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 overstory 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, Thwaites 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.
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.
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.

**Declaration by FC as an Operator.**

All timber arising from the Forest Enterprise estate represents a negligible risk under EUTR (No 995/210).
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.
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 enrichen 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.

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.
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.

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

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.

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.
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.

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.

For coupes adjacent to the River Lugg SSSI please see previous page.
Shobdon and Wigmore Forest Plan
2017 - 2027

Management Prescriptions
2017 - 2047

WIGMORE, BARNETT WOOD
and OAKLEY WOOD

Legend
- Fell 2017-2021
- Fell 2022-2026
- Fell 2027-2031
- Fell 2032-2036
- Fell 2037-2041
- Fell 2042-2046
- Fell 2047-2051
- Conifer crop on extended rotation
- Mature habitat retention
- Minimum Intervention
- 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.

Western Hemlock to be removed during the next thinning.

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Approximate scale 1:10,000
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.
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.

Beginning the re-coppicing of this area will start a process of producing a more enhanced and cohesive network of native habitat features within Wigmore, ensuring a more varied age structure and more open ride structure is achieved E.g. for likes of Dormice. Further detail can be found in the management prescriptions for Wigmore, Barnett and Oakley Wood.
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.

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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.