Forestry England

Deer Park Forest Plan
FP 51
2023

Yorkshire Forest District

Forestry England forests and woodlands have been certified in accordance with the UK Woodland Assurance Standard (UKWAS)

Forestry England - Property

Forest District:	Yorkshire
Woodland or property name:	Deer Park
Nearest town, village or locality:	Helmsley
OS Grid reference:	SE 585830
Local Authority district/unitary Authority:	North York Moors National Park Authority

Areas for approval

	Conifer	Broadleaf	Open
Felling	7.97		
Lower Impact Silvicultural Systems regeneration felling	10.0	5.0	
Restocking	10.0	12.97	

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

2. I confirm that the pre-consultation, carried out and documented in the Consultation Record, incorporated those stakeholders which FS agreed must be included. Where it has not been possible to resolve specific issues associated with the Plan to the satisfaction of consultees, this is highlighted in the Consultation Record.

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

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

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Deer Park

312.1 Hectares (Ha)

Period of Plan: 2023 - 2033

1. Background

Deer Park Wood is part of a network of forests managed by Forestry England (FE), Yorkshire Forest District, located within the York Beat. It is situated approximately 3km south-west of Helmsley within the North York Moors National Park.

This is a leasehold property with the majority of Deer Park Wood acquired in 1958 from the Duncombe Park Estate and the conifer stands were established by the Forestry Commission between 1961 and 1976. There are significant areas of ancient semi-natural woodland (ASNW) and plantation on ancient woodland sites (PAWS). The busy A170 – Thirsk to Scarborough road runs along its southern boundary. The wood is comprised of four distinct blocks ranging between 60 and 87 hectares situated on Scawton Moor running down to the River Rye.

2. Describing the Site

2.1 Geology and Soils (FP Map 01)

The underlying geology across the southern Hambleton Hills plateau is a combination of calcareous grits (Birdsall/Lower) and Coralline oolite formations overlain by sand.

The plateau soils are predominantly sandy in texture which gives rise to iron pan and podzol soil types. Based on Forest Research Ecological Site Classification (ESC), these have characteristically poor soil nutrient status (SNR) and low soil moisture regime (SMR), which restricts the range of tree species where timber production is an objective. Some local variation occurs where higher clay and silt content leads to areas of brown earth soils, thereby increasing fertility and broadening the range of tree species suitable for timber production.

The underlying geology of the narrow wooded dales is relatively complex with areas of Coralline oolite formation overlain by limestone, Lower calcareous grit formation overlain by sandstone, and Oxford clays overlain by mudstone.

The dales soils are predominantly loam in texture and support predominantly brown earth soil types with isolated pockets of rendzina and surface water gleys toward the valley bottom. Soils range from medium to carbonate SNR and very moist to very dry SMR, the majority of the dales sites have a very moist and rich nutrient regime status. The difference between SNR and SMR impacts on the range of 'suitable' species supported by ESC that can be considered for restocking/regenerating, although objectives and silvicultural management may vary between site types.

2.2 Tree Species (FP Map - 02)

The more notable changes in species composition over the past eleven years has been the reduction in larch and other evergreen conifers and the increase in broadleaf species. Areas that were felled in 2011 have subsequently regenerated with either conifer or broadleaf species as set out in the previously approved plan.

Species composition	2011		2022	
	Ha	%	Ha	%
Broadleaf	86.68	28	138.79	45
Pine	99.42	32	99.62	32
Larch	31.84	10	22.52	7
Other evergreen conifers	47.48	15	30.37	10
Open	22.50	7	17.02	5
Felled	24.16	8	3.76	1

2.3 Wind Damage

The majority of Deer Park Wood falls within Windthrow Hazard Class 1 to 4 providing a range of windfirm conditions from very good to poor. Classes 1 - 3 do not restrict thinning operations. Subsequently, stands might be managed on extended rotations and provide opportunities for Lower Impact Silvicultural Systems (LISS) where other factors such as soil fertility and topography allow. Bungdale Head and part of Sproxton Moor and Waterloo Plantation are categorised as WHC 4, which could restrict management options. To date there is little evidence of windthrow across this forest block and thinning over the last eleven years has been carried out across 80 ha of the forest area.

2.4 Landscape (Photographic montage)

The woods are an integral part of the well-wooded landscape of upper Ryedale.

There are four main fingers of woodland, covering land from the river edge up steep-sided gills and onto more flat moorland to the south. On the valley slopes the woods are mainly mixed or broadleaved in nature, becoming mostly coniferous on the moors. The woods are characteristic of the locality: fitting into the steep sharp gills of the valley side and being more extensive and larger in scale on the higher land.

Seamer Howl Wood, Hagg Wood, Briery Hill Wood, Hollins Wood, Spring Wood and Beech Wood all run down to the edge of the river Rye and are at least partly visible from further up the valley at Rievaulx Abbey, as well as from certain parts of the Cleveland Way. They are also partly visible from the B1257, Helmsley to Stokesley road, though the view is a distant one. These woods sit within the Narrow Moorland Dale (Ryedale) landscape character area. This is characterised by steep wooded valley sides, which define Ryedale valley and create a strong sense of enclosure.

Bungdale Head, Sproxton Moor and Waterloo Plantation are also visible from the B1257; however the view is fore-shortened. The A170 Helmsley to Thirsk road, allows edge views of these three woods, though again this is shortened by the convex landform. These woods sit within the Limestone Hills (Southern Hambleton) landscape character area. This is a large-scale landscape of large regularly shaped predominantly arable fields, where views are broken by coniferous plantations.

2.5 People and Community (FP Map – 03)

These are leasehold woodlands where the owner has retained sporting rights and exercises these through an active pheasant shoot.

Other than a bridleway that runs between Seamer Howl Wood and Hagg Wood, the leasehold status of the woods means they are not registered as open access under CROW legislation and there is no formal public access.

Because of the terms of the lease, potential to develop recreational use and facilities is limited.

2.6 Natural Heritage (FP Map – 03)

Deer Park Woods rich ecological value is closely associated with the areas of ancient woodland and high density of veteran trees. Castle Hill Deer Park and Windy Pits SSSI is a remnant of relict wood-pasture and is designated for this reason. The site is notable for the presence of over 450 veteran trees (mainly oak and lime) and their associated invertebrates (particularly saproxylic genera), fungi, and lichens. Several Ryedale Windy Pits fall within the SSSI adding to the designation for the geological significance of their underground structures, archaeological interest, and nationally the biological importance of the pits for bat conservation.

During the previous plan period, 57 ha of thinning, 20 ha of clear felling/group felling and 25 ha natural regeneration/restocking with site native species has been achieved across areas designated SSSI and ancient woodland sites.

Ancient woodland accounts of 118.88 ha comprising ancient and semi-natural woodland and ancient replanted woodland located within the Narrow Moorland Dale (Ryedale) landscape character area.

Remnant communities of dry upland heath habitat are present across the pine dominated woodland, particularly along external boundaries adjacent neighbouring agricultural fields and along internal roads and rides.

The forest supports a wide range of national and regionally important bird species across different habitat types (see Appendix 1):

Priority woodland birds in decline – Bullfinch, Dunnock, Lesser redpoll, Marsh tit, Spotted flycatcher, Garden warbler, Willow warbler, Song thrush, Redstart, Woodcock, Nuthatch, Tree creeper, Starling, Tree sparrow, Siskin
Woodland specialist – Crossbill,
Farmland / woodland edge –Yellow hammer.

The property also supports Schedule 1 birds of prey.

The River Rye forms the north-east boundary to Briery Hill Wood, Hollins Wood, Spring Wood and Beech Wood, providing a large area of riparian habitat. These sites typically support a diverse woodland structure where native broadleaf tree species, shrubs and ground flora can naturally regenerate.

2.7 Cultural Heritage (FP Map 03)

The property has a wide range of heritage features including 3 scheduled monuments: prehistoric and late Bronze age linear earthworks and Bronze age round barrow. All scheduled monuments have approved management plans agreed with Historic England. Risk status at the time of writing is; one not at risk, one vulnerable/improving and one vulnerable/declining. All scheduled monuments are managed toward 'not at risk' status.

Unscheduled monuments include prehistoric and Bronze age linear earthworks and early quarrying activity associated with sourcing stone for reconstruction of refectory at Rievaulx Abbey in the late 12th century. Duncombe Park Registered Park and Garden has a common boundary along the eastern boundary of Beech Wood, although the designation does not extend onto land managed by FE.

3. Describing the Project

3.1 Project Brief

- increase the proportion of native broadleaf cover, particularly across areas of PAWS and in line with the Castle Hill Deer Park and Windy pits SSSI management plan,

- manage recently restored woodland around veteran trees to improve or maintain their condition status where possible,

- increase the diversity of age structure by selecting the most appropriate felling pattern and silvicultural system throughout the wood and visually enhance external and internal woodland edges,

- consider the selection of alternative main tree species that will contribute toward timber production where productivity can be improved while recognising the potential impacts from climate change, pests and diseases,

- manage designated sites in accordance with statutory requirements as per agreed management plans,

- ongoing recognition of the sporting potential of the woodland to the Duncombe Park Estate where this does not impact on its nationally important environmental values.

3.2 Objectives

Nature

- Improve and maintain the resilience of the natural environment, with particular focus on designated sites and realise the potential of these woods for nature and wildlife, to be measured by Natural England, NYMNP Authority and FC systems accordingly.

- Maintain the cultural and heritage value of these woods, to be measured by Historic England, NYMNP Authority and FC systems accordingly.

Economy

- All of our forests and woodlands are certified to the Forest Stewardship Council®(FSC®) licence code FSC-C123214 and the Programme for the Endorsement of Forest Certification (PEFC) licence code PEFC/16-40-1001 standards. We will maintain the land within our stewardship certified against the UK Woodland Assurance Standard, as independently assessed by annual independent surveillance audits.

- Improve the economic resilience of these woods from a more diverse range of site appropriate conifer and broadleaf species, to be measured by FC systems accordingly.

People

- Maintain and improve the woodlands contribution to the landscape character within the North York Moors National Park 'Narrow Moorland Dale landscape character area - Ryedale' and 'Limestone Hills character areas – Southern Hambleton/Tabular Hills'. To be measured by fixed-point photography.

3.3 Opportunities & Constraints

- terms of the lease restrict the development for public recreation

- steep slopes and difficult topography present operational challenges whilst harvesting gills and valley sides

- low nutrient and moisture regimes across plateau sites reduces species choice

3.4 Implementation

3.4.1 Conservation

Protect and, where appropriate, enhance all known sites of archaeological and ecological importance:

Archaeological sites

All sites, regardless of their designation, will receive the same level of care during the planning and execution of forest operations. The Operational Site Assessment (OSA) system will ensure they are recognised and the proper measures for their protection are in place before work begins. This planning system also ensures that, where possible, opportunities to enhance the condition of archaeological interest are taken during routine forest work through liaison with Historic England and North York Moors National Park Authority.

Ecological sites

All work sites are surveyed prior to any operations being carried out, both to audit the accuracy of information already held on record and to identify opportunities to further improve the ecological value of the woodlands. For Deer Park this will include:

- Increase and improve the deadwood resource as set out in – 'Deadwood - Policy, Procedures, Guidance (PPG) 51 (2018)'. Areas of high ecological value across which deadwood resources could be encouraged include; Ancient Woodland, riparian zones, Long Term Retention sites and areas of broadleaf woodland.

- Managing Veteran trees and PAWS as set out in – 'Keepers of Time: ancient and native woodland trees policy in England (May 2022), 'Ancient Woodland on the Forestry Commission Estate in England (March 2002)' and 'FEE Operations Instructions No. 3 (rev.2012), Ancient Woodlands'.

  'FC – Managing England's woodlands in a climate emergency' provides guidance to implement adaptation actions including the acceptance of naturalised species and assisted migration.

- Increase the diversity of tree species and age structure that will maintain and improve favourable conditions for target species and identified habitats. This is particularly beneficial for the range of habitats and species recorded at Deer Park from which a selection has already been mentioned at 2.6 - Natural Heritage.

- The River Rye previously identified as Moderate status through the Water Framework Directive (WFD) assessment flows adjacent to parts of the property. Works carried out through the previous plan reduced the proportion of conifer woodland along this riparian corridor and the development of this broadleaf-dominant habitat will be maintained through this plan. Management using LISS will avoid significant lengths of watercourse being felled at any one time throughout the approval period of the plan.

- Castle Hill Deer Park SSSI and Windy Pits SSSI will continue to see management in line with Natural England approved management plans, which will continue to be reviewed at the agreed intervals.

Minimum Intervention – Candidate Natural Reserve

Sites that have the potential to deliver greatest biodiversity benefit but without the formal designation of Natural Reserve as defined by the UKWAS.

There are no Candidate Natural Reserves in Deer Park.

Long Term Retentions (LTR)

These are stable stands or clumps of trees that are important to retain for landscape or biodiversity reasons and will be retained beyond their economic rotation but still managed under an appropriate silvicultural system i.e. thinning may still be carried out.

Through this plan there are no Long Term Retentions in Deer Park.

Invasive species

Rhododendron can be problematic, and its control will need to be prioritised depending on the level of risk it poses to priority habitats. Likewise, Himalayan balsam and Japanese knotweed is recorded within the locality and its potential progress in-wood will be monitored and the level of risk it poses will be assessed at that time.

3.4.2 Timber Harvesting

We will continue to sustainably harvest timber through clear felling, Lower Impact Silvicultural Systems (LISS) and thinning. Where appropriate we will develop broadleaf stands to increase their contribution to timber production. These operations will be planned and controlled to ensure due regard for all other objectives of management at Deer Park, in particular the notified SSSI features of the ancient and veteran trees and the windy pits.

3.4.3 Landscape

Deer Park Forest lies within the North York Moors National Park, a protected and designated landscape, where felling observed from various viewpoints has softened the impacts of hard geometric boundaries and even-aged plantation forest. Most notably through the previous plan, the felling of mature Scots pine adjacent the A170 at Tom Smiths Cross, promoting the development of a semi-natural stand of predominantly native broadleaf woodland and open space with heathland ground flora, providing a positive landscape impact along this gateway route into the National Park. The mosaic of habitats developing across these sites provides opportunities to manage a more diverse forest with a wider range of tree species and age classes.

Appropriate scale felling across the coniferous parts of the forest will continue the process of restructuring, moving away from even-aged, single species stands to a more mixed conifer/broadleaf woodland.

Over time LISS with associated smaller-scale felling will contribute toward a more varied and intimate internal forest landscape, where simple and complex stand structures create a more diverse visitor experience within the forest.

On a scale of low/medium/high, landscape sensitivity is considered to be medium to high.

3.5 Plan (FP Map 04)

The design analysis and concept map shows the key factors we need to address. These are taken forward and used to form the basis of a practical plan set out in the fell and restock maps.

3.6 Areas (FP Maps 05, 06 and 07)

3.6.1 Breakdown of felling areas within the period of the plan.

A map showing the location of felling sites can be found in the Forest Plan folder.

Felling	Area - hectares	% of total area	Projected volume (m^3)
2023 – 2026 Clearfell	**7.97**	**3**	**3400**
2027 – 2031 Clearfell	**Nil**	**-**	**-**
LISS regeneration felling*	**15.0**	**5**	**5000**

* Through this plan 297.86 ha at Deer Park will be managed using LISS through the Strip Shelterwood and Group Shelterwood silvicultural systems. During the plan period, it is proposed areas of LISS where crops are over 25 years old will receive a silvicultural intervention (thinning or regeneration felling). As a result of this intervention, the above area of woodland cover will be strip or group felled and regenerated through a combination of restocking and natural regeneration, removing no more than 25% of the stems within any single compartment over the plan period.

3.6.2 Breakdown of constituent areas.

A Future Habitat and Species map showing the location and detail of the constituent areas can be found in the Forest Plan folder (FP Map 07).

Habitat type	Area – hectares			% age of total area		
	2023	2033	2123	2023	2033	2123
Conifer	152.51	144.54	86.78	49	46	28
Broadleaf	138.79	146.76	183.52	44	47	59
Open inc. felled, riparian corridors, roadside/ride side verges, archaeological features etc	20.78	20.78	42.30	7	7	13

3.7 Methods / Forest Operations

3.7.1 Planning

Before any major forest operations are undertaken an OSA is completed. This document details the proposed work and outlines all known environmental, social and operational considerations. The OSA then becomes an important reference document during the planning phase, at the pre commencement meeting before scheduled works begin and for supervisory visits during the operation. The OSA is kept along with other documents relating to the operation in the main office. For routine maintenance operations (e.g. fencing, ride mowing, survey work etc.) the Yorkshire District policy on timing of operations to minimise wildlife disturbance will be followed.

Regarding wildfire, we will follow guidance as set out in 'FC Practice Guide – Building wildfire resilience into forest management planning'. This will be applied proportionately dependant on a particular forest or woodland.

3.7.2 Standards

All operations within the forest will be carried out in accordance with the following standards;

- U.K. Woodland Assurance Standard
- U.K Forestry Standard (published 2017).

3.7.3 Harvesting

See 3.4.2. Forestry Commission staff will monitor work through regular site visits to ensure all guidelines and contract conditions are adhered to.

Clearfell V's LISS

All plans are required to consider LISS in windfirm conifer plantations as opposed to traditional clearfell systems. This decision is based upon the methodology provided in FC Information Note 40 – 'Transforming Even-aged Conifer Stands to Continuous Cover Management'. Where existing coupes are not identified for LISS management, we may consider managing these on an extended rotation basis to be thinned and monitored for future consideration for conversion to LISS.

Using the FC Forest Research Agency ESC system, a range of conifer species are considered 'optimum' to 'suitable' for LISS where timber production is considered as an objective. Through this plan the area to be managed under LISS has increased from 76 ha to 298 ha.

See Appendix 2 – LISS Justification.

3.7.4 Haulage

As in our other woodland blocks we will continue discussions with the relevant Highways Authority to agree haulage routes and discuss annual tonnages.

All timber traffic will be managed in line with the Road Haulage of Round Timber Code of Practice, Fifth Edition (2020), which aims to improve the safety and environmental standards of the timber haulage industry.

3.7.5 Restocking

Conifer

The areas of LISS regeneration felling will be established through a combination of natural regeneration and replanting using alternative productive conifer species to diversify species and age structure to continue to provide a sustainable timber resource, whilst mindful of the projected impacts of climate change. The FC Forest Research Agency, Ecological Site Classification system (ESC) will aid species choice and selection. A range of timber producing conifer species as set out in Appendix 2 and Appendix 3 'Species by soil type' will help inform restocking options.

Reference to Predominantly Mixed Conifer on the Future Habitat & Species Map will be used to describe those areas where a range of species will be planted and/or regenerated, where conifer species will comprise at least 80% of the component mix.

As indicated at 3.7.1, the Operational Site Assessment will provide site-specific data on soils and other site factors that will help inform the correct choice of species on a site-by-site basis.

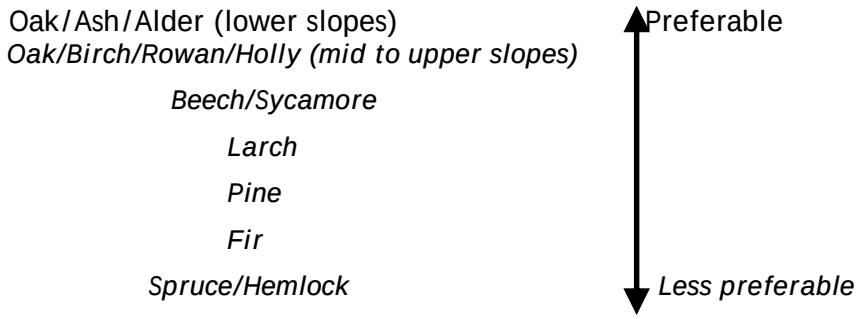
All sites will achieve at least 2500 stems per hectare through planting, natural regeneration or a combination of both.

Broadleaf

There are 118.88 ha Ancient Woodland Sites across Deer Park Forest which currently ranges between semi-natural class 1 or 4 (see section 4.1 Habitat Condition). Through the previous plan, semi-naturalness scores have improved across parts of Seamer Howl, Hollins Wood, Spring Wood, Castle Hill, and Beech Wood. Where Conifer PAWS are either clear felled or managed through LISS regeneration felling through this plan, regeneration will be carried out through a combination of planting site-native species and natural regeneration. Sites will achieve at least 1100 broadleaf stems per hectare. We will accept 'naturalised' species i.e. beech and sycamore where these can enhance resilience to impacts of climate change.

Natural regeneration in PAWS woodland will be assessed and the risk it poses to the objectives of the plan considered. Where dense shade or invasive species (i.e. Western hemlock, Western red cedar) threatens the native woodland community, it will be removed as part of routine felling or thinning operations.

Broadleaf regeneration (indicative)



Reference to Predominantly Mixed Broadleaf on the Future Habitat & Species Map will be used to describe those areas where a range of species will be planted and/or regenerated, where broadleaf species will comprise at least 70% of the component mix.

Where conversion from conifer to predominantly broadleaf woodland is proposed, sites will achieve at least 1100 broadleaf stems per hectare though natural regeneration, planting or a combination of both.

Castle Hill Deer Park and Windy Pits SSSI

Where natural regeneration of conifer and/or broadleaf species pose a threat to the ecological condition of ancient and veteran trees, these may be removed earlier than routine felling and thinning operations, reflecting the management principles in the SSSI Management Plan 2012.

3.7.6 Wildlife Management

Although Roe and Fallow deer are present there are currently low levels of browsing pressure. If future browsing pressure poses a significant threat to achieving plan objectives, levels of control will be increased in line with YFD Deer Strategy

4. Monitoring

See Appendix 4 – Monitoring Plan

4.1 Habitat condition

Over the lifetime of the plan where maintaining semi-naturalness is important, such as Ancient Woodland Sites, we will monitor and record levels of change through the Sub-Compartment Database and the resulting Semi Natural Class scores. Across these sites we will maintain stands at SN Class 1 and gradually manage other sites towards this target composition.

Class 1	Semi-Natural Woodland
Includes native coppice woodland and high forest or site-native plantation with a relatively high percentage of native self-sown or coppice understorey.	

Class 2	Reasserting Semi-Natural Woodland
Plantation or ex-plantation with 50-80% site-native species. Includes coppice regeneration and/or strong natural regeneration amongst planted trees.	

Class 3	Plantation
Plantation with 20-50% site-native trees under established plantation stands	

Class 4	Plantation
Plantation with less than 20% site-native species. Includes all non-native broadleaves and beech planted outside its natural range in England.	

4.2 Forest Plan

All forest plans are formally reviewed as part of a "5-year mid-term review" and the plan's aims and objectives and its success at achieving those aims and objectives. This plan will be formally reviewed in 2028 with opportunity to share information where requested. This time period can be shortened if circumstances change significantly or if parts of the plan prove detrimental to the overall aims and objectives.

Where an amendment to the Forest Plan is required, the Forestry Commission Practice Delivery Note 01 – Tolerance Table will be applied as set out in Appendix 5.

4.3 UKWAS Compliance Table

Maintain the land within our stewardship certified against the UK Woodland Assurance Standard, as independently assessed by annual independent surveillance audits.

	Forest Plan Area (ha)	Forest Plan Percentage	Forest District Area (ha)	Forest District Percentage
Total Area	312.08	100	20,971	100.0
Total Wooded area	307.1	98.4	18,595	88.7
Natural Reserves – Plantation (1%)	0	0	255	1.5
Natural Reserves – Semi-natural (5%)	0	0	88	4.8
Long-term Retentions and Low Impact Silvicultural Systems (>1% Wooded area)	297.8	95.4	9,346	44.6
Area of conservation value(>15% Total area) including designations; PAWS, ASNW, NR, LTR, LISS	297.8	95.4	9,346	44.6
Planned Open/Other (Managed Open and Open Successional)	2.7	0.9	3,203	15.3

5 Determination of Impact Significance and Mitigation

5.1 Native Woodland

Threats to our native woodlands can be immediate and absolute (e.g. loss to infrastructure or development) or slower and subtler (e.g. shading from conifer species or invasive species such as Rhododendron). There are also more widespread environmental changes, such as diffuse pollution and climate change, which may threaten in the long term. Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk)

Major threats to native woodland are:

- Climate change and fragmentation
- Excessive browsing and grazing by deer, livestock and grey squirrels
- Inadequate or inappropriate management
- Invasive and non-native plant species
- Diffuse pollution
- Pests and diseases
- Inappropriate recreational use
- Development and boundary incursions.

Through this plan, we will continue to apply local and national policy and best practice guidance for the management and development of our existing and new native woodlands. Within Castle Hill Deer Park and Windy Pits SSSI, this will include remnant upland oak woodland and wet woodland.

5.2 Flora

Heathland is a UKBAP Priority Habitat for which remnants are present across open areas associated with forest roads, rides and external boundaries.

Within woods, concentrate on open space habitat expansion and management, developing heathland, neutral grassland and acid mires.

(G. Peterken – Native Woodland Development in the North York Moors and Howardian Hills)

This plan will continue the management and development of heathland where this will improve habitat networks across Deer Park forest. Maintaining a mixed resource of temporary and permanent open space with heathland flora will provide suitable habitat for priority woodland bird species. There are no plans to create new areas of permanent open heathland through this Forest Plan.

5.3 Other Objectives

Concentrate on developing habitat–rich riparian corridors with marshes, meadows, woodlands, trees in farmlands. These would pass through both woodland and farmland.
(G. Peterken – Native Woodland Development in the North York Moors and Howardian Hills)

We will continue to apply local and national policy and best practice guidance to the management of riparian corridors across Deer Park. This will improve and enhance the habitat network within the woodlands and benefit protected species. Continuing development of both species and structural diversity will benefit habitats for priority woodland bird species throughout the woodland (Appendix 1 – Priority species).

Appendix 1 – Priority species

Bird Species [1]	Forest location	Habitat enhancement
Woodcock Dunnock	Developed shrub layer	Continue selective thinning and strip-shelterwood felling as part of LISS management, this will allow the development of shrub layer structure and increased structural and species diversity. Enhance rides and woodland edge habitat. Expand diverse riparian woodland habitat, create and maintain successional woodland (birch and oak)/scrub habitat and standing deadwood.
Willow warbler Garden warbler Redstart Song thrush Marsh tit Spotted Flycatcher Lesser redpoll Bullfinch Yellow hammer Nuthatch Tree Creeper Starling Tree sparrow Siskin	Woodland edge, ride, glade	Continue selective thinning and strip-shelterwood felling as part of LISS management, this will allow the development of shrub layer structure and increased structural and species diversity. Enhance rides and woodland edge habitat. Expand diverse riparian woodland habitat, create and maintain successional woodland (birch and oak)/scrub habitat and standing deadwood.
Crossbill	Mature conifer woodland	Continue thinning conifer stands to develop canopy and subsequent seed production across a range of conifer species.
Lepidoptera [2]	**Forest location**	**Habitat enhancement**

Fungi	**Forest location**	**Habitat enhancement**
Oak polypore Piptoporus quercinus	PAWS and ASNW areas and veteran trees	Maintain and increase the amount and diversity of deadwood – both large diameter fallen and standing deadwood. Manage and maintain the veteran trees allowing them to age naturally
Invertebrates	**Forest location**	**Habitat enhancement**
Species associated with Saproxylic habitat e.g. Red data book sp. *Pseudopomyza atrimana, Anthalia beatricella, Tachydromia costalis* , and notable diptera including *Euthyneura halidayi* and *Lasiambia brevibucca*).	PAWS and ASNW areas and veteran trees	Maintain and increase the amount and diversity of deadwood – both large diameter fallen and standing deadwood. Manage and maintain the veteran trees as important saproxylic habitats, allowing them to age naturally.
Species associated with fungi or wet woodand e.g. The Nationally Scarce dolichopodid *Syntormon spicatus,* heleomyzid fly *Suillia dumicola* The pseudoscorpion, beetle *Chernes cimicoides* and the net-winged beetle *Pyropterus nigroruber*	PAWS and ASNW areas and veteran trees	Increase the connectivity of riparian and wet woodland habitats and maintain and increase the amount and diversity of deadwood and associated fungi which support a range of invertebrates
Mammals	**Forest location**	**Habitat enhancement**

Otter	Riparian areas	Increase the connectivity of these riparian habitats through thinning operations. Continue sequential conifer felling and heavy thinning adjacent to riparian zones to encourage woodland of a more diverse structure.
Bats (Common and Soprano pipistrelles, Alcathoe, Noctules, Brown long-eared and myotis species	Windy pits, veteran trees.	Increase habitat connectivity throughout the forest along with the road and ride network and maintain a mosaic of open structure woodland and improve riparian corridors and wider rides through thinning operations. Ensure veteran trees remain protected.

[1] Source – BTO Bird Atlas and Breeding Bird Survey data

The Breeding Bird Survey is run by the British Trust for Ornithology (BTO) and is jointly funded by the BTO, the Joint Nature Conservation Committee (JNCC) (on behalf of the statutory nature conservation bodies: Department of Agriculture, Environment and Rural Affairs - Northern Ireland, Natural England, Natural Resources Wales and Scottish Natural Heritage), and the Royal Society for the Protection of Birds (RSPB).

Appendix 2 – LISS justification

Site Appraisal

Site Factor	Suitability Score	Comment
Wind Hazard Classification: Class 1 & 2 across 60% forest area Class 3 & 4 across 40% forest area	 1 2	ESC indicates rooting depth up to 100cm across steep valley sides and 20cm across the gently sloping plateaux sites.
Soil fertility: Typical ironpan, Typical brown earth	 1 3	Competing ground vegetation is generally that associated with heathland communities and poor SNR.
Current species suitability: **AWS/SSSI** Ash Beech, **Non AWS/SSSI** SP, HL, EL,	(fresh SMR/carbonate SNR) 1 – Very suitable 2 - Suitable 2 - Suitable	 Oak and birch species score poorly for future climate projections although birch readily regenerates across these sites. Careful management toward adaptation strategies should be considered to mitigate negative impacts. Cherry, Wild service tree, Hornbeam and Small-leaved lime are considered suitable species through ESC. Pine and larch species are currently suitable and into the future. Both have the capacity to regenerate. Future suitable species that could be considered to improve diversity and adaptive capacity across this site include MCP, ESF, SS, WSQ, WH.

Combined scores vary across designated steep valley sides and productive plateaux sites, the former being 5 or 6 and the latter 5, depending on site factors. Initial analysis indicates stands across both site types achieve a 'Moderate' and 'Low' site ranking for transformation to LISS. Although not optimal for transformation, the choice of strip shelterwood can incorporate low thinning of the remaining stand to develop existing seed trees and provide side shelter for the development of adjacent strip-felled crops. Stands of first rotation Scots pine where rows are indistinct and understorey scrub birch restricts harvester operator vision, a Uniform shelterwood system will be adopted. Stem selection will focus on the retention of dominant and co-dominant trees where the proportion of stems removed will be up to 40-50% of sub-dominant and suppressed trees.

Stand Appraisal

Stand form – Overall stand form for first rotation Scots pine and larch is good. There is good evidence of advanced regeneration of birch which can act as a site improving species although this species is less suitable under future climate projections.

Thinning history - Thinning operations have been maintained across the majority of sites unless access or steep conditions impede management. Where access is not an issue stands are well developed.

Access – Generally, this is not a limiting factor as good infrastructure exists across the majority of stands. Thinning and LISS management will seek to maximise stand development where safe to do so.

On the basis of the above information, we will consider transformation to LISS across both site types with the aim of increasing species diversity through enrichment planting using a range of species depending on site objectives.

We will adopt a Strip Shelterwood system, where strips will aim to be between 25 to 30m wide, retaining seed trees within strips where stability is not a significant threat. A Uniform shelterwood system will be applied across stands of SP where Strip Shelterwood is not appropriate. Group shelterwood system will be applied to a range of stand types within Newtondale where the felling of small coupes, up to 0.6 ha in size, will contribute toward the development Predominantly mixed broadleaf woodland and Successional open woodland.

The Forest Research ESC table below supports the range of target species considered for natural regeneration and those identified as suitable (light green) where enrichment planting will increase species diversity. For Cropton, enrichment planting could consider the introduction of Macedonian pine, European silver fir, Giant redwood, Hornbeam, Small-leaved lime, Wild cherry and Wild service tree.

Future wildlife management issues may arise where deer browsing could impact across strips as more palatable species are introduced. Site monitoring, the development of deer management infrastructure as set out in Forest Plan, section 3.7.6 and adherence to the District Deer Management strategy will help inform future management.

Ecological Site Classification Report

Eastings(m)	Northings(m)	Grid Reference	Climate Scenario	Site Class	Filter	Brash	Drainage	Fertiliser/Nurse
457800	483400	SE578834	Medium-High 2080 (A1b/3q0) AWC method	Very warm - Sheltered - Slightly dry	Native species only	Brash present aged less than 18 months	No drainage installed	Mixture applied

Site Description and Variables

The site has a very warm, sheltered and slightly dry climate. The soils are fresh moisture status and carbonate nutrient status. The presence of a carbonate soil will potentially cause chlorosis in many tree species. The analysis assumes that site management (e.g. CCF), the use of deep rooting species and/or soil properties will help mitigate climatic moisture deficits. Brash will be redistributed evenly across the site to provide nutrients and avoid uneven growth. Nutrient deficiencies are primarily due to nitrogen availability, and will be ameliorated through planting target species in an intimate mixture with one or more of Scots pine, Alaskan Lodgepole pine, Larch, Birch or Alder. The site DAMS score has been reduced due to either a) an intention to underplant species with the benefit of shelter from established trees or b) local observations of additional shelter/less exposure. Tree species recommendations in ESC do not take account of each countries regulatory approval process, so prior to including species in a forest plan advice should be sought from relevant forestry authorities.

Modifications	AT	CT	DAMS	MD	SMR	SNR
Default	2572.0	9.0	7.0	228.0	5.0(Fresh)	6.0(Carbonate)
Brash						0.0
Nursing mixture						0.0
Dams Modifier			-2			
Final	2572.0	9.0	5.0	228.0	5.0(Fresh)	6.0(Carbonate)

Species	Abbr.	Suit(Eco)	Suit(Timber)	Yield	Limiting	AT	CT	DAMS	MD	SMR	SNR	Version
Scots pine	SP	●	●	3	SNR	●	●	●	●	●	●	3.3(A)
Downy birch	PBI	●	●	0	SNR	▲	●	●	▲	●	●	3.2(A)
Silver birch	SBI	●	●	0	SNR	●	●	●	●	●	●	3.2(A)
Beech	BE	●	▲	5	AT5	●	●	●	●	●	●	3.1(A)
Ash	AH	●	●	10	AT5	●	●	●	●	●	●	3(A)
Pedunculate oak	POK	●	●	0	SNR	●	●	●	●	●	●	3.1(A)
Sessile oak	SOK	●	●	0	SNR	●	●	●	●	●	●	3.2(A)
Aspen	ASP	●	●	0	SNR	●	●	●	●	●	●	3.2(A)
Common alder	CAR	▲	▲	4	SNR	●	●	●	●	●	▲	3.2(A)
Rowan	ROW	▲	▲	1	SNR	●	●	●	●	●	▲	3.3(A)
Wild service tree	WST	●	●	5	SNR	●	●	●	●	●	●	3(A)
Hornbeam	HBM	●	●	7	SNR	●	●	●	●	●	●	3(A)
Small-leaved lime	SLI	●	●	6	SNR	●	●	●	●	●	●	3(A)
Wych elm	WEM	●	●	0	SNR	●	●	●	●	●	●	3(A)
Wild cherry	WCH	●	●	11	AT5	●	●	●	●	●	●	3(A)
White willow	WWL	●	●	2	SNR	●	●	●	▲	●	●	3(C)
Holly	HOL	▲	▲	2	SNR	●	●	●	●	●	▲	3(C)
Willow (SRC)	SRC	●	●	7	SNR	●	●	●	●	●	●	3(C)

Ecological Site Classification Report

Eastings(m)	Northings(m)	Grid Reference	Climate Scenario	Site Class	Filter	Brash	Drainage	Fertiliser/Nurse
457400	481600	SE574816	Medium-High 2080 (A1b/3q0) AWC method	Warm - Moderately exposed - Slightly dry	All species	Brash present aged less than 18 months	No drainage installed	Mixture applied

Site Description and Variables

The site has a warm, highly exposed and slightly dry climate. Exposure constraints may limit species options and the ability to thin woodlands without significant risk of windthrow. The soils are fresh moisture status and poor nutrient status. The analysis assumes that site management (e.g. CCF), the use of deep rooting species and/or soil properties will help mitigate climatic moisture deficits. Brash will be redistributed evenly across the site to provide nutrients and avoid uneven growth. Nutrient deficiencies are primarily due to nitrogen availability, and will be ameliorated through planting target species in an intimate mixture with one or more of Scots pine, Alaskan Lodgepole pine, Larch, Birch or Alder. The site exposure is anticipated to be higher than modelled values. Tree species recommendations in ESC do not take account of each countries regulatory approval process, so prior to including species in a forest plan advice should be sought from relevant forestry authorities.

Modifications	AT	CT	DAMS	MD	SMR	SNR
Default	2339.0	9.0	15.0	205.0	5.0(Fresh)	2.0(Poor)
Brash						0.5
Nursing mixture						0.5
Dams Modifier			2			
Final	2339.0	9.0	17.0	205.0	5.0(Fresh)	3.0(Medium)

Species	Abbr.	Suit(Eco)	Suit(Timber)	Yield	Limiting	AT	CT	DAMS	MD	SMR	SNR	Version
Corsican pine	CP	●	●	13	DAMS	●	●	●	●	●	●	3.3(A)
Lodgepole pine	LP	●	●	11	DAMS	●	●	●	●	●	●	3.1(A)
Macedonian pine	MCP	●	●	11	DAMS	●	●	●	●	●	●	3.1(C)
Maritime pine	MAP	▲	▲	5	DAMS	●	●	▲	●	●	●	3.1(C)
Monterey/Radiata pine	RAP	●	●	13	DAMS	●	●	●	●	●	●	3(C)
Scots pine	SP	●	●	9	DAMS	●	●	●	●	●	●	3.3(A)
Weymouth pine	WEP	▲	▲	6	DAMS	●	●	▲	●	●	●	3(C)
Norway spruce	NS	▲	▲	9	DAMS	●	●	▲	●	●	●	3.3(A)
Oriental spruce	ORS	▲	▲	8	DAMS	●	●	▲	●	●	●	3(C)
Serbian spruce	OMS	●	▲	10	DAMS	●	●	●	●	●	●	3(B)
Sitka spruce	SS	●	●	20	DAMS	●	●	●	●	●	●	3.4(A)
Sitka spruce (Imp.)	Imp.SS	●	●	23	DAMS	●	●	●	●	●	●	3.4(A)
Douglas fir	DF	●	●	8	DAMS	●	●	●	●	●	●	3.1(A)
Hybrid larch	HL	●	●	5	DAMS	●	●	●	●	●	●	3(A)
Japanese larch	JL	●	▲	5	AT5	●	●	●	●	●	●	3(A)
European larch	EL	●	●	6	DAMS	●	●	●	●	●	●	3(A)
Western red cedar	RC	▲	▲	9	DAMS	●	●	▲	●	●	●	3.1(A)
Japanese red cedar	JCR	▲	▲	8	DAMS	●	●	▲	●	●	●	3(B)
European silver fir	ESF	●	●	11	DAMS	●	●	●	●	●	●	3(B)

Ecological Site Classification Report												
Grand fir	GF	▲	▲	12	DAMS	●	●	▲	●	●	●	3(A)
Noble Fir	NF	●	●	2	AT5	●	●	●	●	●	●	3(A)
Nordmann fir	NMF	●	●	13	DAMS	●	●	●	●	●	●	3(C)
Pacific fir	PSF	●	●	17	DAMS	●	●	●	●	●	●	3.4(C)
Leyland cypress	LEC	▲	▲	8	DAMS	●	●	▲	●	●	●	3(B)
Western hemlock	WH	●	▲	11	DAMS	●	●	●	●	●	●	3(A)
Giant redwood	WSQ	●	●	17	DAMS	●	●	●	●	●	●	3(B)
Coast redwood	RSQ	▲	▲	13	DAMS	●	●	▲	●	●	●	3(B)
Lawson's cypress	LC	●	●	6	DAMS	●	●	●	●	●	●	3(B)
Downy birch	PBI	●	▲	3	DAMS	●	●	●	●	●	●	3.2(A)
Silver birch	SBI	▲	▲	4	DAMS	●	●	▲	●	●	●	3.2(A)
Big leaf maple	AMA	●	●	2	DAMS	●	●	●	●	●	●	3.1(C)
Norway maple	NOM	▲	●	3	DAMS	●	●	▲	●	●	●	3(B)
Sycamore	SY	●	●	8	DAMS	●	●	●	●	●	●	3.3(A)
Beech	BE	●	▲	4	DAMS	●	●	●	●	●	●	3.1(A)
Roble beech	RON	▲	▲	8	DAMS	●	●	▲	●	●	●	3.1(B)
Ash	AH	▲	▲	4	DAMS	●	●	▲	▲	●	●	3(A)
Pedunculate oak	POK	●	●	4	DAMS	●	●	●	●	●	●	3.1(A)
Red oak	ROK	●	●	4	DAMS	●	●	●	●	●	●	3(B)
Sessile oak	SOK	●	●	4	DAMS	●	●	●	●	●	●	3.2(A)
Aspen	ASP	●	●	6	DAMS	●	●	●	●	●	●	3.2(A)
Black poplar	BPO	●	●	10	SNR	●	●	●	●	●	●	3.1(A)
Rauli beech	RAN	▲	●	5	DAMS	●	●	▲	●	●	●	3.1(B)
Common alder	CAR	●	●	6	DAMS	●	●	●	●	●	●	3.2(A)
Red alder	RAR	●	●	7	DAMS	●	●	●	●	●	●	3(B)
Grey alder	GAR	●	●	8	AT5	●	●	●	●	●	●	3.1(B)
Italian alder	IAR	▲	▲	4	DAMS	●	●	▲	●	●	●	3.2(B)
Shining gum	ENI	●	●	23	DAMS	●	●	●	●	●	●	3(C)
Cider gum	EGU	●	▲	11	DAMS	●	●	●	●	●	●	3(C)
Rowan	ROW	●	●	4	DAMS	●	●	●	●	●	●	3.3(A)

Site type		Species													
Upland sites	Lowland sites	**SP**	**LP**	**MCP**	**DF**	ESF	GF	**WH**	WRC	Ley/Law C	Coast R	Giant R	**SS**	**NS**	Oriental S
Gley						***y***		***y***	***y***	y			**Y**	**Y**	***y***
Iron pan/podzol		**Y**	***y***	***y***	**y**	***y***	***y***				***y***	***y***		y	***y***
BE/intergrade		**Y**		***y***	**Y**	***y***	***y***	***y***	***y***	y	***y***	***y***	***y***	**Y**	***y***
Calcareous				***y***		***y***			***y***	y					***y***
	Gley					***y***		***y***	***y***	y	***y***	***y***	**Y**	**Y**	***y***
	Podzol	**Y**	***y***	***y***	**y**	***y***	***y***	***y***	***y***	y		***y***		y	***y***
	BE/intergrade	**Y**		***y***	**Y**	***y***	***y***		***y***	y	***y***	***y***	***y***	**Y**	***y***

BOLD CAPITAL (Y) / BOLD INFILL COLOUR	**Cat A Major species** - currently widely used with no supply problems and should continue to play an important role
Bold, lower case italics (y), pastel infil colour	**Cat B Minor species** - Species that either currently play a minor role but have demonstrated their suitability being part of a species range to diversify our forests. Climate change may increase or reduce their use
Normal lower case (y), pastel infill colour	**Cat C Secondary species**- Species with little information on forest performance but possible choice based on Arboreta. Use on small-scale experimental basis for now but may increase if favourable results

Refer to cell comments for specific species notes

No planting where >50cm peat depth

Pacific coast associated forest cover - mixtures as part of underplanting for CCF					consider in
DF	GF	WH	Law C	Coast R	*ESF*

Objective	Method
People	
Maintain and improve the woodlands contribution to the landscape character within the North York Moors National Park 'Narrow Moorland Dale landscape character area - Ryedale' and 'Limestone Hills character areas – Southern Hambleton/Tabular Hills'.	Fixed-point photography
Nature	
Improve and maintain the resilience of the natural environment and realise the potential of these woods for nature and wildlife	Update Forester Web GIS; sub compartment database, Semi Natural Class Scores, Conservation module.
	Review sample of Operational Site Assessments.
Maintain the cultural and ecological heritage value of these woods.	Liaise with and review Historic England - At risk Register, NYMNPA shared monuments data, update Forester Web GIS Heritage module.
	Monitor SSSI condition including veteran trees. Liaise with Natural England (NE) regarding Castle Hill Deer Park and Windy Pits SSSI to achieve favourable status where FE management can have an impact.
	Survey invertebrate species.
Economy	
All of our forests and woodlands are certified to the Forest Stewardship Council®(FSC®) licence code FSC-C123214 and the Programme for the Endorsement of Forest Certification (PEFC) licence code PEFC/16-40-1001 standards. We will maintain the land within our stewardship certified against the UK Woodland Assurance Standard	Independent audit across the organisation.
	Independent audit across the District.
Improve the economic resilience of these woods from a more diverse range of site appropriate conifer and broadleaf species.	Update Forester Web GIS; sub compartment database, Operational Thinning Layer, Management Coupe Layer.
Site-specific	

Clearfell coupes - ensure boundaries are accurately reproduced and within agreed tolerances as set out in Forestry Commission Practice Delivery Note 01 (FC PDN 01).	GPS unit or equivalent data recorders.
Restock & Future Habitat Coupes - Productive mixed conifer sites. Establish at least 2500 conifer stems per ha by planting and natural regeneration by year 5 since date of initial planting.	On-site stocking density plot surveys.
Restock & Future Habitat Coupes - Mixed broadleaf habitat. Establish at least 1100 broadleaf stems per ha through natural regeneration by year 10 since date of felling.	On-site stocking density plot surveys.
LISS coupes - Productive mixed conifer sites. Establish at least 2500 conifer stems per ha by year 10 after final removal overstorey.	On-site stocking density plot surveys.
PAWS regeneration.	Monitor change through abbreviated stocking density assessments and repeat condition surveys.
Wildlife management - Identify problem sites where mammal damage is affecting crop establishment or degrading woodland flora.	On-site stocking density plot surveys. Damage, Impact and Activity Assessments as set out in YFD Deer Management Strategy.
Plan specific	
Forest Plan mid-term review. Review the plan's aims and objectives and the progress of their implementation.	Apply a variety of measures as described in the above table.

rk Forest Monitoring Plan	
Frequency/Timings	**Actions**
Year 0 baseline, 5-year review, 10-year review.	Review visual impact of coupes within the landscape and adjust future coupe shape if necessary.
As recordable changes occur within the forest environment. At time of Year 0 plan renewal, 5-year review, 10-year review.	Measure changes in diversity across species, age structure, conservation siting's/records and broad habitat types; conifer, broadleaf, open. Ensure positive change through increasing diversity occurs over the lifetime of the plan.
Annually across the District	Provide feedback where management is not compliant with recommendations.
Annually or as data becomes available. At time of Year 0 baseline, 5-year review, 10-year review.	Review progress of annual maintenance programmes and adjust where At Risk status may decline from target condition.
As agreed with NE.	Carry out management as agreed with NE.
Within plan period.	Provide feedback where habitat is not in favourable condition and recommend programme of works to achieve favourable status that will benefit target species.
Annually	Implement corrective actions as required.
As per audit sample.	Implement corrective actions as required.
As recordable changes occur within the forest environment and End Of Year updates. Year 0 plan renewal, 5-year review, 10-year review.	Review long-term changes in productive capacity through the Production Forecast at the point of plan renewal and across the wider District.

Upon completion of all harvesting activity.	If significant coupe variation, apply for appropriate amendment to FC as required as per FC PDN 01 prior to felling. Update Forester Web for completed clearfells.
Beat-up surveys between years 1 to 4. Year 5 stocking assessment, internal guidance OGB4.	Carry out beating up where stocking density falls below prescribed number of trees/ha to achieve full stocking.
Beat-up surveys between years 1 to 4. Year 5 stocking assessment, internal guidance OGB4.	Carry out enrichment planting where stocking density falls below prescribed number of trees/ha to achieve full stocking.
Beat-up surveys between years 1 to 4. Year 5 stocking assessment, internal guidance OGB4.	Carry out enrichment planting where stocking density falls below prescribed number of trees/ha to achieve full stocking.
Beat-up surveys between years 1 to 5 year assessment. Ancient Woodland condition survey within plan period.	Monitor change from current Semi natural class toward target SN 1 (>80% native). Consider future changes in management that can achieve target score.
To be informed from results of beat-up surveys between years 1 to 4 and year 5 stocking assessment, internal guidance OGB4.	Target deer control in line with District strategy.
2028	Modify the plans aims and/or objectives where these are no longer compatible with National or District Policy. Significant plan changes will require consultation and formal amendment from the Forestry Commission.

Forestry England

Deer Park Forest Plan

FP Map 01 - Soils

Scale: 1:15,000

Scale at A3

Created: February 2023

- Brown Earth
- Mining Spoil, Stony or Coarse Textured
- Typical Podzol
- Ironpan Soil
- Ground-Water Gley
- Surface-Water Gley
- Rendzina
- Calcareous Brown Earth
- Valley Complex
- Not Surveyed

0 0.13 0.25 0.5 Kilometers

Forestry England forests and woodlands have been certified in accordance with the UK Woodland Assurance Standard (UKWAS)

Forestry England

Deer Park Forest Plan

FP Map 02 - Current Species

Scale: 1:15,000

Scale at A3

Created: February 2023

- Beech
- Larch
- Oak
- Other Broadleaves
- Other Conifers
- Pine
- Spruce
- Open, Felled etc

0 0.13 0.25 0.5 Kilometers

Forestry England forests and woodlands have been certified in accordance with the UK Woodland Assurance Standard (UKWAS)

Forestry England

Deer Park Forest Plan

FP Map 03 - Management Information

Scale: 1:15,000

Scale at A3

Created: February 2023

- Deer Park
- Scheduled Monuments
- Public Rights of Way
- Watercourses
- Sites of Special Scientific Interest
- Heritage
- Ancient & Semi-Natural Woodland
- Ancient Replanted Woodland

0 0.13 0.25 0.5 Kilometers

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Forestry England

Title: **FP Map 04 · Analysis & Concept**

Date: 18 August 2022

Author: Nigel Rylance

Scale @ A3: 1:15,000

The River Rye, previously identified as Moderate status through the Water Framework Directive, flows adjacent to significant parts of the property.
* Riparian corridors will continue to be created and maintained replacing conifer-dominant stands with a mosaic of successional habitats, managing toward broadleaf dominant woodland contributing to improving watercourse ecological condition.

Castle Hill Deer Park SSSI and Windy Pits SSSI are key features across this property and their continued progression toward favourable condition remain a priority.
* Continued management in line with Natural England approved management plans will influence operational activity carried out to achieve target condition status.

Restoration and maintenance of ancient woodland sites that are resilient to potential threats from climate change remains a priority objective across the forest.
* Conifer stands will be restored to native species by a combination of felling, thinning, natural regeneration and reducing the negative impacts of invasive species. Enrichment planting will be carried out where primary species are unlikely to become established through natural regeneration.
* Ancient woodland sites will be buffered by converting adjacent conifer stands to predominantly mixed broadleaf woodland.
* Maintain existing and develop additional deadwood resource through management interventions and allowing natural mortality of large dimension trees.

Forest landscape character has been strongly influenced by the steep-sided gills of the Narrow Moorland Dale (Ryedale) and flat moorland to the south of the Limestone Hills (Southern Hambleton) landscape character areas.
* Continue to design clearfell coupes that respond to landform and increase structural diversity, moving away from even-aged, single species crops to uneven aged, mixed conifer/broadleaf woodland.
* Manage remaining areas using lower impact, alternative to clear fell systems, increasing structural and species diversity.

Sustainable timber production remains a priority objective across the forest whilst mindful of impacts from climate change on species choice and plant health.
* The introduction of alternative conifer species i.e. Macedonian pine, European silver fir and Coast redwood, will be considered for restocking where conditions are suitable. In addition, site-improving broadleaf species such as Aspen and Alder may also be included as a component of productive mixed species.
* Develop low impact silvicultural systems and extended rotation silviculture to allow natural regeneration and enrichment planting with alternative species to become established.

Scawton Moor

Sproxton Moor

Wass Moor

Byland Moor Plantation

0 0.175 0.35 0.7 1.05 1.4 1.75 km

Legend

- Convert and maintain as predominantly mixed broadleaf woodland.
- Continue to manage as predominantly productive mixed conifer woodland.
- Castle Hill Deer Park and Windy Pits SSSI will be managed in line with agreed plans,
- Scheduled monuments will be managed in line with agreed plans.
- Restore and maintain ancient woodland sites
- Watercourses and riprian habitats.

Castle Hill Deer Park and Windy Pits SSSI will be managed in line with agreed plans.

Proposed Harvesting Map

The map shows how we intend to manage tree felling in Deer Park in order to meet the multiple objectives of management there.

Clearfells

Clearfells remove all or the majority of trees from the site. They allow significant changes in landscape, species and age class diversity to be achieved in a short space of time. They provide temporary open space followed by a slow succession of different habitat types each exploited by different flora and fauna.

Low Impact Silvicultural Systems

Change is managed more slowly using a combination of heavier thinnings and small group felling or strip felling. The purpose of thinning/felling operations is to produce timber and to allow enough light to reach the forest floor for replanting/regeneration to take place. The majority of the site has tree cover at all times and at one or more levels.

Forestry England

Deer Park Forest Plan

FP Map 05 - Management Coupe

Scale: 1:15,000

Scale at A3

Created: February 2023

- 2022 - 2026
- 2027 - 2031
- 2032 - 2036
- 2037 - 2041
- Beyond 2042 or LISS
- Other / Open Land
- Long Term Retention

0 0.13 0.25 0.5 Kilometers

Forestry England forests and woodlands have been certified in accordance with the UK Woodland Assurance Standard (UKWAS)

Forestry England

Deer Park Forest Plan

FP Map 06 - Management Type

Scale: 1:15,000

Scale at A3

Created: February 2023

- Clearfell
- Strip shelterwood
- Group shelterwood
- Irregular shelterwood (general)
- Minimum Intervention
- Other\Open Land

0 0.13 0.25 0.5 Kilometers

Forestry England forests and woodlands have been certified in accordance with the UK Woodland Assurance Standard (UKWAS)

Forestry England

Deer Park Forest Plan

FP Map 07 - Future Habitat & Restock

Scale: 1:15,000

Scale at A3

Created: February 2023

- Predominantly Mixed Broadleaf
- Predominantly Mixed Conifer

This map shows the main species groups that are to be used when restocking felled areas. Due to the constraints of map scale, unplanted areas are not shown unless they are greater than 0.5 hectares in size. This means that unplanted corridors such as along forest roads and rides will not be shown on this map.

Predominantly mixed conifer areas will be regenerated through a combination of planting and natural regeneration with appropriate species, dependent on the underlying site conditions such as soil and topography.

In addition, climate change projections and plant health issues indicate a reduction in the suitability of species such as Corsican pine and larch for restocking. Species showing drought tolerance and disease resistance characteristics such as Macedonian pine, Oriental spruce, European silver fir, Coast redwood and Douglas fir will be considered.

Predominantly mixed broadleaf areas will be restocked by natural regeneration primarily using site-native species. This will be predominantly birch but other species such as rowan, holly and oak are anticipated. We will also accept other species that are not site-native such as beech and sycamore where these meet management objectives. Enrichment planting may be used where there is insufficient regeneration or where we wish to further diversify the range of species present.

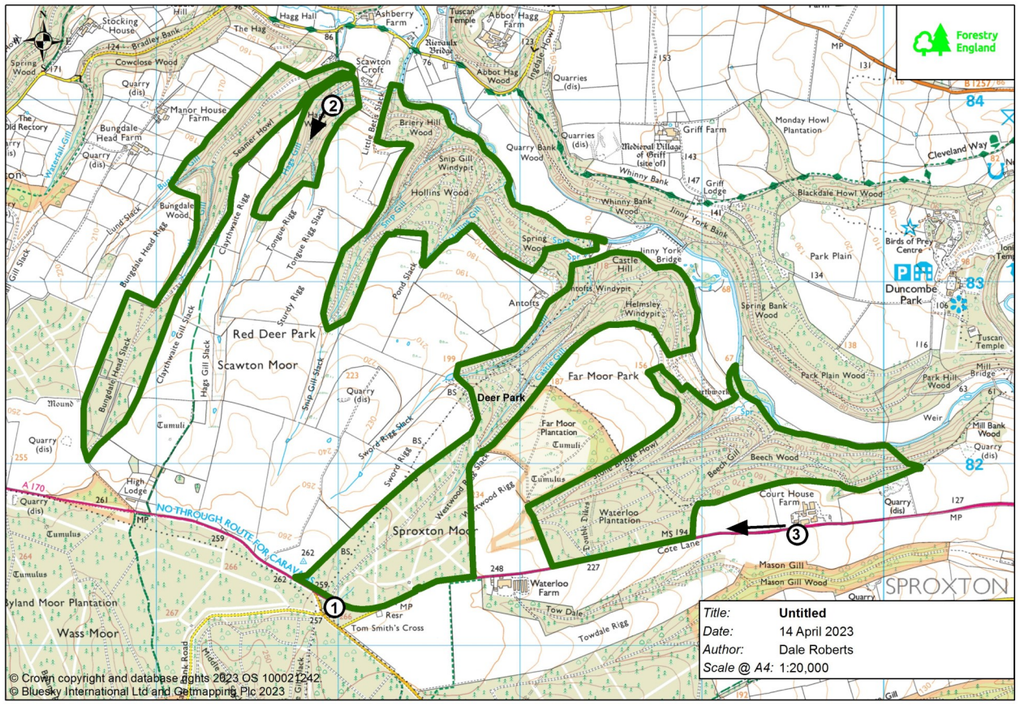
0 0.13 0.25 0.5 Kilometers

Forestry England forests and woodlands have been certified in accordance with the UK Woodland Assurance Standard (UKWAS)

Forest Design Plan

Deer Park

Photographs



1— SE 5681 8135

A typical example view from the A170 Helmsley—Thirsk road, illustrating developing mixed species wooded habitat, into the Sproxton Moor area of Deer Park

2—SE 5697 8401

An example of recent forest management improving species and structural diversity through deer park

3 - SE 5942 8164

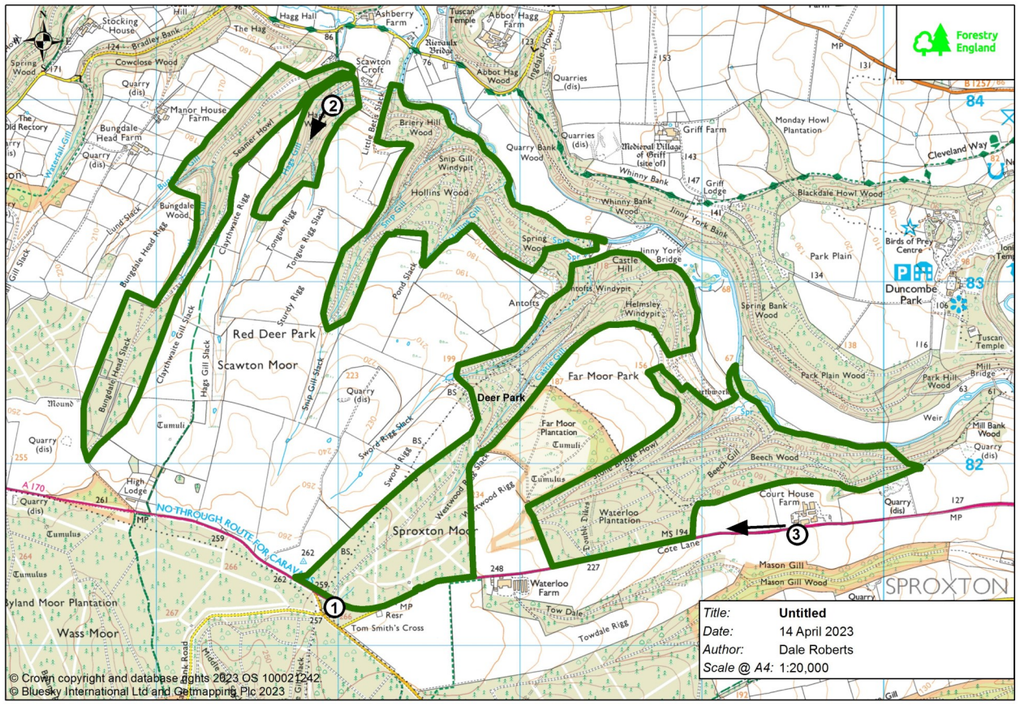
Northerly view of the wood edge at Waterloo plantation from the A170.

The once hard woodland edge has been improved through recent management and a developing soft, species and structurally diverse woodland edge can be seen.

Forest Design Plan

Deer Park

Internal Photographs



Beech Wood – SE 59588207

Under the previous plan the overstorey of Western hemlock has been removed leaving a predominantly Beech woodland with some naturally regenerating beech, holly and hemlock. Ground flora is recovering with ferns and herbaceous species colonising previously bare ground. Through this plan, conifer regeneration will be re-moved as set out in Forest Plan text document, 3.7.5 Restocking – Broadleaf.

Restored veterans – SE 59458210

Veteran oaks are benefitting from the removal of 1971 Western hemlock overstorey with birch and hemlock regeneration now becoming established. Careful management of regenerating species will ensure competition is minimised that will further improve the ecological conditions associated with the veteran oak habitat.