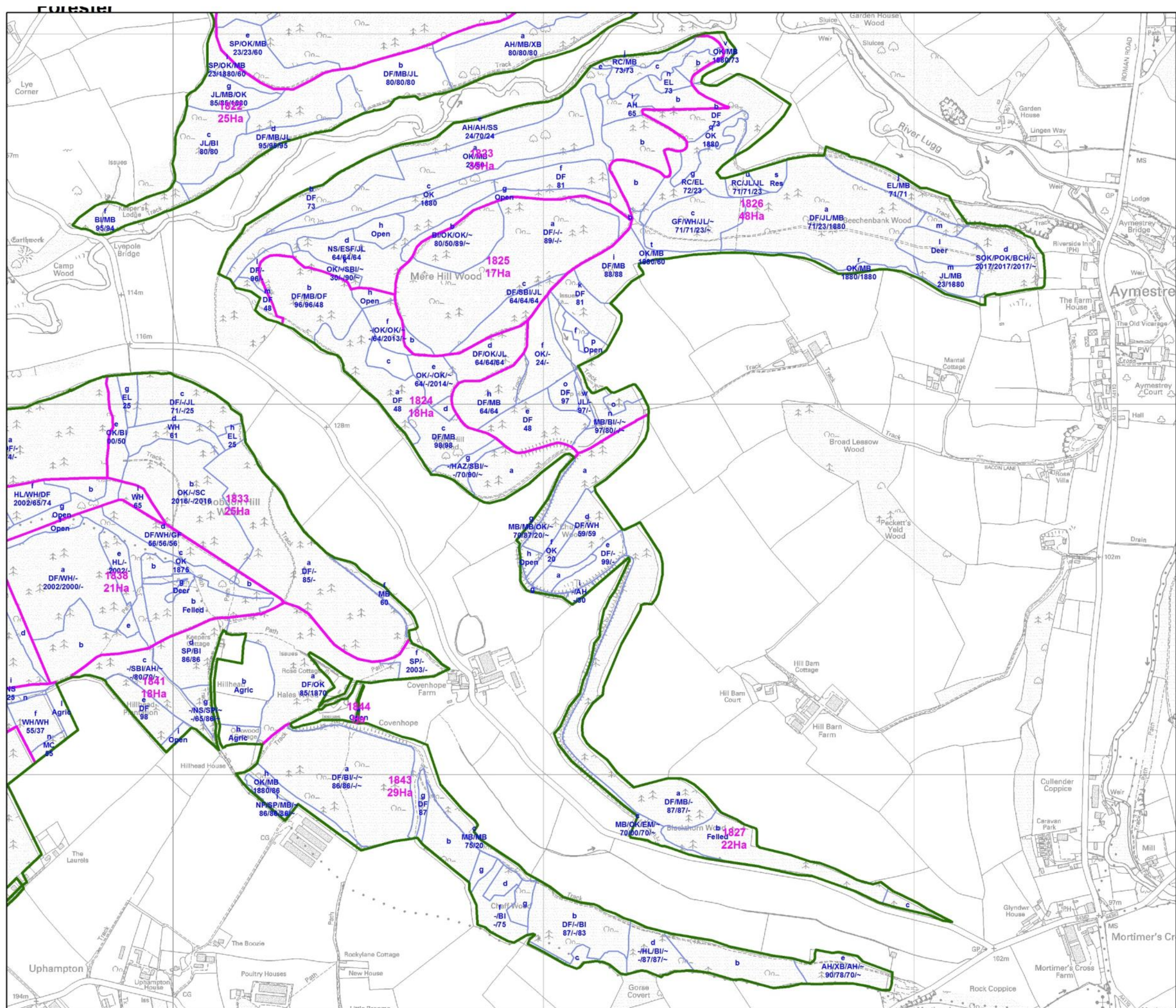
Forestry Commission
woodlands have
been certified in
accordance with the
rules of the Forest
Stewardship Council.

PEFC
PEFC-UK-440
Promoting Sustainable
Forest Management
www.pefc.org

April 2017



Approximate scale 1:10,000



Stock Data

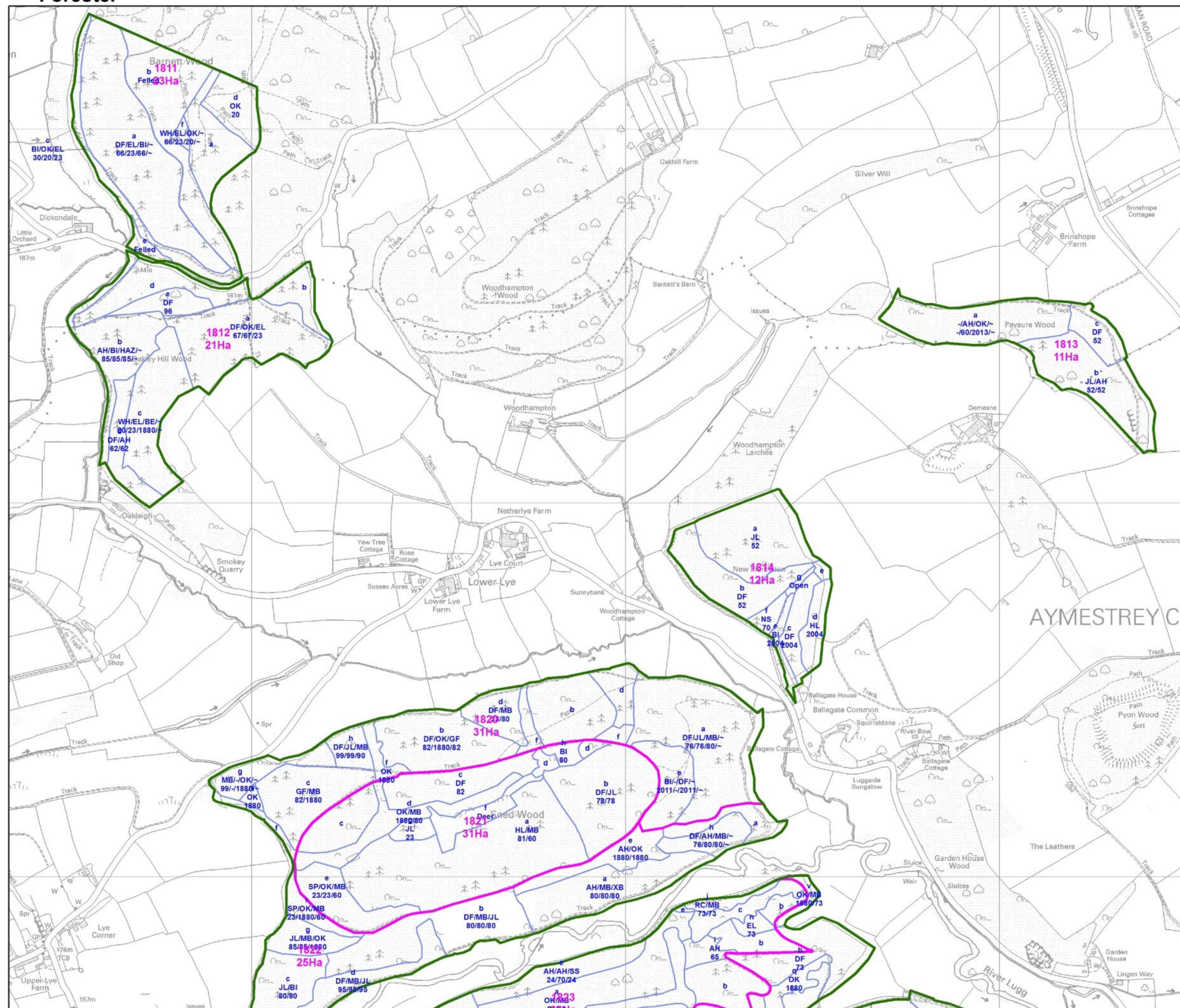
MERE HILL and
SHOBDON



Stock Data

SNED WOOD
BALLSGATE WOOD
PAYSURE WOOD
OAKLEY WOOD
BARNETT WOOD

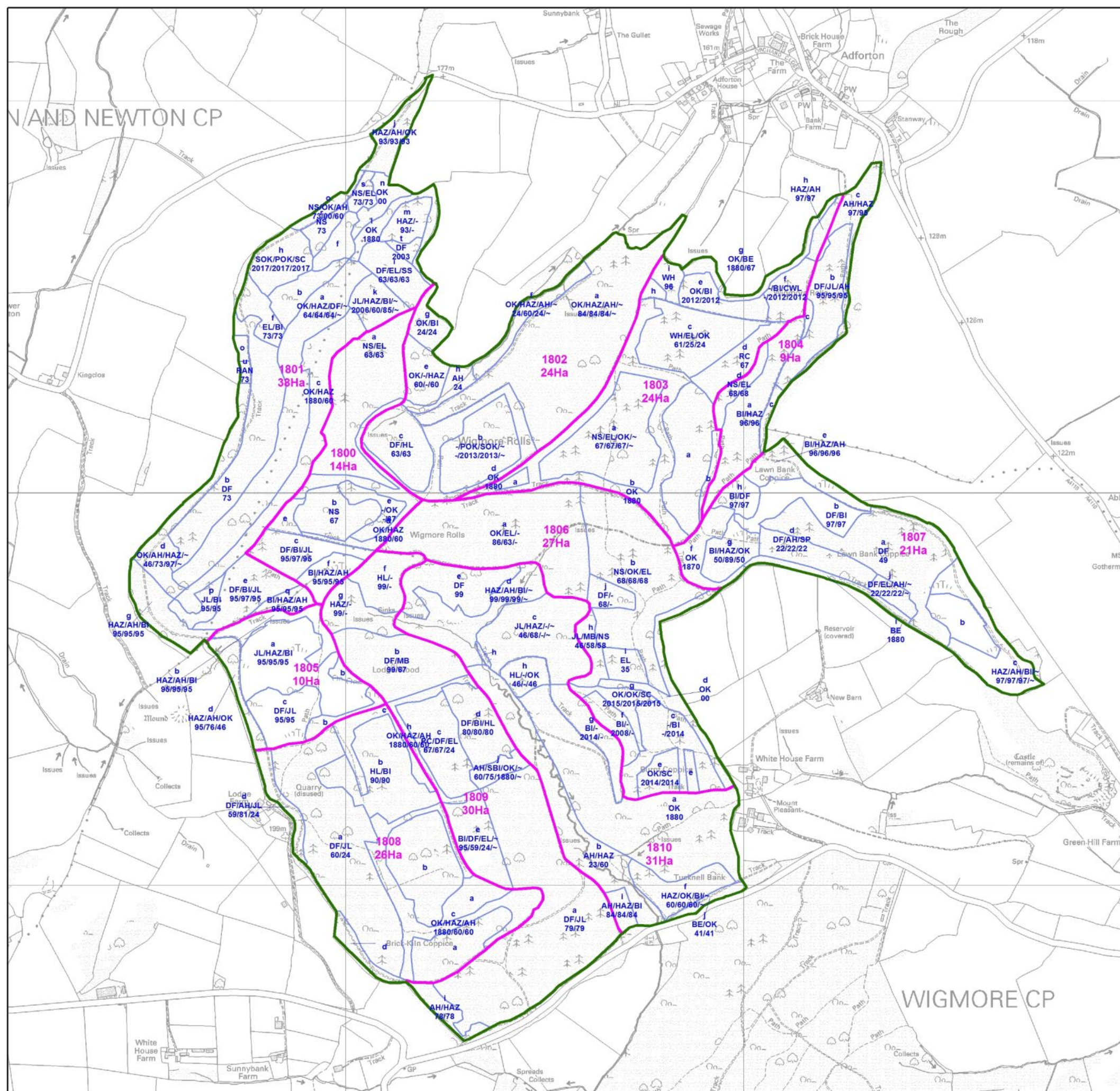
April 2017



Stock Data

WIGMORE ROLLS

April 2017



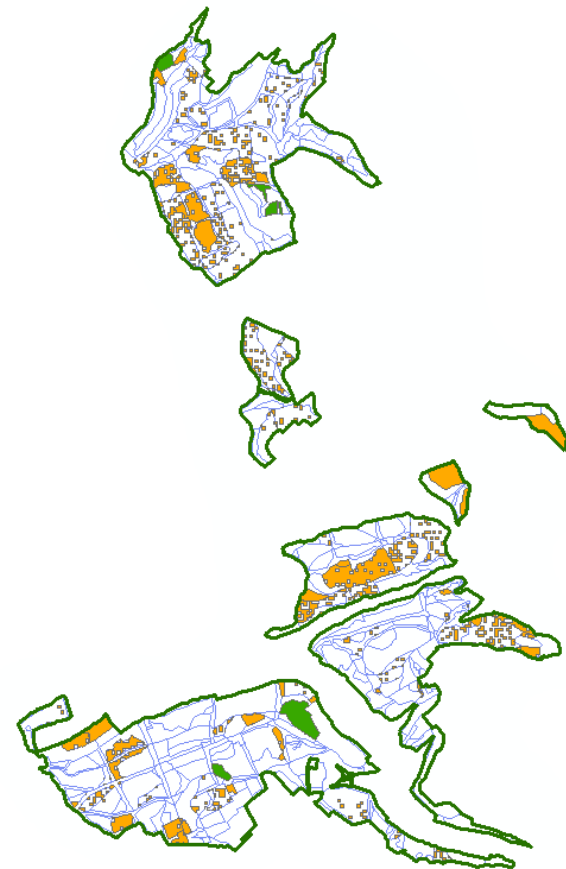
Name: *Phytophthora ramorum* (PR)

First appearance: 2009

Attacks: Larches

P. ramorum was first found in the UK in 2002 and until 2009 in the woodland environment had largely been associated with rhododendron species acting as a host from which spores are produced. In August 2009 *P. ramorum* was found on a small number of dead and dying Japanese Larch in South West England, causing particular concern since some affected trees were not close to infected rhododendron and showing a significant change in the dynamics of the disease than experienced previously. Following this testing in Devon and west Somerset confirmed the presence of PR in mature Japanese larch as well as species in its under-storey, including sweet chestnut, beech, birch, oak, Douglas fir and Western hemlock. On some sites there is little or no rhododendron present. It is now known that Japanese larch can produce very high quantities of disease-carrying spores when actively growing in spring and summer, at much higher levels than those produced by rhododendron. These can be

spread significant distances in moist air. PR is a notifiable disease dealt with by felling the infected area under a statutory plant health notice (SPHN) issued through FERA and the Forestry Commission.



Legend

- Larches
- S. Chestnut

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Ordnance Survey [100021242]



Legend

- Oaks

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Ordnance Survey [100021242]

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 to any of these agents on a yearly/seasonal basis further reduces the health of the tree(s) and predisposes it to other living (Biotic) agents that can often spell the eventual death knell for the tree.

Pests & Diseases

Name: *Chalara fraxinea*

First appearance: currently N/A

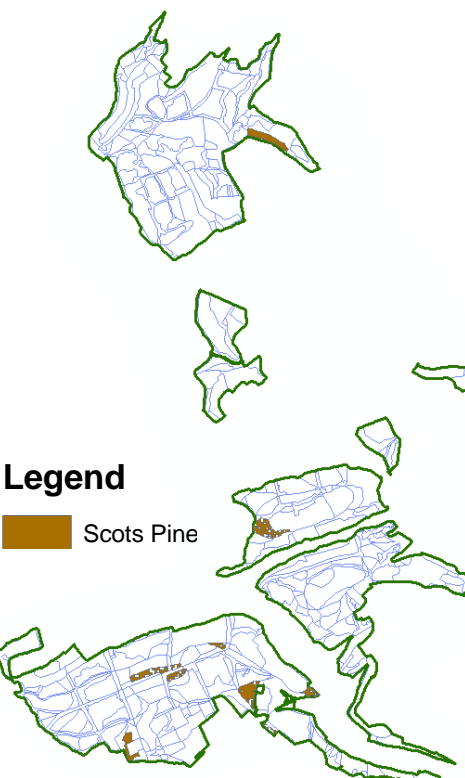
Attacks: Ash

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!

Legend

- Ash

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Ordnance Survey [100021242]



Legend

- Scots Pine

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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. However, the Mortimer WMU contains a relatively small component and therefore its impact has been fairly limited.

Term	Abbreviation	Description
Ancient Semi-Natural Wood-land	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.
Alternatives to Clearfell	ATC	Alternative to Clearfell is similar to CCF and refers to management systems where stands are regenerated without clearfelling.
Ancient Wood-land 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 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.
Clearfell	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.
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 Regen-eration	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 clear-fell 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> <ol style="list-style-type: none"> 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. <p>NOTE: 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 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.</p>