

Didlington

Thetford Forest

Forest Plan

2017 — 2027

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



The mark of
responsible forestry

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



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 the woodlands we manage.
- 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 across England's public forest estate 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 (2017 - 2027) and outline approval for the medium term vision (2027 - 2086). The plan will be reviewed after the first five years (2022) 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 our woods. Historic England will approve management proposals for Scheduled Monuments (SM).

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. The most current edition at this time is the third edition.

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 European 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 919 hectares of Forestry Commission land which is part of Thetford Forest in the county of Norfolk. We are guided and directed by the policies and strategies detailed below:

The Governments Priorities

The Government forestry policy is set out in Defra's and Forestry Commission England's Forestry and Woodland policy statement. This policy was published in 2013 during the Conservative and Liberal Democrat coalition government.

The Forestry Commissions Priorities

At a national and regional level the Strategic Plan for the Public Forest Estate in England and Corporate plan 2015-2016 define our strategic direction. At a district level the East England Forest District Strategic Plan 2016-2021 sets our objectives to meet the 3 drivers of sustainable forest management:

- An Estate that delivers for Environment, Nature and History
- An Estate that delivers for Economic Growth
- An Estate that delivers for People

Our vision and overall goal is "To secure and grow the economic and natural capital value of the English Public Forest Estate".

General Description of Plan Area

The plan area is situated North of Mundford. The main 'spine' of the woodland runs from Foulden in the North to Ickburgh in the South. Four smaller woodlands surround the main block including Bodney, Didlington, Spring Covert (including Little Scotland) and the Sweating Course.

Bodney is bordered by Hollow Heath to the North and Stanta training area owned by the MOD to the South. Didlington Springs lies between the smaller woodlands of Didlington and Spring Covert. The plan area is surrounded by intensively managed arable and animal production units. There is a significant proportion of non-Forestry Commission woodland in the landscape, linked with hedgerow trees.

The whole plan area lies in the county of Norfolk, and is within the administrative boundary of Breckland District Council. It falls within five parishes including Ickburgh, Didlington, Northwold, Cranwich and Foulden.

The majority of the plan area is held as freehold, acquired by the Forestry Commission in the 1920s and 30s, this land is open access. Bodney (60ha) is leasehold land from the MOD and public access is not authorised.

The strategic priorities of the Government and Forestry Commission set the direction for the future management of the woodland. These along with the East England Forest District Strategic Plan and local knowledge are used to prepare a design brief for the Didlington area. The plan is then subject to a consultation where subsequent changes may be applied before being finalised.

The whole plan is arranged around the three themes of sustainable forest management:

- Nature
- Economy
- People

4. Design Brief

Nature

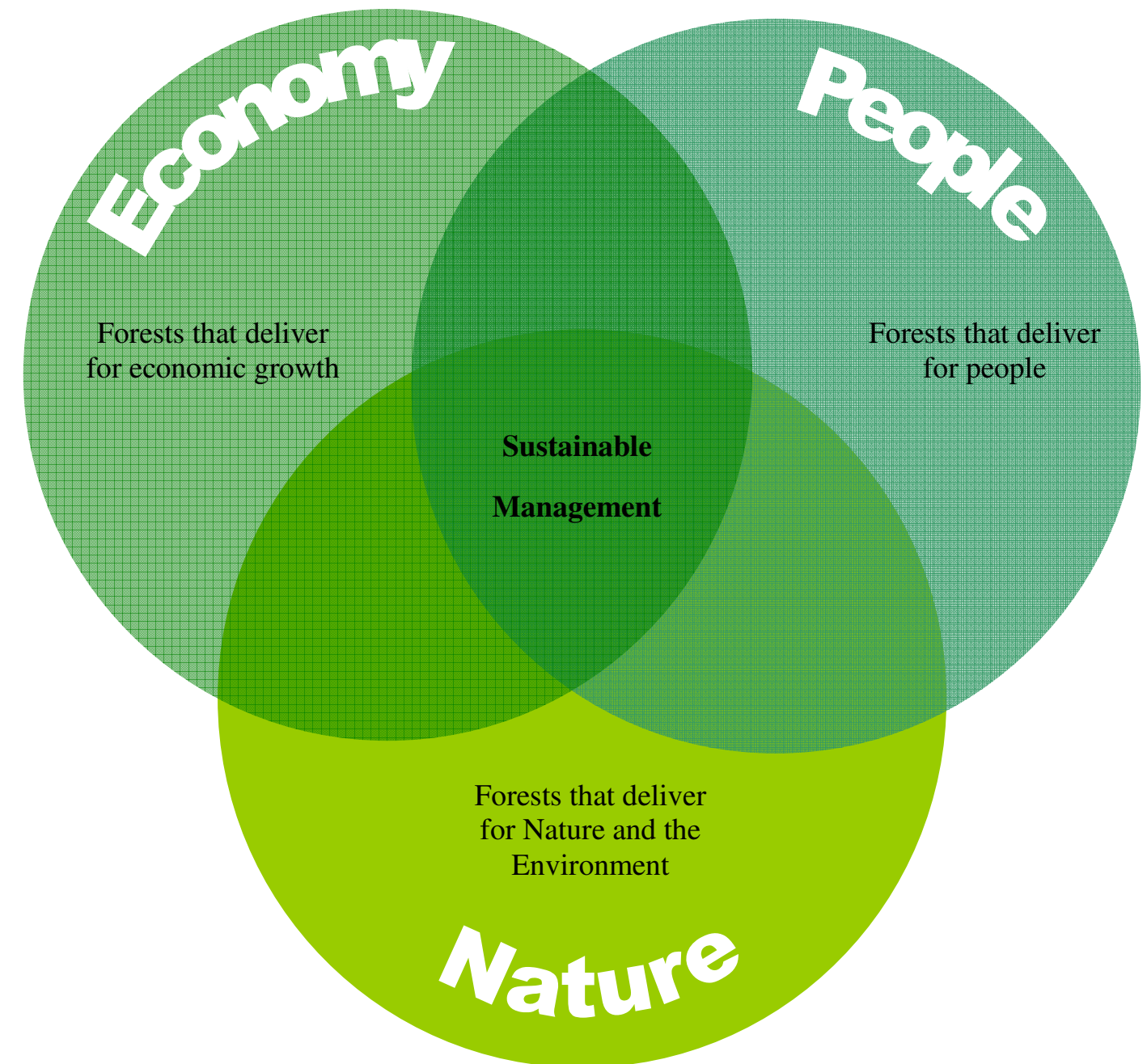
- The felling plans should aim for an even distribution of felled area for Woodlark/ Nightjar nesting habitat and contribute to maintaining a minimum area of 12,757 ha in cyclic clearfell. There should be no more than 10% of coupes* <5ha as required under the SPA* designation.
- In accordance with the tolerance table on page 24, incorporate open space networks as detailed in the Thetford Open Habitat Plan (appendix 1), encouraging distribution of rare flora and fauna.
- In partnership with the Freshwater Habitat Trust, survey ground ice depressions, commonly termed pingos in Spring covert, to assess their conservation value and inform future management decisions.
- Maintain and improve cultural and heritage value of the land by protecting sensitive heritage features highlighted through the OSA* process.

People

- Create a pleasant natural environment for the public to enjoy outdoor recreation in a rural woodland setting.
- Manage an area around the campsite at High Ash as continuous cover* for amenity value.
- Maintain recreational facilities to a high standard through inspection processes and partnership working with the Dessert Rats Association and Dessert Rats Memorial.

Economy

- Maintain the land within our stewardship under UKWAS* certification by meeting standards detailed in UKWAS third edition.
- Improve economic resilience of our forests by increasing species diversity through restock programmes to protect future timber supplies and biomass.
- Assess the threat posed by Dothistroma Needle Blight (DNB) in Corsican pine plantations under 40 years old, through survey work. Identify suitable silvicultural practices including underplanting for areas of high infection to maintain economic viability.
- The felling plan should aim to smooth production from crops in cyclic clearfell but also meet market commitments.





Forestry Commission
East England Forest District
Didlington Forest

Design Concept Map

Access

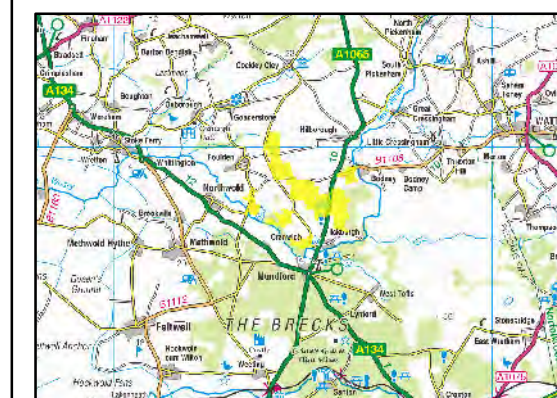
- | | |
|------------------------|---|
| Freehold woodland | Forest access barrier |
| Public right of access | FC Carpark/picnic site |
| Leasehold woodland | Public campsite |
| No public access | Public Right of Way |
| Settlements | Walk trail (Dessert Rats managed by FC) |
| House | |
| Roads | |

Environment

- | | |
|-------------------------------------|------------------------------------|
| SSSI & SPA | Langford Warren |
| FC Conservation Sites | River Wissey |
| Surrounding SSSI sites to plan area | Proposed Open Habitat plan network |
| FC natural reserve | |

Location & Context

Forest Plan area highlighted in yellow



Design Brief

Nature

- Evenly distribute clearfell areas for Woodlark/Nightjar habitat as required under the SPA designation.
- Implement Open Habitats plan where possible encouraging distribution of rare flora and fauna.
- Survey pingos in Spring Covert to assess their conservational value and inform future management decisions.
- Maintain, manage and protect sensitive heritage features using the OSA* process.

People

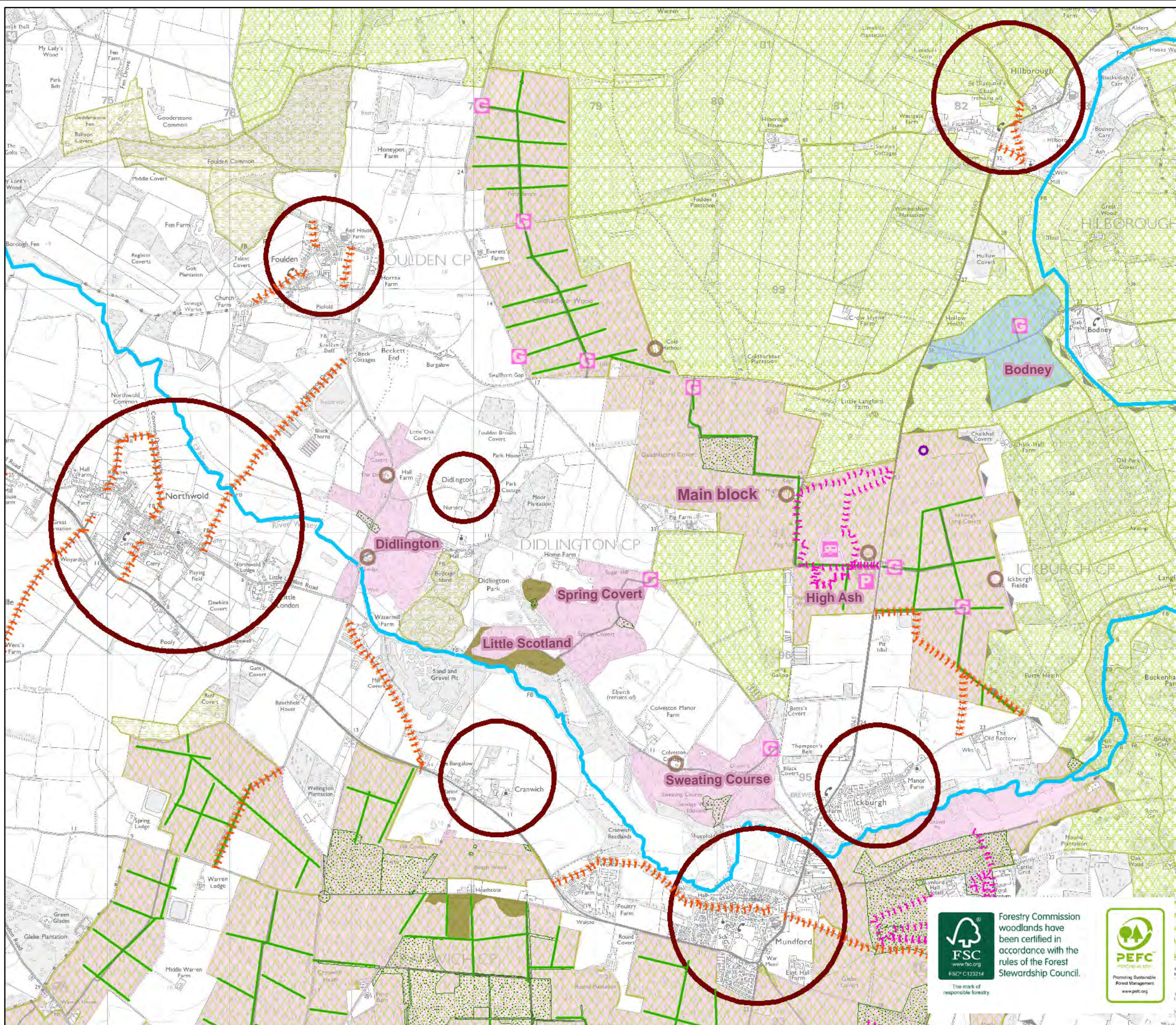
- Create a pleasant natural environment for the public.
- Manage area around campsite as continuous cover.
- Maintain recreational facilities through inspections process and partnership working with Dessert Rats Association and Dessert Rats Memorial.

Economy

- Maintain FC land under UKWAS* certification.
- Increase species diversity through restock programmes.
- Identify suitable management for areas of high DNB infection.
- Smooth crop production to meet market commitments.

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Ordnance Survey [100021242]

Scale: 1:30,000



5. Nature

Site Characteristics

Didlington Forest lies within the Brecks in the heart of East Anglia. It is among one of the warmest and driest parts of the UK with relatively low rainfall of less than 600mm/year. East Anglia is generally flat with an undulating landscape and big open skies. Large commercial conifer plantations bordered by broadleaf belts, form the forest landscape, a distinctive characteristic of lowland England. Heathland (Hollow heath) and agricultural land surrounds the plan area, often defined by scots pine and mixed broadleaf belts on the edge of the forest.

A distinctive feature of the Brecks is the thin mantle of sandy soil which covers the underlying chalk bedrock caused as a result of glaciations and the freeze-thaw conditions, which occurred in the final stages of the last Ice Age. The chalk solid geology lies close to the surface and is covered by deposits of sand and flint. The last ice age produced the intricate ground patterns containing large patches of calcium-rich soils interspersed with acidic conditions, that are present across the forest today. These chalky soils support a limited range of tree species but a great diversity of plants, invertebrates and breeding birds adapted to live in forestry and arable habitats. Didlington forest supports nationally rare species such as Tower mustard, Sickie medick and the Dingy skipper butterfly.

The River Wissey, which runs to the south of the area provides contrast to the dry landscape. The areas of Didlington and Little Scotland lie in this area and are predominantly wet areas with peaty/gley soils. They support a range of broadleaf species including Poplar and Alder suited to these wet conditions.

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. Many continuous cover areas* in the plan provide habitat for these species (see management map page 13).

Deadwood

The OSA* process is used to consider opportunities to provide deadwood habitat. 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. Natural reserves where no intervention takes place provide the largest proportions of deadwood within the plan area. This type of management encourages ecological processes such as vegetation succession, natural regeneration and windthrow increasing biodiversity and conservational value of the area.

Protected Sites

The Didlington plan area includes 719ha (main block & Bodney) which are part of the Breckland Forest SSSI* (www.sssi.naturalengland.org.uk/citation/citation_photo/2000443.pdf) which covers most of Thetford Forest (see design concept map page 6). The features of conservation interest include: the invertebrate communities of the open grassland areas; 20 species of rare plants found in grassland and disturbed areas; 2 species of bird known as Woodlark (*Lullula arborea*) and Nightjar (*Caprimulgus europaeus*). These birds nest on open ground and rely on the clearfell tree harvesting system to generate suitable nesting habitat.

Breckland Forest SSSI forms part of the Breckland SPA* designated under the European Birds Directive. The SPA designation supports populations of Woodlark and Nightjar, by protecting their breeding habitat and therefore impacts on the clearfell programme across Thetford Forest. The 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 plan appraisal on page 16.

There are also SSSI and SPA areas which adjoin the forest boundary. A significant proportion lies to the east of the plan area. In addition to this Didlington Park lakes SSSI lies between Little Scotland and Didlington (design concept map page 7).

The areas outside the SSSI include Didlington, Little Scotland, Spring covert and the Sweating Course (design and concept map page 7).



5. Nature

Ponds, watercourses and wetlands

During the last ice age retreating glaciers left hummocks and hollows, distinctive features in the landscape, known as Pingos. These are present in Spring Covert although some are hidden due to fallen debris and silting. Pingos are generally managed through selective felling around the ponds (haloing). This reduces debris falling into ponds and allows sunlight to reach the surface, increasing the temperature to encourage fauna and flora species.

A project is planned within the next 5 years to work in partnership with the Freshwater Habitat Trust to assess the conservational value of the pingos. This will involve carrying out invertebrate surveys in order to produce a management plan. Currently, Pingo management is considered during the OSA* process resulting in exclusion zones around pingos to avoid tree planting directly around their locations during the restock process. In Spring Covert, areas around these ponds have been felled and left to naturally regenerate over the last 5 years without success. The mid term review in 2022 will be used to assess the progress of the project and consider where replanting may be necessary if no conservational value is found in these pingos (habitat and restock map page 15).

The River Wissey runs along the south of the plan area, through the smaller woodlands of Didlington and Little Scotland (design and concept map page 7). The White clawed crayfish, the largest native freshwater crustacean species, has been found in the river indicating good water quality.

The smaller Didlington woodland contains a diverse range of both broadleaf and conifer species. Wet woodland species are present closer to the river and include Birch, Poplar and Alder adding diversity to a predominantly pine forest. This area is managed under a continuous cover* system to support the rich biodiversity in the area.



Pingo in Spring Covert



Open ride



Tower Mustard

Open Space

The UK Forestry Standard and UKWAS requires a minimum 10% of the forest area to be managed as open space for biodiversity, cultural and recreational purposes. The existing open space within this plan is made up of recreation areas including a car park/picnic site and campsite at High Ash and the network of forest rides. The plan area also adjoins STANTA, a very large managed area of open space (appendix 1).

Didlington forest supports a variety of nationally rare fauna and flora including the Dingy skipper butterfly, Sickie medick and Tower mustard. It is recognised that widening and linking rides to surrounding open habitat within this plan will increase biodiversity for the priority habitats: lowland dry acid and calcareous grassland, whilst improving species distribution. The restock map on page 15 shows the proposed network of 40m wide rides for the area. This is within the SSSI area and will be ground truthed taking into account suitability for increasing species before committing these areas to open habitat. These rides will weave to avoid creating straight linear patterns.

As well as conservation value and timber extraction routes, these wide rides act as fire breaks helping to prevent fires spreading during a wildfire incident, and providing good access for the emergency services. They are also important for wildlife management providing good feeding areas for deer. Open habitat is managed through mowing, discing, ground disturbance and forage harvesting practices.

Tree removal around pingos (haloing) will also increase open space whilst creating potential habitat for freshwater species. A small area of open land at Bodney, originally left to maintain a view is now obscured with broadleaf trees and gorse. This area currently performs no function and will therefore be planted to enrich the naturally regenerated trees (see habitat and restock map page 15).

The Thetford Open Habitat Plan identifies priority habitats and aims to integrate 10% open space across 12 Thetford Forest plans (appendix 1), creating ecological corridors, benefiting the wider Breckland landscape. More information on this proposed plan can be found at: www.forestry.gov.uk/forestry/INFD-9P7JCF.

5. Nature *cont.*

Safeguarding our Heritage

The Forestry Commission acquired Didlington forest in the 1920's with a small number of early woodland blocks in existence before this time. Historically the majority of the area was used for arable crops. Other areas were managed as heathland and woodland.

There are no Scheduled Ancient Monuments in the plan area. However, there is an extensive military history. A military training camp was built between 1940 and 1942 by civilian contractors, laying concrete roads and hut bases. The camp was used by the 7th armoured division Desert Rats who were stationed here between January and May 1944 while preparing for the invasion of Normandy (D-Day). In addition to High Ash there is also evidence of building and infrastructure remains, drains and roads from the WW2 training camp in the Sweating Course. Soldiers were accommodated in Nissen huts supported by the concrete bases whilst officers were accommodated nearby in stately homes including Didlington Hall, a 17th century mansion requisitioned by the army in WW2 and demolished in 1950 due to neglect. Didlington Manor now stands in its place. The Cromwell tank memorial at the road entrance marks the route to the original camp area which is used as the main access into High Ash today. This is marked with a red star on LiDAR image opposite.

As part of the Breaking New Ground (BNG) Landscape Partnership Scheme, The Forestry Commission and Forest Research carried out a LiDAR* survey covering 150km² of Thetford Forest in the Brecks to reveal hidden ground features providing new information on previous land use. The LiDAR image opposite shows a large number of small squares in Shakers Wood (blue rectangle). These are the surviving remains of either concrete bases or hollows made during base removal. The plan recognises the importance of retaining these historical features. Therefore, important historical areas identified using LiDAR will be managed under a continuous cover system* to reduce the risk of damage during felling and restocking processes (management map page 13). A BNG project—Brecks Military History, led by the Breckland Society has produced a report of the military history of the Brecks from the 1900's through to the First and Second World War which can be viewed here: www.breakingnewground.org.uk/our-projects/a-window-into-the-past/brecks-military-history/.

From the 13th to the 19th centuries, rabbits were high class luxury items farmed for their meat and fur in enclosed areas known as warrens. There were 26 warrens in the Brecks established by monasteries or wealthy landowners. Warreners lived in lodges built on the highest points to safeguard against poachers and also signify the high status of the importance of warrening. The remains of Langford Warren Lodge believed to have been built in 1476 lies within the plan area (design concept map page 7). The trees around this area will remain in cyclic clear fell. However, an open area in front of the lodge is mowed during the summer months maintaining a view of this important historical feature.



A 19th century Ice House is located in the Didlington woodland block. These were typically made from brick or stone, partly underground and used to store ice throughout the year before the invention of the refrigerator. This is now protected as a winter hibernaculum for bats. This area is also managed under a continuous cover system*.

In common with much of Thetford Forest, the plan area has good survival of features associated with previous land use history including prehistoric flints, medieval pottery roads/trackways, parish boundary banks, arable boundary banks and warren banks.

Heritage features are considered as part of an OSA* process rather than as part of this plan.



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6. People

Access and Recreation

The plan area provides 858 ha of unrestricted public access on foot. Recreation facilities are located at High Ash within the main block (design concept map page 7). The Cromwell tank marks the entrance to the main car park for the forest area located just off the A1065. The tank is a memorial to the Desserts Rats who were based here during World War II. There are several gateways around the forest boundary which although not encouraged are often used for parking.

There is a 2 mile circular walking trail with interpretation boards explaining the history of the Desert Rats and their time in this area prior to D-day. The trail is sign posted with the division's Jerboa badge and benches for resting are also located along the trail. It is still possible to locate positions of buildings from the old army camp on the walk which are managed under a continuous cover system* to ensure their protection. There is also a short public right of way in the south east of the main block, near to Ickburgh.

The caravan club operate a campsite open from March to October for their members. The area surrounding the campsite is managed through a continuous cover system*.

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 long term retention* or continuous cover system*, thereby contributing well to providing a more aesthetic environment.

The Forestry Commission manages a recreation webpage for High Ash providing information on the area including its history, recreation offer and the opportunity to provide feedback about the site. The web address is <http://www.forestry.gov.uk/forestry/EnglandEastAngliaNoForestThetfordForestParkHighAsh>. There is also a Thetford Forest Facebook page.

Community

There are cottages within the main block of the forest and a manor and cottage within the Didlington block. There are isolated houses and farming units neighbouring the woods across the area. Didlington nurseries is located to the east of the Didlington block.

The surrounding villages including Cranwich, Ickburgh, Foulden, Didlington, Hilbrough and Northwold have a combined population of 2,178 people and Mundford 1,526 people. The nearest town to the plan area is Watton with a population of approximately 7,000. The Environment Agency has water monitoring points at various locations in the forest.

Forest plans are revised every 10 years and plans for the East England Forest District are accessible from the Forest Plans webpages at www.forestry.gov.uk/forestry/INFD-9PFDDY. Details of current forest operations in the area are also available on these pages.



Landscape

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. Economy

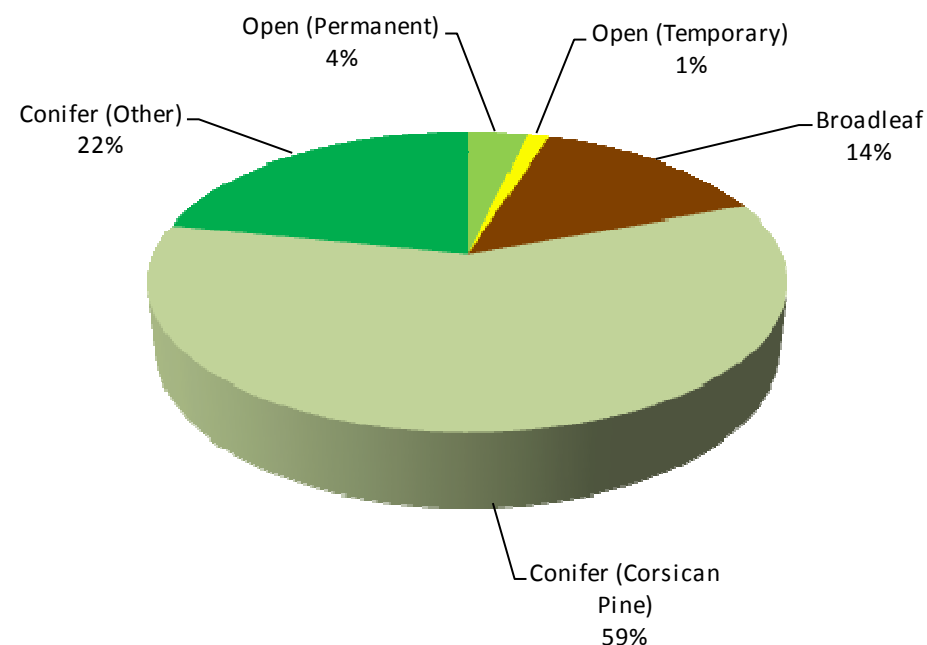
Tree Species

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* Needle Blight 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. Ongoing research is guiding our future silvicultural decisions. Within the plan area there are 1.5ha of longstanding research plots looking into the effects of current thinning practices on *Dothistroma* Needle Blight.

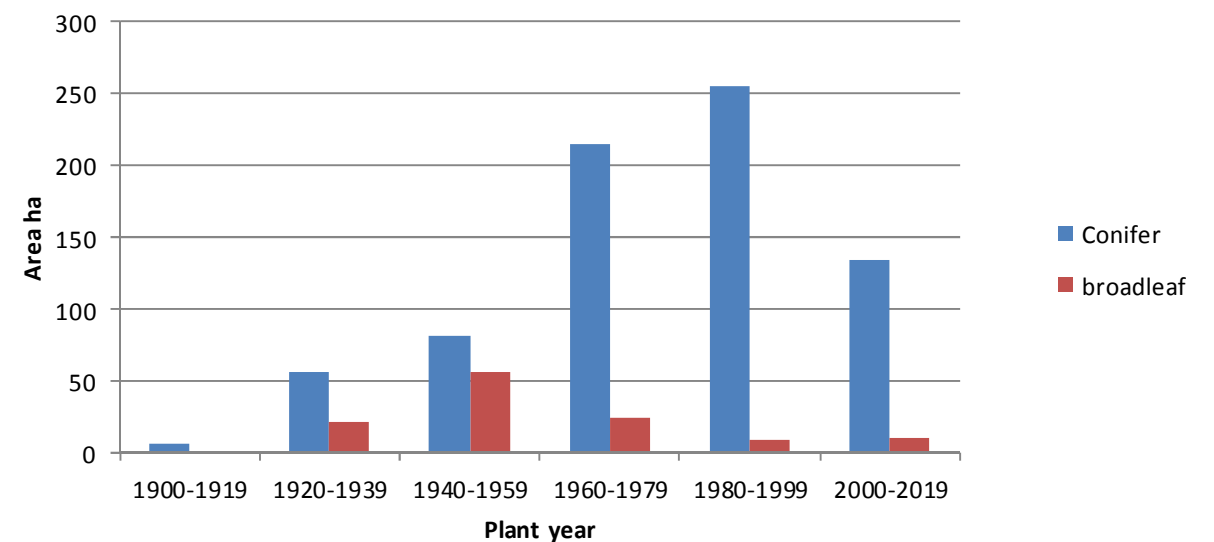
In 2016, a survey of Corsican Pine <40 yrs old highlighted areas of high-extreme infection, requiring intervention within the next year to avoid mortality. These areas have been identified for underplanting*. Although this will result in coupes being felled later than originally planned this will maximise the economic output of timber in these infected coupes.

Broadleaves make up 14% of the plan area, the majority are located in the Didlington block whilst others occur in belts along the boundary and in small blocks throughout the forest. Open space including both permanent and temporary (e.g. recently felled areas) accounts for 5% of the plan area.

Species proportions before plan implementation (2017)



Age class distribution at 2017



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.

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.

Forest resilience

The plan area is an established woodland with an increasing varied age structure and ride network throughout. Silvicultural systems currently used include thinning on a 5-7 year cycle in conifer plantations and a 10 year cycle for continuous cover areas to encourage natural re-generation.

To improve forest sustainability tree species and protection is considered as part of the restock programme taking into account soil type, diversification, fire resilient species, disease and pests. As a result of changing priorities restock species are decided closer to the time of felling. The split between conifer, broadleaf and open space are shown on the habitat and restock species map on page 15.



Forestry Commission
England

East England Forest District

Didlington

Scale: 1:24,000

Management Area

Legend

- 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

Continuous Cover Forest

- CCF - Conifer
- CCF - Broadleaves
- Natural Reserve
- Long term retention

Open/Other

- Open

Areas identified for underplanting. In some coupes this has extended the clear fell age.

Areas managed through CCF to protect WWII Archaeology



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



Produced by the planning team
February 2017

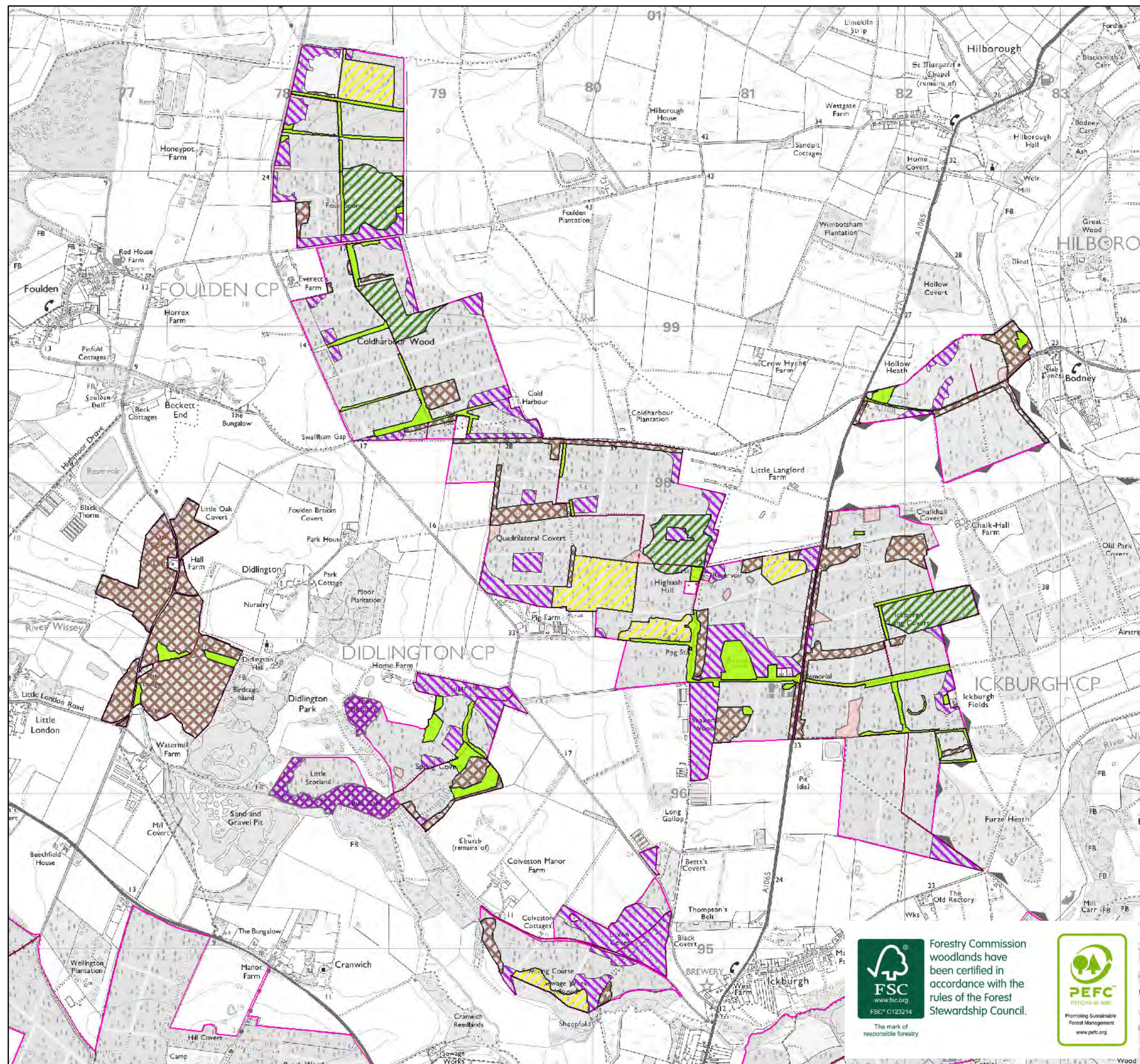
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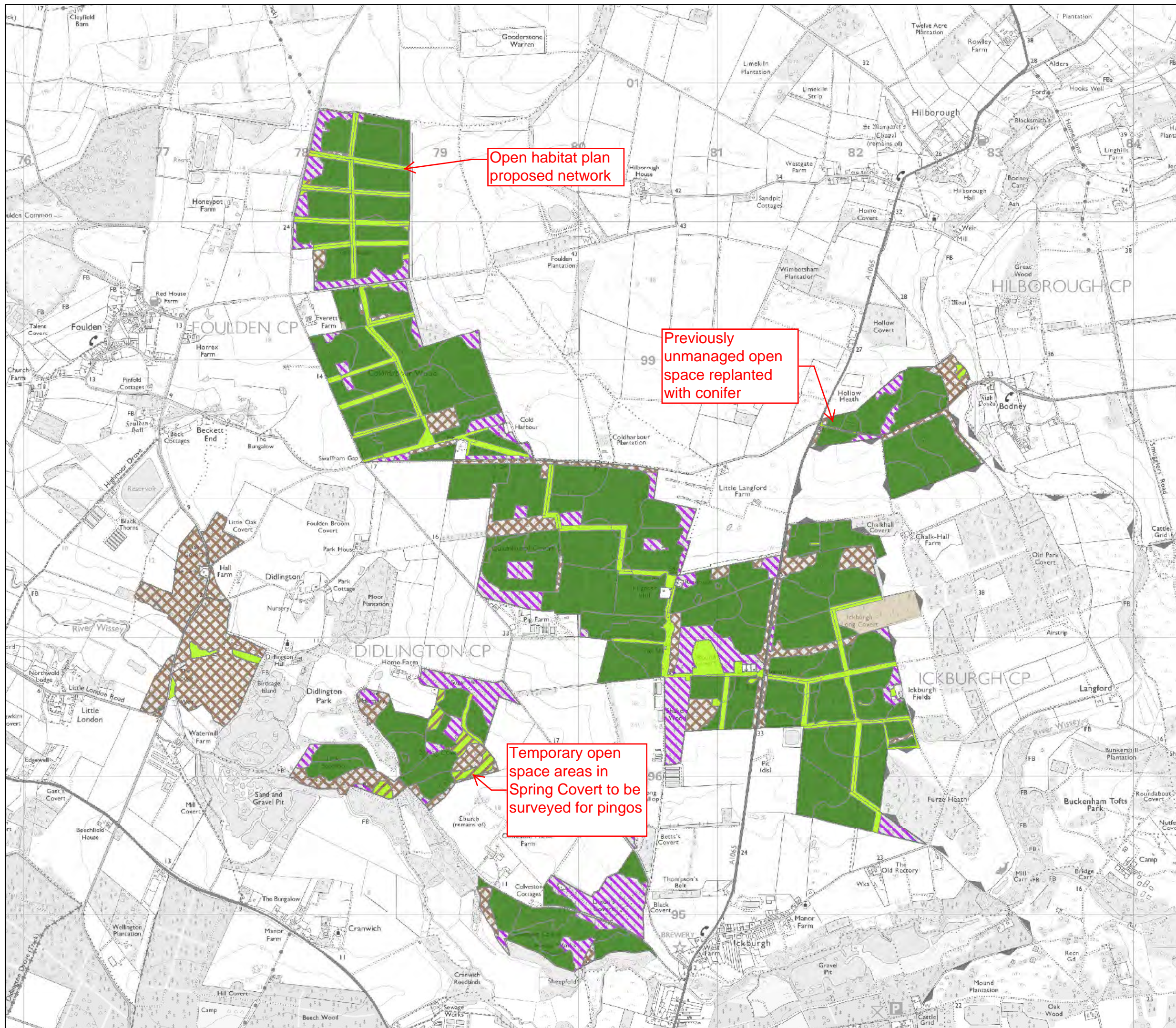


Management map for the 10 year approval period of the plan, showing clear fell, selective fell and open areas

Legend

-  Management Area
- Clear fell**
 -  Clearfell 2017-2021
 -  Clearfell 2022-2026
 -  Long term retention
- Continuous Cover Forest (selective felling)**
 -  CCF - Conifer
 -  CCF - Broadleaves
- Natural process**
 -  Natural Reserve
- Open (managed through recreation, forage harvesting and discing practices)**
 -  Open/Other





East England Forest District
Didlington
Scale: 1:26,000

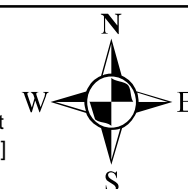
Habitat and restock species map

Legend

- Conifer
- Broadleaf
- Mixed Conifers
- Broadleaves
- Permanent Open Space
- Temporary Open Space

Produced by the planning team
February 2017

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[2017] Ordnance Survey [100021242]



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



8. Plan Appraisal

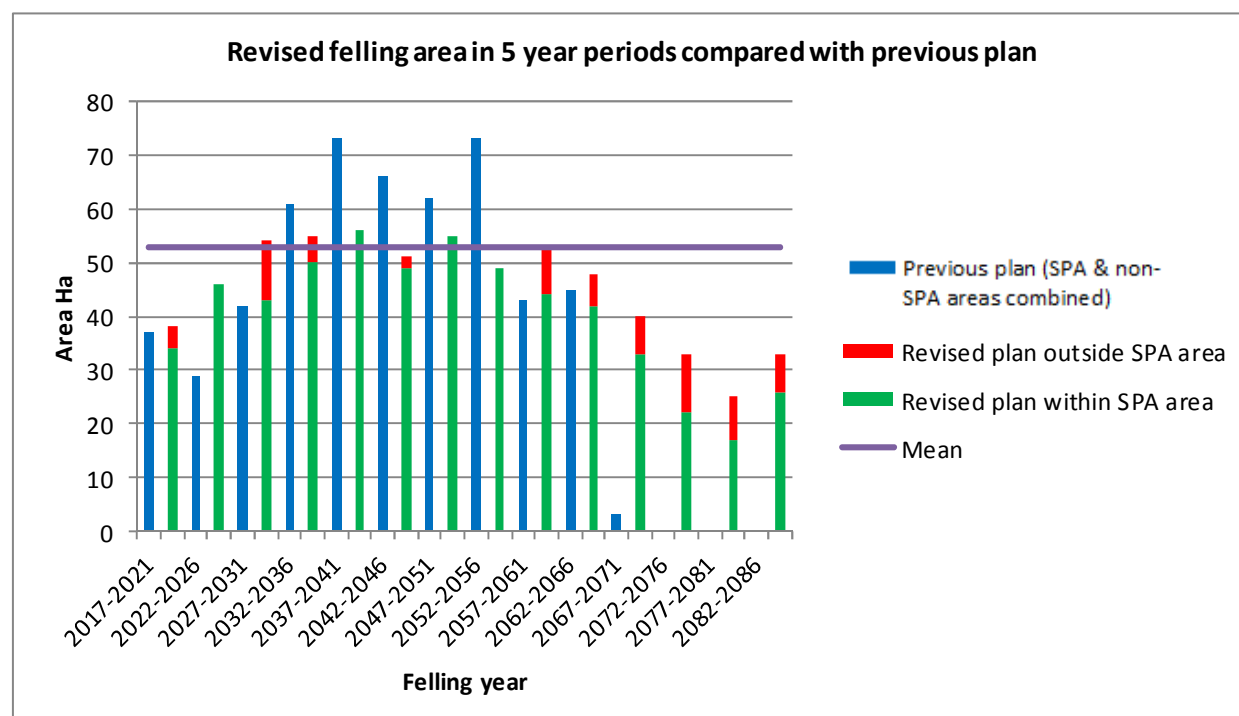
The appraisal of the revised plan is measured against the design brief on page 6, this has three separate sections and the appraisal relates to these sections:

Nature

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 12). The planned underplanting* of coupes shown in the management map (page 13) has extended the fell year of these coupes. This has had a positive effect on smoothing clear fell area in the long term by significantly increasing clear fell habitat in the future (2067-2086).

The proportion of permanent open space within the plan has increased from 5% to 9% (including temporary open space) as shown on page 17. The Open Habitat Plan route proposal is shown in the design concept map (page 7) and detailed in the habitat and restock map (page 15). It should be noted these areas are indicative of the key areas for increasing the open space network encouraging greater distribution of internationally important species, a key objective in the design brief. These areas will require ground truthing before implementation. Future plans for open space will see an increase/decrease in individual plans, as the 10% requirement is reallocated across Thetford Forest as a whole, using a network of rides in the most beneficial areas. The complete network across Thetford Forest can be seen in appendix 1.

The size and shape of the coupes planned for felling can be seen on the management maps on pages 13-15; the average size of these coupes is 7ha. An SPA assessment has been carried out for this plan and agreed with Natural England.



Mature trees maintained under a continuous cover system

People

It is difficult to assess how pleasant a woodland environment is as this 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 passers by.

The size and shape of the coupes planned for felling show the continued use of organic shapes blend well into the landscape.

8. Plan Appraisal continued ...

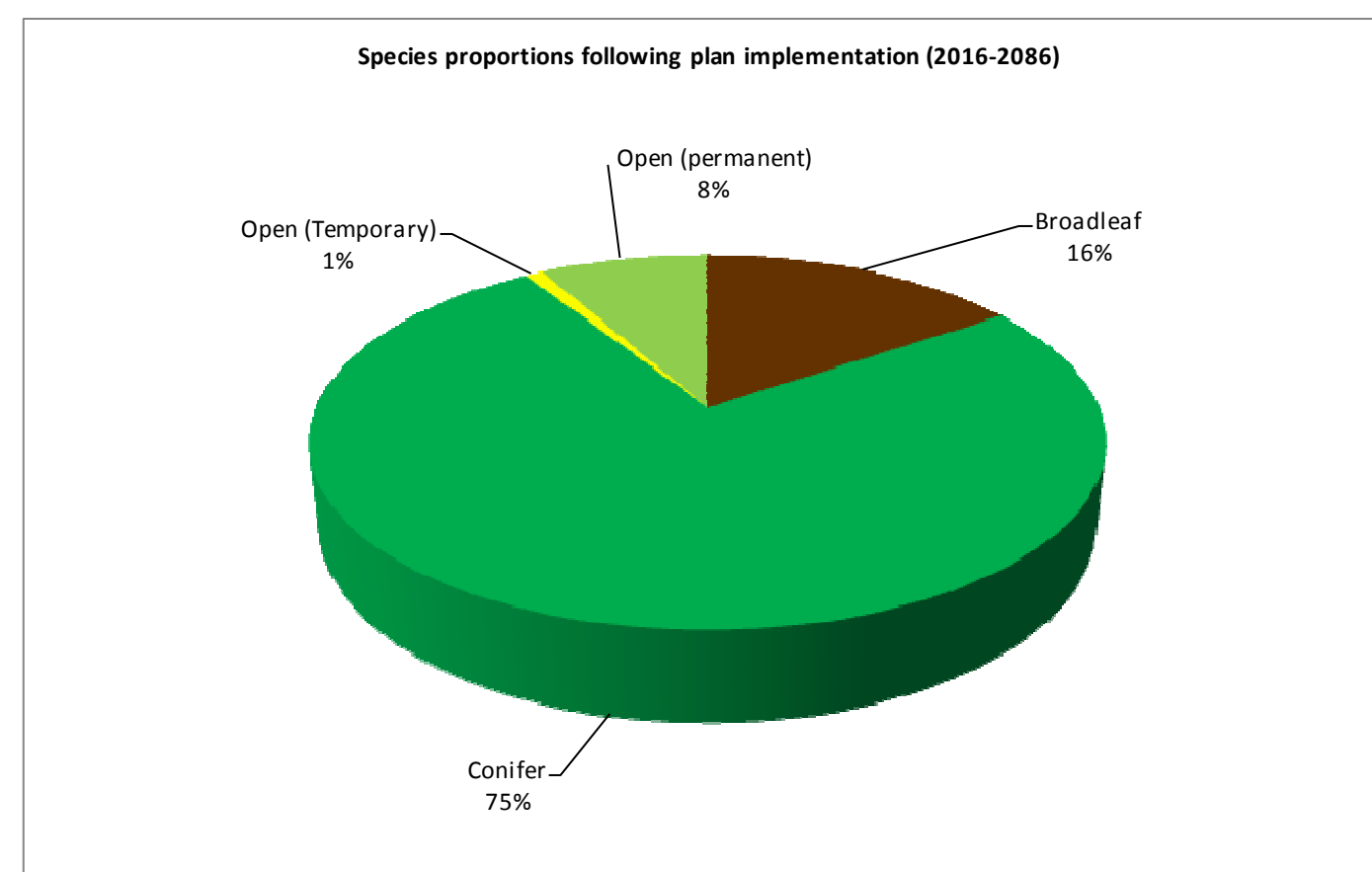
Economy

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 Didlington are expected to yield good quality thinnings material, and the average 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 and reduction in Corsican Pine compared to the current species proportions (page 12). Due to poor soil quality and increases in disease and pests affecting tree health the selected tree species for restock are decided closer to the time of felling and therefore shown only as conifer in the chart. There are no plans to plant Corsican pine but a small proportion of mature trees will still remain in small patches within continuous cover and long term retention areas. There has been a 2% increase in broadleaf due to an identified need to restock a coupe with broadleaf instead of conifer, due to the presence of fomes (pathogen). This area can be seen in the habitat and restock map on page 15 (eastern side). The conifer has reduced by 6% due to the planting of broadleaf in this coupe and a 4% increase in open space as a result of the open habitat network.

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 and restock map on page 15 gives an indication of the split between conifer, broadleaf and open space. 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. Currently 12 different conifer species are being trialled to find suitable restock species for the future.

The management map on page 13 shows areas planned for underplanting*. These areas are suffering from high-extreme Dothistroma Needle Blight. The underplanting programme has successfully trialed 6 shade tolerant species including Silver fir, Grand fir, Omorika spruce, Serbian spruce, Western red cedar and Japanese cedar. As well as increasing species diversity underplanted areas will extend the age at which the coupe will be clear felled. This has had a positive effect on the smoothing of essential clear fell habitat for woodlark and Nightjar (see graph on page 16).



9. Monitoring

FEE National vision and overall goal: “To secure and grow the economic, social and natural capital value of the Public Forest Estate for the people of England.”

District Strategic Objective	Forest Plan Objective	Monitoring
Nature	<ul style="list-style-type: none"> The felling plans should aim for an even distribution of felled area for Woodlark/Nightjar nesting habitat and contribute to maintaining a minimum area of 12757 ha in cyclic clearfell. There should be no more than 10% of coupes* <5ha as required under the SPA* designation. In accordance with the tolerance table on page 24, incorporate open space networks as detailed in the Thetford Open Habitat Plan (appendix 1), encouraging distribution of rare flora and fauna. In partnership with the Freshwater Habitat Trust, survey ground ice depressions, commonly termed pingos in Spring Covert to assess their conservation value and inform future management decisions. Maintain and improve cultural and heritage value of the land by protecting sensitive heritage features highlighted through the OSA* process. 	<p>A Habitats Regulation Assessment has been carried out and agreed with Natural England. This shows area in cyclic clear fell. There are 4% of coupe <5ha, well below the 10% threshold.</p> <p>Mid term review (April 2022) will assess the progress of ground truthing proposed routes shown on restock map (page 15) and implementation.</p> <p>Mid term review (April 2022) will assess the progress of this project and conclude management plan prescription for pingo areas. Temporary open space areas will be assessed for natural regen at this stage and supplementary planting will be carried out to achieve satisfactory stocking density (2,500 s/pha) where open space is not required as part of the pingo management plan.</p> <p>Archaeological areas including WWII remains will continue to be managed under a continuous cover system. Langford warren will be maintained as open to ensure a clear view remains. Archaeology will continue to be monitored through the OSA* process.</p>
People	<ul style="list-style-type: none"> Create a pleasant natural environment for the public to enjoy outdoor recreation in a rural woodland setting. Manage an area around the campsite at High Ash as continuous cover* for amenity value. Maintain recreational facilities to a high standard through inspection processes and partnership working with the Dessert Rats Association and Dessert Rats Memorial. 	<p>As this is subjective it is difficult to monitor. However, feedback through the recreation webpage or stakeholders will be used to monitor success of this objective.</p> <p>As above.</p> <p>Inspections on walking trails are carried out quarterly by the Thetford Forest recreation team. Paper records are kept and actions carried out accordingly dependant on level of urgency identified.</p>

District Strategic Objective	Forest Plan Objective	Monitoring
Economy	<ul style="list-style-type: none"> Maintain the land within our stewardship under UKWAS* certification by meeting standards detailed in UKWAS third edition. Improve economic resilience of our forests by increasing species diversity through restock programmes to protect future timber supplies and biomass. Assess the threat posed by Dothistroma Needle Blight (DNB) in Corsican pine plantations under 40 years old, through survey work. Identify suitable silvicultural practices including underplanting for areas of high infection to maintain economic viability. The felling plan should aim to smooth production from crops in cyclic clearfell but also meet market commitments. 	<p>UKWAS audits and UKWAS certification</p> <p>The sub-compartment* 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 and restock 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 24. 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.</p> <p>The sub-compartment* database will be used to monitor species diversity. In calcareous soils Scots pine will be the predominant species planted. In acidic soils other species will be identified based on their success from trials. The underplanting programme will also add species diversity.</p> <p>Mid term review (2022) will assess progress of underplanting in the areas identified in the management map on page 13.</p> <p>A comparison between the production forecast of the previous plan (2007-2017) and the revised plan (2017-2027) was carried out to ensure no negative effect on market plan commitments and check smoothing of felling over the plan period.</p> <p>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.</p>

10. Application for Forest Design Plan

Forest Enterprise — Property

Forest District:	East England
Woodland or property name:	Didlington
Nearest town, village or locality:	Mundford
OS Grid reference:	TL806973
Local Authority district/unitary Au-	Breckland District Council

Areas for approval

	Conifer	Broadleaf
Felling	105	24
New planting (complete appendix 4)	N/A	N/A

- I apply for Forest Design Plan approval*/~~amendment approval~~* for the property described above and in the enclosed Forest Design Plan.
- ~~I apply for an opinion under the terms of the Environmental Impact Assessment (Forestry) (England & Wales) Regulations 1999 for afforestation*/deforestation*/roads*/quarries* as detailed in my application.~~
- 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.
- I confirm that the proposals contained in this plan comply with the UK Forestry Standard.
- I undertake to obtain any permissions necessary for the implementation of the approved Plan.

Signed

FOREST MANAGEMENT DIRECTOR—
Forest Enterprise

Date

Signed

REGIONAL DIRECTOR—Forest
Enterprise

Date

I seek approval to clear fell and restock 84ha of the Public Forest Estate (this is the area in yellow and green stripe fell periods—i.e. 2017-2027).

I also seek approval to selectively fell approximately 45ha within an area of 224 hectares (for the purpose of continuous cover forestry) during the period 1/4/2017 to 31/3/2027 as shown on the enclosed plans.

Date of commencement of the plan: **1 April 2017**

Expiry Date: **1 April 2027**

Mid-Term Review Date: **1 April 2022**

11. 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 1 million years ago and include artefacts, 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.

Lidar

Light detection and ranging is a method of surveying landscapes. Flights over the landscape send down laser pulses to the ground and the time taken to reflect back builds a picture of the relative height of the land and vegetation. For more information visit www.breakingnewground.org.uk.

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 Shelter wood 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.

Yield Class

Yield class is a measure of the growth rate of a tree crop and is the maximum average rate of volume increment (increase) that a particular crop can achieve. For example, a crop capable of a maximum annual increment of 14 m³ per hectare has a yield class of 14.

12. 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 open space on page 9.

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.

Underplanting

This system involves selectively felling strips currently between 1-2 rows of trees across the site or 'coupe'. These rows are then planted with young trees. The remaining older trees provide shade in summer and shelter from frost in winter giving an ideal climate for a larger variety of species to grow. The majority of tree species prefer this type of climate making this a useful management system for increasing species diversity and increasing success rates of restock.

13. Tolerance Table

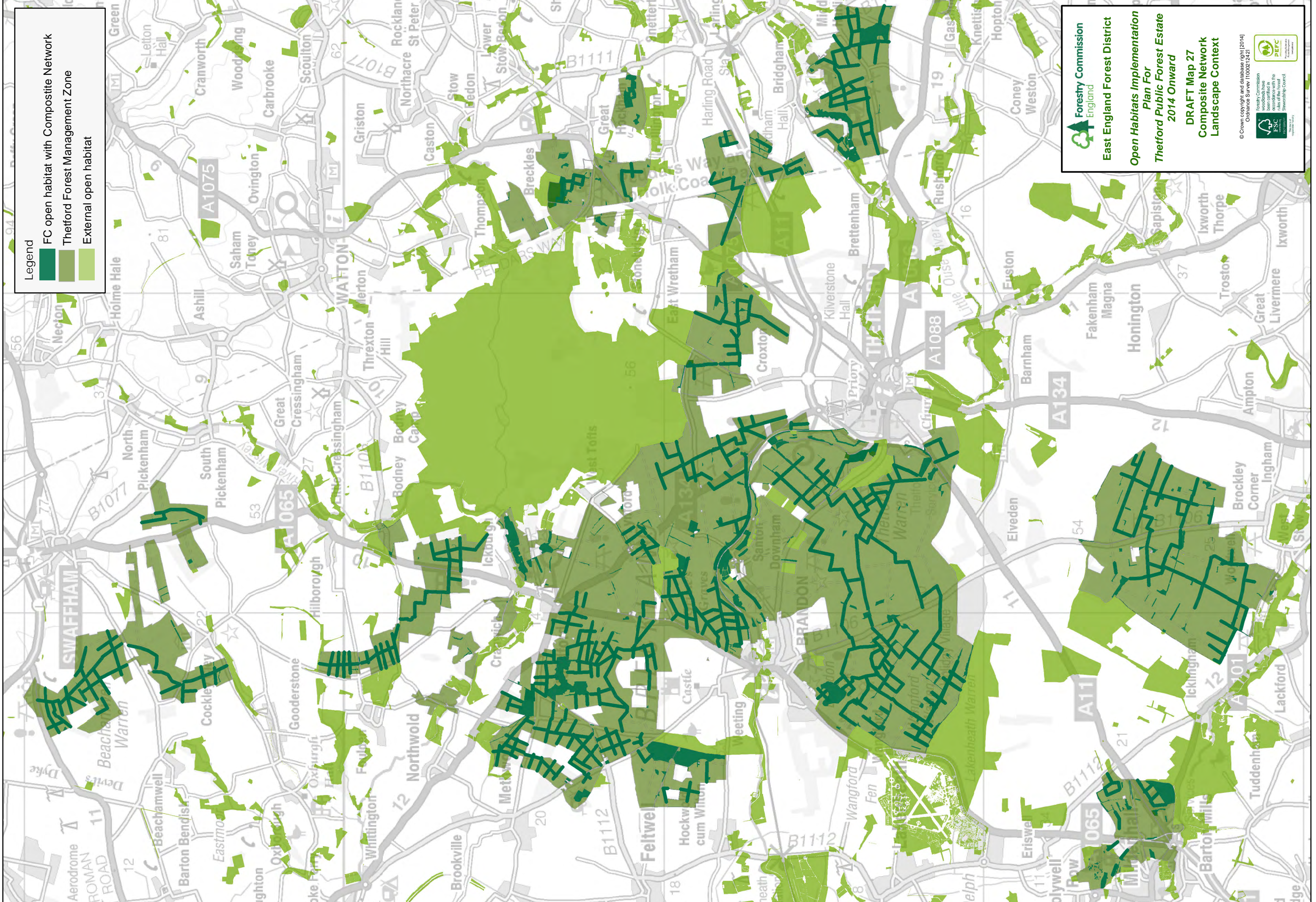
	Adjustment to felling coupe boundaries	Swapping of felling coupes	Timing of Restocking	Changes to species	Windthrow & DNB clearance
FC Approval normally not required	< 10% of the coupe area	Where changes to the felling sequence does not result in a breach of the UKFS adjacency rules.	Up to 3 planting seasons after felling	Change within species group e.g. conifers; broadleaves	Up to 2ha
Approval by exchange of letters and map	Between 10-25% of the coupe area	Where changes to the felling sequence is likely to result in a minor breach ^[2] of the UKFS adjacency rules	Up to 4 planting seasons after felling	Change from other conifers to Corsican Pine	> 2ha to 10ha
Approval by formal plan amendment	> 25% of the coupe area	Where changes to the felling sequence is likely to result in a significant breach ^[1] of the UKFS adjacency rules	Over 4 planting seasons after felling	Change from broadleaves to conifers	> 10a

[1] 21% or more of the coupe boundary

[2] 20% or less of the coupe boundary

Appendices:

1. Thetford Forest Open Habitats Plan



Legend

- FC open habitat with Composite Network
- Thetford Forest Management Zone
- External open habitat



Forestry Commission
England

East England Forest District

Open Habitats Implementation
Plan For
Thetford Public Forest Estate
2014 Onward

DRAFT Map 27
Composite Network
Landscape Context

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Ordnance Survey 1000212421



FSC
Certified
Sustainable
Wood



PEFC
Certified
Sustainable
Wood

Forestry Commission
woodlands have
been certified in
accordance with the
FSC and PEFC
standards
Shropshire & Shropshire Council