Forestry Commission
England

East England

ROUDHAM

Thetford Forest

Forest Plan

2013 – 2023

Contents

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

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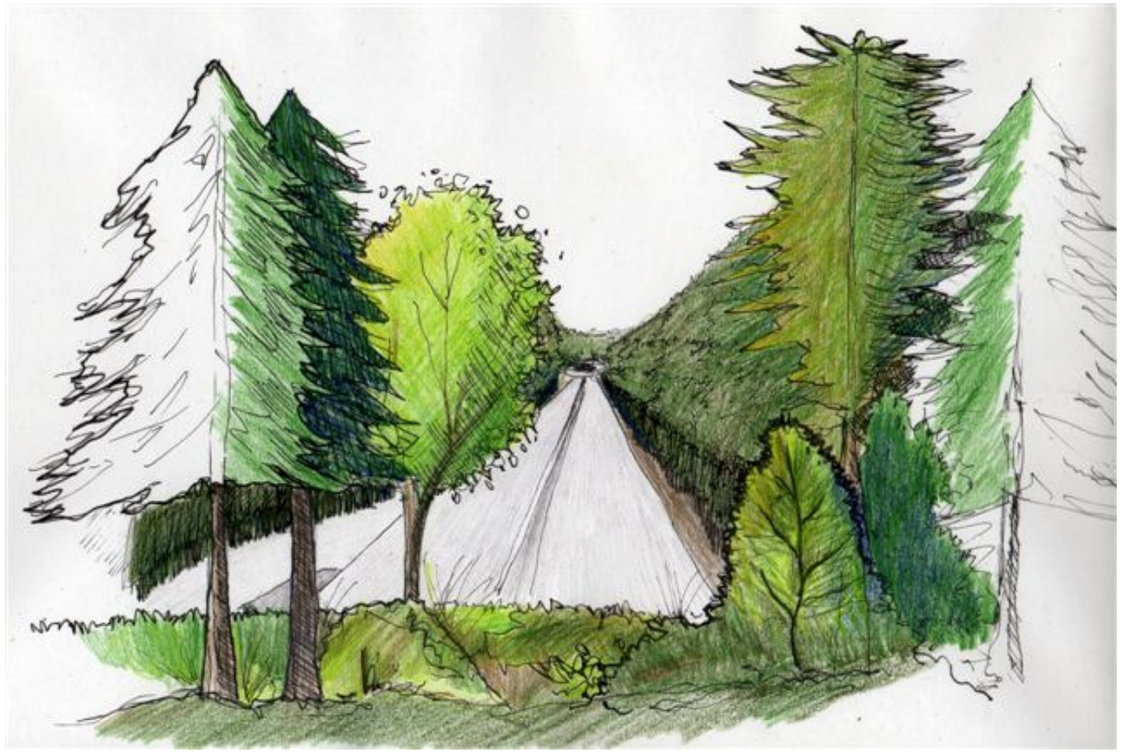
Forestry Commission
England

PROTECTING
AND EXPANDING
ENGLAND'S FORESTS
AND WOODLANDS,
AND INCREASING THEIR VALUE TO SOCIETY
AND THE ENVIRONMENT.

1. What are Forest Plans?

Forest Plans are produced by us, the Forestry Commission (FC), as a means of communicating our management intentions to a range of stakeholders. They aim to fulfil a number of objectives:

- To provide descriptions of our woodlands to show what they are like now.
- To explain the process we go through in deciding what is best for the woodlands' long term future.
- To show what we intend the woodlands to look like in the future.
- To outline our management proposals, in detail, for the first ten years so we can seek approval from the statutory regulators.



Our aim is to produce a plan that meets your needs for the woodland; meets the needs of the plants and animals that live there and meets our needs as managers.

We have produced this draft plan to illustrate our management proposals thereby creating an opportunity for you to comment on the plan, whether you are a user, a neighbour or a member of one of the many stakeholder groups that have an interest in the woodlands. Information on how to get your comments to us is on the webpage.

This plan does not set out the detailed yearly management operations for each small piece of a wood, known as a coupe*. It is not possible to say which year a particular operation will take place, but we can say in which five-year period it should happen.

All tree felling in the UK is regulated and a licence is required before trees can be felled; the scale of tree felling in Thetford Forest is such that the Forest Plan is the best mechanism for applying for this licence.

Responsibility for checking that the plan meets all the relevant standards and statutes lies with another part of the FC (Forest Services). If all the criteria are met, full approval is given for the management operations in the first ten years (2013 - 2023) and outline approval for the medium term vision (2023 - 2043). The plan will be reviewed after the first five years (2018) to assess if the objectives are being achieved. Natural England will approve management proposals for the Sites of Special Scientific Interest (SSSIs) which lie within in our woods.

We use some technical words and phrases in the text because they best describe what we are doing. There is a glossary at the back of the plan with some commonly used technical forest terms and abbreviations these technical words are identified with an * .

2. Standard Practices and Guidance

Underpinning the management proposals in Forest Plans is a suite of standard practices and guidance described briefly below. Some of these practices are strategic national policy, whilst others are local expressions of national policy to reflect the particular conditions found in East England - the policy level is indicated in brackets.

The UK Forestry Standard* (national)

The UKFS sets out standards for the sustainable management of all forests and woodlands in the UK and describes, in outline, good forest practice.

The UK Woodland Assurance Standard* (national)

The UKWAS certification standard sets out the requirements which woodland owners, managers and forest certification bodies can use to certify their woodland and forests as sustainably managed. It is the document which guides all of our management, and against which the FC is certified by outside consultants to ensure our compliance.

Deadwood (national and local)

Deadwood is important in the forest as a habitat for birds, invertebrates and some primitive plants. Guidance is given on how to provide deadwood in the forest of different sorts and sizes and how this will be distributed.

Natural reserves (national and local)

Natural reserves are areas of the forest where little or no active management takes place thereby creating a very different and special habitat in our otherwise actively managed forests.

European Protected Species (national)

In August 2007 amendments to the European Habitat Directive came into force in England and Wales to protect the habitat of a number of vulnerable species. Those European Protected Species (EPS) most likely to be found in a woodland habitat include all species of bat, hazel dormouse, great crested newt, otter, sand lizard and smooth snake.

In Forestry Commission managed woodland where one or more of these species has been confirmed, the FC will manage the woodland in accordance with the good practice guidance documents that have been produced by FC and Natural England (NE). On the rare occasion when woodland management operations cannot be undertaken in compliance with the guidance, NE will be consulted and where necessary, an application will be made to undertake the operation under licence.

It is recognised that EPS can occur beyond woodland therefore the management of open habitats identified in this Forest Plan will also need to consider the presence of these species.

Other Designations

The FC landholding in England has a wide range of Eurpoean and national designations placed upon it in various locations across the country, such as;

- National Park
- Area of Outstanding Natural Beauty (AONB)
- Special Protection Area* (SPA)
- Special Area of Conservation (SAC)
- Sites of Special Scientific Interest* (SSSI)
- Scheduled Monuments (SM's)
- County Wildlife Sites*

Along with the standard guidance documents, we have individual plans for our designated sites; these describe work required to maintain and enhance the protected features. We will gradually integrate these into our Forest Plans where appropriate.

In addition, the Forestry Commission has a number of practice guides and specialist bulletins which further inform our management, some of these are available to download from our website http://www.forestry.gov.uk/

3. Introduction

This Forest Plan covers 461 hectares of Forestry Commission land which is part of Thetford Forest in the county of Norfolk. We are guided and directed by a number of policies and strategies - the most significant being:

The Government's Priorities

The Government's priorities for England's trees, woods and forests, and its approach to achieving them, flow from "The Coalition: our programme for government" (Cabinet Office 2010).

Whilst Government formulates the detail underlying this programme, FC priorities are to make sure that trees and woodlands help in meeting Government's goals for natural resources, climate change, improved urban environments and a better quality of life for all.

Forest District Strategic Priorities for Thetford Forest

The main priorities listed below are taken from the East Anglia Forest District's Strategic Plan which was written in 2005 and is due for revision in the during 2013.

This plan lies within the Thetford Forest strategic zone.

- To manage and monitor SACs, SPAs and SSSIs.
- Take into account the internal and external landscape considerations for the area.
- To collate and prioritise the ideas/objectives of all teams to fully inform the Forest Plan.
- To diversify the range of restock species in response to climate change adaption and increased threats from pests and diseases.

General Description of Plan Area

The plan area lies on the eastern edge of Breckland approximately 5 miles north east of Thetford. The wood split by a dual carriageway (A11) and railway line (Cambridge to Norwich).

The whole of the plan area lies in the county of Norfolk, and is within the administrative boundaries of Breckland District Council. It falls within three of several parishes that converge at Ringmere—Wretham, Roudham and Bridgham.

The plan area was acquired by the Forestry Commission in the 1930s and most is now dedicated as open access land under the Countryside and Rights of Way Act 2000 (CRoW Act).

Roudham woods have historically produced relatively good quality timber and just over 85% of the plan area is planted with conifer trees, the balance being made up of broadleaved trees and open space.

The strategic priorities of the Coalition and the Strategic Plan for East England set the general direction for the future management of the woodland. We take these and our own local knowledge of the site to prepare a 'Design Brief', which sets out the main factors we need to consider within this plan. However these may be subsequently modified following consultation. The Brief is used to draw up an Analysis and Concept Map, which feeds into the rest of the Forest Plan. The whole plan is arranged around the three themes of sustainable forest management:

- Land and Natural Environment.
- Communities and Places.
- Working Woodlands.

4. Design Brief

Land and Natural Environment

- The Thetford felling plans should aim for an even distribution of felled area for Woodlark/Nightjar habitat and maintain a minimum area of 12757 ha in cyclic clearfell as required under the SPA designation.
- Implement the Thetford Open Habitat Plan through the network of rides* in the forest.
- Protect sensitive heritage features within the wood.

Communities and Places

- Maintain a pleasant woodland environment for users.
- Size and shape of felling coupes to fit into the landscape.

Working Woodlands

- The felling plan should aim to smooth production from crops in cyclic clearfell but also meet market commitments for 2013-23.
- Restocking should aim to maximise production but also to increase species diversity and climate change resilience.
- Restock species should take soil pH into account and the threat posed by Dothistroma Needle Blight.

The following three sections will show how the objectives in the Design Brief can be delivered through the Forest Plan for the Roudham area of Thetford Forest. The final section will be an appraisal of the plan against the brief to see if all the objectives have been met and a statement regarding monitoring the progress of work as the Forest Plan is implemented on the ground over the next ten years.

Forestry Commission
England

East England Forest District

Roudham

Analysis & Concept Map

Environment

- SSSI/SAC/SPAs - excluding Forest SSSI/SPA as this covers whole plan area.
- National Nature Reserve
- County Wildlife Sites
- Managed conservation rides
- Character or veteran tree
- Pre FC woodland
- Scheduled Monument

Infrastructure

- Gas pressure station
- Mobile phone mast
- FC shed (tennanted)
- Environment Agency borehole
- Drains

Access

- Public forest access dedicated under Countryside and Rights of Way Act (CROW)
- Forest Road
- Third party vehicle access
- Public Road
- Public Right of Way
- Rides (compartment edges)
- Parking (in layby)
- Parking (in gateway)
- Parking (non FC car parks)
- Paintball site (tennanted)
- Settlement
- House

Location & Context

Forest Plan consultation area highlighted in yellow

Design Brief

Land and Natural Environment

The Thetford felling plans should aim for an even distribution of felled area for Woodlark/Nightjar habitat and maintain a minimum area of 12757 ha in cyclic clearfell as required under the SPA designation.

Implement the Thetford Open Habitat Plan through the network of rides* in the forest.

Protect sensitive heritage features within the wood.

Encourage people away from the managed heathland recreation area during sensitive times of the year.

Communities and Places

Maintain a pleasant woodland environment for users.

Size and shape of felling coupes to fit into the landscape.

Working Woodlands

The felling plan should aim to smooth production from crops in cyclic clearfell but also meet market commitments for 2013-23.

Restocking should aim to maximise production but also to increase species diversity and climate change resilience.

Restock species should take soil pH into account and the threat posed by Dothistroma Needle Blight.

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5. Land and Natural Environment

Location and Ownership

Roudham is a freehold area of Thetford Forest - see map on the previous page.

Site Characteristics

The plan area north of the A11 lies between the 45m and 30m contours on a gentle (up to 1°) south facing slope and base of a broad upland terrace. The block south of the A11 rises over a shallow ridge then enters the River Thet valley close to Bridgham.

The dominant soil type on the south facing slope and terrace are the deep acidic Freckenham/Red Lodge complex. The Freckenham series is classified as a brown earth, the Red Lodge series is a podzol. These course textured soils have less than 3% clay and less than 7% silt resulting in low water availability to trees except where the local water table is accessible.

Soils on the higher ground and on the slope down to the River Thet are generally in the base-rich Worlington/Methwold complex. This is a characteristic Breckland soil pattern derived from the undulating relief of the underlying chalk sand drift. The resulting channels of deeper sand, tending to run up/down slope, allow acidic loving heather to develop on these Worlington soils, with the more chalky Methwold series developing *Agrostis/Fescue* grassland. This alkalinity creates ideal conditions for the tree pathogen *Heterobasidion* to spread between tree roots. Methwold are relatively drought resistant due to silt in the chalk-sand drift, so have historically been favoured for agriculture. Where the southern block falls towards the River Thet, the lower slopes are in the stonier leached gravelly phase of the Worlington series, with patches of the Moulton series which has a more clayey underlying chalk drift and has been marled.

The overall climate is generally mild with very warm summers, but the area can experience very low winter temperatures; spring and early summer frosts are common. These factors, coupled with relatively low rainfall (520 - 640 mm/year) create an almost continental climate.

Existing Habitats

Coniferous Forest
Most of the wooded area of the plan is conifer forest, with Pine being the predominant species. The mature forest areas are used as breeding habitat by several different species of raptor and other Schedule 1 birds such as Firecrest.

Deadwood
A proportion of dead trees are left standing after clearfelling, providing they are regarded as safe; these become important standing deadwood habitat. A lot of fallen trees are left to rot down where they fall, it is important not to 'tidy up' these fallen trees from a biodiversity point of view as shaded rotting wood is important habitat for invertebrates.

Ponds and watercourses
There are extensive fluctuating mere and pingo systems to the west and north but are no waterbodies in the plan area. In places along the base of the terrace the rides hold water when compacted, and features which appear to be dried up pingoes. There are a number of irrigation reservoirs within 1km of the plan area—fed by abstraction boreholes.

Open space
The network of wide forest rides passes through acidic and calcareous areas, providing around 5% open space. This is a relatively low proportion of open space, but the plan area falls between extensive open heathland to the west, and open intensively managed arable land to the north and east. The importance of linking these areas is recognized and a project called the 'Thetford Forest Open Habitats Plan' is underway looking at linking the larger open space areas utilizing wide rides as 'ecological corridors', which will be managed for biodiversity.

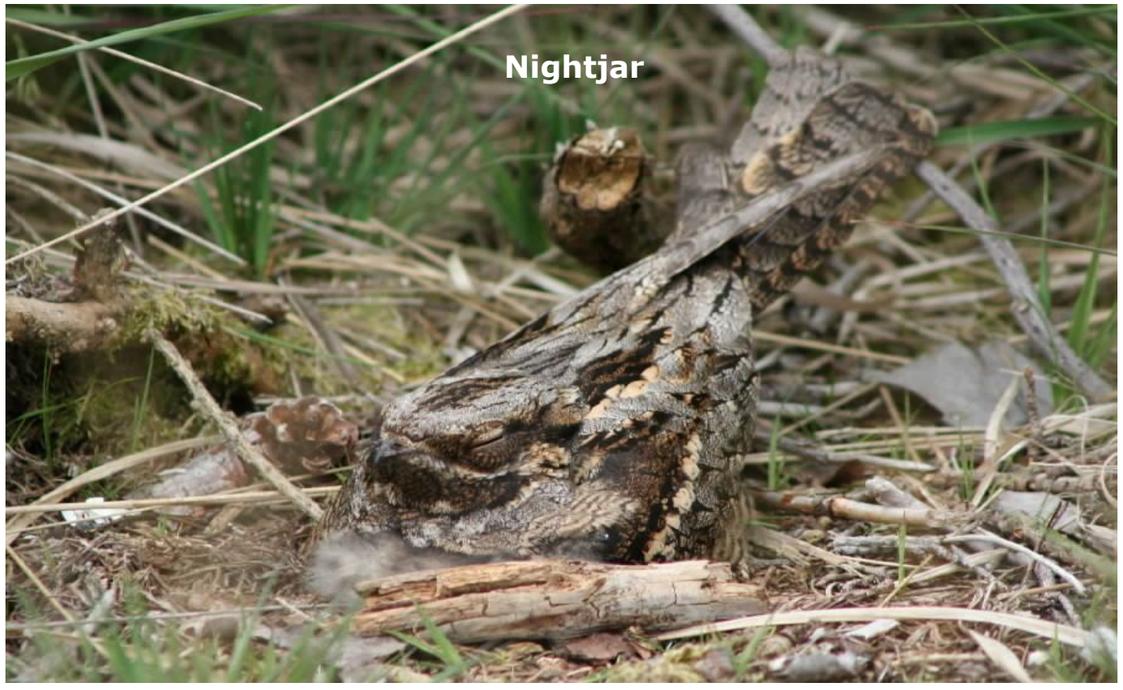
Protected Sites

Most of the plan area has been designated as a Special Protection Area (SPA) under the European Habitat Directive.

The two birds of interest nest on open ground and rely on the clearfell tree harvesting system to generate suitable nesting habitat - Woodlark (*Lullula arborea*)

5. Land and Natural Environment *cont.*

and Nightjar (*Caprimulgus europaeus*). As a result of the SPA designation the area notified as a Site of Special Scientific Interest (SSSI) has been increased to match the SPA, although parts of the forest had already been notified as SSSI for significant assemblages of rare Breckland plants and invertebrates.



The SPA designation protects the breeding habitat of Woodlark and Nightjar and therefore impacts on the clearfell programme across Thetford Forest. This revision of the Forest Plan will try to smooth the 'supply' of breeding habitat over time by amending the felling dates of the clearfell coupes to produce an annual area of clearfell close to the sustainable mean for the forest. This is illustrated in a bar graph in the appraisal and monitoring section.

Open Habitats

The 'Thetford Forest Open Habitats Plan' aims to focus open space around a ride network managed for conservation and will utilize data from the Breckland Biodiversity Audit (2010) to make links along rides that already have high levels of biodiversity and contain a wide range of rare species. The Thetford Forest Open Habitats Plan will be completed during 2013 and a copy will be posted on Thetford Forest Planning webpage.

Safeguarding our Heritage

The Forestry Commission acquired most of Roudham Forest in 1932, and the western block from Wretham Estate in 1939. The central area was heathland with pockets of pre-1840 woodland; the pattern of enclosure of the remaining area is ghosted by modern compartment boundaries.

In common with much of Thetford Forest, the plan area has good survival of features associated with the previous land use history—from prehistoric burnt flint mounds, to parish boundary banks to a disused railway to WWII training areas. The valley through the centre of the plan area has deeply undulating ground which includes surface mines as well as natural pingo-like features.

A medieval cross once stood in Roudham Woods at the cross roads of two historic routes. Both the prehistoric Harling Drove running approximately east/west, and the Roman Peddars' Way running north/south are used as by-ways in modern times.

Cultural and heritage features are considered during pre-operational site assessments rather within the plan.

6. Communities and Places

Access and Recreation

Just over 80% of the plan area has been dedicated for unrestricted public access on foot under the Countryside and Rights of Way Act 2000 and there are two long distance trails through the forest— the Peddars Way and the "Hereward Way" (known as the Harling Drove further west), as well as other foot/bridlepaths.

In Roudham Woods the Forestry Commission make no formal provision for access, although people commonly park in the gateways along the unclassified Bridgham Road and on the farm track along the Eastern boundary. To the west of the woods there is a Norfolk Wildlife Trust car park at the A1075 entrance to Wretham Nature Reserve, and on the Bridgham road a car park provided by the local authority for access the Peddars Way. A truck stop off the A11 westbound carriageway tends not to be used for access to the surrounding woods.

One compartment is used by tenants to host a popular paintball course, and various events using the ride network are organised by permit holders. Game shooting is let on a three year term. There are high pressure gas pipelines and powerline wayleaves.

A recent Europe wide study has shown that people who visit forests prefer to see stands of large mature trees, both of broadleaves and conifers. This study confirms our own management policy of retaining some over-mature trees and managing them under a continuous cover system.

Community

The plan area is close to Roudham medieval village, the site of which is now a scheduled monument and only has a handful of households. Within the plan area there are two groups of cottages associated with the railway line, and occasional isolated agricultural residences in the surrounding area.

Landscape

The woods occupy a prominent landscape position.

For nearly a century the landscape of Thetford Forest has been ever-changing; from the 1920's onwards tree planting on a huge scale created one of England's largest lowland forests and from the 1970's, when the trees started to reach maturity, the timber from the forest has been harvested. The present day landscape of Thetford Forest is a patchwork of trees of different ages intermingled with wide rides and open spaces.

As the age structure of the forest has altered it has been possible to assess the visual effect of the larger clearfells of the 1970's and 80's. These early clearfells were 25 – 30 hectares in size and can dominate the landscape. It is now agreed that a fell area of around 15 hectares fits better into the landscape, providing visual diversity while retaining the economies of scale for our forest operations.

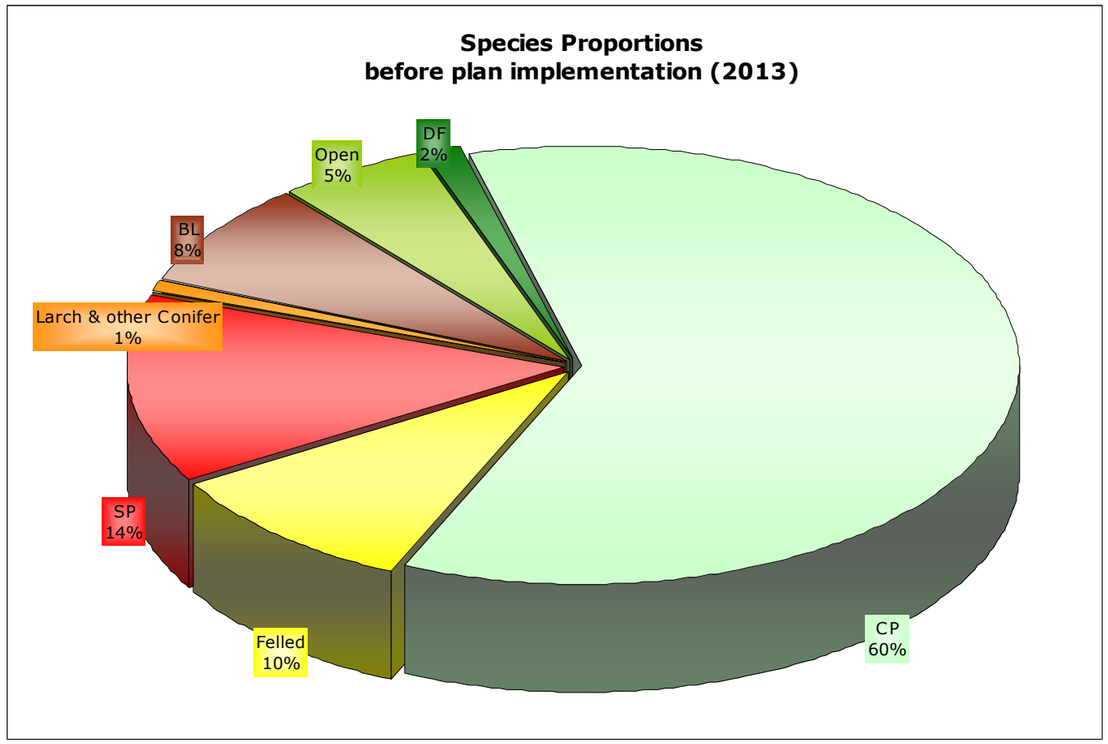
Forest Plans have been used in Thetford Forest for more than 20 years; leading to a change from rectilinear felling shapes to more 'organic' shapes that follow natural or historic boundaries resulting in more of the forest becoming a mosaic of organic shapes composed of trees of different ages and species. There are just a few large rectilinear areas left to 'redesign' but most of the Thetford Forest is well on the way to becoming a well balanced and sustainable multi-purpose forest.

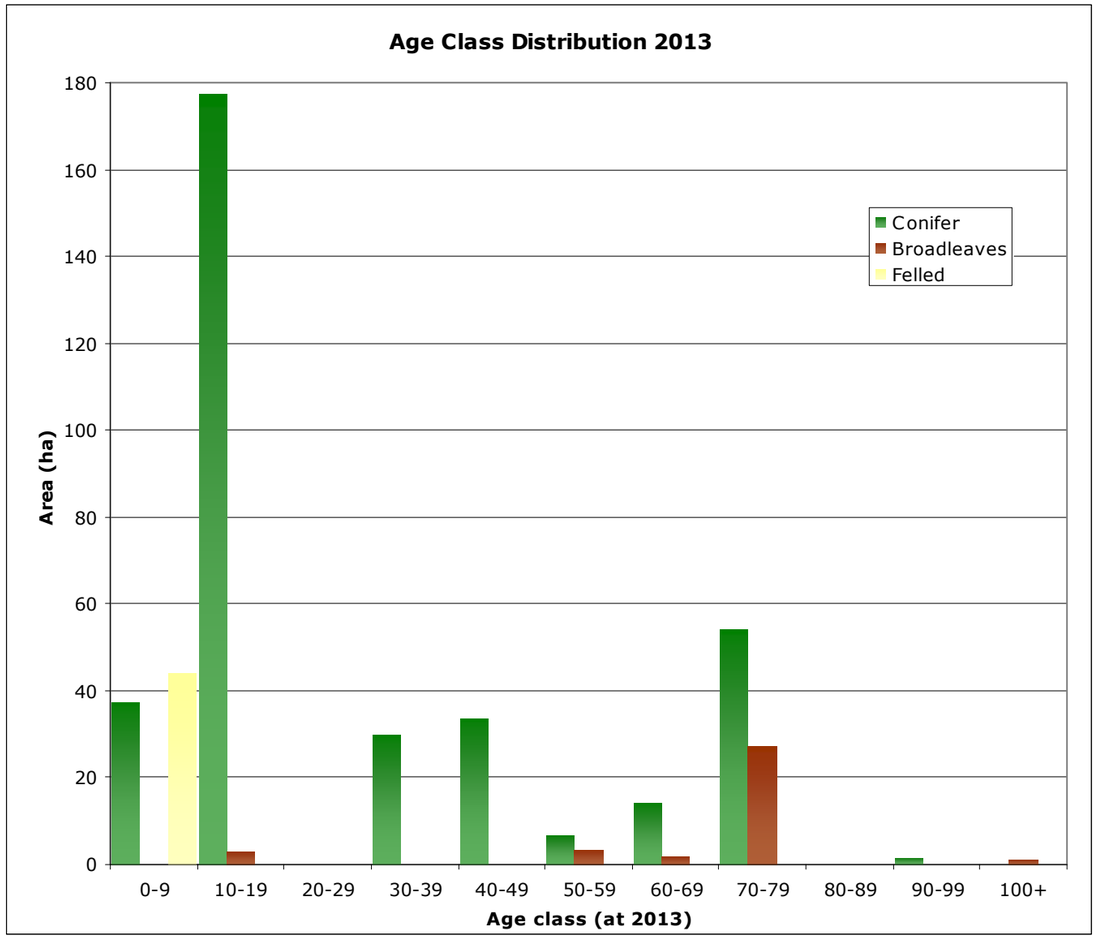
7. Working Woodlands

Tree Species

Thetford Forest is predominantly a pine forest; this genus was chosen as both Scots and Corsican pine are particularly well suited to the soils and climate in Breckland; growing fast and producing good quality timber. The heavy reliance on pine, particularly Corsican pine, has its downside as Dothistroma Needle Blight (aka Red Band Needle Blight) has now spread across the forest; Corsican pine is particularly susceptible to this disease; Scots pine is also affected but to a lesser extent. The effect of Dothistroma is to reduce the number of needles held on the tree and also to reduce the efficiency with which the remaining needles photosynthesize, leading to poor growth and in the worst cases killing the tree but this relatively rare.

Only 8% of the plan area has broadleaves as the main species, occurring in belts and small blocks. In addition, some stands have a significant amount of naturally regenerated broadleaf.





Age Classes

The bar chart above illustrates how past management of the woods has perpetuated the condensed initial establishment phase—resulting in the current limited spread of tree ages. Some of the original pine plantings and broadleaf belts remain, as does the pre-Forestry Commission broadleaf woodland.

The design brief is to ‘smooth’ the felling of the second rotation so that the age class distribution becomes more evenly spread over a period of 60 to 70 years. This equates, approximately, to a rotation* of trees and will move the forest forward on a more sustainable basis.

Forestry Commission England

East England Forest District

Roudham

Management Map

Legend

- Clearfell 2012-2016
- Clearfell 2017-2021
- Clearfell 2022-2026
- Clearfell 2027-2031
- Clearfell 2032-2036
- Clearfell 2037-2041
- Clearfell 2042-2046
- Clearfell 2047-2051
- Clearfell 2052-2056
- Clearfell 2057-2061
- Clearfell 2062-2066
- Clearfell 2067-2071
- Clearfell 2072-2076
- Clearfell 2077-2081
- Clearfell 2082-2086
- Long Term Retention
- CCF - Conifer
- CCF - Broadleaves
- Coppice
- PAWS Reversion
- Minimum Intervention
- Natural Reserve
- Open/Other

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Forestry Commission England

East England Forest District

Roudham

Management Map Showing felling periods falling within the 10 year plan approval date

Legend

- Clearfell 2017-2021
- Clearfell 2022-2026
- Long Term Retention
- CCF - Conifer
- CCF - Broadleaves
- Open/Other

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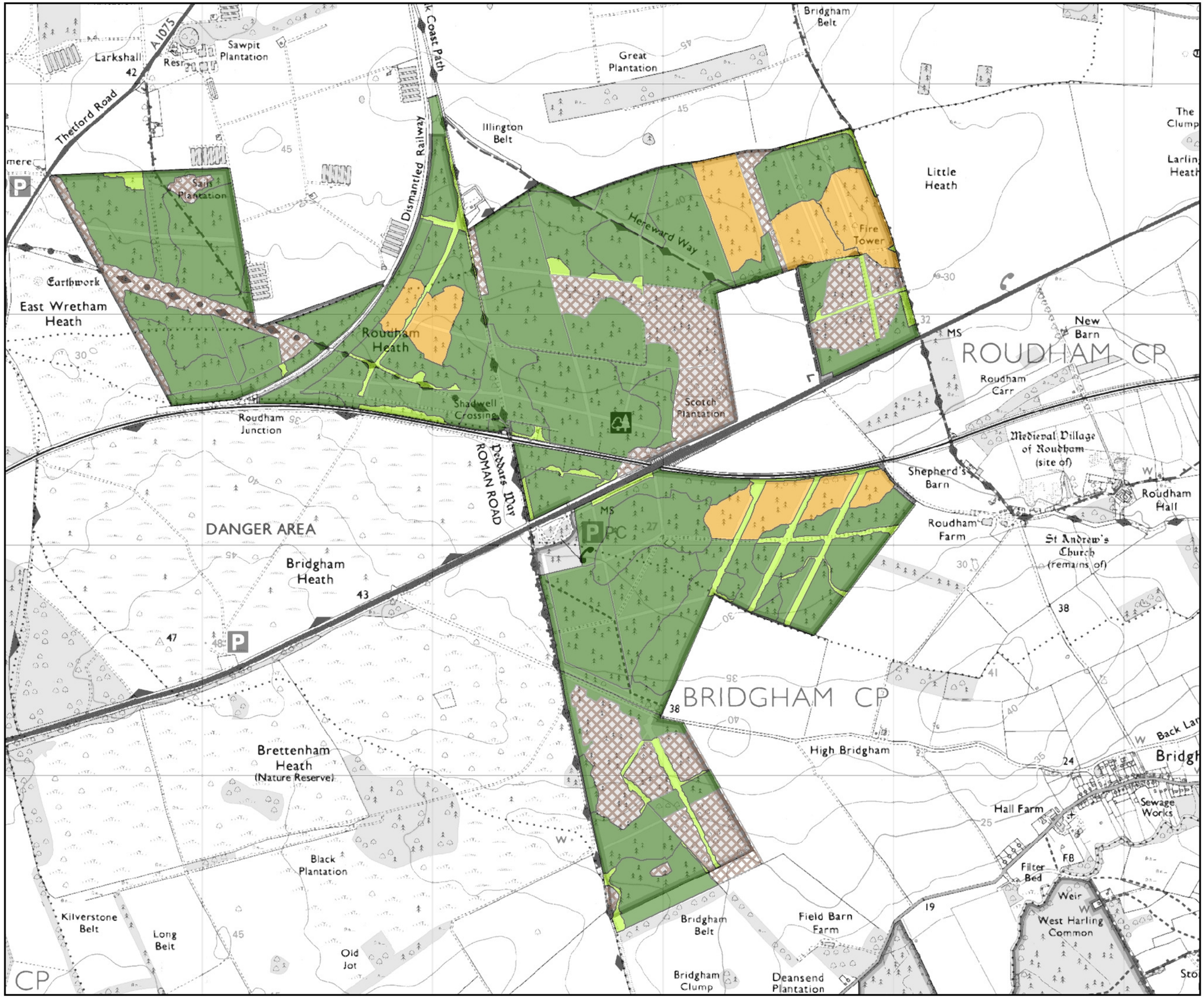

Forestry Commission England

East England Forest District

Roudham

Habitat Map

Legend

- Broadleaf woodland
- Evergreen conifer woodland
- Deciduous conifer woodland
- Permanent Open Space

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Forestry Commission England

East England Forest District

Roudham

Habitat Map showing provisional restock species

Legend

- Larch
- Scots pine
- Douglas fir
- Other conifer
- Broadleaves
- Mixed conifers
- Permanent open space

Produced by the Planning Team
August 2013

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8. Plan Appraisal

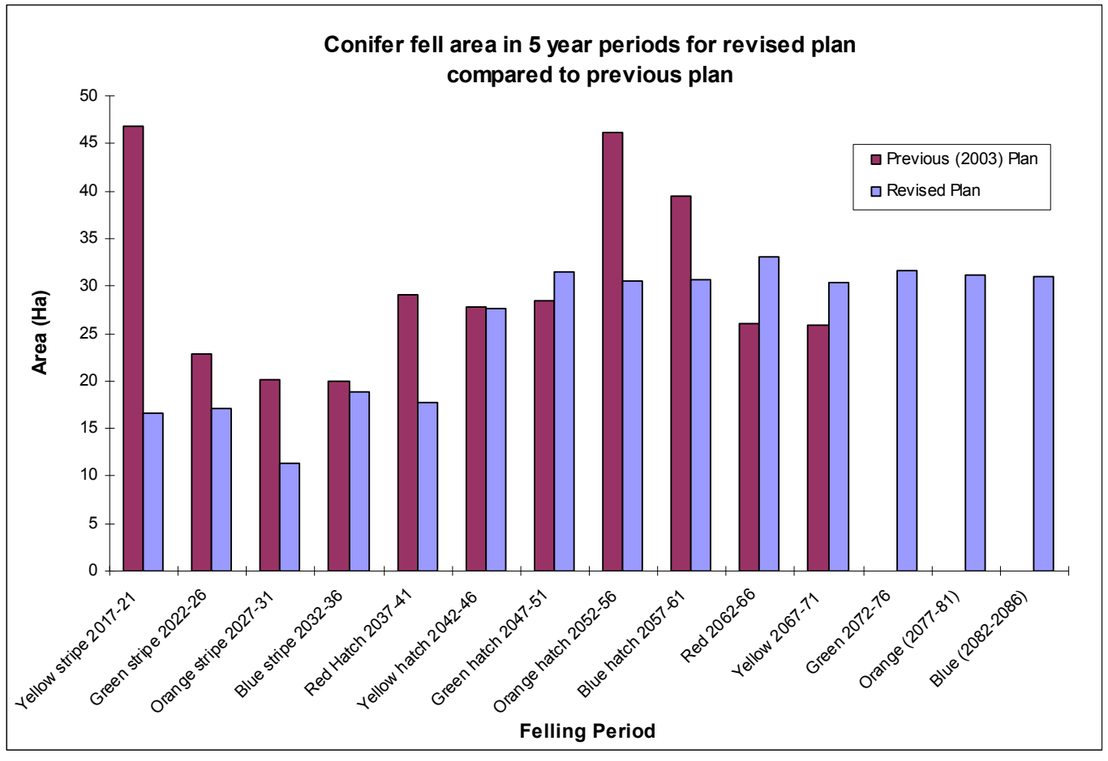
The appraisal of the revised plan is measured against the design brief on page 6, this has three separate sections and the appraisal relates to these sections:

Land and Natural Environment

The felling comparison chart below shows how the revised plan has 'smoothed' the creation of felled area over the long term so that Woodlark and Nightjar habitat is more evenly distributed around the mean value. However, in the short term, complete smoothing has not been possible because there is insufficient mature timber to clearfell in this 10 year period (see age class chart on page 11).

The proportion of planned open space takes account of the extensive adjoining area of designated heathland habitat, and the surrounding open arable landscape.

Unfortunately the analysis work involved in the Thetford Open Habitat Plan is more complex than envisaged so the plan is not available to dovetail with this revision. It is still the intention to use the plan as a guide to creating linkages between existing open space, but this will be a separate project.



Communities and Places

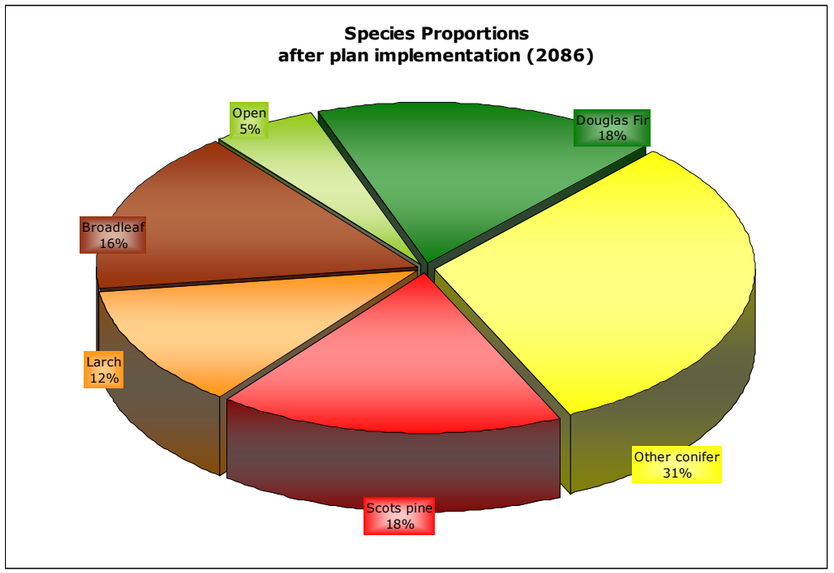
It is difficult to assess how pleasant a woodland environment is subjective but maintaining areas of woodland under continuous cover systems and keeping patches of mature trees in long term retentions should create a pleasing environment for forest users and viewers.

The size and shape of the coupes planned for felling can be seen on the management maps on pages 12/13; the average size of these coupes is 9ha and the continued use of organic shapes blend well into the landscape.

Working Woodlands

The objective to smooth timber production while continuing to meet market commitments is very similar to the prior objective for the provision of SPA habitat and the same restriction of age class on clearfell area applies. Most of the stands in the plan are programmed for felling at their current optimum marketable age—between 50 and 70 years old. In the interim, the productive stands at Roudham are expected to yield good quality thinnings material.

Where possible, coupe size is large enough to allow efficient timber harvesting.



The pie chart shows projected species proportions by the end of the plan period, demonstrating a significant increase in the diversity of tree species across the plan area compared the to the current species proportions (page 11) .

9. Summary of Proposals

The increase in restock species diversity should increase the resilience of the forest to climate change and the threat from pests and diseases.

The habitat map on page 14 gives and indication of the split between conifer and deciduous trees across the plan area; Larch is separated out because it is a deciduous conifer. The habitat map on page 15 indicates provisional restock species based on soil maps. Restock species will be confirmed by a site assessment after felling— soil pits and vegetation surveys will be used to ascertain the optimum species for the coupe taking into account prevailing knowledge of species performance and pathology concerns.

Monitoring

To monitor compliance with the felling plan, after a coupe is felled the shape is captured on the ground using a GPS* receiver and the data is uploaded into GIS*. The resulting point data is then compared to the original coupe shape to confirm that the felling coupe has been accurately laid out on the ground.

To monitor compliance with the restocking plan, the forest district database is updated at replanting to show the newly planted species and their proportions. As part of this updating process the restocking information is compared with the Habitat Plan to confirm compliance. The restocking area can vary slightly from the plan as physical features come to light only after felling. Most of these minor changes are within the tolerances agreed between Forest Enterprise and the Forest Services – see Tolerance table on page 21. A felled coupe is usually restocked two years later, when all the ground preparation and weed control has been completed.

To monitor timber sustainability, a stocking assessment is carried out to measure establishment success after five years.

Ongoing monitoring of the SPA is undertaken by surveying woodlark and nightjar numbers; the results inform subsequent Forest Plan revisions and site management prescriptions.

Date of commencement of the plan: **23rd July 2014**

Expiry Date: **23rd July 2024**

Mid-Term Review Date: **23rd July 2018**

I seek approval to clearfell and restock 36ha of the Public Forest Estate (this is the area in yellow and green stripe fell periods—i.e. 2017-2026, all felling from the previous red stripe period has been completed).

I also seek approval to selectively fell approximately 24ha within an area of 94hectares (for the purpose of continuous cover forestry) during the period 1/4/2013 to 31/3/2023 as shown on the enclosed plans.

Signed .....

FOREST MANAGEMENT DIRECTOR

Date 23 July 2014

Signed .....

AREA DIRECTOR

Date 23/7/14

Signatures inserted from a scan of the signed page:
Public Forest Estate Richard Brooke, Planning & Environment District Forester
Forest Services, Neil Jarvis, Area Manager

10. Glossary of Terms

Biological Diversity

The richness and variety of wildlife and habitats.

Canopy

The mass of foliage and branches formed collectively by the crowns of trees.

Compartments

Permanent management units of land within a forest, further divided into sub-compartments. The compartment boundary usually coincides with a road or ride.

County Wildlife Sites (also SINC and LNR)

A non-statutory designation, recognising a site's local importance for nature conservation. These sites are identified by the Local Authority and should be taken account of in planning.

Coupes

Areas of forest that have been or will be managed together.

Cubic metre

A standard forestry unit of timber volume. A cubic metre is roughly equivalent to a tonne of timber.

England Forestry Strategy (now England's Trees Woodlands and Forests)

Describes how the Government will deliver its forestry policies in England and sets out the Government's priorities for the next five to ten years.

Favourable condition

English Nature's definition for an SSSI in its intended state.

Forestry Commission Guidelines

Outline the principles and standards of good management practices in forests and woodlands to enable landowners, land managers and their advisors to satisfy Forestry Commission policy.

GIS

Geographic Information System - computer program that enables the FC to hold and display all the district's inventory, landholding and crop information. All the maps in this document have been produced using GIS.

GPS

Global Positioning System, which uses information from satellites to accurately locate a position on the Earth.

Habitat Action Plans

UK wide plans for priority habitats defined under the UK Biodiversity Action Plan. They contain quantitative targets for conserving, restoring and expanding the habitats.

Historic Environment

These are the physical remains of every period of human development from 450,000 years ago and include earthworks, buried remains, structures and buildings.

Historic Environment Action Plan (HEAP)

Sets out the requirements for the sustainable management of all historic environment sites.

Historic Environment Record (HER)

The definitive database of all known Historic Environment remains which is managed by the County Archaeology Service.

Native woodland

Woodland containing tree and shrub species which colonised Britain unaided by the influence of man after the last Ice Age.

Natural regeneration

The growth of trees from seed found in the soil or cast from adjacent trees and shrubs.

Non-native species

Trees and shrubs that have been introduced to the UK by the activities of man. Also used to describe species not native to the site and locality.

Operational Site Assessment (OSA)

Detailed site plans that are prepared in advance of all major forest operations and identify site constraints, opportunities and areas requiring special treatment or protection.

Red Data Book species

Species that are included on Red Data lists published by the Joint Nature Conservation Committee (JNCC). The lists are based on a global system developed by the International Union for Conservation of Nature and Natural resources (IUCN) for classifying species according to their extinction risk.

Restocking

The re-establishment of trees where felling has taken place. Restocking may be achieved through natural regeneration but as a term, it is more usually associated with replanting.

Ride

Forestry term for unsurfaced roads, paths and tracks within a woodland.

Rotation

The period, in years, that a 'crop' of trees take to reach economic maturity e.g. Scots Pine may be grown on a 80 year rotation.

Scheduled Monuments

Nationally important archaeological sites which are protected under the Ancient Monuments and Archaeological Areas Act, 1979.

Semi-natural woodland

A woodland predominantly composed of trees and shrubs that are native to the site and are not obviously planted.

Species Action Plan

A conservation plan under the UK Biodiversity Action Plan for species based upon knowledge of its ecological and other requirements, which identifies the action needed to stabilise and improve its status.

SPA

Special Protection Area designated under the European Habitats Directive (Council Directive 92/43/EEC).

SSSI

Site of Special Scientific Interest—this designation is determined by Natural England and placed on areas of very high conservation value.

Sub-compartments

Areas of forest comprising a more or less homogeneous crop in terms of age, species composition and condition. Their boundaries may change as the forest develops after felling and restocking.

Strategic Plan

Serves as a guide to the management of woodlands within South East England Forest District. It divides the district into zones for the purpose of management and ensures that forestry activities reflect the local ecological, social and cultural individuality of woodland. Strategic objectives for each zone are presented within the context of the Government's strategic priorities for forestry in England (e.g. forestry for rural development; forestry for economic regeneration; forestry for recreation, access and tourism and forestry for the environment and conservation).

Succession

Applied to the natural sequence of species change on a site over time, or more simply, the following on of one thing after another. So successional open space is the open space and the plants associated with it, that persist for a short time after felling of trees.

Thinning

The removal of a proportion of the trees in a sub-compartment to improve the quality of the remaining trees, accelerate individual tree growth and provide income.

UK Biodiversity Action Plan

The UK government response to the Convention on Biological Diversity at Rio de Janeiro: includes actions to safeguard key habitats and species.

UK Forestry Standard

The Government's criteria and standards for the sustainable management of forests in the UK.

UK Woodland Assurance Scheme (UKWAS)

A voluntary scheme for the independent assessment of forest management in the UK. The Scheme has been developed by a partnership of forestry and environmental organisations in response to the growing consumer demand for timber products from sustainably managed forests. It has been designed to ensure that it reflects the requirements of both the Government's UK Forestry Standard - and through this the guidelines adopted by European Forestry Ministers at Helsinki in 1993 - and the Forest Stewardship Council's (FSC's) GB Standard.

Uniform Shelterwood System

A management system that allows young crops to become established under the overhead shelter of existing crops. The existing tree crop is evenly and gradually removed over time in successive regeneration fellings to bring about natural regeneration on the ground beneath.

Veteran tree

A tree that is of interest biologically, aesthetically or culturally because of its age, or a tree that is in the ancient stage of its life, or a tree that is old relative to others of the same species.

Windthrow (or sometimes windblow)

Uprooting or breakage of trees caused by strong winds.

11. Management Prescriptions

(Ref: Management Map)

Clearfelling

This is the main form of timber harvesting in Thetford Forest. All the trees are felled across the site or 'coupe' with the timber part of the tree extracted to the forest road where it is taken away by lorry. The smaller branches and tops are left on site where they may be chipped, mulched or raked in to rows so that enough bare ground is available to plant the next rotation of young trees. The creation of the bare planting ground is an important part of the management of the Breckland Forest SPA/SSSI, as it is this bare ground that is the nesting habitat for Woodlark and Nightjar.

Thinning

This is an important part of the management of Thetford Forest as nearly all the trees planted in the forest will require thinning at some point. Thinning performs three separate functions; removing small, dying or diseased trees; providing space for the dominant trees to continue growing; provide a small economic return in advance of clearfelling. Due to the size of Thetford Forest, thinning is a continual process that works around the forest on a five year cycle.

Long Term Retention

In some areas trees are retained beyond their normal clearfell age to provide non-timber benefits such as bat roosts, raptor nests and landscape interest. Generally, these are thinned to encourage large crowned stable trees.

Continuous Cover Forestry (CCF)

This is a general term for the management of trees without clearfelling them all. There are a number of CCF silvicultural systems but all of them are based on thinning the crop on a regular cycle and removing a proportion of the trees thereby making space for seeds to germinate and new saplings to grow and fill the resulting space.

CCF is often used in areas of high public access to maintain the visual impact of large mature trees as these trees are maintained for their aesthetic value. CCF is also used to manage most of the broadleaf crops in Thetford and all the mature conifer crops in areas of high conservation value as these trees often provide important nesting habitat e.g. Firecrest.

Open space

Temporary open space follows felling when coupes are prepared for planting or to encourage natural regeneration.

Permanent open space will be centred on conservation sites and the heritage sites—see 5.5 Open Habitats.

Minimum Intervention & Natural Reserves

These two management types are similar in that they are areas where natural processes are left to progress unhindered unless there are tree safety issues e.g. a tree has died adjacent to a footpath and creates a hazard to the public. The natural reserve areas have been identified as a permanent feature in the plans where as minimum intervention is the current management type in these areas but could change in the future.

12. Tolerance Table

	Adjustment to felling coupe boundaries	Timing of Restocking	Changes to species	Windthrow & DNB clearance
FC Approval normally not required	0.5 ha or 5% of coupe	Up to 3 planting seasons after felling	Change within species group e.g. conifers; broadleaves	Up to 2ha
Approval by exchange of letters and map	0.5ha to 2ha or 10% of coupe	Up to 4 planting seasons after felling	Change from other conifers to Corsican Pine	> 2ha to 10ha
Approval by formal plan amendment	> 2ha or >10% of coupe	Over 4 planting seasons after felling	Change from broadleaves to conifers	> 10a