Forestry Commission England

Yorkshire Forest District

Eastmoors and Riccaldale Forest Plan

FDP 15

2014

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FOREST ENTERPRISE - Application for Forest Plan Approvals in England

Forest Enterprise - Property

Forest District:	Yorkshire
Woodland or property name:	Eastmoors and Riccaldale
Nearest town, village or locality:	Helmsley
OS Grid reference:	NZ 482 502
Local Authority district/unitary Authority:	North York Moors National Park

Areas for approval

	Conifer	Broadleaf
Felling	104.0	
Restocking	57.7	46.3
Continuous Cover	20.0	

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

2. I confirm that the pre consultation, carried out and documented in the Consultation Record attached, incorporated those stakeholders which the FC 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 any permission necessary for the implementation of the approved Plan.

Signed ..... Signed .....

Forest Management Director Area Field Manager

District ..... Area .....

Date .....

Date of Approval..... **Date approval ends**.....

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APPENDICES

Eastmoors and Riccaldale

1100.7 Hectares

Period of Plan: 2014 - 2023

1. Background

Eastmoors and Riccaldale Forest is part of a network of Forestry Commission (FC) land in the south-west of the North York Moors National Park, due north of the market town of Helmsley and forms part of the York Beat. The land was acquired by the FC during the 1950's and 1960's through a collection of long-term leases although by far the largest is with Duncombe Park Estate.

The forest consists of a variety of distinctly different but contiguous woodland areas ranging from; conifer-dominated gently sloping plateau, mixed broadleaf and conifer woodland along dale and valley sides, and mixed broadleaf and conifer woodland across the scarp slopes that surround Rievaulx Moor that connect the constituent parts. Separated by a narrow strip of private woodland sits Heater Rigg in the centre of Rievaulx Moor. This is an area of conifer-dominated woodland that surrounds a series of spring-fed watercourses that drain Rievaulx and Helmsley Moor.

2. Describing the Site

2.1 Geology and Soils (Map - 01)

Underlying geology is varied across the range of woodland areas. The valley and dale sides are underlain by soft Lias mudstones and Cleveland ironstone with thin limestone beds and the plateau sites by Lower calcareous grit (sandstone) and Ooidal limestone. The lower lying sites at Roppa and East Moor Wood are underlain by sandstone, mudstone, siltstone and limestone associated with Long Nab, Moor Grit, Scarborough and Cloughton formations.

Soils at Eastmoors and Riccaldale follow similar patterns to the geology, with a predominance of iron pan and podsol soils over the sandstone grits on the plateau, brown earths along the valley/dale sides and Carlton Park Woods and podzolic peaty surface water gleys at Roppa Wood.

2.2 Tree Species (Map - 02)

Conifer is the dominant species group at 58% comprised primarily of larch (24%) and pine (21%) with spruce, fir and hemlock as lesser components.

Broadleaves account for 23% of the overall area, dominated mainly by birch (7%) and sycamore (5%) with lesser amounts of ash, beech and oak species.

Agricultural land use accounts for 11% of this forest block, the majority of which forms the Snaper Farm Meadow Site of Special Scientific Interest (SSSI)

2.3 Wind Damage

Windthrow hazard measurements indicate the majority of Eastmoors and Riccaldale Forest is windfirm, although on gleyed soils at Roppa Wood tree stability is less certain. Tree stability has also been an issue in the past with previous stands of Lodgepole pine at East Moor Wood having suffered from wind damage in the early 1990's.

In light of this, management options are relatively unrestricted across the majority of the property with regard to practising Continuous Cover Forestry and the potential to extend the rotation age of crops to cover a wide range of objectives.

2.4 Landscape

Eastmoors and Riccaldale are situated across 'Eastmoors and Riccaldale Forest' landscape character area[1] in the south-west of the North York Moors National Park, on gradually rising former upland moor. Elevation ranges from 60 metres at the lower end of Riccal Dale valley rising up to 328 metes on the edge of the forest plateau at Rievaulx Moor. There are three broad landforms across the Eastmoors and Riccaldale landscape;

- the forest plateau at an altitude of 240 metres to 328 metres, across which the conifer-dominant, regularly shaped plantations of Newgate Plantation, Heater Rigg and Baxton's Wood occupy,
- the river valley of Bilsdale and the deeply incised dale of Riccal Dale have a far greater proportion of broadleaf species,
- the narrow scarp slope comprised of Ayton, Rievaulx and Helmsley Bank that provides the forest link between Bilsdale and Riccal Dale is generally dominated by conifer species.

At the start of the previous plan (2000), the forest was largely coniferous in nature, with 64% of the forest area being coniferous, 19% broadleaf cover and 17% open space (11% agriculture).

[1] North York Moors National Park Landscape Character Assessment - 2003

Recent felling and restocking over the past thirteen years has seen a gradual transition with the reduction of conifer and increase of broadleaf cover, as set out in the previous plan, and is supported by the current stand composition as described in section 2.2, Tree Species.

This process is starting to address the narrow range of age classes across the productive coniferous blocks and create a more structurally diverse woodland resource (see Map – 03). Greater use of open ground is starting to soften the forest edge and provide a more diverse interface with upland moor and heathland habitats.

2.5 People and Community (Map - 04)

The car parks at Newgate and Cowhouse Bank provide a popular starting point for walkers and ramblers to utilise the large network of public rights of way that link the surrounding woodland and open access moorland.

These are leasehold woodlands where the main freeholder has retained sporting rights and exercises these through an active pheasant shoot primarily through the woods of Riccal Dale. Because of the terms of the lease, potential to develop recreational use and facilities is limited.

2.6 Natural Heritage (Map - 04)

Within Eastmoors and Riccaldale there is one designated Sites of Special Scientific Interest;

Snaper Farm Meadows – notified for its unimproved neutral grassland, representing the largest known complex of such grassland in the North York Moors National Park.

In addition, the North York Moors SSSI/SAC/SPA runs contiguous with Eastmoors and Riccaldale forest boundary at Rievaulx and Helmsley Moor, notified for its mire and moorland vegetation communities and of international importance for its breeding bird populations.

Although Eastmoors and Riccaldale is a predominantly secondary plantation conifer forest, 24% are classed as Ancient Woodland Sites of which 131 ha are ancient semi-natural woodland (ASNW) and the remainder are plantation ancient woodland sites (PAWS). Native woodland types range from W4 – Birch woodland with purple moor grass, W7- Alder/ash woodland with bottle sedge, W10/11 – Lowland/Upland mixed broadleaf woodland with bluebell and W16/17 – Upland Oak/birch woodland with bilberry.

Eastmoors and Riccaldale forest is home to a wide range of international, national and regionally important species including Schedule 1 birds of prey, declining woodland bird species such as woodcock, willow tit and spotted flycatcher (see Appendix 2), floristically diverse mire and herb rich grassland and colonies of Northern brown wood ant.

2.7 Cultural Heritage (Map 04)

Eastmoors and Riccaldale forest contains a rich and regionally important resource of historic features with over 80 unscheduled monuments including; medieval holloways, post medieval limestone quarries and kilns, 19th century coal mining bell pits, an 18th century water race and more recently, Defence of Britain second world war military base at Carlton Camp.

3. Describing the Project

3.1 Project Brief

- increase the proportion of native broadleaf cover, particularly across areas of PAWS, areas of high conservation value, riparian zones and along steep-sided scarp slopes
- manage designated sites in accordance with statutory requirements as per agreed management plans
- consider the selection of alternative main tree species that will contribute toward a greater range of species diversity to maintain or increase timber productivity and increase resilience to plant health and biosecurity threats
- increase the diversity of the age structure by adjusting current felling patterns throughout the wood and enhance external and internal edges
- ongoing recognition of the sporting potential of the woodland to the Duncombe Park Estate

3.2 Objectives

- Maintain the woodlands contribution to the wooded character within the NYMNPA Tabular Hills-Limestone Hills and Bilsdale-Narrow Moorland Dale character types through the maintenance and development of structural and species diversity. To be measured by the sub-compartment database and fixed-point photography.
- In line with climate change projections, maintain a sustainable supply of timber from a more diverse range of site appropriate conifer and broadleaf species, to be measured by the Production Forecast and Sales Recording Package.
- Ensure scheduled and unscheduled ecological and historic features are maintained in target condition and improved where opportunities arise, to be measured by North York Moors National Park Authority, Natural England, Non Government Organisations and FC systems accordingly.
- Conserve veteran trees and in line with climate change projections continue the restoration of PAWS to site appropriate native woodland and associated plant communities, to be measured by the sub-compartment database.

3.3 Constraints

- Difficult access and topography present operational challenges whilst harvesting steep scarp slopes and valley sides

- Inappropriate designation of poor quality stands for Continuous Cover Forest (CCF) management on steep slopes with difficult or no access for harvesting.

  Across these sites we will look to manage on a high forest/clearfell system. We will consider delaying felling of appropriate wind-firm crops to manage these on extended rotations and CCF to sites that are able to support these systems where access for mechanical harvesting is not restricted.

- Larch comprises 30% (264 ha) of the productive high forest and the woodland sits within Zone 2 of the national P.ramorum risk zone map.

  We will consider the scale and pace of removal and look to bring forward larch felling to reduce the level of risk to the development of the disease.

- Projected climate change scenarios and forest pest and diseases are likely to challenge future tree species choice, particularly on the plateau where the nutrient and water regimes are low.

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 planning 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 and historic interest are taken during routine forest work. For Eastmoors and Riccaldale this will include:

- Maintain sites in favourable condition. Reference will be made to site-specific management plans where these identify particular management issues that need to be addressed.
- Where linear archaeological features exist in continuous cover compartments, forest operations should take special care in crossing these features to avoid damaging them. In some instances it may be appropriate to create fixed crossing points with adequate protection measures for the archaeological features.

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 Eastmoors and Riccaldale this will include:

- Managing Veteran trees and PAWS as set out in – 'Ancient Woodland on the Forestry Commission Estate in England (March 2002)' and 'FEE Operations Instructions No. 3 (rev.2012), Ancient Woodlands'.

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

- Increase and improve the deadwood resource as set out in – 'Managing deadwood in forests and woodlands Practice Guide (2012)'. Areas of high ecological value across which deadwood resources could be encouraged include; riparian zones, PAWS, Natural Reserves and adjacent to SSSI's.

- Watercourses currently identified as moderate or poor overall status through the Water Framework Directive assessment will have their condition improved by replacing existing conifer crops with predominantly broadleaf woodland at the time of regeneration. The implementation of continuous cover forestry systems and phasing of felling will avoid significant lengths of watercourse being felled at any one time.

Minimum Intervention - Natural Reserves

Natural Reserves are sites that are predominantly woodland which have been set aside where biodiversity is the prime objective. As far as reasonably practicable this is a permanent designation and will be managed on a minimum intervention system.

There are currently no Natural Reserves designated at Eastmoors & Riccaldale although a number of Candidate sites have been identified for future consideration. Designation of new areas will be periodically reviewed in line with National and District policy.

Long Term Retentions

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.

Invasive species

Priority will be given to control and progressively remove invasive species (e.g. rhododendron, Himalayan balsam and Western hemlock) across Ancient Woodland Sites and other sites identified as being of High Conservation Value. The rate of control will be dependant on the resources available during the period of approval for the plan.

3.4.2 Timber Harvesting

We will continue to sustainably harvest timber both from clearfell and thinnings, and where appropriate 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 Eastmoors and Riccaldale.

3.4.3 Landscape

The woods at Eastmoors and Riccaldale cut across a range of character types within the North York Moors National Park, a designated landscape.

The woods at Baxton's and on Rievaulx Moor lie within the Tabular Hills character type, a sub-set of the Limestone Hills:

'Smoothly contoured plateau landscape underlain by Corallian limestones and sandstones rising at a shallow angle to prominent and impressive escarpments with conspicuous flat tops, deeply dissected and divided by a series of densely wooded dales, a number of which are thought to have their origins as glacial overflow channels.

Views are broken by large often regularly shaped plantations (mainly coniferous), concentrated on the elevated parts of the western hills.' [1]

The woods at Riccal Dale and Roppa also lie within the Limestone Hills but fall within the Southern Dales and Moor Foot sub-set:

'The plateau is dissected and divided by a series of deeply incised valleys (distinct from the shallower valleys of the dip slope in that they each contain a beck or river), narrowing in their lower reaches to the south and widening in their upper reaches to include an unusual narrow strip of low lying land overlying Oxford Clays and Kellaways Rocks where the north facing scarp slope meets the foot or lower lying slopes of the moors. This is a small scale, intimate and secluded landscape, enclosed by the elevated moorland to the north, the wooded scarp slope and the densely wooded valley sides. The contrast between this enclosed landscape and the openness of the surrounding plateau and moorland is marked.'[1]

The woods lying between the River Rye and the B1257 sit within the Ryedale sub-set of the Narrow Moorland Dale character area:

'A steep sided long and narrow winding v-shaped valley, becoming u-shaped in its central reaches around Hawnby, the u-shape becoming more pronounced in the lower dale. Steep wooded valley side slopes define the valley and create a strong sense of enclosure along much of its length.

South of Hawnby the valley is incised between the flat topped plateau of the limestone Hambleton Hills to the west and the Tabular Hills to the east.

Blocks of dense woodland cover significant areas of the dale. Further south, linear deciduous woodland (much of which is replanted ancient woodland) and coniferous plantations are concentrated on the valley sides and along the length of the adjoining tributaries. Farmed areas are well treed contributing to the wooded character of the dale.'[1]

On a scale of low/medium/high, landscape sensitivity is considered to range from low to medium depending upon site factors and visibility across the wider landscape.

Views are varied with internal views experienced by walkers, cyclists and horse riders using the numerous trails, public rights of way and forest rides. Longer views, both internal and external can be experienced from established points that have developed as first-rotation crops have been felled.

Future felling should retain site-appropriate species such as Scots pine and diversify species and age structure by bringing forward the felling of phytophthora prone larch. Conifer PAWS will be restored to site-native broadleaf species and adjacent stands of secondary plantation conifer will be converted to predominantly mixed broadleaf woodland, providing a robust buffer and create an extended habitat network.

[1] North York Moors National Park Landscape Character Assessment - 2003

3.5 Plan (FDP Map 09)

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

3.6 Areas (FDP Maps 10 and 11)

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 A1 Forest Design Plan folder.

Felling	Area - hectares	% of total area	Projected volume (m^3)
2014 – 2016 Clearfell	**29**	**2.6**	**10227**
2017 – 2021 Clearfell	**45**	**4.1**	**17280**
2022 – 2023 Clearfell	**30**	**2.7**	**10672**
Continuous Cover	**20**	**1.8**	**5600**
Minimum Intervention (Natural Reserve)	**-**	**-**	

(Projected volume includes felling and thinning across felling periods)

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 Design Plan folder.

Habitat type (based on principal species established)	Area – hectares	% age of total area
Conifer	**495**	**45**
Broadleaf	**444**	**40**
Open space (i.e. heathland/ agriculture)	**162**	**15**

3.7 Methods / Forest Operations

3.7.1 Planning

Before any major forest operations are undertaken an "Operational Site Assessment" is completed. This document details the proposed work and outlines all known environmental, social and operational considerations. The "Operational Site Assessment" 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 "Operational Site Assessment" 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.

3.7.2 Standards

All operations within the forest will be carried out in accordance with the certification standard for the U.K. Woodland Assurance Standard and the U.K Forestry Standard 2011 i.e. Forests and biodiversity, Forests and climate change, Forests and historic environments, Forests and landscape, Forests and people, Forests and soils, Forests and Water.

3.7.3 Harvesting

The majority of the timber is likely to be sold standing and contractors will be employed by the purchaser to carry out the work. Staff from both the timber buyer and the Forestry Commission

will monitor work through regular site visits to ensure all guidelines and contract conditions are adhered to.

Clearfell V's Continuous Cover Forestry

All plans are required to consider lower impact silvicultural systems (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 CCF management, we will manage on an extended rotation basis to be thinned and monitored for future consideration for conversion to CCF.

At Eastmoors and Riccaldale, using the FC Forest Research Agency, Ecological Site Classification system (ESC), a range of conifer species are considered 'optimum' to 'unsuitable' for CCF where timber production is considered as an objective. We will only use species identified as 'unsuitable' where local conditions minimise site limiting factors i.e. fir and cypress species will be planted on locally free draining, brown earth locations to reduce the limiting factor of winter soil moisture regime (water logging); spruce on locally gleyed soils and wetter sites to reduce the limiting factor of summer soil moisture regime (drought).

Steep sided, irregularly thinned sites with poor access and difficult harvesting terrain will be clear felled with a view to retaining mature, windfirm broadleaf and conifer specimens where possible. Physical and economic constraints may require certain sites to be left and allowed to develop through to biological rotation, where no felling is carried out. These are identified as 'Candidate' Natural Reserves.

See Appendix 3 – CCF 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, Fourth Edition (2012), which aims to improve the safety and environmental standards of the timber haulage industry.

3.7.5 Restocking

Conifer

The areas of clearfell in the design plan will be replanted to diversify species and age structure and 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 4 'Species by soil type' will help inform restocking options.

Although identified as suitable by ESC, Corsican pine is no longer considered appropriate for restocking due to forest health issues and there are concerns regarding the long term sustainability of larch.

Sitka and Norway spruce is considered unsuitable by ESC at the 2080 high scenario, however it will continue to be grown across locally gleyed and brown earth soil types on water receiving sites with a north-west to north-east aspect. Across such sites it is felt that localised conditions that reduce the impact of moisture deficit values will allow the retention of these species across suitable locations.

Unless restocking conifer sites with a single species, 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.

As indicated at 3.7.1 Planning, 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.

The continuous cover areas will be managed to encourage natural regeneration, although it is accepted that replanting will be required to maintain and further diversify the current range of species.

Natural regeneration across clearfell areas will be assessed in terms of species suitability and the risk it poses to the stated objectives of the plan are considered as to its retention or removal.

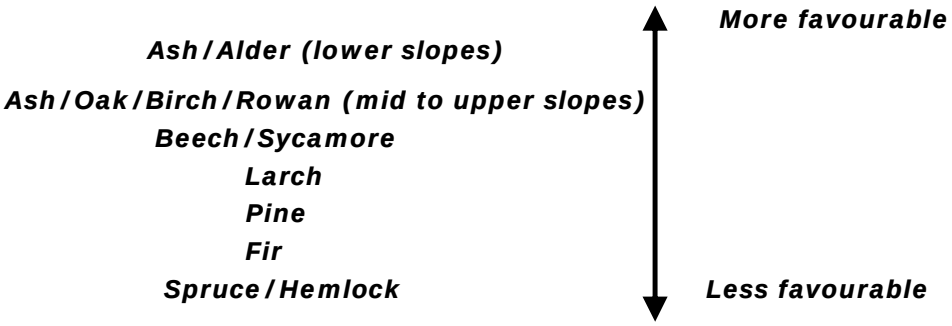
Broadleaf

The areas of PAWS at Eastmoors and Riccaldale will be restored to the appropriate range of native woodland types where this is influenced by underlying soil nutrient and moisture regimes. Delayed thinning or no-thinning across some of these sites reduces the option for gradual restoration through CCF due to the increased risks of windthrow. Consequently, appropriate scale clear felling phased over a range of felling periods, and restocking by natural regeneration will secure the eventual conversion from conifer to native dominant, mixed broadleaf woodland. Other sites that are more stable will be considered to be managed as CCF. The impact of Chalara on ash natural regeneration will be monitored during the life of the plan, although the acceptance of

other site-native species will be considered as an acceptable alternative to achieve PAWS restoration.

On non-PAWS sites planned for conversion to broadleaf woodland, we will accept natural regeneration of both native and non-native species i.e. beech, sycamore.

Species regeneration on PAWS areas



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, rhododendron) threatens the native woodland community, it will be removed as soon as practicable. Where the risk is lower it will be allowed to reach a harvestable size and removed as part of a routine felling or thinning operation.

Heathland/Wooded heath

It is proposed to develop a mosaic of upland heath and native broadleaf/mixed woodland habitat through natural regeneration across conifer sites that lie adjacent to existing heathland habitats. Habitat networks will be maintained and established across parts of the forest that will enhance and maximise the movement of flora and fauna by increasing the permeability both within and outwith the forest area. The development of these sites will be beneficial for a range of species including Nightjar. We do not intend to manage these sites for future timber production.

4. Monitoring

4.1 Clearfells

All clearfell areas are managed spatially using the Sub Compartment Database to ensure the boundaries and designs are accurately reproduced on the ground. Significant variances in the areas to be felled will require a formal amendment of the plan plus the agreement of and approval by Forest Services staff, as per CSM 6.

4.2 Restock

All restock areas where timber production is an objective will be planted/naturally regenerated and monitored to ensure that the number of established trees per hectare fully meets the requirements of OGB*4. This document has mandatory requirements on the monitoring of the crop in Year 5 to ensure the establishment of at least 2500 trees / ha.

4.3 Continuous Cover

Continuous cover areas will be monitored using the methods and procedures contained in OGB*7. Similar in scope to the methods employed for restock areas, where timber production is the aim we need to have at least 2000 saplings per hectare after 10 – 15 years, these should be evenly spread over 90% of the site.

4.4 Design Plan

All design 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 2018. This time period can be shortened if circumstances change significantly or if parts of the plan prove detrimental to the overall aims and objectives.

*Operational Guidance Booklet

5. Determination of Impact Significance and Mitigation

5.1 Ancient and Native Woodland

*Threats to our ancient and native woodlands can be immediate and absolute (e.g. loss to infrastructure or development) or slower and more subtle (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. (*www.forestry.gov.uk/keepersoftime*)*

Major threats to ancient and native woodland are:

- *Climate change and fragmentation*
- *Excessive browsing and grazing by deer & livestock*
- *Inadequate or inappropriate management*
- *Invasive and problem species*
- *Diffuse pollution*
- *Loss*

Through this plan, we will continue to apply local and national policy and best practice guidance for the restoration of PAWS. It will help to target resources and identify where additional support is required.

5.2 Flora

Heathland is a UKBAP Priority Habitat

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 within Eastmoors and Riccaldale Forest. Maintaining a mixed resource of temporary and permanent open space will provide suitable habitat for Woodcock and other priority flora and fauna species within the forest area.

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 Eastmoors and Riccaldale Forest. 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- Forest Plan Consultation Record

Consultee	Date Contacted	Date Response Received	Issues Raised	Forest District Response to Issues
Statutory Consultees				
Forest Services	09/09/2013		Overview of previous plan performance provided, draft objectives and issues/opportunities agreed for plan renewal.	Clarification provided on revised wording for objectives, continuation of economic conifer crops along scarp slope, accelerate the rate of larch felling (PR).
		18/02/2014	Joint meeting with FS where issues on Forest Health and Biosecurity, status of waterbodies, adjacency and relevance of Strategic Plan were raised.	Changes carried out to text document and revision of coupe felling date at Newgate Bank to reduce adjacency.
Natural England	02/11/2013		Provided copy of Brief and Objectives.	
		21/02/2014	A number of general issues were raised regarding Phytophthora, Chalara and Schedule 1 birds.	21/02/2014. Email response provided addressing issues raised.
NYMNPA		14/11/2013	NYMNPA content with the above and await draft proposals.	
		24/02/2014	Clarification required on Minimum Intervention sites, landscaping issues adjacent Lund Farm and across Newgate Bank and designation of Long Term Retention sites.	04/03/2014. Provided detailed response including supporting maps highlighting coupe amendments.

Consultee	Date Contacted	Date Response Received	Issues Raised	Forest District Response to Issues

Neighbours

Duncombe Park Estate (and main freeholder)	12/11/2013	13/11/2013 06/01/2014	Expressed wish to see recognition of importance of shooting reflected in the plan brief and objectives. Expressed wish to see a number of coupes re-designed to allow game management to continue during the transition to re-establishing 2nd rotation stands.	Copy of revised brief sent on 25/11/2013 and response agreeing to changes received from Estate on 26/11/2013. Meeting held between FE and Estate on 04/03/2014 to agree changes to selected coupes.

Others

Yorkshire Forest District staff	09/09/2013		Overview of previous plan performance provided, draft objectives and issues/opportunities agreed for plan renewal.	Clarification provided on revised wording for objectives, continuation of economic conifer crops along scarp slope, accelerate the rate of larch felling (PR).

Non Governmental Organisations

Community Groups

Appendix 2 – Priority woodland bird species

Bird Species [1]	Forest location	Habitat enhancement
Woodcock	Forest plateau	Restructure closed canopy woodland through thinning and sequential felling, create and maintain open structure woodland/wooded heath, ride enhancement and glade creation.
Willow tit	Stream valleys	Thinning of closed canopy stands to improve shrub layer structure, enhance rides and woodland edge, create and maintain successional woodland (birch)/scrub habitat and standing deadwood
Spotted flycatcher	Stream valleys	

[1] Source – RSPB targeting maps.

Appendix 3 – CCF justification

Site Factor	Suitability Score	Comment
WHC: range 1to 4	2	Tree stability is not a site-limiting factor except for surface water gley soil types and higher elevations of conifer.
Soil fertility: Very Poor to medium	1	Predominantly Very Poor with isolated areas of Medium fertility which support a wider range of competing vegetation.
Species suitability: Nil SP,CP,LP,WH,Larch WRC,SS	 1 – Optimal 2 – Suitable 3 – Marginal/ Unsuitable	Corsican pine is not considered suitable due to RBNB. Larch is not considered suitable due to Phytophthora ramorum

With a combined score ranging from 4 to 6, initial analysis indicates significant areas of Eastmoors & Riccaldale achieve a moderate suitability score for transformation to CCF. Further analysis of stand structure is considered to help inform whether transformation should be considered.

- Stand form – Form is average and of a reasonable quality.
- Thinning history – Thinning operations have been carried out over a regular cycle, developing crowns that can act as potential seed bearing trees.
- Currently, there is evidence that SP, LP, WRC, WH, NF, SS and larch are capable of developing as a natural regeneration resource across restock sites

On the basis of the above information, we will consider CCF across even-aged conifer stands using a range of conifer species (SP, LP, WH but also WRC, SS and NF spruce where conditions allow), aiming for a simple stand structure.

We will adopt a Group Shelterwood system through a combination of thinning, group felling (0.25 to 0.50 ha) and replanting with suitable species.

Some areas of high forest/clearfell coupes will be managed on an extended rotation basis and will be monitored for there development of natural regeneration. Where appropriate these will be considered for developing toward CCF management as set out above.

The Forest Research ESC table below supports the range of target species considered for natural regeneration and those where enrichment planting will increase species diversity.

Key

Very Suitable

Suitable

Marginal

Unsuitable

[Eastmoors 2091 SE606910] Future Climate Analysis - 5km Area Projection UKCIP02

Species	Baseline			2050 Lo			2050 Hi			2080 Lo			2080 Hi		
	Lim Factor	Suitability	Yield	Lim Factor	Suitability	Yield	Lim Factor	Suitability	Yield	Lim Factor	Suitability	Yield	Lim Factor	Suitability	Yield
Corsican pine	SNR		8	SNR		12	SNR		12	SNR		12	SNR		12
Lodgepole pine	SNR		12	SNR		12	SNR		12	SNR		12	SNR		12
Macedonian pine	SNR		8	SNR		8	SNR		8	SNR		8	SNR		8
Maritime pine	AT5		6	SNR		8	SNR		10	SNR		10	SNR		10
Monterey/Radiata pine	AT5		4	SNR		6	SNR		8	SNR		8	SNR		12
Scots pine	SNR		10	SNR		10	SNR		10	SNR		10	SNR		10
Weymouth pine	SNR		4	SNR		4	SNR		4	SNR		4	SNR		4
Norway spruce	SNR		4	SNR		4	SNR		4	SNR		4	SNR		4
Oriental spruce	SNR		0	SNR		0	SNR		0	SNR		0	SNR		0
Serbian spruce	SNR		6	SNR		6	SNR		6	SNR		6	SNR		6
Sitka spruce	SNR		12	SNR		12	SNR		12	SNR		12	MD		8
Douglas fir	SNR		4	SNR		4	SNR		4	SNR		4	SNR		4
Hybrid larch	SNR		10	SNR		10	SNR		10	SNR		10	MD		0
Japanese larch	SNR		10	SNR		10	SNR		10	SNR		10	MD		0
European larch	SNR		0	SNR		0	SNR		0	SNR		0	SNR		0
Western red cedar	SNR		0	SNR		0	SNR		0	SNR		0	SNR		0
Japanese red cedar	SNR		0	SNR		0	SNR		0	SNR		0	MD		0
European silver fir	SNR		4	SNR		4	SNR		4	SNR		4	MD		4
Grand fir	SNR		0	SNR		0	SNR		0	SNR		0	SNR		0

Noble Fir	SNR		6	SNR		6	MD		4	SNR		6	MD		0
Nordmann fir	SNR		4	SNR		6	SNR		6	SNR		6	SNR		6
Pacific fir	SNR		12	SNR		12	SNR		12	SNR		12	SNR		10
Leyland cypress	SNR		2	SNR		2	SNR		2	SNR		2	SNR		2
Western hemlock	SNR		14	SNR		14	SNR		14	SNR		14	SNR		12
Giant redwood	SNR		0	SNR		0	SNR		0	SNR		0	SNR		0
Coast redwood	SNR		0	SNR		0	SNR		0	SNR		0	SNR		0
Lawson's cypress	SNR		4	SNR		6	SNR		6	SNR		6	SNR		6

Site type		Species													
Upland sites	Lowland sites	**SP**	**LP**	Mac P	**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/INFILL	**Cat A Major species** - currently widely used with no supply problems and should continue to play an important role
Bold lower case italics	**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	**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

soucre data http://www.forestry.gov.uk/fr/treespecies

source data http://www.forestry.gov.uk/forestry/infd-8mad67

Refer to cell comments for specific species notes

No planting where >1m peat depth

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

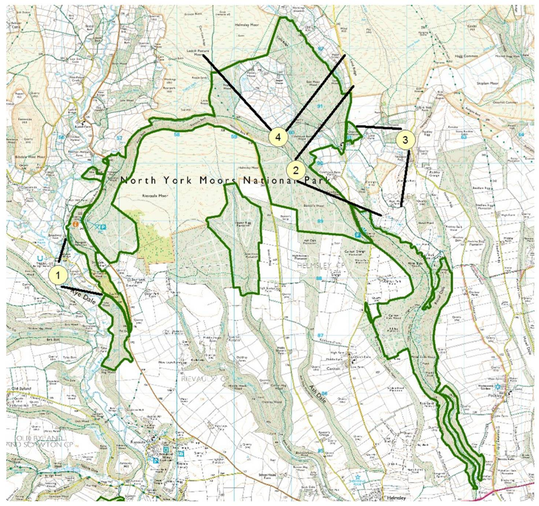
Forestry Commission England

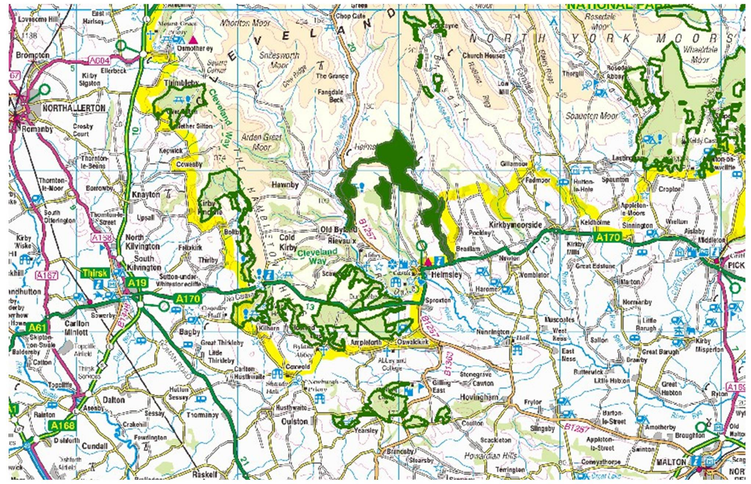
Yorkshire Forest District

Eastmoor & Riccaldale

Forest Plan FP 15

Eastmoor & Riccaldale
Yorkshire Forest District
Forest Plan 15

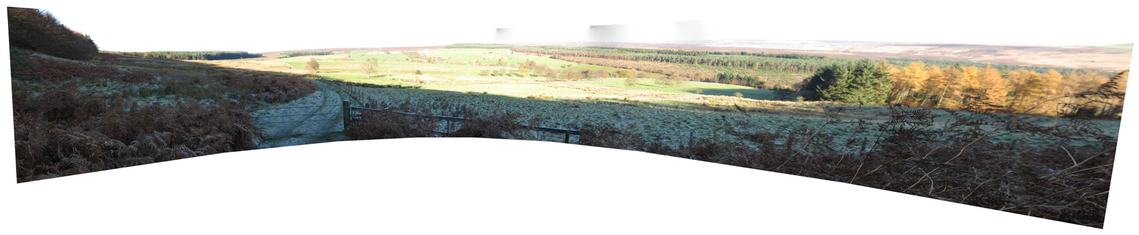




View 1 from Knolls Lane looking east across to Newgate Bank—The significance of larch within the landscape is evident from this view, particularly where it forms a stark contrast with evergreen conifers. Appropriately sized felling and restocking will continue the process of breaking up the even-aged structure. A wider variety of conifer species and an increase in broadleaf species and open space will contribute to the development of a more varied stand composition and forest structure.

View 2 from the top of Cowhouse Bank Wood across to Beadlam Ridge—Recent felling along the top of the scarp slope has resulted in several vistas allowing walkers to benefit fromviews across to Riccaldale in the foreground and long-distance views to the Vale of Pickering. The continuation of phased felling along the scarp slope will ensure a variety of viewpoints are enjoyed from the Public Footpath.

View 3 from Newgate Foot Farm across to Cowhouse Bank—Although masked by the back-lit conditions, recent felling coupes are evident along the scarp slope and at the start of Riccal Dale Wood. Proposed felling and natural regeneration will see a gradual change from conifer to broadleaf dominant woodland establishing along the scarp slope, providing a softer transition between the forest and agricultural fields in the valley bottom.



View 4 from the forest road below Helmsley Bank shows Roppa Wood to the left and East Moors to the right—recent felling and restocking at both of these woods is starting to break-up the even-aged structure as originally established. In the foreground is Snaper Farm Meadows SSSI, this view will become more diverse as broadleaf and scrub habitat develops adjacent to the agricultural holding.

Forestry Commission England

Eastmoor & Riccaldale Forest Plan

N

Helmsley Moor

Lastell Pasture Moor

Hilltop Common

Skiplam Moor

Rievaulx Moor

Old Byland

Kirkdale West Moor

Carlton

Pockley

Map 01 - Geology & Soils

- 1z [Podzolic brown earth]
- 3 [Typical podzol]
- 4 [Typical ironpan]
- 6 [Typical peaty surface-water gley]
- 6z [Podzolic peaty surface-water gley]
- 7 [Typical surface-water gley]
- 7z [Podzolic surface-water gley]
- 11b [Calluna, Erioph. vag. blanket bog]
- 12a [Rendzina]
- 12b [Calcareous brown earth]
- 12t (Argillic brown earth)
- 13s [Scree]
- Podzols
- Gleys
- Calcareous
- Agriculture

1:10,000

Date: Mar 2014

0 250 500 1,000 1,500 2,000 Meters

Forestry Commission England

Forestry Commission Scotland has been certified in accordance with the rules of the UK Woodlands Council

Eastmoor/Riccaldale Forest Plan

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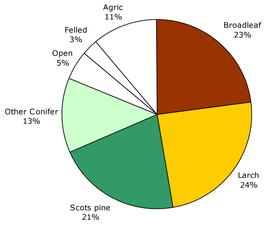

Map 02 - Current Species

- Open, Felled etc
- Agriculture
- Broadleaves
- Lodgepole Pine
- Mixed Conifer
- Other Conifer
- Corsican Pine
- Norway Spruce
- Scots Pine
- Sitka Spruce
- Larches
- Douglas Fir

Scale: 1:10,000

Date: Mar 2014

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Forestry Commission England

Eastmoor/Riccaldale Forest Plan

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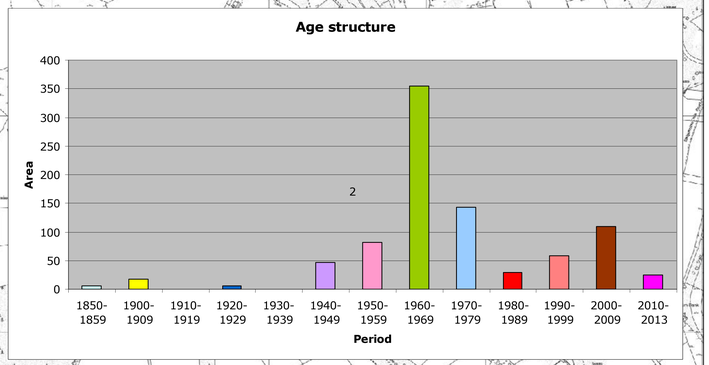

Map 03 - Age Class

- Agriculture
- Open, Felled etc
- 1850 - 1859
- 1900 - 1909
- 1910 - 1919
- 1920 -1929
- 1930 -1939
- 1940 - 1949
- 1950 - 1959
- 1960 - 1969
- 1970 - 1979
- 1980 - 1989
- 1990 - 1999
- 2000 - 2009
- 2010 - 2013

Scale: 1:10,000

Date: Mar 2014

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Forestry Commission England

Eastmoor/Riccaldale Forest Plan

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Map 04 - Management Information

- Management Area
- FC Car Park
- FC Roads
- PROW Bridleway
- PROW Footpath
- Powerline Overhead
- Powerline Underground
- NYM National Park Boundary
- Planted Ancient Woodland Site
- Ancient Semi-Natural Woodland
- Special Area of Conservation
- Special Protection Area
- Site of Special Scientific Interest
- Conservation Area
- Conservation Area
- Conservation Area
- Heritage Feature
- Heritage Feature
- Heritage Feature

Scale: 1:10,000

Date: Mar 2014

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Forestry Commission England

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

Eastmoor/Riccaldale Forest Plan

N

Map 05 - Current Felling

- Agriculture
- Open/Felled etc
- 2012-2016
- 2017-2021
- 2022-2026
- 2027-2031
- 2032-2036
- 2037-2041
- 2042-2046
- 2047-2051
- 2052-2056
- 2057-2062
- Felling Beyond Plan Period
- Continuous Cover
- Minimum Intervention

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Printed Date:

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Forestry Commission England

Eastmoors and Riccaldale Forest Plan
Yorkshire Forest District
Analysis and Concept

N

Visually improve the woods within the landscape, particularly along the prominent scarp slope at Newgate Bank where stands of larch create a dominant contrast to evergreen conifers.

* Phased felling of appropriate sized coupes that respond to landform will provide opportunities to improve species and structural diversity.
* Increasing the area of broadleaf woodland and open habitat will minimise the impact of the reducing influence of larch within the landscape.

The overall status for a number of waterbodies is currently designated as either poor or moderate.

- Where conditions allow, continuous cover forestry systems will reduce the impact of felling activity adjacent to watercourses, as will the scale and phasing of clearfelling where CCF is not appropriate.
- Riparian corridors of predominantly broadleaf woodland and open habitat will be established over time.

Sustainable timber production remains a priority objective across the more accessible parts of the forest.

- Alternative conifer species i.e. Macedonian pine, Oriental spruce, European silver fir and Coast redwood will be considered where conditions are suitable.
- Develop continuous cover systems and extended rotation to allow natural regeneration and underplanting with alternative species to become established.

Restoration of ancient woodland to native species remains a priority objective.

- Felled conifer stands will be restored to native species by natural regeneration and enrichment planting if required.
- Ancient Woodland Sites will be buffered by converting adjacent conifer stands to predominantly broadleaf woodland.

Map 06 - Analysis and Concept

- Restore Ancient Woodland
- Open i.e. Felled, Agriculture
- Convert conifer to predominantly broadleaf
- Productive conifer sites
- SSSI

Watercourse status

- Moderate
- Poor

Scale: 1:10,000

Eastmoor/Riccaldale Forest Plan

Forestry Commission England

N

Proposed Harvesting Map

This map shows how we intend to manage tree felling in Eastmoor/Riccaldale 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.

Continuous Cover
In a continuous cover system change is managed more slowly using a combination of heavier thinnings and small group fellings (normally no greater than 0.25Ha). The purpose of the 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.

Minimum Intervention
Managed for conservation and landscape. Management will be very low key where areas will be considered as an ecological refuge. In exceptional cases some areas may continue to be thinned but only when, and for as long as, thinning can be clearly demonstrated to have a higher conservation or biodiversity value than not thinning.

Map 07 - Proposed Felling

- Agriculture
- Open/Felled etc
- 2014-2016
- 2017-2021
- 2022-2026
- 2027-2031
- 2032-2036
- 2037-2041
- 2042-2046
- 2047-2051
- 2052-2056
- 2057-2062
- Felling Beyond Plan Period
- Continuous Cover
- Minimum Intervention - Candidate Natural Reserve
- Long Term Retention

Scale: 1:10,000

Date: Mar 2014

0 250 500 1,000 1,500 2,000 Meters

Eastmoor/Riccaldale Forest Plan

Forestry Commission England

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.

Mixed conifer areas will be regenerated through a combination of planting and natural regeneration with appropriate species, dependant 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 Sitka spruce, Corsican pine and larch for restocking. Species showing drought tolerance and disease resistance characteristics such as Macedonian pine, Oriental spruce, European silver fir and Coast redwood will also be considered.

Mixed broadleaf areas will be restocked by natural regeneration primarily using site-native species. This will be predominantly birch and ash 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.

N

Map 08 - Proposed Future Habitat and Restock Map

- Agriculture
- Open, Felled etc
- Predominantly mixed Broadleaf
- Predominantly mixed Conifer

1:10,000

Date: Mar 2014

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