

Highmeadow Forest Plan 2015 - 2025 **West England Forest District**

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

Francis-Raymond-Barker FCE File Ref: OP10/31 (Old OP10/12) FS File Ref: GL1/5/2.25



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



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adow from Little Doward Hill Fort



The Highmeadow plan covers 1075 hectares of mixed woodland in the Wye Valley west of the Forest of Dean straddling the border between England and Wales and the three counties of Monmouthshire, Herefordshire and Gloucestershire.

The Wye Gorge has tremendous landscape and conservation value, and thanks to the rich natural resources and geography of the area Highmeadow is steeped in social and economic history.

In 18th and 19th Century the River Wye provided good access. A weir and dock were constructed at Symonds Yat and the woodland enjoyed a thriving trade in iron ore helped by the coppice wood that fuelled the charcoal industry, remnants of both are clearly visible throughout the woodland to this day.

In the latter part of the 17th Century the picturesque movement enjoyed the Wye Valley and the Gorge for its dramatic craggy scenery and today, despite the sheer rock faces being heavily cloaked in deciduous woodland, the Wye Valley and Gorge remains a favourite attraction for people to enjoy panoramic views over the Gorge and surrounding countryside that are often still perceived as 'wild' and untouched.

Some areas are relatively inaccessible such as the Seven Sisters along with other parts of the Wye Gorge like the Doward and Huntsham Hill that all enjoy great ecological diversity. The importance of nature conservation is confirmed by their SSSI, SAC and NNR designations.

In the 20th Century the policy of developing a national strategic reserve of timber meant large areas of the Forest of Dean including Highmeadow were planted with conifer. In 1985 the value of broadleaf woodland was recognised by a change in policy that aimed to maintain and increase broadleaf coverage. In 2005 the Keepers in Time policy outlined a shift away from planting conifer on ancient woodland sites to one of planting native broadleaf.

The 2003 Forest Plan set out to restructure the woodland with a series of carefully designed clearfells phased over a 30 year period in recognition of the values of this natural and historic landscape.

More recently the increasing threats from pests, disease and changes in climate have highlighted the need to increase woodland resilience for the future through diversifying tree species and woodland structure.





The focus of this plan will therefore face these new threats and risks by broadening the limited range of native species, and begin to reduce reliance on Oak, Beech, Birch and Ash.

In the longer term management will seek to achieve a wider range of species to diversify woodland composition.

To achieve this sympathetically, there will be less clear felling with more use of Low Impact Silvicultural Systems. To conserve both cultural and heritage features within the plan area notably: Symonds Yat Hill Fort, King Arthurs Cave and Merlins Cave (all are Scheduled) and other recorded and unrecorded non-scheduled features for instance: hearths and platforms, banks and hedges, surface mineral workings etc.

> The provision of formal public access at key sites, and the provision and monitoring of informal access that minimises damage to sensitive areas such those being managed for native wood restoration or those with a high heritage or cultural value. A considered management

Management of the woodland will be to the standards required to maintain FSC and PEFC accreditation.

The continued use and development of Low Impact Silvicultural Systems (LISS) to complement and enhance management objectives that include the restoration of PAW sites and will help achieve a healthy robust woodland for the future.

To undertake management that protects and enhances ASNW along with other woodland and open habitats facilitating resilience and adaptation to projected climate change and threat of disease.

To undertake management that maintains and enhances the condition of the SSSI and SAC areas.





The mark of responsible forestry

The objectives of this Plan will, in

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

Monitoring of the meeting of these objectives and ultimately the success of the Plan is outlined in Part 6

part, deliver the West England Forest District Strategic Plan and the national Strategic Plan for the Public Forest Estate in England.

woodland products that also allows for the delivery of a range of other public benefits and provides opportunities for economic growth.

Continued production of

sustainable and marketable

approach that ensures the

of both the external and

internal landscape.

protection and enhancement





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

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







Tenure and Designations

The plan area is predominantly freehold, whilst Elliots Wood at Huntsham Hill are leased from the Courtfield Estate owned by JH Vaughan Esq.. It is likely the Estate will resume possession of this area at some point during the 10 year term of this plan.

Highmeadow Woods lies wholly within the Wye Valley AONB including 186Ha of SSSI collectively known as the Upper Wye Gorge. Its international importance is recognised by the majority of the SSSI area also designated as a Special Area of Conservation (SAC). Lady Park Wood is a National Nature Reserve established in 1945 and lies within the SAC. The NNR monitors the natural woodland processes when no management is carried out giving vital information on woodland ecology and how natural processes influence woodland development.

The Keepers in Time policy and the management designations within Highmeadow identify that restoration of Native Woodland and the conservation of existing Ancient Semi-natural Woodland will need to be prominent features of plan proposals.

Three Scheduled Ancient Monuments lie within the plan area: • Symonds Yat Hill Fort. This is an Iron Age settlement and due to its outstanding views of the Wye valley and Peregrine Falcons that nest on Coldwell Rocks is a major visitor attraction. This site is subject to management under an agreed plan with

- years ago.
- the river south of Symonds Yat.
- Prehistoric standing stone known as The Long Stone

The plan area contains 3 campsites: Christchurch that is a large cabin site, and a major entry point to the woodlands managed by Forest Holidays, with further camping provided at Bracelands by Camping in the Forest. The third educational campsite facility based at the Biblins on the Doward is franchised to a third party. These and other recreational pressures will need to be accounted for within the plan.

English Heritage. Management of visitors to the site is particularly crucial in order to conserve archaeological features from erosion. • King Arthur's Cave is a limestone cave with a long history of occupation dating back to Palaeolithic period some half million

Merlins cave has a similar formation and lies on the north side of

There is also a listed structure on the side of the A4136:

listed under GHER 5099 – see Heritage Features section

LANDSCAPE CHARACTER

Wooded valley – 1a Wye Valley

The deeply incised, heavily wooded valley of the Wye and its tributaries define the western boundary of the district. The dramatic valley profiles, sheer rock faces and areas of deciduous woodland are often perceived as "wild" and untouched, with long panoramic views from vantage points emphasising remoteness and inaccessibility of many parts of the landscape. This in part is due to the drop in sea-level around 2 million years ago eroding rapidly downward through the Carboniferous Limestone, e.g. at the Yat Rocks, and as the meandering Wye became more vigorous the meanders became rapidly entrenched within the deep valley that it had carved. Compared to the 1800s in many areas the dramatic effect of the rock faces is diminishing due to overgrown and overhanging vegetation. E.g. Seven Sisters rocks.

The area is remarkably diverse in terms of flora and fauna and in 1971 The Wye Valley was designated an AONB in recognition of both its landscape value and its high ecological value.

Limestone Hills - 2b Highmeadow woods and Staunton Hills Coniferous plantations and mixed woodlands dominate and cloak the landscape obscuring underlying Carboniferous Coal Measures and subtle hilly landforms. Convex hillsides characteristic of Carboniferous Limestone geology are visible especially around Staunton confirmed by distinct absence of surface streams and the quarries south of Staunton.

In contrast a geological feature known as "The Buckstone" lies west of the village on an escarpment of Quartz Conglomerate where the Carboniferous and Devonian geology meet and enjoy panoramic views over the Forest of Dean and Highmeadow. The meeting of these two rock types is also evidenced by place names such as Whitecliffe and Coalpit Hill. The prominent Crease Limestone band is another geological feature running north west between Whitecliffe and Reddings Lodge; historically important as a source of iron ore and only identifiable by the presence of natural shallow features locally known as "Scowles".



View south into Highmeadow from the Little Doward hill fort clearly shows the complex topography of valleys and ridges with varied aspects that will have an impact on species choice and establishment.



NATIONAL CHARACTER AREA

View south west into Highmeadow from Seven Sisters shows the dramatic gorge profile and panoramic views that are available.

During the period of Roman occupation, the deposits of iron ore and abundant local supplies of charcoal were exploited to produce iron. Remains of shallow workings are still visible as Scowles. The main influence on the majority of the area was the creation of a Royal Forest in the 13th century.

The underlying geology has a major influence on the landscape and landforms in the area whilst the varied soils associated with them lead to a wide range of habitats with their characteristic flora and fauna.

Forty percent of the Forest of Dean National Character Area is wooded amounting to some 12,700 ha of woodland of which around 10,600 Ha is ancient woodland.

The NCA area contains 8,041 ha of the Wye Valley AONB that covers 26% of the total NCA area, within which the main priority habitats relevant to Highmeadow are lowland mixed deciduous woodland and wet woodland.





Left: Etchings from the 1800s casts a romantic impression of the clearly visible rugged limestone cliffs of Symonds Yat and Coldwell Rocks whilst also indicating the industrial and recreational value of the woods and economic value of the River Wye as a transport route. **Right:** Today much of the rugged landscape is cloaked in woodland although the river is still enjoyed for recreational purposes and less so for transport.



West England **Forest District**

HIGHMEADOW

2015 - 2025

Landscape **Character and** National **Character Area**

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Looking to the future...

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The focus of management should aim to: Broaden the limited range of native species. Reduce reliance on Oak, Beech and Ash; Take advantage of opportunities to promote and increase both silvicultural¹ and ecological diversity through planting, coppicing, rideside management, and the selective thinning of both conifer and broadleaf crops. (¹ structure, age and species)

This approach helps ensure a structure robust enough to help meet future environmental demands and threats being faced by woodlands.



AIMS FOR THE TRANSITION PERIOD to a woodland containing 80% or more of native species should be to achieve:

A varied age structure with varying ratios of high canopy, secondary canopy and understorey throughout.

Transition that ensures a preferable future target content of 4 native species in order to establish a healthy diversity of native tree species that increases future woodland resilience.

Avoid reliance on monocultures especially of Birch, Ash, Hazel or Oak. This objective may eventually mean considering either underplanting or group felling and planting within existing mid rotation and maturer broadleaf crops.

A STAGED AND FLEXIBLE APPROACH, of classifying conifer crops is needed that will offer opportunities to develop a better woodland structure with a wider diversity of species.

Areas of conifer will be allocated to one of three categories (described on the next page) that will depend on site conditions and crop characteristics including the proportion of native species present within the crop.

Crop classification will range from those sites where transition to native woodland is likely to be quickest, to the 'non-native crops' with a woodland naturalness score of 3 or 4, where a much higher degree of preparatory work is required before crops can be progressed to woodland naturalness 1 or 2.

Over time and with appropriate management, the proportion of native tree species will increase and areas may move to a more suitable category.

The final transition to a native woodland structure will give a predominantly broadleaf composition and areas will be regarded as restored once the proportion of non-native species falls to 20%.

INDICATIVE STRUCTURE IN THE LONGER TERM

Non-native species may still be present in low numbers, particularly where topography and terrain make their removal difficult, in areas where large trees will enhance the woodland users' experience¹ or where felling of non-natives would be detrimental to the surrounding native woodland.

This low impact approach will improve age class structure, species diversity and help maintain and enhance the quality of the wider landscape that is so highly valued by woodland visitors.

Given recreational pressures¹, the natural pressures² across the whole area, and the high external/internal landscape value of Highmeadow, a low impact approach would seem appropriate. Such an approach will have the added advantage of offering greater control of light levels thus reducing the impact of competing ground vegetation such as bramble and bracken on the establishment of planted trees or natural regeneration. However, in parts, the use of clearfelling and restocking may still be the preferred management approach³.



3163d DF p87 first thin with drawn up birch nat regen



3134b NS p66 7 AH regen close to camp site





3129f DF p27 with a mixed understorey close to campsite



3138b,d a character BE amongst RC & NS

3138a OK p1840 with DF p62



The broadleaf components maybe of any age and any height with large or small diameters and it is these characteristics that will drive how conifer crops are converted.

Tall thin broadleaves of a small diameter will probably not be suitable for development into a future crop that is both mature and stable; drawn up with conifer, these types of broadleaf have little crown and a tendency to become bent over. With this type of crop it is probably best to remove this element and recruit younger broadleaf that has a chance to be managed so as to develop well formed crowns as the conifer is thinned over time.

Crops in Woodland naturalness class 3 contain a native content of between 20 and 50% and are in preparation for transition to naturalness class 2 or 1.

Broadleaves in this category are likely to be more robust and more dominant than in the non-native group, but stocking will still be limited to scattered individuals or small groups in need of further development through thinning.

> The last group will typically contain upwards of 50% but less than 80% native tree species that is equivocal to class 2 naturalness. This transition to **native woodland** will be achieved through thinning and or group felling and planting.

Larger diameter mature broadleaves and veteran trees will be more common in this category, and thinning work will gradually remove competing conifer, increasing light levels for development of existing natural regeneration and provide opportunities to establish open space for group plantings through group felling in order to ensure a healthy diversity of native tree species for the future.

¹ – Especially likely to be around the vicinity of the campsites in the Mailscot area. ² – The impact of deer, boar and climate change. ³ – due to threat of disease, poor growth rates, or the wrong species for the site. 4 – A score from 1 to 4 used by FC to determine the native content of an area of woodland.



Transition to native woodland

Here the indicative proportion of native tree species within a given area would be more than 50% of the crop but less than 80%. Removal of remaining conifer can be achieved either through: thinning operations or felling in small groups at the same time as thinning.

Regeneration and establishment of native species is likely to be achieved through a combination of natural regeneration and group planting in order to ensure future woodland has a diverse composition that should aim for 4 native species. Crops in this class may well need enrichment planting to achieve this diversity before being able to achieve a woodland naturalness score of 1.

The establishment period to predominantly native woodland within this category is anticipated to be 20-30 years but is dependent on successful regeneration and establishment although maybe sooner depending on the quantity of conifer in need of removal.





Preparation for transition

Areas within this category will generally contain less than 50% of native tree species but have a proportion greater than 20% of the crop. Enhancement of native content will continue through thinning the conifer content. Management of the crop will ensure broadleaf elements benefit from any thinning work undertaken.

No specific measures will be implemented to promote natural regeneration of native tree species unless:

• There is evidence of significant natural regeneration, or

• Where enrichment through planting will help achieve satisfactory stocking levels and ensure native species diversity is not reliant on 1 or 2 species for future resilience.

The anticipated time scale for establishment of predominantly native species is expected be around 40-50 years or so, but could be longer depending on success of establishing the future crop.

These are younger conifer stands that have not yet reached thinning age or older conifer areas that have been thinned but where there is little evidence of native species regenerating into the stand. The proportion of native tree species within a given area for this category will be less than

Areas of older conifer that are in or around areas of high public pressure such as the campsites, where landscaping issues and shelter are an important factor. These areas are likely to contain a conifer component for the longer term. The planning of thinning of these areas should refer to the Landscape management plan drawn up for Forest Holidays.

Thinning in both these sub-categories should encourage crown development of broadleaf components. Progress will be monitored and crops moved into a more suitable category depending on development of stand structure and the response of natural regeneration with a 80-90% native structure achieved in the longer term.



• Cpt 3124a planted in 1820 contains mature habitat typical of the area, with Oak & Beech of the same age. These types of habitat add ambience to the area and any thinning should be sensitive to these characteristics.

cpt 3137f

with Beech

be planted

structure.

Oak 203 years old

planted in 1920.

failed regen from

the 1980's could

helping improve

Small areas of



• **Cpt 3128a** 75 year old Oak planted in 1940 with possibilities for opening up riparian zone and thin towards a structure suited for enrichment planting at some point in the future that will increase species diversity



Cpt 3148a p1837

will often contain this

Area of mature Oak

typical Hazel under

storey that will be

managed through

periodic coppicing.



Previous Broadleaf management has resulted in Oak becoming the dominant broadleaf species accounting for 43% of total broadleaf cover followed by Beech at 18% and Ash at 14 %. **Figure 4** shows the association of Oak dominance within NVC classification.

The limited diversity of broadleaved tree species¹ is partly down to stand manipulation, but also a heavy historical reliance over the last 30 years or so on the use of natural regeneration as a means of regenerating and establishing the next generation of tree cover. Deer pressure and the presence of feral wild boar within Highmeadow have also limited the successfulness of this approach. ¹The exception being the Upper Wye Gorge SSSI and SAC where extensive areas of semi-natural woodland include collections of rare sorbus species and stands of both small and large leaved Lime along with small areas of relict grassland.

The above contributory factors have resulted in Birch and Ash being the primary species to naturally colonise, albeit with high incursion rates of non productive scrub and heavy vegetation e.g. broom, gorse, buddleia, bramble and even Western Hemlock on some sites where broadleaf regeneration was expected. With constant threats from disease and climate change it is prudent to help ensure future resilience by extending planting to a more diverse list of native species that should aim for a future mix of 4 species (inc Ash and Birch).

For the Future, broadleaves have been split by age class into 4 main coupes consisting of broadleaf sites aged upto 50 years old, those aged between 50 and 100, those over 100 and those considered to be mature habitat that predominantly consists of Oak and Beech planted in the 1800s. These groupings will be used to help easily identify and determine any management that maybe required during the plan period. Management will look to begin the process to ensure that age class and species are diversified through thinning and planting. Proportions of older veteran tree classes will increase through recognition and promotion of areas into mature habitat retention.

Deadwood Habitat will be managed to enhance the quality of both standing and fallen deadwood and to increase the amount in line with UKWAS recommendations. The percentage of crowns left in situ following harvesting operations will depend on the quality and condition of existing deadwood. Consider retaining wind damaged broadleaves, fallen limbs or fully windblown trees to add diversity to the types of deadwood present.

Broadleaf coupes and likely management operations for 2015-2025

Shelterwood upto 50 years old

Predominantly establishment operations such as planting, beating up, weeding, cleaning, Respacing, enrichment planting and pruning etc will ensure correct stocking density is achieved.

Shelterwood from 50 to 100 years old

Respacing of natural regeneration with enrichment planting will ensure future diversity, along with pruning and thinning that will help raise the quality of timber.

Shelterwood over 100 years old

Possibly some prep work for regeneration, enrichment planting, and thinning.





CONIFER THINNING

Areas of conifer are assessed for thinning every 5 years. Assessments record measurements of basal area, see glossary in **appendix 6**, that help determine if an area is ready to be thinned. Other factors such as Forestry Commission the quantity, condition, age and distribution of any broadleaf content, England will also help decide if an area of conifer is to be thinned or not. Light West England levels within the crop, existing ground vegetation and any evidence of **Forest District** any thinning to be carried out. **Forest Plan** Other than identified clearfells within the 10 year plan period (see next **HIGHMEADOW** page) there are currently just over 90Ha identified where restoration to a native state will be achieved through thinning. 2014 - 2025 (See sections on Plantation Ancient Woodland and also PAWS Thinning

natural regeneration will also influence how many trees are removed in management)

BROADLEAF THINNING

2015

Broadleaf high forest is assessed for thinning every 10 years with a visual inspection of the stand to confirm if thinning is required or not. If a sub-compartment is flagged for thinning it can be the whole sub-cpt or just part of that sub-cpt that will be thinned; influenced by objectives, crop conditions, levels of stocking, natural regeneration etc.

Thinning will allow sub-dominant broadleaves sufficient light and space to mature or will release existing advance 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 maybe possible to enlarge natural gaps through irregular thinning rather than create new gaps through group felling, however, in all cases the size of gap created will be dependent and relative to slope, aspect, site fertility and must try to avoid detriment to crop stability. These gaps will be utilised for enrichment planting using a mix of native species other than those occurring in the overstorey, creating both diversity and structure within the woodland.

With the known difficulties experienced over the past 30 years in establishing Oak regeneration, there is no rush for this process and no group felling interventions will take place unless accompanied by an intention to replant. With this in mind enrichment planting will initially focus on existing historical group fellings where regeneration has failed, e.g. at Headless Hill, which will begin the diversification of both species and structure within the older broadleaf crops.

COPPICE

There are around 28Ha of Hazel and 19Ha of sweet Chestnut within Highmeadow. Only 3 of these hectares are recorded as coppice. As future areas are worked for coppice, they should be mapped and logged as Productive High Forest or Coppice¹ depending on objectives and the intended cutting frequency in the future – if cut regularly record as coppice, if not then record as High Forest.

Coppice work will continue in areas of high conservation value and some of these areas are identified on the Site Analysis map. This will help create linkages running northerly from Marians Enclosure into the heart of Highmeadow and down to the SSSI. With threat from disease and other site factors, conversion to high forest may not be possible but where possible 50-100 standards of varying size classes per Ha should be retained in order to perpetuate a diverse structure.

Hazel is often found in Highmeadow as an understorey to high forest, having previously been managed as coppice. These areas should be managed in coupes on a 7-15 year cycle, with 1 or 2 coupes being felled during normal thinning operations to invigorate the stools. Among other species a 25-30 year rotation will be more appropriate.

Along the riverside, stored stools of coppice can collapse into the river at times and implementation of a coppice regime began during the previous plan to recoppice the dense thickets and pole stage woods that tended to obscure views of the river. This practice will continue with sections being assessed for work that will follow guidance detailed in the SSSI plan located in **appendix 4**.

NATURAL RESERVES AND SSSI WORKING For the past seventy years Lady Park Wood has been under a regime of total non intervention and has been part of a study into natural stand dynamics. The area is designated as a National Nature Reserve and has its own management plan produced by Natural England.

A number of other areas within Highmeadow have been identified as being suitable for natural reserves managed under a minimum intervention regime. These areas are called minimum intervention as opposed to non-intervention as there may well be a need to intervene in order to remove inappropriate plant and tree species and to reduce risks to public safety, for example along public footpaths.

Management of this area will ensure particular rare habitats and species are maintained e.g. Limestone grassland refugia and rare sorbus species. These areas can be found on the Doward, Seven Sisters, the rapids down to Biblins, beneath/above The Slaughter and between Huntsham and Coldwell Rocks.

Work within the SSSI will be small in scale with any thinning or coppicing in line with prescriptions of the SSSI plan that can be found in **appendix 4**.



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	Page 16
e: 31710 2017-2021	
pe: 31710a planted	Forestry Commission England
lime 20% 20%	West England Forest District
10% 50%	Forest Plan
	HIGHMEADOW
	2015 – 2025
5	Felling and restocking 2015-2025
	2015-2025

The scale and pace of clearfelling will be greatly reduced and slowed during

• Establishing a fully stocked, diverse area using natural regeneration has proved unsuccessful within Highmeadow over the last 30 years. Past restocking has been just as challenging with relatively large clearfells, high deer pressure and the fertile nature of the sites.

Achieve full stocking that is diverse in species and structure on existing natural regeneration and restock areas that are currently poorly

Recent outbreaks of disease such as Phytophthora ramorum (PR) within the District has meant the clearfell programme had to be adjusted to ensure timber production remained at sustainable levels although clearfelling of larch will not take place within Highmeadow perse

Clearfelling will concentrate on removing areas of CP infected with

Aside from the clearfell coupes identified on this map, smaller group felling will be carried out during routine thinning interventions within PAW areas. Group size will be dependent on site conditions but will be in the order of 0.5-0.75Ha (see sections on Plantation Ancient Woodland, PAWs prescriptions and thinning) Some interventions may have no groups felled at all which will further encourage a varied age structure and ensure

Gaps created are to be restocked with a variety of native broadleaves with the removal of overstory dependant on successful establishment and growth rates of the planted groups of trees. Using this method will hopefully achieve a future crop that is commercially viable and ecologically robust. Some areas, like those around the campsites may retain a

Operations will be managed in accordance with the England Operational Instruction no3 for the management of Forest Operations in Ancient

Deer will be managed through routine management in conjunction with the Deer Initiative and adjoining land owners to ensure successful establishment. Feral wild boar will be managed in line with Defra policy.



The planning of operations must make reference to the cabinsites Landscape Management Plan.

Over the next 10 years the plan has identified around 29Ha to be restored to broadleaf woodland through clearfelling that will include elements of open space especially on the Doward and in the Reddings area too.



Highmeadow 2015 Forest Plan Production Forecast felling and thinning split 2015-2054 2032-2036 2017-2022-2027-2037-Total forecast 2003 plan 2016 2021 2026 2031 2099 Total forecast 2015 plan Felling Period THIN forecast 2015 plan FELL forecast 2015 plan

Practice guide Restoration of Native Woodland on Ancient Woodland sites

Page 11 NVC W8: Gradual conversion to native woodland is desirable, using systems other than clearfell to control light levels and weed competition. Maintenance of woodland condition is important for species susceptible to disturbance of woodland

Page 11 NVC 10: Terrain is often steep and inaccessible with woods often containing deep gorges and rocky outcrops acting as refugia for native species. Birch regen may often need enrichment, whilst Oak is preferentially browsed and may not regenerate

Page 28: Extended rotation length for even-aged conifer stands give opportunity for structural diversity to develop typically around the normal economic age of clearfelling. Diversity greatly increases with very long rotations as the 'old growth' stage is reached.

Systems that will enable the continuation of woodland conditions should be favoured. The risk of wind-throw and the stability of drawn up native trees or veteran trees that are suddenly released should be considered as should the potential for heavy weed colonisation following heavier thinning with the likelihood of inhibiting future regeneration



PRIORITY FOR ESTABLISHMENT aside from any clearfells will be given to areas where natural regeneration has failed or to those areas restocked during the last plan period where planting density has been compromised and opportunities exist to enhance native species diversity to achieve a goal of establishing 4-5 native species, minimising reliance on Birch and Ash helping build a more resilient woodland for the future.

PROTECTION MEASURES DURING ESTABLISHMENT

Due to deer and boar pressure the fencing of whole subcompartments or the use of tree shelters maybe required to ensure establishment is successful of both planted stock and or any advance regeneration. The use of tree shelters in small groups on young naturally regenerated seedlings other than Birch or Ash may also be used.

Areas outlined with red may well contain a mixture of conifer and broadleaved trees by year 40 although removal of conifer should continue after this through thinning. It is likely that areas of high recreational use such as the camp sites will retain a proportion of conifer for the longer term, especially Douglas Fir.

For the purposes of Forest Composition at year 40 the following assumptions have been made: **1** – That all components in the transition to Native Woodland phase will have achieved an 80-90% Native composition. **2** - That 40-50% of those areas in the preparation phase will have moved into the transitional phase. **3** – In the non-native category 10% will have moved into the preparation phase. **4** - That enrichment plantings following group fellings have achieved 100% stocking and have successfully established themselves. 5 - A proportion of the conifer left in Non-native will indeed be showing signs of broadleaf assertion but not enough to warrant moving to the preparation phase.





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River Wve SSSI and SAC

A focus on using Low impact management such as coppicing will minimise the impact forestry operations are likely to have on these important features. Also see the section on Thinning and the SSSI plan in Appendix 4 has more details on riverside coppicing.

Lady Park Wood **National Nature Reserve**

Lady Park Wood is part of the SAC and is a particularly important area having been under long-term non-intervention for the study of ecology and woodland dynamics the past 70 years. (Please also see section on Thinning.)





Upper Wye Gorge Special Area of Conservation Value (SAC) and SSSI cover extensive areas of semi-natural woodland including stands of Small-leaved Lime and Large-leaved Lime, a rich mixture of

The SAC recognises three woodland types of European importance: Ash/Lime/Elm wood, groves of Yew both on alkaline soil and Beech woods on neutral/alkaline soil. The SAC also recognises 2 geological conservation review sites gualifying for SSSI status in their own right as well as the paleolontological importance of the Upper Wye Gorge SSSI.

A varied list of species can be found within the SSSI and include European Protected Species such as Horse Shoe bats, Otters, dormouse, as well as several Annex 1 birds, red-data-book vascular plant species

Look to safeguard these relict grassland areas and other rare flora by work such as the cutting back of scrub, possibly with the use of volunteers. E.g. Seven Sisters, old guarry edges and Dropping Wells. Safeguard all Sorbus species from harvesting damage.

Use coppicing as a means to increase the structure of the woodland and help promote regeneration of native species esp. Sorbus. Increase open habitat on the Doward plateau and increase ride

SSSI includes the shaded area and any areas hatched in red.

Design Concept and the section on Thinning. Coppicing along the A4136 should also continue to help increase sight lines for deer and motorists alike.



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Features

	S S F
f	Legend
E.	 Trees_Special_Interest_Doward Water Courses
e et	FC Natural Reserve FC Site;
O var	FC/GWT FC SITA Project area (2008-2010)
	Forest Research
Nh	Highmeadow_block_shape
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Δ	•





Highmeadow contains a number of ancient monuments both scheduled and unscheduled. All forest operations will avoid impact to these features and where appropriate seek advice from Gloucestershire or Herefordshire County Councils archaeological departments.

- The three scheduled monuments are:
- Symonds Yat Promontory Fort
- King Arthurs Cave
- Merlins Cave

These are managed in accordance with management plans agreed with English Heritage.



Prehistoric standing stone known as the "Long Stone" GHER ref: 5099



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Objective	Description	Proposals and Monitoring
To conserve both cultural and heritage features within the plan area notably: Symonds Yat Hill Fort, King Arthurs Cave and Merlins Cave (all are Scheduled) and other recorded and unrecorded non- scheduled features for instance: hearths and platforms, banks and hedges, surface mineral workings etc.	All works will adhere to relevant SAM plans and or EH guidance. There also exist numerous earthworks associated with past management of the wood.	 Manage sensitive areas in line with Forest preferenced to any site specific plans such as plans. Maintain a record via GIS of any unschedule improve the quality of existing data sets. Monitoring will be achieved through: Site supervision and the Forest Plan review preserves and the set plan review plan r
A considered management approach that ensures the protection and enhancement of both the external and internal landscape.	The Wye gorge has tremendous landscape and conservation value and lies within the Wye Valley AONB.	 Operational site planning of harvesting and operations should account for landscape en appropriate minimising the risk of adverse is same time highlight opportunities where lan conservation benefits can be delivered. Appropriate reinstatement works will be can operations have been concluded. Monitoring will be through fixed point praticate review stage.
Continued production of sustainable and marketable woodland products that also allows for the delivery of a range of other public benefits and provides opportunities for economic growth.	 Management of the district's woodlands is undertaken to the standards required under UKWAS as endorsed and certified by the Forest Stewardship Council and to maintain PEFC accreditation. As part of the Forest District's business plan and the organisation's customers' charter, the forest district is committed to financial and sustainable timber marketing targets. Growing quality timber in so far as this is consistent with other objectives. Giving local companies the opportunity to purchase timber through open competitive sales. 	 Sustainable production will be monitored forest district's marketing plan, five year forecast and at the Forest Plan (FP) five process is audited as part of the FSC for process. Annual pre-thinning survey. Production forecast comparison with act assess accuracy of forecast. Annual Customer Liaison meetings. The Forestry Commission is already com available supplies of timber for the wood this will be monitored as part of the dist plan. Monitoring will also be achieved through contract supervision.
The provision of formal public access at key sites, and the provision and monitoring of informal access that minimises damage to sensitive areas such those being managed for native wood restoration or those with a high heritage or cultural value.	The area is popular with local people, day visitors and those staying longer at one of the three camping facilities. Good use is made of the trails provided as well as the numerous PRoW. The area is also fast becoming a favourite place for mountain bikers to explore too.	 There are no plans to extend facilities beyo available, other than to retender leases due Biblins campsites. Signage has already been erected to educar road adventure on two wheels. Monitoring at regular intervals by the Rethrough the design plan review process.
To undertake management that protects and enhances ASNW along with other woodland and open habitats facilitating their resilience and adaptation to projected climate change and threat of disease.	Diversify the woodlands so as to develop a better variety of age structures and habitat types that is better adapted to meet future demands. Protect veteran trees and promote the retention of both standing and fallen dead wood.	 The sustainable programme of thinning and together with a varied restock program will diversify stand and age structure, enhance benefit a wide range of species and can be plan reviews and include: Analysis and comparison of SCDB 'natur Site visits to check restocking and reger diversity.

Page 23

olan proposals s SSSI or SAM

ed features, to

e Planning, contract process.

restocking hancements where impact whilst at the ndscaping and or

rried out once

notography analysis

d as part of the r production -year review. This rest certification

tual output to

nmitted to making d-fuel market and crict's marketing

n: Site Planning and

ond those currently e to expire at the

te those seeking off

ecreation team and

d proposed felling l continue to the landscape and monitored during

ralness' scores. neration for



The continued use and development of Low Impact Silvicultural Systems (LISS) to complement and enhance management objectives that include the restoration of PAW sites and will help achieve a healthy robust woodland for the future.	Diversify the woodlands so as to develop a better variety of age structure, species and habitat types that is better adapted to meet future demands.	 The sustainable programme of thinning and together with a varied restock program will diversify stand and age structure, enhance to benefit a wide range of species. Operational site planning should identify deliver this objective. Contract management will ensure opport are implemented effectively and efficient relevant Ops instructions and OGBs. Monitored during plan reviews that shoul harvesting and restocking operational site up with site visits during the review proce
Management of the woodland will be to the standards required to maintain FSC and PEFC accreditation.	Management of the district's woodlands is undertaken to the standards required under UKWAS as endorsed by the Forest Stewardship Council and to maintain PEFC accreditation.	Compliance to these standards is monitored national and district policies, guidance, field GIS and other IT software, internal support external audits carried out by SGS (Société Surveillance) which is an independent auditi Monitoring can also be achieved through: Si contract supervision and the Forest Plan rev

OPTION TESTING

OBJECTIVE		
Option 1 - current Forest Plan	Option 2 Proposed Forest Plan	
To conserve both cultural and heritage features within the plan area notably: Symonds Yat I and unrecorded non-scheduled features for instance: hearths and platforms, banks and hed	Hill Fort, King Arthurs Cave and Merlins Cave (a ges, surface mineral workings etc.	
Management proposals were in line with management intentions laid out within site specific management plans.	Proposals for option 2 have been refined to offer p potential enhancements to ecological values.	
A considered management approach that ensures the protection and enhancement of both t	he external and internal landscape.	
The existing plan recognised the value of the historic landscape and prioritised major anomalies within a wider landscape context. Internally not much work has specifically been done other than to ensure the external landscape was not altered too drastically.	The new Forest Plan proposes to slow the rate of or The main anomalies have been addressed previou on internal landscaping issues.	
Continued production of sustainable and marketable woodland products that also allows for economic growth.	the delivery of a range of other public benefits	
The primary silvicultural method used in achieving the establishment of future crops is that of clearfelling, whilst suggested species choice does not take into account the impact of new diseases and climate change.	Where desirable issues of restructuring are still resystems, but the choice of restock species has been new diseases and climate change. In some cases establishment needs of the more sensitive species	
The provision of formal public access at key sites, and the provision and monitoring of infor native wood restoration or those with a high heritage or cultural value.	mal access that minimises damage to sensitive	
Management proposals saw a steady flow of clearfelling with coupes including areas adjacent to the campsites.	This plan has had to address a wider range of issu presented opportunities for increasing diversity of will replace some clearfelling in key areas to ensur especially around the campsites.	

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proposed felling continue to the landscape and

opportunities to

tunities identified tly to standards in

ld check both te plans followed tess.

l through various surveys, use of audits and Générale de ing company.

ite Planning, /iew process.

all are Scheduled) and other recorded

prescriptions that continue to offer

clear felling in light of other considerations. Isly and so the new plan can concentrate

s and provides opportunities for

ecognised with the retention of clearfelling en widened to address the threats from the low impact approach will help meet s.

areas such those being managed for

ues such as plant health. This has f native tree species. Low impact systems re a higher quality of user experience

To undertake management that protects and enhances ASNW along with other woodland and change and threat of disease.	open habitats facilitating their resilience and
Restructuring of High Meadow was mainly reliant on the use of clearfelling, with restocking consisting usually of one or two species and a reliance on natural regeneration that consisted of mainly birch, Ash and perhaps some Oak if you were lucky.	In reality the range of naturally regenerating spect aspect, fertile nature of the woodland, partially re- be the preferred option for the new plan to ensure species composition.
The continued use and development of Low Impact Silvicultural Systems (LISS) to compleme and will help achieve a healthy robust woodland for the future.	e <mark>nt and enhance management</mark> objectives that
These proposals were very much focused on restructuring, and were still partially reliant on natural regeneration but through the use of clear-felling rather than low impact systems that accepted that perpetuation of conifer species in certain areas would occur.	With the problems surrounding the use of natural diversity regeneration has given over the past 30 method of establishment ensuring native diversity
Management of the woodland will be to the standards required to maintain FSC and PEFC acc	reditation.
Felling coupes are primarily aimed at restructuring age class distribution at a landscape scale with considerable fore thought to landform although with limited number of restocking species.	Other management considerations have meant inc be managed under alternatives to clear-felling (AT that will perpetuate the well thought out landscap

Option 2 more fully addresses the current management priorities & is the preferred option



adaptation to projected climate

ies is quite limited given the diversity of stricted by browsing issues. Planting will e the establishment of a more diverse

include the restoration of PAW sites

regeneration and the lack of species years, planting will be the preferred and structure is established.

creasing the proportion of High Meadow to C) using low impact silvicultural systems ing from the previous plan.



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 Highmeadow_roads
Forest Plan boundary
pre 1850
1851 - 1900
1901 - 1920
1921 - 1930
1931 - 1940
1941 - 1950
1951 - 1960
1961 - 1970
1971 - 1980
1981 - 1990
1991 - 2000
2001 - 2010





The landform within Highmeadow is complex due to the underlying geology and can partly be attributed to the drop in sea-level around 2 million years ago that eroded rapidly downward and rapidly entrenched the meandering Wye within the deep valley that it had carved. Coniferous plantations and underlying Carboniferous Coal Measures and subtle hilly landforms. Convex

In contrast a geological feature known as "The Buckstone" lies west of the village on an escarpment of Quartz Conglomerate where the Carboniferous and Devonian geology meet and enjoy panoramic views over the Forest of

The prominent Crease Limestone band is another geological feature running northwest between Whitecliffe and Reddings Lodge; historically important as



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The landform within Highmeadow is complex due to the underlying geology and can partly be attributed to the drop in sea-level around 2 million years ago that eroded rapidly downward and rapidly entrenched the meandering Wye within the deep valley that it had carved. Coniferous plantations and mixed woodlands now dominate and cloak the landscape obscuring underlying Carboniferous Coal Measures and subtle hilly landforms. Convex hillsides characteristic of Carboniferous Limestone geology are visible especially around Staunton confirmed by distinct absence of surface streams and the quarries south of Staunton.

In contrast a geological feature known as "The Buckstone" lies west of the village on an escarpment of Quartz Conglomerate where the Carboniferous and Devonian geology meet and enjoy panoramic views over the Forest of Dean, and High Meadow. The meeting of these two rock types is also evidenced by place names such as Whitecliffe and Coalpit Hill.

The prominent Crease Limestone band is another geological feature running northwest between Whitecliffe and Reddings Lodge; historically important as the source of iron ore and only identifiable by the presence of disused shallow workings for iron ore that are locally know as "Scowles".



Valleys / Hollows (Upward line of force)

APPENDIX 1



Photograph 1 - HUNTSHAM HILL

Left top: 3-D impression from 2002 of the felling in compartment 3100b. Note projected break in skyline from felling and prominence of the two "pudding stone" rocks.

Left bottom: Same site in October 2014. A higher component of mature broadleaves along skyline than first thought adds visual integrity to the landscape. The "Pudding stones" are not as prominent as first thought.

The site has mainly naturally regenerated with Birch with around 20% remaining currently as unstocked, bare or unplanted.

During the next 10 years, Huntsham is likely at some point to revert back to the Vaughan Estate.

Photograph 2 – SEVEN SISTERS ROCKS

Conifer largely confined to areas away from gorge. Felling work will not adversely affect the view as low-impact systems will be employed.

Biblins

Campsite

Lady Park Wood National Nature Reserve, managed predominantly as non-intervention.

With the conifer woodland now removed patchy natural regeneration is evident and scattered mature broadleaves have been retained. The site is integrating well with the surrounding woodland and will be monitored. Enrichment planting maybe considered on this and other previously felled sites to ensure future woodland with a diverse native content.

The view is dominated by the broadleaves of the Welsh woodlands of High meadow. The whole vista is dominated by woodland and the effects of the River Wye Gorge with its meanders that open up curvilinear views into the distance.

Some coppicing along the riverbanks has been carried out with little effect on the external landscape. Future coppice work will be assessed and prioritised and carried out as resources permit.



West England Forest District

Forest Plan

HIGH MEADOW

2014 - 2024

LANDSCAPE ANALYSIS

Photograph 3 – View from the Kymin

The Western area of High Meadow contains a mixture of both broadleaf and conifer woods with some intimate mixtures and older veteran Oaks and Beech

The rolling landscape of the plateau above the Wye Valley is dominated by woodland, linked to surrounding landscape by hedgerows and individual veterans or groups of veterans.

Conifer within Rodge wood has now been removed. Enrichment planting will be used on this site and other restock sites within Highmeadow from the previous 10 years to ensure a rich and diverse native woodland for the future is established.

There will be little change to the external landscape as low impact systems have been favoured over clear felling that gives opportunity to diversify future woodland composition through enrichment planting.

Photograph 4 – View from Little Doward Hill Fort

This photo clearly illustrates the diversity of topography within High Meadow, showing the variety of aspects and steepness of slopes experienced within the woodland that challenge the success of natural regeneration.







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APPENDIX 2



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Name: Phytopththora 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. At present there is no PR on Oak in this part of the West England Forest District, however, around 12% of all larch within the Dean was felled in 2012 to eradicate the disease with regular aerial flyovers to keep track of hot spots. Luckily flyovers in 2013 have shown no reinfection. This is not to say there will not be a need for further fellings of infected larch required in the future.





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

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

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!

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

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.







West England Forest District Forest Plan

HIGH MEADOW

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PESTS & DISEASES





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Highmeadow_Plan_Area

Coal Authority recorded mine entrances 2011

Shallow coal working areas

Probable shallow coal working areas



Within the Doward there are many unique species of Sorbus. Above is a map courtesy of David Green that shows the distribution of some of the known varieties and there maybe more yet to be discovered.

The planning of any forest operation should ensure that any Sorbus species are preserved and protected for the duration of the operation.

Please see **Appendix 4** for the SSSI plan and further detail.

Further guidance and identification help can be sought through Natural England or David Green.





APPENDIX 3

WEST ENGLAND FOREST DISTRICT

Site of Special Scientific Interest

Management Plan for

UPPER WYE GORGE SSSI

Plan Period June 2015 – June 2025

APPENDIX 4 for the Highmeadow Forest Plan

1. Agreement and Consent

District	West England Forest District
Name of SSSI	Upper Wye Gorge SSSI
OS Grid reference	SO560155
Period of Plan	June 2015 – June 2025
Kevin Stannard	

Kevin Stannard Forest Management Director Forestry Commission England

Juliet Hynes Lead Adviser Natural England

The signing of this plan by Natural England gives the necessary consent under Section 28 (6) of the Wildlife and Countryside Act (1981), as amended, for the management prescriptions detailed in this plan and to be undertaken without necessity to consult prior to each operation during the plan.

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

2. SSSI Notification

County	Herefordshire and Gloucestershire
Site Name	Upper Wye Gorge SSSI
District	West England Forest District
Status	Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 as amended
Local Planning Authority County Council	Gloucestershire County Council, Herefordshire
National Grid Reference	SO560155
Ordnance Survey Sheet	1:50,000: 162
Date Notified (Under 1981 Act)	1989

The Upper Wye Gorge was last assessed by Natural England on 12^{th} February 2013.

English Units: Unit 14 is in Favourable condition, the remainder; units 10, 11, 12, 13, 15 and 16 are in Unfavourable Recovering condition.

The Upper Wye Gorge was last assessed by Natural Resources Wales on ?????

Welsh Units: Unit 7556 is in Unfavourable (no trend) condition.

3. List of Potentially Damaging Operations

1. Cultivation, including ploughing, rotovating, harrowing, and re-seeding.

2. Grazing and changes in the grazing regime (including type of stock, intensity or seasonal pattern of grazing and cessation of grazing).

- 3. The introduction of stock feeding and changes in stock feeding practice.
- 4. The introduction of mowing etc and changes in the mowing or cutting regime
- 5. including hay making to silage and cessation).
- 6. Application of manure, fertilisers and lime.
- 7. Application of pesticides, including herbicides (weedkillers). Dumping, spreading or discharge of any materials.
- 8. Burning.
- 9. The release into the site of any wild, feral or domestic animal, plant or seed.
- 10. The killing or removal of any wild animal, other than pest control.
- 11. The destruction, displacement, removal or cutting of any plant or plant remains, including tree, shrub, herb, hedge, dead or decaying wood, moss, lichen, fungus,
- 12. leaf-mould and turf.
- 13a.Changes in tree and/or woodland management.
- 13b.Drainage (including the use of mole, tile, tunnel or other artificial drains).

13c.Modification of the structure of watercourses (eg streams, springs, ditches, drains), including their banks and beds, as by re-alignment, re-grading and dredging.

14. Management of aquatic and bank vegetation for drainage purposes.

15. The changing of water levels and tables and water utilisation (including irrigation, storage and abstraction from existing water bodies and through boreholes). Infilling of ditches or drains.

16a.The introduction of freshwater fishery production and/or management and changes in freshwater fishery production and/or management, including sporting fishing and angling.

20.Extraction of minerals, including topsoil, subsoil, limestone and spoil.

21. Construction, removal or destruction of roads, tracks, walls, fences, hardstands, banks, ditches or other earthworks, or the laying, maintenance or removal of pipelines and cables, above or below ground.

22. Storage of materials on or in caves.

23. Erection of permanent or temporary structures, or the undertaking of engineering works, including drilling.

- 24. Modification of natural or man-made features including cave entrances, clearance of boulders, large stones, loose rock, scree or spoil and battering, buttressing, grading or seeding rock-faces, outcrops or cuttings.
- 25. Removal of geological specimens, including cave sediments and associated fossils.
- 26. Use of vehicles likely to damage or disturb features of interest.
- 27. Recreational or other activities, including motor cycle trials riding likely to damage cave deposits, woodland or grassland.
- 28. Introduction of game management and changes in game management and hunting practice.

4. Location

Upper Wye Gorge SSSI is located 5 km north-east of Monmouth, in the northern part of Highmeadow Woods (Map 1). National Grid Reference: SO560155. A highly protected landscape, the Upper Wye Gorge SSSI is managed in part by Forestry Commission England (numbered units). Much of the designated land is also designated as Special Area of Conservation (SAC).



Map No.1 Location of Upper Wye Gorge SSSI showing extent of SSSI designated land

ERROR: stackunderflow OFFENDING COMMAND: ~

STACK:

Symonds Yat Promontory Fort, English Bicknor, Gloucestershire

Management Plan

2014 Revision

Extracts

Jon Hoyle Archaeology Service Gloucestershire County Council

Glos 19 SAM 1016760 SO 564158 (C)

April 2014

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A sculptor's impression of Symonds Yat **Promontory Fort Completed as part of the Over looking the Wye project**

Symonds Yat Promontory Fort: Management Plan

Summary

This management plan discusses issues affecting the surviving earthworks and other archaeological deposits associated with Symonds Yat Promontory Fort, English Bicknor, Gloucestershire (Glos HER 19, SAM 1016760, SO 564158). Recommendations are made for a management strategy for the promontory fort which attracts up to 250,000 visitors a year.

Review of the management plan

This document is a revision of the 1997 management plan which was reviewed in 2005

The revised management plan can be summarised as follows:

- The woodland cover on the ramparts is to be maintained in its current condition although the woodland should be monitored and felling undertaken in advance of wind blow. No grubbing up of root systems should take place and any self-set saplings or regenerative scrub should be controlled sufficient to maintain current canopy levels.
- The bramble adjacent to the main path through the ramparts should be controlled either by strimming or poisoning on a regular basis.
- The condition of the woodland within the hillfort interior is to be continually monitored and trees felled in advance of wind blow.
- All forestry operations on the ramparts must be undertaken using vehicles with low pressure tyres, or other appropriate vehicles. Light wheeled or tracked vehicles are permitted to enter other parts of the site.
- Access into and out of the site is to be by specified routes, avoiding visible earthworks. Continual use of precisely the same line is to be avoided to prevent rutting.
- No cut timber is to be stored on the site.
- No forestry operations are to be undertaken when ground conditions are wet.
- Visitor erosion, particularly to the reconstructed terminals of the ramparts adjacent to the main path should be monitored and remedial repairs undertaken if this becomes serious.
- Recommendations for further archaeological investigation where this will contribute to the effective management of the site are included as an appendix to this revision of the management plan.

3.3 Visitor erosion

Symonds Yat rock has been a popular tourist attraction since at least the 18th century (Parry 1994a), and attracts between 200,000 and 250,000 visitors per year (Jon Westlake pers. comm. 1996).

In previous management plans active visitor erosion was identified as a serious issue with active erosion impacting on the ramparts, particularly to either side of the main path through the ramparts from the carpark to the south (Hoyle 1997; 2005).

Since 2005 the paths leading into site from the carpark to the south have been resurfaced and the damaged edges of adjacent ramparts have been consolidated, which appears to have had the effect of channelling visitors along the main path form the car park. In March 2014 erosion of the edges of the ramparts adjacent to the path was negligible, with only some slight erosion of the reconstructed edge of rampart 5 to the east of the path, where some of the plastic mesh which had been laid when this section of the rampart was rebuilt was visible. In other areas the reconstructed ramparts appear to have consolidated well and were beginning to merge in with the surrounding vegetation.

No unofficial visitor paths were noted in the woodland to the east of the path, although to the west of the path a circular route as been worn by visitors to the north rampart 5, rejoining the main trackway to the south of rampart 4. This was recorded in the 2005 and its northern arm had been gritted by March 2014. Most visitors do not appear to use this diversion to the main track and, although its line was devoid of vegetation, the erosion appears to be stable. Another desire line to the west of the path between ramparts 3 and 4 had also been gritted and was stable.

Some patches of bare earth were noted adjacent to the main path where visitors have strayed from the path, but the impact of these was negligible.

The area of the Symonds Yat Rock viewing point is largely devoid of all soil cover, the exposed surface consisting entirely of bedrock. Where bedrock is exposed, the area can be regarded as devoid of archaeological potential.

Management issues

3

The following management issues were identified in March 2014.

Woodland on the monument 3.1

> The extent and nature of the woodland on the site has already been outlined (see 1.5 above), and archaeological sites, and particularly upstanding earthworks such as the ramparts at Symonds Yat may be prone to erosion caused by woodland cover the seriousness of which cannot necessarily be assessed simply by observation. These are:

Tree roots

Tree roots may have a damaging effect on the survival of archaeological deposits within the monument, and on the fabric of the hillfort ramparts, where root action may cause some destabilisation of steep sided earthworks, making them more vulnerable to other forms of erosion (Streeten 1994).

Shading

Tree canopy can discourage ground cover resulting in areas without vegetation. This has the potential to be particularly serious on the faces of upstanding earthworks, where bare patches are relatively unstable and more susceptible to weathering, landslip and erosion caused by animals or people scrambling up the face of the banks.

- Wind blow
- The uprooted bowls of windblown trees can cause significant damage to buried archaeological deposits or structural remains. Forestry operations
- Forestry operations, and particularly the use of machinery can cause damage to archaeological remains particular where the use of machinery is not managed in an appropriate way or ground conditions are soft.

In March 2014 none of these appeared to be significant active problems, although the appropriate management of the woodland cover on parts of the site the site remains a management issue.

Undergrowth 3.2

> Much of the ramparts were heavily overgrown with brambles in the areas immediately adjacent to the main path into the site from the car park to the south. This undergrowth was, however, relatively localised and to the east, where canopy cover was greater, undergrowth had been suppressed and the ramparts had a more open feel with some low undergrowth between widely spaced mature trees.

3.4 Animal erosion

Wild animal erosion on the site was negligible in March 2014, although some shallow wild boar scrapes were noted on the eastern side of the main track between ramparts 3, 4 and 5.

Presentation of the monument 3.5

> In March 2014 the site generally appeared tidy with a well-ordered open feel, whilst still preserving a sense of being set within an area of broadleaved native woodland. Signage, information for visitors and seating was adequate, and had been placed in such a way that the site did not feel over cluttered with visitor furniture. A number of picnic tables were concentrated in the log cabin area but this did not feel intrusive and was appropriate given that teas and cake were available at the log cabin.

3.6 Management issues affecting the site in March 2014

> By March 2014 many of the issues associated with visitor erosion, woodland management and presentation of the site which had been identified in earlier management plans had been addressed, and apart from few issues associated with undergrowth control and minor visitor erosion, the principal management issue is maintenance of the site in its current condition.



West England **Forest District**

Forest Plan

HIGH MEADOW

2014 - 2024

APPENDIX 5: Scheduled Ancient Monuments

SYMONDS YAT

Management recommendations 4

4.1 The Ramparts

4.1.1 Woodland

The woodland on the ramparts should be managed to, as far as is possible, maintain it in its current condition.

In the short to medium term the remaining mature trees should be monitored and selective felling undertaken in advance of the likely threat of wind blow.

Selective felling should take account of:

- Trunk diameter and age of individual trees.
- · The position of individual trees with reference to the topography of the site.
- Visible signs of decay and instability.

Felling should be restricted to the trees selected in this process, and no clear felling of large areas should be undertaken

Once felled, stumps and root systems should be left in-situ and logs should be removed from the site using appropriate machinery in dry conditions, following designated access routes (Fig 4). Specifications for appropriate machinery will be agreed with Gloucestershire County Council, Archaeology Service in advance of forestry operations).

No new planting should take place and any self-set saplings or regenerative scrub should be controlled, although it would be acceptable to allow sufficient regeneration to maintain current canopy levels which promote dappled shade and encourage a suitable ground cover to become established on the ramparts.

4.2 Undergrowth

There is relatively dense bramble in the area to either side of the main path through the ramparts where woodland is thinner and there is insufficient canopy cover to suppress this. In March 2014 this was not dense enough to obscure the earthworks in any significant way, and may have been deterring visitors from leaving the main path thus limiting visitor erosion on the earthworks.

Whilst this bramble is unlikely to be impacting on the fabric of the ramparts in any significant way, it does appear relatively unsightly and has the potential to obscure legibility of the ramparts if left unmanaged.

Accordingly it is recommended that the bramble in this area should be controlled by either strimming or poisoning and the detritus removed from the site. It will not be possible to prevent bramble form returning to areas where canopy cover is light, and it is likely that the bramble will need to be cut back or poisoned on a regular basis to prevent it taking hold in these areas and obscuring the ramparts.

Visitor numbers

4.3

Erosion to the ramparts caused by visitor numbers have largely been resolved by the works undertaken in 2009 (see above). In March 2014 there was some slight erosion to the repaired ends of the ramparts, particularly rampart 1 to the east of the path. Although this was only impacting on the reconstructed sections of the ramparts and not on their surviving fabric, erosion of these areas does detract from the appearance of the ramparts and consequently should be monitored and repaired if it becomes serious.



Woodland management

- set out in 4.4.1, and trees felled in advance of this.
- acceptable to use light machinery in these areas.

Where woodland is relatively dense on the western side of the hillfort interior where the ground begins to slope down towards the top of the Wye cliffs, the woodland should be managed in accordance with the specifications set out for the management of the woodland on the ramparts (see 4.4.1 above).

6

Programme of works in the next 5 years 6.1

the south

Clear undergrowth from ra track Continue to monitor under side of track and control as Monitor visitor erosion par to main track and repair as Continuing monitoring of felling in advance of wind Continuing management of in accordance with the ge

the management plan

6.2 Long-term management aims (years 2010 - 2050)

where necessary.

The ramparts should be maintained as an area of native broadleaved woodland with a flora of ivy or low herbaceous plants growing between fairly widely spaced mature woodland with enough canopy cover to maintain dappled shade and suppress undergrowth regeneration.





 Much of the woodland in the hillfort interior consists of widely spaced mature trees, which have survived earlier phases of woodland clearance. The stability of existing trees should be monitored to guard against wind blow in line with the specifications

· All forestry operations and access arrangements should be undertaken in accordance with the specifications set out below (see 4.6.1 below) although, given the level terrain, and known depths of metalling over much of the site, it would be

· No new planting should take place within the hillfort interior.

Summary of Management plan progress, and future actions

The following programme of works is a provisional assessment of the management work that needs to be implemented at Symonds Yat in the years 2014-2019. The priority for this period is to address the issue of undergrowth on the ramparts, particularly brambles, to either side of the main track into the site form the car park to

	2014-15	2015-16	2016-17	2017-18	2018-19
imparts to either side of main	$\mathbf{\times}$				
rgrowth on ramparts to either s necessary		\checkmark	~	~	~
ticularly on ramparts adjacent necessary	•	~	\checkmark	`	~
woodland on ramparts and blow	~	~	~	<	~
of other woodland on the site neral recommendation within	~	~	~	~	~
		-	-		

The long-term management of the site is essentially the continuing management of the woodland on the ramparts and within the hillfort interior, whilst monitoring undergrowth levels and visitor erosion (particularly to the ramparts) and taking remedial action

Forestry operations 4.6

4.6.1 Forestry operation methods

Archaeological deposits are particularly vulnerable to damage from heavy machinery, or the dragging of logs along the ground, as these can cause deep rutting, especially where ground is soft, or in wet weather. Consequently it is recommended that :

- · All felling and removal of felled trees should only be undertaken in dry conditions when the ground is firm.
- · Only machinery with low pressure tyres has access to the site during the felling of the large larch standards on the ramparts.
- · All subsequent forestry operations, and log removal is undertaken using appropriate machinery. Types of machinery to be agreed with Gloucestershire County Council Archaeology Service in advance of any forestry operations.
- · Felled trees and any forestry waste should be removed from site immediately and not stored within the area covered by this management plan.
- Stumps, and roots are to be left in-situ. No and no ground disturbance is to be caused by the grubbing out of tree stumps or other root systems.

General recommendations 4.7

Where forestry operations are proposed within the area of the SSSI these will require assent from English Nature and be consistent with the aims of the SSSI Management Plan for the Upper Wye Gorge (English Nature & Forest Enterprise 1995).

Scheduled Monument Consent will be required before any management recommendations (with the exception of woodland management operations) are implemented within the scheduled area (Fig 2).

Monitoring 4.8

The long term effect all management recommendations should be regularly monitored to assess their success and reviewed if necessary



These photos were taken in February 2015. They show the well thinned and now scattered mature trees amongst the ramparts. Now most of the trees are removed the main concern will be controlling bramble at acceptable levels to ensure features remain recognisable.



Looking from the south up the main visitor access route that takes you from the visitor car park northward through the SAM to the Hill Fort Interior.

4.6.2 Access onto the site, and movement within the site (Fig 4)

As there is a danger that forestry operations and in particular log removal could have a detrimental affect upon the surviving fabric of upstanding earthworks and buried archaeological deposits the following recommendations are made to govern access onto, and movement within the site: · No routes, either for general access or the transportation of felled trees, should

- cross visible earthworks.
- adjacent rampart.

A schematic representation of preferred access routes is shown on Fig 4. This can, however, only act as general guidance to forestry operations, and precise routes may have to be agreed and marked out on site. It is recognised that the preferred access routes may necessitate the temporary removal of some fence lines, particularly in the western part of the ramparts area.



 Where felled logs are to be removed from the area of the ramparts, they should be transported to the nearest metalled trackway by the most direct route possible whilst avoiding any visible earthworks. In practice this will mean taking a route parallel to the visible earthworks towards the nearest metalled trackway.

· Where felled logs are in the bottoms of ditches, they should be dragged along the ditches directly to the nearest metalled trackway, rather than up the face of the

Special care should be taken to ensure that logs do not drag against the terminals of surviving ramparts at either side of the designated access routes.

Removal of trees from other parts of the site should take the most direct possible route to the nearest metalled access route.

· Continual re-use of precisely the same alignment within an agreed access route should, as far as is possible, be avoided in order to minimise surface wear.



This is looking south from the interior of the Fort down towards the ramparts. Mature trees are monitored with reference to paragraphs 3.1 and 3.3.

GLOSSARY OF TERMS – alphabetical order

Term	Abbrev-	Description	Component	A recorded species o	r land-use within a
	iation			Components are usu	ally mapable areas
Ancient Semi- Natural Woodland	ASNW	An ancient woodland site, where trees and other plant species appear to of established naturally rather than having been planted. Predominantly these sites will contain 80% or over of site native species or species native to the surrounding area.	Coppicing	A method of manage the next rotation is e old crop – or "stools" methods and technic	ment where the ex stablished by allow as they are known ues used to cut the
Ancient Woodland Site	AWS	A site that has technically been wooded since 1600AD and is unlikely to have been converted to farmland in the last few centuries.		influence how succes be. As coppice stool coppiced it is likely s one must consider th	sful the re-growth s get older and the ome will regenerate he need to use enric
Basal Area	BA	A measurement used to help determine if stocking in a given area is sufficient for thinning. It relates to the cross-sectional area of a tree at 1.3 meters and is usually expressed as a measure given in M2 per Hectare.		way of ensuring the Protection from brow too.	successful establish ising mammals can
Clearfell or clearfall	C/F or CF	To cut and remove all trees from a certain area of woodland.	Coupe	An area of managem both compartment a	ent whose boundar nd sub-compartmer
Compartment	Cpt	The second largest management unit within a woodland whose boundaries are defined by fixed features such as roads, rides	_	can be any scale of s	ize, although are n
Sub- compartment	Sub-cpt	or watercourses etc and are numbered numerically e.g. 4223. A smaller management unit within a compartment. Usually defined by a change in species, age of tree or perhaps a ride, footpath, road or other feature like a ditch, earth embankment or hedge. Sub-cpts are identified by a letter of the alphabet that appears as a suffix to the compartment number.	Сгор	A stand of trees. Of partially managed fo Just as farmers man difference is a farme 1 year. Trees are a varying from 6 years rotation)	iten associated with r its timber. age crops so does fo rs' rotation is shorto much longer term c ; to 400 years. (also
Continuous Cover	<u>CCE</u>	A management system that is applicable to conifer or broadleaf, where tree canopy is maintained at one or more levels without the need to clearfell the whole site. Management is through a combination of thinning and targeted clearfelling, usually with the aim of using natural regeneration to provide subsequent woodland cover, although planting can be used as well or instead of to help achieve the correct stocking level and add diversity.	Enrichment planting	Planting different spe diversify the range o make it more resilier threats from disease Enrichment may be o regeneration is unev limited by the numbe	ecies within areas of f species in a wood nt to future dimate desirable in areas w en, patchy or where er of species presen
	ATC LISS	CCE can sometimes be referred to as either an "Alternative to Clearfell" (ATC) this would include the likes of coppicing; or sometimes the phrase "Low Impact Silvicultural System" (LISS) is used. The diagram below is from the FC Forest Research department and helps visualise the relationship between LISS, CCF and ATC. (Also see definitions for	Forestry Stewardship Council	SC An international non- promoting responsib the world to ensure to social standards. Pri FSC forests are mark see this logo, you ca harming the world's	profit organisation le forestry. FSC cert they meet the highe oducts made with w ed with the FSC 'tion n be confident that forests.
		Lex impact shinkness contract Small coope felling Coppier 41- standards Minimum intervention Others Shelterwood, enrichment planting, group felling, silvicultural systems and natural regeneration)	Group felling / group planting	This is where small a name "group felling" through the use of n planting". Over time structure* within a v continuous cover. * species present, sind remaining upper stor tree species when de	reas of woodland a and then either all at-regen or planting these techniques o wood and is often us Either in terms of a shelter and shade rey one can conside
				(Also see definition f	or continuous cover

sub-compartment. no smaller than half a

isting crop is cut and ing the stumps of the n – to re-grow. The original crop can and regeneration will more times they are e less plentifully and chment planting as a ment of the next crop. be an important factor

ries can cut through nt boundaries. Coupes ormally over half a Ha.

stands completely or

orestry the only er and often realised in prop with rotations o see definition for

f regen that helps and in doing so can change and future

where success of re a regen crop is int.

dedicated to tifies forests all over est environmental and wood and paper from ck tree' logo. When you buying it won't mean

ire felled hence the owed to develop g hence "group can help to develop sed in conjunction with age or number of tree e are provided by the er a larger number of nt.



West England Forest District

Forest Plan

HIGH MEADOW

2014 - 2024

Glossary

APPENDIX 6

Hectare	На	Unit of area equating to 2.47 acres.	Operat guidan	tional ice 1	Ops 1	A site analysis, asse carried out during th
Mixed Wood		Woodland consisting of both conifer and broadleaf species.				outlines managemer
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.	Planta an And Woodl (Site)	tion on ient and	PAW(S)	carried out. This is an ancient with planted, usually with and surrounding are
National Vegetation Classification Natural Regeneration	NXC Regen / nat-regen or NP	A UK wide classification system used to attribute standardised descriptions to plant communities. 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	for the Endors of Fore Certific	ement est cation		organization dedicat Management (SFM) certification. It is an endorsing national f through multi-stake priorities and condit
Naturalness Scores		 by woodland to germinate, grow and develop haturally. 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 have 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. 	Rotation Sense of Place	on		Generally a commer time an area of tree to the time of felling lot longer than that speaking be anywhe opposed to conifer of but can vary from 2 *The exception bein can vary from 5 or 6 management object "First rotation" woul ground not previous where woodland has A factor or set of fac character, making it is a combination of a associations that cree
		 Protection from competing plant species and mammal browsing might be required in the early stages by fencing or using tree shelters. Enrichment planting maybe used if regen is patchy or does not provide the diversity one requires. (Also see definition for continuous cover, shelterwood and enrichment planting) A score from 1 to 4 used by FC to determine the native content of an area of woodland. Where class 0 refers to open, un-planted, felled or bare ground. Class 1 has a content of 80% or more site native species. 2 = Reasserting native wood with 50-80% site native content. Conifer plantations with 20-50% site native species are in class 3 and class 4 contains conifer plantations with less than 20% site native species. 	Shelte	rwood		to a location. A management syst broadleaf, where tre levels without the ne occur, but generally spatial distribution v "groups" are then ei the use of natural re using a mixture of b shelterwood system A variation on this i: removes individual t uniformly throughou stand and achieve o easier to apply such
		with 50-80% site native content. Conifer plantations with 20- 50% site native species are in class 3 and class 4 contains conifer plantations with less than 20% site native species.				rer un sta ea to ca

essment and methodology statement he planning of harvesting operations. It ont considerations, looks at other influences and states how the proposed work will be

oodland site that appears to have been h a species that is not native to the site ea and usually conifer.

onal non-profit, non-governmental ted to promoting Sustainable Forest through independent third-party n umbrella organization and works by forest certification systems developed sholder processes and tailored to local tions.

rcial term used to describe the length of es is growing for, from the time of planting g. For broadleaves a rotation is generally a of conifer species* and can broadly ere between 80 years to 3-400 years, as crops whose rotation is generally shorter 20-25 years to 120 years plus. ng that of coppice where rotation length 6 years up to 30 years plus depending on

ld refer to an area of wood planted on open sly wooded. And so "second rotation" is one s been cleared and replanted.

ves.

ctors that give a specific location special t unique in its own intangible way. Often it character, features, quality, space and eates and gives a unique sense of identity

em that is applicable to conifer or ee canopy is maintained at one or more eed to clearfell the whole site. Felling can in small "groups" whose size shape and will vary depending on site conditions. The ither: allowed to develop and establish by egeneration, are planted or are established both techniques. This known as a "group "

s "Single tree selection". This variation trees of all size classes more or less ut the stand to maintain an uneven-aged other stand structural objectives. While it is n a system to a stand that is naturally close I condition, single tree selection systems or even-aged stands, although numerous

		preparatory thinning interventions must be made to create a stand structure where the system can truly be applied. (Also see continuous cover and enrichment planting)
Silviculture		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.
Silvicultural systems		These refer to a wide range of complete regimes for the regenerating, tending, and harvesting of forests and are called "silvicultural systems".
Stand		A group or area of trees that are more or less homogeneous with regard to species composition, density, size, and sometimes habitat.
Thin	TH	 Selective removal of trees from a wooded area, giving remaining trees more space to grow into larger trees. Thinning is done to: Improve the quality and vigour of remaining trees. Remove trees interfering with mature or veteran broadleaf trees. Give space for tops (or "crowns") of broadleaf trees to develop and potentially act as a future seed source. 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. Create gaps for group planting or enrichment. 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. Improve the economic value of a wood. Help realise opportunities to enhance ecological value.
Yield Class	YC	A method of measuring the growth rate or "increment" of a crop of trees by age and height; measured in m3 per Ha per annum. E.g. A crop with a YC of 16 is one that has an annual increment of more than 16m3 but less than 17m3, although generally only even numbers are used when stating YC.