Forestry Commission
England

North England Forest District

Harbottle & Holystone

Harbottle & Holystone Forest Plan

Revision 2016

Introduction

This is the second revision of the Harbottle and Holystone Forest Plan first produced in 2000 and approved in 2001. The purpose of Forest Plans is to lay out our medium to long term management proposals for the forests, and provide a framework within which more short and medium term development may take place. The Forest Plan details the current resource in terms of the trees planted (species, growth rate), and other influences on management (landscape conservation and recreation). The Forest Plan draws together this information to detail our clearfelling and outline replanting (indicative restocking) proposals. The management proposals set out in the plan meet the requirements of the UK Woodland Assurance Scheme accredited by the Forest Stewardship Council (FSC) for the supply of timber from well managed forests.

The objectives of the revision remain the same as the previous plan but changes and developments to note are:

1/ The South western boundary coupe of the forest has been felled and restocked with open woodland (mixed native broadleaf planting). Though not yet fully established this will provide a transitional edge habitat from open moorland to high forest.

2/ Rescheduling some of the clearfelling in light of crop stability and windthrow.

Location and Current Forest Structure

Located towards the eastern boundary of Northumberland National Park, adjacent to the villages of the same name. The forest is owned freehold by the Forestry Commission and totals an area of 865 ha. The Forestry Commission gained the freehold ownership of the forest in a number of conveyances (eight in total). The first purchased in 1955 and the final from the Ministry of Defence (MOD) in 1987. The relative recent acquisition of Harbottle and Holystone is reflected in that the majority of the trees planted are first rotation, plus the Forestry Commission's ownership includes a significant proportion of open moor (Table 1).

Table 1 Percentage rotational distribution of crops	
First rotation	54
Second and subsequent rotation	15
Open	31

The altitude of the forest varies significantly (130m to 360m above sea level) compared to the size of the forest, reflecting the forests position within the transitional zone from lowland pasture and arable farming to the more expansive upland moorland associated with the MOD Otterburn training area. The soils present within the forest also vary from gleyed and peat to iron pan and podzols.

The current species composition is mainly coniferous, a mixture of pine, spruce and larch with scots pine and lodgepole pine dominant (see current species map, table 2). Only a small proportion of the forest is broadleaf, though it is significant in that the majority of the broadleaf is assessed as ancient semi-natural woodland.

Table 2 Species percentages (of net planted area)	
Larch	6
Pine	56
Sitka Spruce	11
Other Conifer	9
Broadleaf	19

The crops are generally growing well with spruce obtaining yield class[1] 12 to 18 and pines 8 to 12, though an area of poor growing lodgepole pine is present on the higher elevation and exposed sites in West wood. Site stability as measured by Wind Hazard Class[2] reflects the changes with altitude and soil type, with class 5 sites dominating the more exposed areas, whereas on less exposed sites the hazard class falls to as low as 1 (see wind hazard class maps).

[1] Yield class is a measure of how fast the trees are growing. If they are yield class 12, the trees will put on $12m^3$ of timber /hectare/annum as an average over their life

[2] Wind hazard is measured on a scale of 1 to 6 with 1 being the most stable. Windhazard class 6 site would normally be considered too unstable to grow trees

The relative stability of these lower slopes does present opportunities to manage crops under continuous cover silvicultural systems. The majority of the crops have not yet reached the age of economic maturity though a significant proportion of the crop will reach it over the coming decade. At higher elevations windthrow is a limiting factor on rotation length and some sporadic windblow has started within crops on less stable sites.

Conservation Recreation and Landscape

Three statutory designated sites (Sites of Special scientific Interest (SSSIs)) Holystone Burn Wood, Holystone North Wood and Harbottle Moor fall within the plan area and are also covered by detailed management plans agreed with Natural England. The Harbottle moor SSSI is not affected by the proposals contained within the plan. Through the planting of an element of open woodland (see appendix 2) at the boundary with the moorland the aim is to both visually mitigate the transition from forest to moorland and provide an intermediate woodland edge habitat ideal for species such as Black grouse. The other SSSI sites are noted for their ancient semi-natural woodland (ASNW), and the plan proposes to maintain the area of ASNW, plus extend the area of native broadleaf woodland adjacent to these areas. Where practical this will be achieved slowly through continuous cover management, or through clearfelling and restocking where appropriate.

In addition, a number of other sites of conservation interest are located within the plan area, ranging from habitat types to the location of specific species. Where appropriate these are noted on the plan.

Two Scheduled sites of archaeological interest, the bronze age Campville Cairn (smr 20950) and a prehistoric cross dyke Campville Dyke (smr 20951) cutting off the promontory formed by the confluence of the Dove Crag and Holystone Burns. Other none scheduled sites of archaeological interest within the plan area are the route of a former roman road, and the remains of Romano British Farmsteads. Artefacts have also been found within the forest (stone arrow, axe and hammer) and there is a report of a Priest's Bastle having been located in West wood.

Harbottle and Holystone, though not heavily used for recreation are an important resource for the local community and visitors to the area. Two car parks are located within the forest with one waymarked walk associated with the Holystone car park to Lady's Well, located just off the Forestry Commission estate. Lady's Well, located adjacent to the route of a roman road, is a stone water tank fed by a natural spring (possibly dating back to Roman times) which has been completely rebuilt at least once since the roman period. In West Wood the car park provides an access point to the bridleway leading to the Drake stone, Northumberland's largest isolated boulder, and Harbottle Lake.

In terms of landscape the forest sits within the transitional zone of the more intimate landscape of mixed agricultural use on the lower land to the east to the more expansive open moor associated with the MOD Otterburn training area to the West. This transitional location is highlighted by the forest's location at a pinch point between three landscape character areas as described by Natural England (Northumberland Sandstone Hills, Cheviot Fringe, Border Moors and Forests). The typography is generally of an East facing slope incised by the Holystone burn, containing the Yardhope Oak Wood, and the North West facing ridge of West wood. The forest fits well into this mixed transitional landscape as viewed from the low-lying land to the east. However, at times the abrupt moorland boundary can feel intrusive when viewed from the more open moorland landscape to the west, especially the medium to short distance. Softening of the forest edge at this boundary has therefore been an aim of the plan and some planting of a more transitional mixed low density forest has taken place since the last plan revision.

Design Concept

The design concept is a means of précising spatially the main influencing factors driving the felling and restocking proposals, highlighting instances or principles that need to be appropriately reflected. Main issues raised are:

1 Ancient semi-natural woodland (ASNW) and plantations on ancient woodland sites (PAWs): Look to maintain the area of ASNW and expand native broadleaf adjacent to these areas where practical through intimate Continuous Cover Management.
2 Continuous Cover Management: Extend the areas allocated for continuous cover management on the lower lying and more stable sites in order to form a continuous link with the mixed agricultural, hedgerow and forest landscape to the east.
3 Moorland boundaries: These can at times look harsh in the medium to short view. Look to mitigate this transition but at a scale that is also appropriate in the longer view. An area of low

density transitional planting has taken place and once fully established will be managed through minimum intervention.

Clearfelling and Restocking plans

The felling and restocking plans presented represent a balance between the multi-objective management of the forest, balancing the conservation, landscape and recreation values within the constraints of both the current status of windthrow and future silvicultural management.

During the review clearfelling dates have generally been altered due to the onset of windblow and current assessment of crop stability. It should be noted that the majority of the remaining first rotation crops are beyond the age of economic maturity, and therefore of increased risk of windthrow. Two coupes previously scheduled for felling in the 2012- 2016 period were not felled. These and adjacent coupes have therefore needed to be rescheduled.

The area proposed for management under continuous cover silviculture has been slightly extended. The conversion of the PAWs of Yardhope oaks to native species through selective thinning has been initiated during the plan period together with some enrichment planting. The establishment of native woodland planting along the Dove crag Burn has also increased the area of native species in association with North Wood PAWs.

Table 3 Felling	
Period	
2017-2021	19
2022-2026	9
2027 -2031	17
2032 - 2036	5
>2036	9
Constant cover[3]	32
Minimum Intervention[4]	9

Restocking proposals (indicated on the restocking plan) will aim to mitigate the harsh moorland boundary of the earlier planting, increase the open area, extend the area of existing native broadleaves and introduce a broadleaf element into the wider forest. Where broadleaf species are planted the species will be chosen on the basis of their naturalness to the site (National Vegetation Classification).

Restocking plans are indicative and the proposals will need to be refined once sites are clear felled and ground features, that are difficult to assess under tree cover, become clear. The species percentages (of net-planted area) indicated with the indicative restocking plan are presented in table 4. Pine, which is well suited to the site conditions, will be a major component of the 'other conifer' category within the forest. However, with the introduction of open space, mixed woodland and edge treatment the overall proportion of pine will decrease. Additionally some areas currently planted with Lodgepole pine which have proved unsuitable due to exposure will not be repeated for a second rotation.

Table 4 species percentage contain within the draft restocking at a point 25 year hence	
Species	%
Larch	3
Sitka spruce	6
Other conifer	31
Broadleaf	14
Mixed Woodland[5]	14
Open woodland	6
Internal open space	21
Increase in external open space	5

Larch in the UK is currently being effect by the disease *Phytophthora ramorum.* This is a notifiable disease that is generally fatal to the species once infected. As Harbottle and Holystone lie within the lowest risk zone for infection and there have been no outbreaks in the county the planting of larch has not been excluded from the plan, though this will be kept under review.

[3] Continuous cover describes areas proposed for management through a system of continuous thinning and small scale clearfelling, aiming to achieve a continuous woodland cover developing a mixed age composition

[4] Minimum Intervention – area proposed for management where silvicultural interventions will not be aimed purely towards timber production. These areas also form candidate sites for natural reserves under the UKWAS standard.

[5] Mixed woodland is generally associated with areas proposed for management under continuous cover. It is an aim to increase the proportion of native broadleaf species in these areas notably in areas associated with ancient replanted woodland sites.

Appendix 1 Mixed Woodland

Within areas identified as mixed woodland, management will normally be under a constant cover silvicultural system. Therefore in order to avoid excess management costs, the ability to work with nature is required, accepting where appropriate, species which naturally establish following a regeneration felling. The majority of species within each area will normally be the same as the current dominant species, except on ancient woodland sites where transition to native broadleaves is the management aim. However, within all mixed woodland maintenance of pure species will not be an aim and a component of both pioneer and climax native hardwood species will be encouraged to develop. As with all constant cover silvicultural systems a rapid change in species composition is not practical without a major intervention. This would not normally be the intention, the objective being the maintenance of a constant forest cover. Any change within these blocks will therefore normally be progressive and relatively slow.

Appendix 2 Open woodland

The aim is to establish an open woodland type to ameliorate the abrupt habitat change from the open moor to the high forest by establishing a low and varied density planting, establishing 300 – 400 trees per ha. The species mix will be based on the proportions in Table 7.

Table 7	
Species	**Approx. %**
Birch (Betula Pubescens)	40 -50
Willow (Salix aurita)	15 - 25
Rowan (Sorbus aucuparia)	10 -20
Aspen (populus tremula)[1]	5 -10
Alder (Alnus glutinosa) [1]	5 -10
Scots pine (Pinus silvestris)	5 -10
Juniper (Juniperus comunis)[2]	0 - 5
1 To be planted in localised areas where suitable ground conditions exist. 2 Planted only within its known distribution.	

The aim is to establish an unevenly spaced tree cover from groups to sparse singletons. There are no formal prescriptions for the most suitable means of establishing this form of woodland. However, being woodland edge habitat, fencing (especially deer fencing) needs to be avoided where practical to do so. It is therefore proposed that initially areas identified to be restocked as open woodland will be planted at a density higher than the final required stocking, with the prescribed sporadic form of woodland developing through natural losses. Natural regeneration will also be accepted where is does not establish to a level which could diminish the habitat value.

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Location map

1:50,000

Legend

- Harbottle and Holystone
- Forestry Commission Woodland

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Current Species

1:20,000

Sitka spruce
Larch
Other conifer
Broadleaves

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Planting Year

1:20,000

PLYR
- Pre1950
- 1950 to 1959
- 1960 to 1969
- 1970 to 1979
- 1980 to 1989
- 1990 to 1999
- 2000 to 2009
- 2000 to date

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Yield Class

1:20,000

N

YLDC
- 18 plus
- 16 to 14
- 10 to 12
- 6 to 8
- Less than 6

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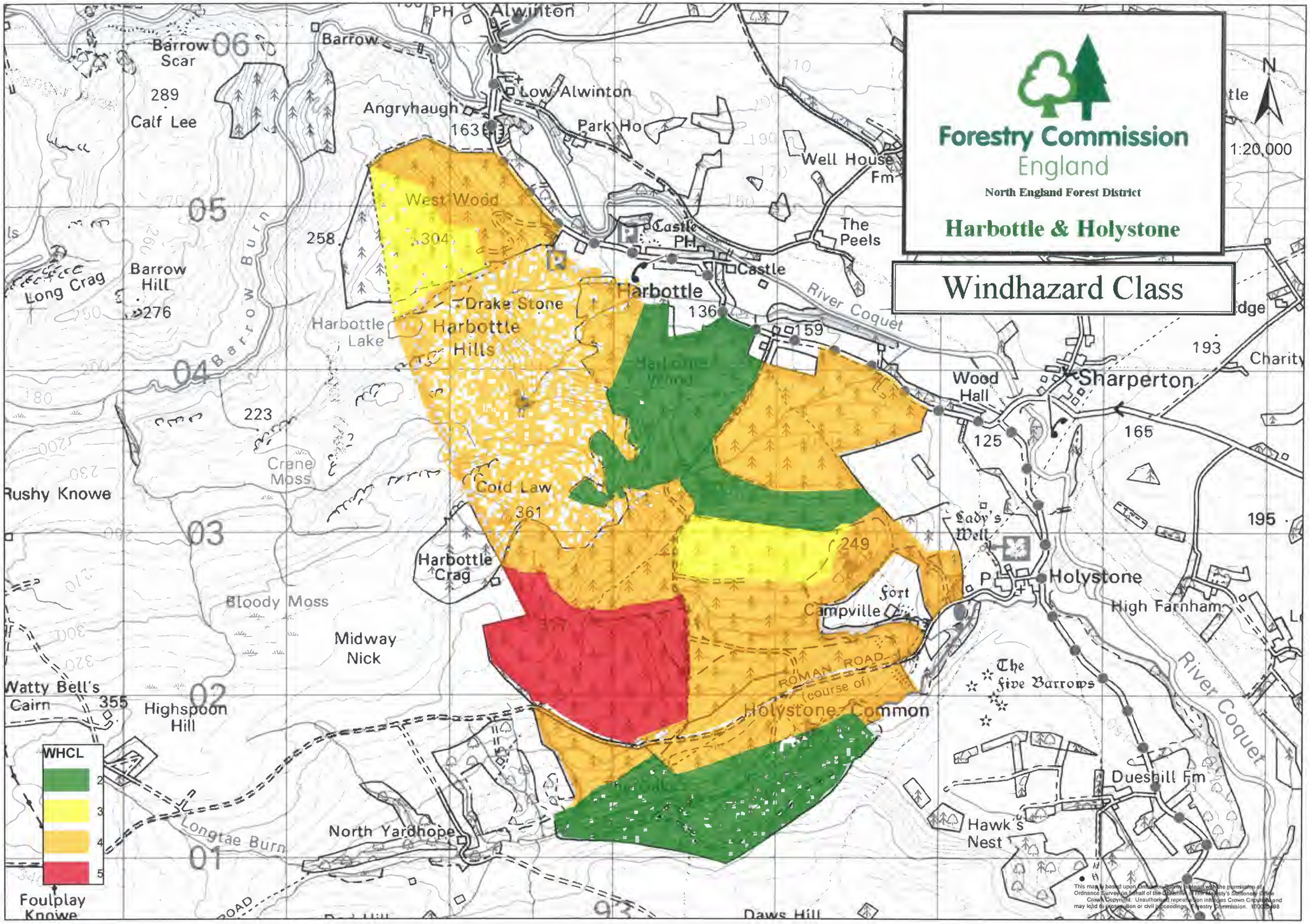
Windhazard Class



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Landform

1:20,000

Major Ridges and Spurs

Minor Ridge and Spurs

Major Hollows and Gullies

Minor Hollows and Gullies

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Recreation Facilities

1:20,000

Recreation Points

FOREST FURNITURE

Picnic Table

SIGNAGE

Primary

Recreation Routes

WALKING

Moderate

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Conservation

- Heritage Features Point
- Scheduled Monument
- Ancient & Semi-Natural Woodland
- Ancient Replanted Woodland
- SSSI
- Conservation Site Point
- Conservation Site Polygon

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Design Concept

Internal ownership boundary
Potential to integrate with woodland neighbours

Continuos Cover
Look to extend the area of forest managed under continuous cover silviculture.

Black Grouse
At restocking develope transition habitat from high forest to moorland through more varied edge planting, providing suitable habitat for forest edge species such as Black grouse.

Seal burn

Maintain open space on Seal burn for conservation of rare plant species.

North wood

Maintain the area of ancient semi natural woodland and look to extend the area of native broadleaves. Species composition and silvicultural history necessitates clearfelling and restocking

Carpark

Look to maintain a wooded feel to the carpark and adjacent area.

Yardhope Oaks
Maintain the area of ancient semi natural woodland and through thinning extend the area surrounding native broadleaf woodland

Black Grouse

Restocking now developing the transition habitat from high forest to moorland through more varied edge planting, providing suitable habitat for forest edge species such as Black

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Felling Proposals

N

1:20,000

FELLING_YEAR

- 2017 - 2021
- 2022 - 2026
- 2027 -2031
- 2032 - 2036
- >2036
- CCF/Min Int
- Blocks

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Restocking Proposals

N

1:20,000

SPP
- Larch
- Broadleaf
- Other conifer
- SS
- Mixed woodland
- Open woodland
- Blocks