Forestry Commission England

East England

North Norfolk Forest Plan

2018 — 2028

Contents

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Our mission for managing the public forest estate:

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.

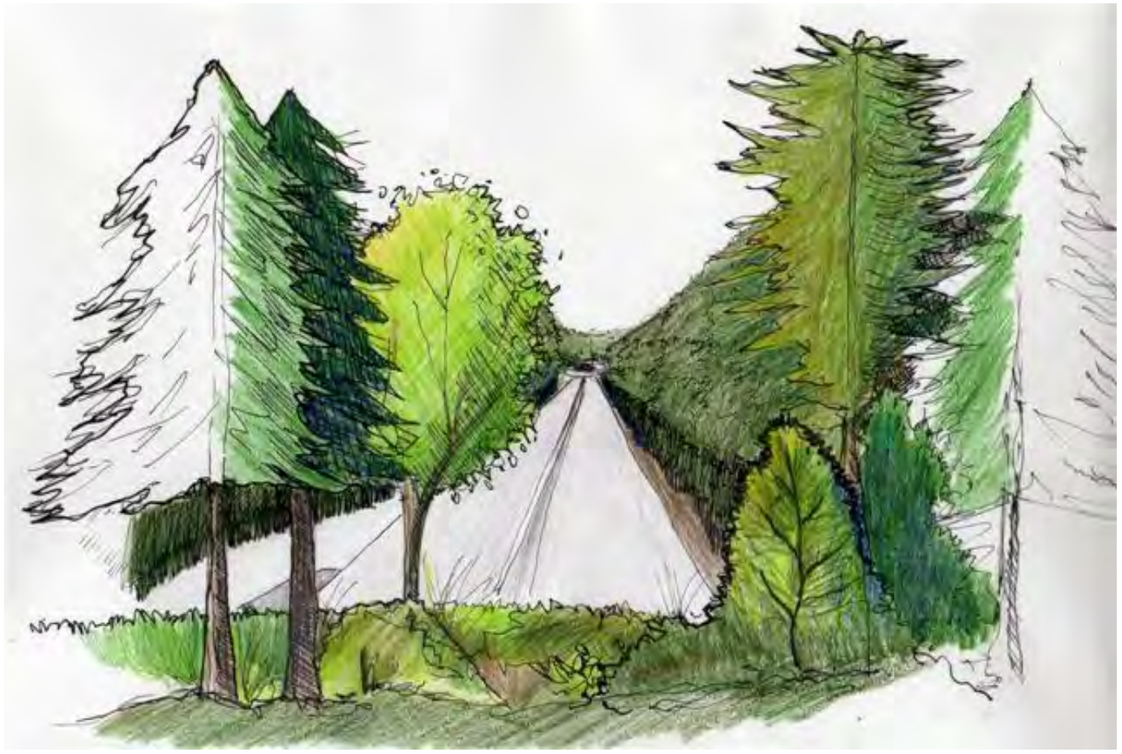
We have produced this draft plan to illustrate our management proposals thereby creating an opportunity for you to comment on the plan, whether you are a user, a neighbour or a member of one of the many stakeholder groups that have an interest in the woodlands. Information on how to get your comments 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 (2018 - 2028) and outline approval for the medium term vision (2029 - 2086). The plan will be reviewed after the first five years (2023) to assess if the objectives are being achieved. Natural England will approve management proposals for any 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 forestry 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 fourth edition.

Priority Habitats and species (national)

The Natural Environment and Rural Communities Act 2006 places a biodiversity duty on the Forestry Commission to conserve "Species and Habitats of Principle Importance for the conservation of Biodiversity" . These priority species and habitats can be found in Section 41 of the Act.

Ancient and native woodland in England (national)

Ancient and native woodlands are one of the oldest land uses and most diverse ecosystems. They have often taken hundreds, if not thousands of years to develop, and in the case of ancient woodland are irreplaceable. The managing ancient and native woodland practice guide (2010) promotes greater flexibility, encouraging new innovative approaches to woodland management that enhance biodiversity and heritage. It replaces the 1985 broadleaves policy.

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.

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 https://www.forestry.gov.uk/england-policypractice

3. Introduction

This Forest Plan covers 1,249 hectares of Forestry Commission land across North 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.

More recently, a 25 year Environment Plan was published in January 2018 to set out the governments approach to maintaining and enhancing the natural environment, within a generation. The plan is broad in scope but covers cleaner air and water, public forests and woodland, marine protected areas, species protection, administrative and governance issues.

The Forestry Commissions Priorities

At a national level the Strategic Framework (page 2) shows our mission for management of the public forest estate (PFE). Our strategic goals for what we will deliver from the PFE are set out in the Strategic Plan for the Public Forest Estate in England (2013-2020) and the Corporate plan (2017-2018). 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 covers all Forestry Commission managed woodland across North Norfolk located between Norwich, Fakenham, Holt and North Walsham including:

Holt: Weybourne, Bodham, Hempstead and Edgefield
Fakenham: Snoring, Wade's beck, Bintree and Bylaugh
Norwich: Haveringland, Marsham, Hevingham, Horsford and The Wilderness
North Walsham: Bacton

The whole plan area lies in the county of Norfolk, and is within the administrative boundaries of North Norfolk District Council, Breckland District council and Broadland District Council. It falls within the 16 parishes of Weybourne, Bodham, Holt, Hempstead, Edgefield, Little Snoring, Bintree, Billingford, Bylaugh, Cawston, Haveringland, Marsham, Hevingham, Horsford, Bacton and Witton.

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.

There is 516ha of freehold land, acquired by the Forestry Commission in the 1920s and 30s, this land is open access. The remaining area is privately owned land leased by the Forestry Commission to manage for timber. The majority of leasehold areas do not permit public access however there is 40ha of permitted public access in Weybourne and Horsford forest (see plan area and landholding status map on page 6).

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 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
- People
- Economy

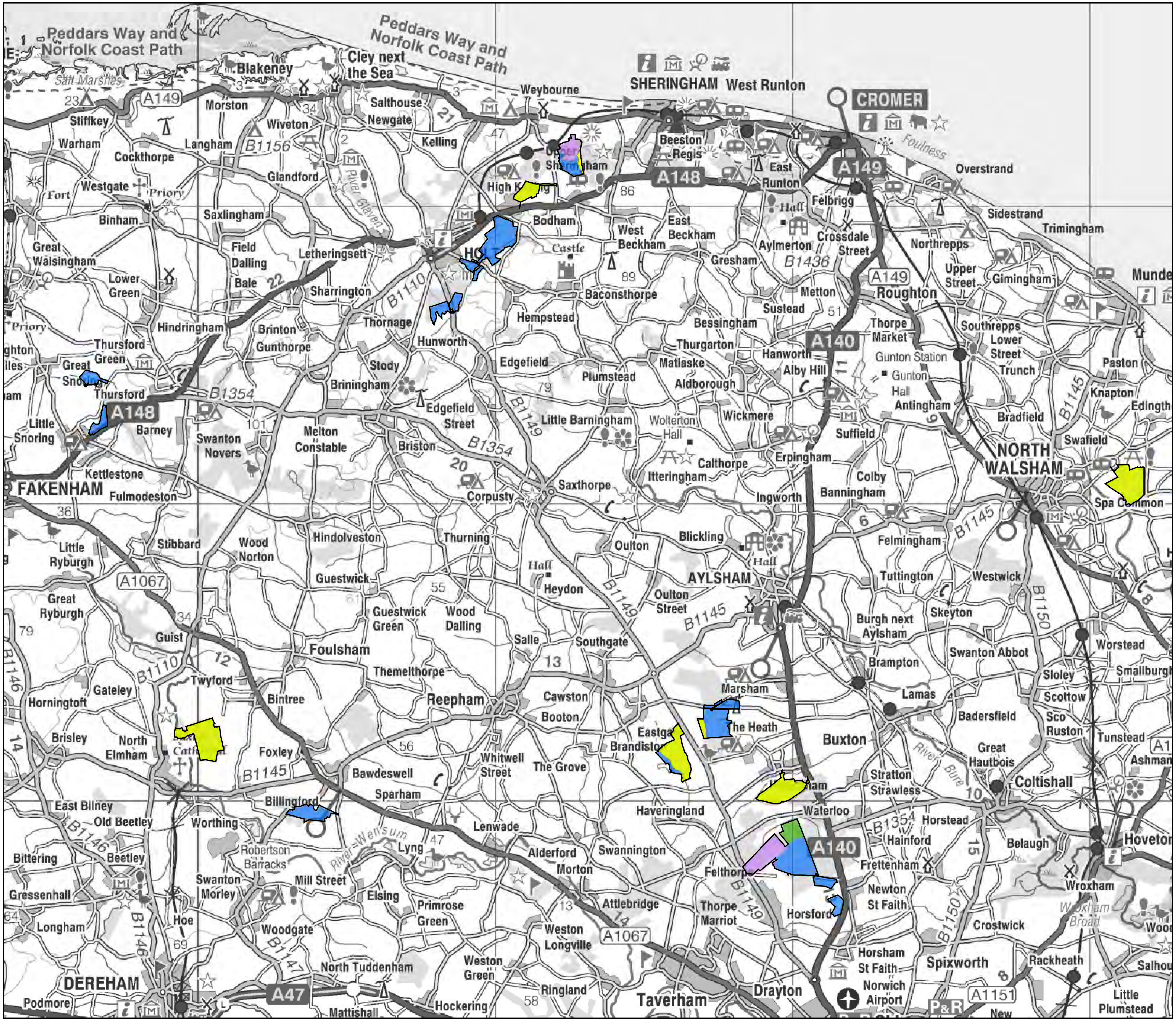
Forestry Commission England

East England Forest District

North Norfolk

Scale: 1:120,000

Plan area and landholding status



Legend

Yellow	Freehold woodland Public right of access
Green	Freehold woodland Permissive access
Blue	Leasehold woodland No public access
Purple	Leasehold woodland Permissive access
White box	Management area

Produced by the planning team
February 2018

N E S W

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4. Design Brief

Nature and cultural environment

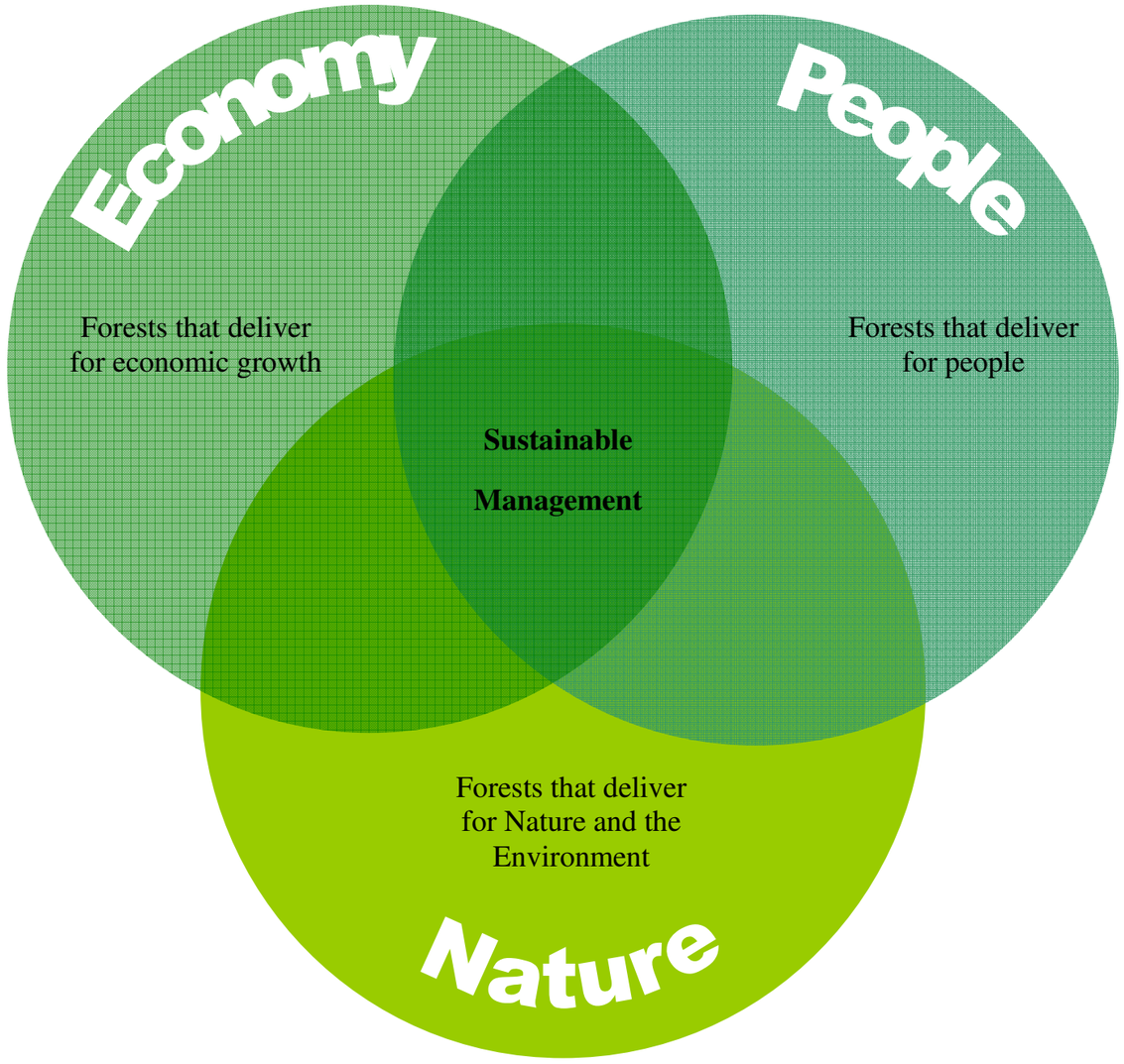
- To protect and enhance areas of ancient semi-natural woodland and restore planted ancient woodland (PAWS) in line with revised PAWS management plans (appendix 1).
- To protect, maintain and enhance designated sites.
- To protect, maintain and enhance priority habitats.
- To protect, maintain and enhance priority species.
- Maintain and improve cultural and heritage value of the land by protecting sensitive heritage features highlighted through the OSA* process.
- Agree management plans for the 10 scheduled monuments (SM) across Bodham, Edgefield and Horsford, with Historic England (appendix 2).

People

- Create a pleasant natural environment for the public to enjoy outdoor recreation in a rural woodland setting.
- Promote public use of open access land by enabling provision of recreational facilities through partnership working.
- Increase area managed through continuous cover to protect and enhance the internal and external landscape, in keeping with the local landscape character.

Economy

- Maintain the land within our stewardship under FSC/PEFC certification by meeting standards detailed in UKWAS fourth edition.
- Improve economic resilience of our forests by increasing species diversity through restock programmes and mixed silviculture practices, to protect future timber supplies and biomass.
- The felling plan should aim to smooth production from crops in cyclic clearfell but also meet market commitments.
- Reduce impact of prolific rhododendron particularly in continuous cover management areas to ensure development of future timber crops.



The design brief presents objectives for the whole plan area, which covers 14 individual woodlands. Therefore, not all objectives are relevant to every woodland. For woodland specific objectives see the design brief section on the relevant design and concept map.

Forestry Commission

East England Forest District

North Norfolk

Design Concept Map

Weybourne, Bodham, Hempstead & Edgefield

Access and recreation facilities

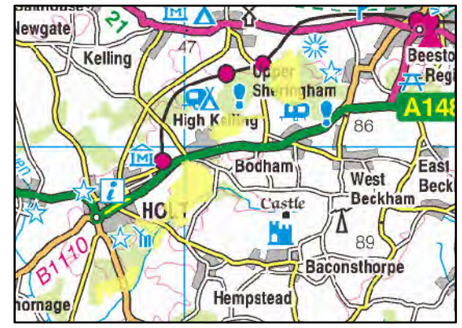
- Freehold woodland Public right of access
- Leasehold woodland No public access
- Leasehold woodland Permissive access
- Forestry Commission management area
- Settlements
- Roads
- Forest access barrier
- Parking area
- Viewpoints: Weybourne & Reptons view
- Mackay's Hill car park
- National Trust routes
- Public Right of way

Environment

- County Wildlife Sites
- FC Conservation Sites
- Surrounding SSSI sites to plan area
- Scheduled Monuments
- River Glaven
- Ponds

Location & Context

Forest Plan area highilighted in yellow



Design Brief

Nature

- Protect, maintain and enhance designated sites, priority habitats and priority species.
- Agree management plans for the scheduled monuments in Bodham and Edgefield.
- 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.
- Promote public use of open access land by enabling provision of recreational facilities through partnership working.
- Increase area managed through continuous cover to protect and enhance the internal and external landscape, in keeping with the local landscape character.

Economy

- Maintain FC land under FSC/PEFC certification by meeting standards detailed in UKWAS* fourth edition.
- Increase species diversity through restock programmes.
- Smooth crop production to meet market commitments.
- Reduce prolific rhododendron to ensure development of future timber crops.

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

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Scale:1:27,000

Forestry Commission

East England Forest District

North Norfolk

Design Concept Map

Wade's Beck & Little Snoring

Access and recreation facilities

- Leasehold woodland — No public access
- Forestry Commission management area
- Settlements
- Roads
- Public Right of way
- Forest access barrier

Environment

- Surrounding SSSI sites to plan area

Location & Context

Forest Plan area highilighted in yellow

Design Brief

Nature

- To protect, maintain and enhance, priority habitats and priority species.
- Maintain and improve cultural and heritage value of the land by protecting sensitive heritage features highlighted through the OSA process.

People

- Increase area managed through continuous cover to protect and enhance the internal and external landscape, in keeping with the local landscape character.

Economy

- Maintain FC land under FSC/PEFC certification by meeting standards detailed in UKWAS* fourth edition.
- Increase species diversity through restock programmes.

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Scale:1:20,000

Forestry Commission

East England Forest District

North Norfolk

Design Concept Map

Bintree and Bylaugh

Access and recreation facilities

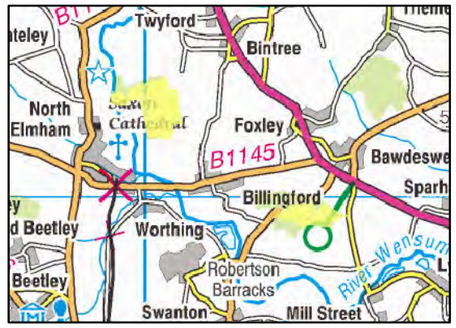
- Freehold woodland — Public right of access
- Leasehold woodland — No public access
- Forestry Commission management area
- Settlements
- House
- Roads
- Forest access barrier
- Parking area & Forest access barrier
- Public Right of way

Environment

- Surrounding SSSI sites to plan area
- Surrounding SAC sites to plan area

Location & Context

Forest Plan area highlighted in yellow



Design Brief

Nature

- To protect, maintain and enhance designated sites, priority habitats and priority species.
- 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.
- Promote public use of open access land by enabling provision of recreational facilities.
- Increase area managed through continuous cover to protect and enhance the internal and external landscape, in keeping with the local landscape character.

Economy

- Maintain FC land under FSC/PEFC certification by meeting standards detailed in UKWAS* fourth edition.
- Increase species diversity through restock programmes.
- Smooth crop production to meet market commitments.
- Reduce prolific rhododendron to ensure development of future timber crops.

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Scale:1:25,000

Forestry Commission

East England Forest District

North Norfolk

Design Concept Map

Haveringland, Marsham, Hevingham, Horsford & The Wilderness

Access and recreation facilities

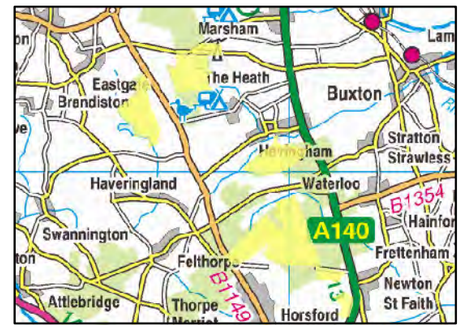
- Freehold woodland Public right of access
- Leasehold woodland No public access
- Leasehold woodland Permissive access
- Forestry Commission management area
- Roads
- Forest access barrier
- Parking area & Forest access barrier
- Settlements
- House
- Public Right of way

Environment

- County Wildlife Sites
- FC Conservation Sites
- Surrounding SSSI sites to plan area
- Surrounding SAC sites to plan area
- Scheduled Monuments
- Open water/Ponds

Location & Context

Forest Plan area highlighted in yellow



Design Brief

Nature

- Protect and enhance areas of ASNW and restore PAWS in line with revised PAWS management plans.
- To protect, maintain and enhance designated sites, priority habitats and priority species
- Maintain and improve cultural and heritage value of the land by protecting sensitive heritage features highlighted through the OSA process.
- Agree management plans for the 10 scheduled monuments across Bodham, Edgefield and Horsford, with Historic England (appendix 2).

People

- Create a pleasant natural environment for the public to enjoy outdoor recreation in a rural woodland setting.
- Promote public use of open access land by enabling provision of recreational facilities through partnership working.
- Increase area managed through continuous cover to protect and enhance the internal and external landscape, in keeping with the local landscape character.

Economy

- Maintain FC land under FSC/PEFC certification by meeting standards detailed in UKWAS* fourth edition.
- Increase species diversity through restock programmes.
- Smooth crop production to meet market commitments.
- Reduce prolific rhododendron to ensure development of future timber crops.

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Scale:1:29,000

Forestry Commission

East England Forest District

North Norfolk

Design Concept Map

Bacton

Access and recreation facilities

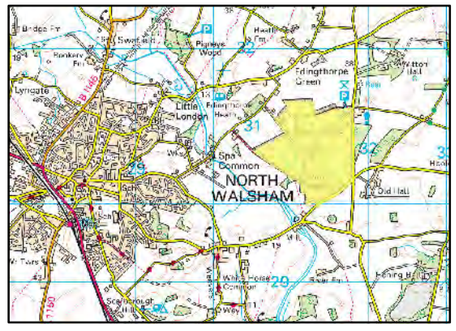
- Freehold woodland Public right of access
- Forestry Commission management area
- Settlements
- House
- Roads
- Forest access barrier
- Car park
- Yellow walking trail
- Blue walking trail
- Red walking trail
- Public Right of way

Environment

- FC Conservation Sites

Location & Context

Forest Plan area highlighted in yellow



Design Brief

Nature

- Protect and enhance areas of ASNW and restore PAWS in line with revised PAWS management plans.
- Protect, maintain and enhance priority habitats and species.
- Maintain and improve cultural and heritage value of the land by protecting sensitive heritage features highlighted through the OSA process.

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- Create a pleasant natural environment for the public to enjoy outdoor recreation in a rural woodland setting.
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Produced by the Planning Team March 2018

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Scale:1:14,000

5. Nature

Site Characteristics

A patchwork of cultivated land, small towns and villages, wooded horizons and big skies dominate the landscape of the plan area. It can be considered one of the warmest and driest parts of the UK with relatively low rainfall of less than 700mm/year.

The Holt area is characterised by rolling ground and shallow dry valleys with gradients considered steep for East Anglia conditions. Weybourne and Bodham lie within the Norfolk Coast AONB designated in 1968, which stretches from the wash in the west through to the dune system at Winterton in the east. From the coastal zone Weybourne is particularly dominant on the scarp of the Cromer ridge. Further inland there is limited topographical variety as the land slopes gently from west to east towards the sea, becoming flatter as it merges with the Norfolk broads. Snoring, Wade's beck, Bintree, Bylaugh and Bacton are important woodland features here, in what is a predominantly agricultural landscape.

The main soil types across the plan area are sands and gravels. This has led to widespread planting of Corsican and Scots pine suited to these soils, with Douglas fir planted where moist fertile brown earths occur.

Wooded 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 including Hobby and Buzzard. Many continuous cover areas* and long term retentions in the plan provide habitat for these species (see management map pages 19-28).

Ancient Woodland

Ancient Woodland makes up 189ha (15%) of the plan area and is located in Hevingham, Haveringland and Bacton. The vast majority of these woodlands are plantations on ancient woodland sites (PAWS) that have a long history of woodland cover, existing since 1600 or earlier. The original "natural" woodland was cleared and replaced by a plantation of mostly non-native conifer. The plan aims to restore these areas to semi-natural woodlands comprising site native species and retaining remnant features. This is detailed in the PAWS restoration plans in appendix 1.

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 and fungi.

The largest amounts of deadwood can be found in areas of minimum intervention, natural reserves and continuous cover forest where ecological processes such as vegetation succession, natural regeneration and windthrow increase biodiversity and conservational value of the area.

Designated sites

There are no statutory conservation designations across the plan area but there are several which adjoin the woodlands. The maintenance and enhancement of biodiversity is a key consideration in the plan. Species of rare flora and fauna associated with designated sites adjoining the plan area, will influence the management of some woodlands.

Cawston and Marsham heath SSSI lies to the north of Marsham wood, and Buxton heath SSSI/Norfolk Valley Fens SAC lies to the south. The open corridor through the woodland connects these areas providing important linking habitat for the silver-studded blue butterfly, adder and other species associated with lowland heath.

Holt Lowes SSSI/Norfolk Valley Fens SAC is located between Hempstead and Edgefield woods, designated for its open heath/mire communities. A link of mixed open space, lowland heath, valley fen and deciduous wet woodland between Selbrigg pond through to Edgefield will be maintained. Mackey's Hill car park maintained by North Norfolk District Council located in Hempstead woods provides access to Holt Country Park.

Norfolk's river valleys contain an important mosaic of habitats and species, with the entire length of the chalk-fed River Wensum designated as a SSSI and SAC.
The river runs along the western boundary of Bintree wood. The area directly adjacent to the river comprises deciduous wet woodland species and will be managed through minimum intervention. The Corsican pine planted in 1995 also within the area will be thinned out and broadleaf species better suited to these wetter soils will be allowed to naturally regenerate here.

County wildlife sites support a wide range of biodiversity* including many priority habitats and species. They are considered among the best remaining wildlife areas in the county, outside of legally protected areas. Hempstead, Edgefield, Hevingham, Horsford and a small area within The Wilderness are identified by the Norfolk County Wildlife Partnership, led by Norfolk Wildlife Trust as County wildlife sites.

The Design and Concept maps on pages 8-12 show the location of all sites mentioned above.

5. Nature

Priority habitats

The UK Forestry Standard and UKWAS requires a minimum 10% of the district forest management area to be managed as open space for biodiversity, cultural and recreational purposes. The existing open space within the plan area is made up of recreation areas, ponds, heathland, archaeology and the network of forest rides.

Open space within the woodland, particularly wide rides, not only provide high conservational value but also timber extraction routes, easy access for public use such as walking and fire breaks helping to prevent fires spreading and providing good access for the emergency services. They are also important for wildlife management providing good feeding areas for deer. Where possible rides will be widened during routine operations to improve access and conservation potential.

Priority open habitats within the design plan area include freshwater habitats such as naturally fluctuating water bodies, eutrophic standing waters, ponds and rivers and terrestrial lowland dry acid grassland, lowland heathland and lowland fen habitats.

Freshwater
The River Glaven which runs through Hempstead wood is a chalk river of which there are only 200 in the world. Chalk streams carry very little sediment giving a transparent appearance and the mineral rich water supports a variety of flora and fauna. Mixed broadleaf species border the riparian* zone and are managed through a continuous cover system*, although closer to Hawksmere lake is managed as a natural reserve. These wet areas are difficult to access and minimal interference is required to avoid causing large disturbance that could lead to silting (see management map on page 19). This is a consideration for the work required to improve Hempstead fen (see Heathland, Grassland and Fen section).

There are ponds present across many of the woodland areas including Weybourne, Hempstead and Bacton. Ponds support a range of priority species including amphibians and dragonflies and are an important water source for birds and other animals in dry weather.
The pond along the main access road in Bacton originally provided breeding ground for Palmate newts, but due to heavy use and disturbance by dogs is now unsuitable. However, several other ponds have been created, which are fenced and the original pond is now sacrificial.

During the last ice age retreating glaciers left hummocks and hollows, distinctive features in the landscape, known as Pingos, which are fluctuating water bodies. A number of these are present in hevingham and The Wilderness. These pingos are to be managed through unshading e.g. selectively felling 'haloing' around the water bodies when thinning operations are carried out in the adjacent continuous cover areas (see management map on page 25).

Heathland, Grassland and Fen
The largest areas of permanent open space are found in Weybourne, Hempstead, Horsford and Marsham. Sheringham park landscaped gardens which lie adjacent to Weybourne were designed by Humphry Repton in 1812. An open area is maintained in the north of Weybourne wood by the National Trust, to preserve Repton's view from Sheringham park (see design & concept map on pg 8 and management map on pg 19).

The valley fen at Hempstead, on the northern bank of the River Glaven, has significant young broadleaf regeneration reducing suitable habitat availability for the fen species. The plan proposes removal of this scrub to maintain the fen in an open condition. Operations in this area will involve careful planning to avoid silt entering the river during removal (see management plan 19).

There are two lowland heathland areas located in the north and west of Horsford with wide ride connections. These are currently colonising with young birch and gorse in places and will require maintenance to bring them back into suitable condition. In Marsham a wide open ride connecting the two SSSI's listed in designated sites on page 13 has suffered similar problems with young broadleaf, conifer and gorse colonisation which requires regular removal (see management plan on page 25). The maintenance of these priority habitat areas will be reviewed and included within a conservation plan. Pictures of Horsford heath, Hempstead fen and Marsham butterfly ride shown on page 15 show these areas to be in good condition in 2008. The plan aims to improve the management of these priority habitat for the priority species they support. The priority open habitats such as lowland dry acid grassland, lowland heathland and lowland fens, will be managed through unshading e.g. felling, thinning, ride widening, scrub removal and other methods including swiping, forage harvesting, mulching, turf stripping and grazing.

Areas of temporary open space are present in Hempstead, Edgefield, Wade's Beck and Haveringland, as a result of previous clear fell operations. The plan proposes restocking through planting in Hempstead, Edgefield and Wade's Beck whilst Haveringland will be left to natural regeneration in line with the PAWS plans in appendix 1. Further temporary open space is provided through rotational clear fell operations.

Priority species

European Protected Species include Bats, Great crested newts and Lepidoptera. Bats are found throughout the plan area and will be managed through maintaining woodland area and connectivity, maintaining and increasing deadwood and open rides and corridors for feeding.
Great crested newts are present within The Wilderness they will be managed by unshading their breeding habitat through haloing ponds and pingos and increasing deadwood.
The Purple Emperor butterfly is found in Weybourne wood. This species will be managed for by maintaining willow in a variety of ages and aspects.

Other Priority species found within the plan area such as Silver-studded Blue Butterfly, Adder, Nightjar, Marsh Gentian, Bog Bush Cricket and Southern marsh orchid are associated with the lowland heathland and valley fen habitats within Horsford, Marsham, Edgefield, Hempstead and Weybourne woods. These will be managed for through scrub management described in the priority habitat section.

As well as in the Forest Plan, priority habitats and priority species will be taken into account as part of the OSA* process before work commences to ensure species protection and to identify additional opportunities for enhancement.

5. Nature

Hempstead fen

Southern Marsh orchid

Horsford heath (north)

Marsham wood- wide open corridor maintained for the silver-studded blue butterfly

Silver-studded blue butterfly

Adder

Marsh gentian

Photos by © Neal Armour-Chelu

5. Cultural Environment

Safeguarding our Heritage

The Forestry Commission acquired North Norfolk woodlands in the 1920's and 1930's including some areas which were already woodland such as Bacton, Haveringland and Hevingham. Surviving features of these medieval ancient woodlands include ditches, diggings, prehistoric burnt mounds and boundary banks showing land use overtime with evidence of Haveringland and Hevingham being used as deer parks and for rabbit warrening. These ancient woodlands contain a high proportion of planted non-native conifer so restoration to semi-natural woodland through delivery of the PAWS plans in appendix 1 is a key objective for the forest plan.

The plan area has good survival of features associated with previous land use history including parish boundary banks, pits and transport routes. There is also a strong WWII history across many of the woodlands including Weybourne, Bodham, Edgefield, Bylaugh, Marsham, Horsford and Bacton. Surviving features include military training areas, trenches, weapon pits, a pill box, Nissen hut and war memorials.

Site specific heritage features are considered as part of an OSA process before work commences. A handbook guide to protecting heritage assets has also been produced for forest workers and referred to during operations to increase understanding and protection of heritage features.

There are 10 scheduled monuments across the North Norfolk area located in Bodham (1 oval barrow), Horsford (2 round barrows) and Edgefield (7 habitation sites). They have specific individual management plans shown in appendix 2 which will be agreed with Historic England and do not form part of the consultation.

Oval barrows are funerary and ceremonial monuments of the early to middle Neolithic periods with the majority dating to the later part of the period. They represent the burial places of Britain's early farming communities and are nationally rare with less than 50 recorded examples in England. The oval barrow at Bodham survives well and is one of a large number of barrows of varying type and date on the Cromer Ridge.

The scheduled round barrows in Horsford are part of a barrow cemetery (a cluster of burial mounds) in the forest and adjacent farmland, although only some survive as upstanding earthworks. There are other burial mounds across the plan area such as the one in Bacton which was investigated in the 1930s, 40s and 50s. These excavations dated the barrow to the Middle Bronze age (approximately 3000 to 3500 years ago) and revealed that the original dimensions were 9.75m in diameter and nearly 1.85m high with a surrounding ditch 1.21m wide and 46cm deep. There had been a large fire beneath the centre of the mound and there may have been a burial but no traces of bones or grave goods survive. Soon after the original construction the top was levelled and a pit dug, in which a cremation appears to have taken place, and the mound was enlarged to 15.24m diameter. Following this, seven urns containing cremated bones were inserted into the southern side.

The scheduled site in Edgefield was discovered during conifer planting in the 1950s. It is recorded as a series of discrete concentrations of burnt and fractured flint occurring along the lower slope of a wet valley. Further information about the extent and significance of this site will be gathered during the life of this plan.

Round barrow in Horsford, photo by David Kenny Historic England

Haveringland - Ancient pollard oak hulks with good epicormic growth

Marsham - War memorial to remember the pilot and navigator from RAF Oulton killed when their Bristol Beau fighter crashed nearby on the 12th August 1942.

6. People

Access and Recreation

There is 516ha of freehold land with public right of access in Bodham, Bintree, Haveringland, Hevingham and Bacton. The remaining 733ha of land is privately owned and leased by the Forestry Commission to manage for timber. The majority of leasehold areas do not permit public access however there is 40ha of permitted public access in Weybourne and Horsford forest. The land holding status map on page 6 shows access rights across the plan area. The number of forest users across the plan area is expected to grow with proposed developments across North Norfolk, further increasing the value and importance of publically accessible woodlands for recreation. The main users in all woodlands with public rights of access include walkers, cyclists, orienteering groups or individuals and horse riders.

Bacton wood is the main recreation woodland within the plan area with a surfaced car park, 3 waymarked trails and an orienteering course. Forest operations are managed by the Forestry Commission, whilst the recreation facilities provided are managed by North Norfolk District Council. Due to the limited availability of open access woodland in the area Bacton is heavily used and a highly important asset to the local community.

The majority of Weybourne is leasehold land with permissive access. The northern area is owned by the National Trust who provide a few walking routes through the wood, connecting to Sheringham park which adjoins the woodland.

There is a small car park area in Horsford wood on the west corner of the woodland, which is leasehold with permissive access. The woodland is well used by the local community.

There are several gateways across all woodlands in which parking is available (Bodham, Hevingham, Haveringland & Horsford) whilst others are not encouraged but often used for parking. There are a significant number of public rights of way which link to and border the plan area with others running through woodlands including Weybourne, Bodham, Edgefield, Bintree, Hevingham, Haveringland and Bacton.

A 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 to providing a more aesthetic environment.

The Forestry Commission manages recreation webpages for many of the woods to provide information and gather feedback from visitors.

Community

There are private houses which directly border woodlands within the plan area including Weybourne, Bylaugh, Horsford and Bacton.

Woodlands lying close to areas with high populations are more heavily used. North Walsham near to Bacton wood has a population of 12,600, the combined population of Horsford and Norwich city surrounding Horsford woods is over 200,000 and the combined population of Holt and Sheringham surrounding Weybourne and Bodham woods is 11,000.

Forest plans are revised every 10 years and plans for the East England Forest District are accessible from the Forest Plans webpages. Details of current forest operations in the area are also available on these pages.

Weybourne forest coastal viewpoint: Train running along the North Norfolk Railway, a heritage steam railway running between the coastal towns of Sheringham and Holt.

Landscape

The woodlands within the plan are widely dispersed and range significantly in size from the smallest in Little Snoring (25ha) to the largest in Horsford (271ha). The majority of the plan area (62%) will be managed as Continuous Cover forest* creating a more mixed age/species woodland with no dramatic effect on the landscape. This is particularly important in smaller woodlands and those within the designated AONB.

In larger woodlands with limited age/species range it is appropriate to use clear fell systems. Forest plans have been used in North Norfolk 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. In woodlands managed under clear fell systems coupe sizes can range from 3ha - 8ha providing visual diversity and retaining the economies of scale for forest operations.

7. Economy

Tree Species

The plan area 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 North Norfolk; 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 woodlands. 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. Corsican pine makes up 41% of tree species across North Norfolk posing a threat to future timber production in the area. However, in more coastal woodlands such as those around Holt the effects of Dothistroma appear minimal whilst woodlands located inland show greater signs of infection including Bintree and Horsford. Ongoing research is guiding our future silvicultural decisions. Within the plan area there are 5 longstanding research plots looking into the effects of current thinning practices on Dothistroma Needle Blight and running species trials.

Broadleaves make up 19% of the plan area with the majority occurring in belts along the boundary and in small blocks throughout the forest. These are located in areas managed as continuous cover (broadleaf) and form a major component of minimum intervention and natural reserve areas. The proportion of broadleaves will increase overtime as PAWS areas are reverted to semi-natural woodlands.

Open space including both permanent and temporary (e.g. recently felled areas) accounts for 9% of the plan area.

Age Class

The bar chart opposite illustrates how past management of the woods has perpetuated the condensed initial establishment phase between the 1950's and 1980's—resulting in the current limited spread of tree ages across some of the woodlands including Weybourne, Snoring, Bintree, Bylaugh and Horsford. Some of the original pine plantings and broadleaf belts remain.

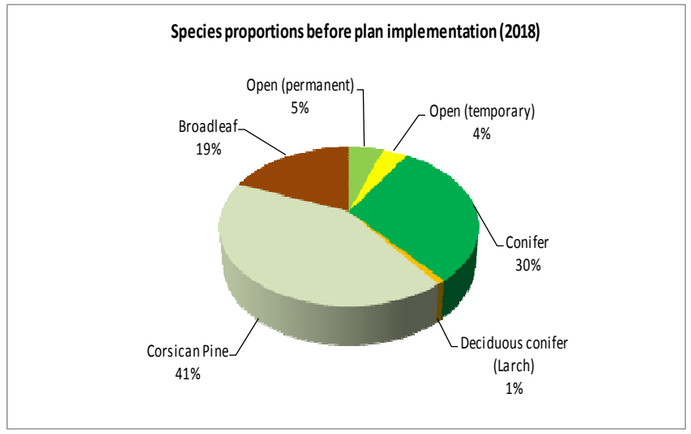
The design brief is to 'smooth' the felling of the second rotation so that the age class distribution becomes more evenly spread over a period of 60 to 70 years. This equates, approximately, to a rotation* of trees and will move the forest forward on a more sustainable basis. In woodlands managed under continuous cover systems the age structure will be diversified through thinning operations which promote natural regeneration with supplementary planting as required, to increase stocking density, age structure and diversify species.

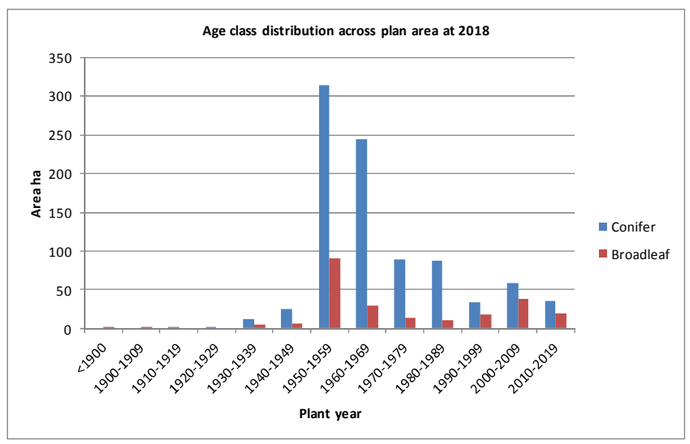
Forest resilience

The threat posed to timber production from climate change and more directly from pests and diseases is having a significant impact in forests, with Corsican pine being the worst affected. To ensure long term sustainable timber production the present tree species will require age/species diversification in future rotations selecting species more resistant to the current and increased incidence of pests and diseases.

This will be attained through a variety of silvicultural systems including clear fell, thinning and underplanting shown in the management maps on pages 19, 21, 23, 25 & 27. As a result of changing priorities restock species are decided closer to the time of felling. The split between conifer, broadleaf and open space is shown on the habitat and restock species maps on pages 20, 22, 24, 26, 28.

Rhododendron is present in almost all woodlands across the plan area but is particularly abundant in some such as Bylaugh. This invasive species can prevent trees from establishing and can therefore be a particular problem in continuous cover areas where restock is to be by natural regeneration. Rhododendron is also one of the main sporulating hosts for Phytophthora ramorum, a fungus like pathogen causing extensive damage and death to a wide range of trees and plants. Larch is the most commonly affected species but Beech, Red oak, Sweet chestnut, Douglas fir, Grand fir and Western hemlock can all be infected although to a lesser extent, but all are present in North Norfolk. Rhododendron treatment will be site specific and will likely involve cutting back plants, chemically treating stumps and underplanting in areas of continuous cover.





This area of Corsican pine is now beyond economic maturity and has not recently been thinned due to risk of wind blow. As the stand continues to mature it will become more unstable and further susceptible to windblow. Some trees have already begun to fall. Therefore, a clear fell is planned to avoid trees becoming a danger to the public, reduce the impact on the landscape of potential windblow, and retain the value of the timber.

Area of open space managed by the National Trust to maintain Repton's view.

Good species/age range throughout woodland making it suitable for management as CCF. Single tree and group selection will be used to encourage natural regeneration already present in the woodland.

Reasonable species/age structure forming. Single tree and group selection will be used to encourage natural regeneration already present. Removal of Western hemlock which is beginning to dominate will be favoured over other species present. Rides to be widened during operations to improve access and lowland heathland ride network.

Coupe felled in 2015 will be restocked with Conifer.

Natural reserve designated due to biological diversity and therefore, high conservation potential.

Hempstead fen to be opened up improving habitat for the Southern marsh orchid.

Broadleaf woodland and open corridors maintained from Selbrigg pond through to Edgefield woods.

Coupe felled in 2010 and left for natural regeneration with mixed results. Supplementary planting will be carried out in this coupe at the same time as the adjacent coupe for operational viability.

Area of wind blow to be removed and standing trees remaining in coupe to be clear felled.

Natural reserve designated due to isolated woodland boundary location and mix of wet and dry woodland increasing conservation potential.

Forestry Commission England

East England Forest District

North Norfolk

Scale: 1:24,000

Management area: Weybourne, Bodham, Hempstead & Edgefield

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

Continuous Cover Forest

- CCF - Conifer
- CCF - Broadleaves
- Natural Reserve

Open/Other

- Open

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

FSC www.fsc.org FSC® C123214 The mark of responsible forestry

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Produced by the planning team
March 2018

N W E S

A mixture of open space and broadleaf woodland (Oak) will form the future habitat along the ridge adding diversity to a predominantly conifer woodland and maintaining Repton's view from Sheringham Park.

Hempstead Fen opened up.

Forestry Commission England

East England Forest District

North Norfolk

Scale: 1:24,000

Habitat and restock species map

Weybourne, Bodham, Hempstead & Edgefield

Legend

- Other Conifer
- Douglas Fir
- Broadleaves
- Mixed Conifers
- Permanent Open Space
- Temporary Open Space

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March 2018

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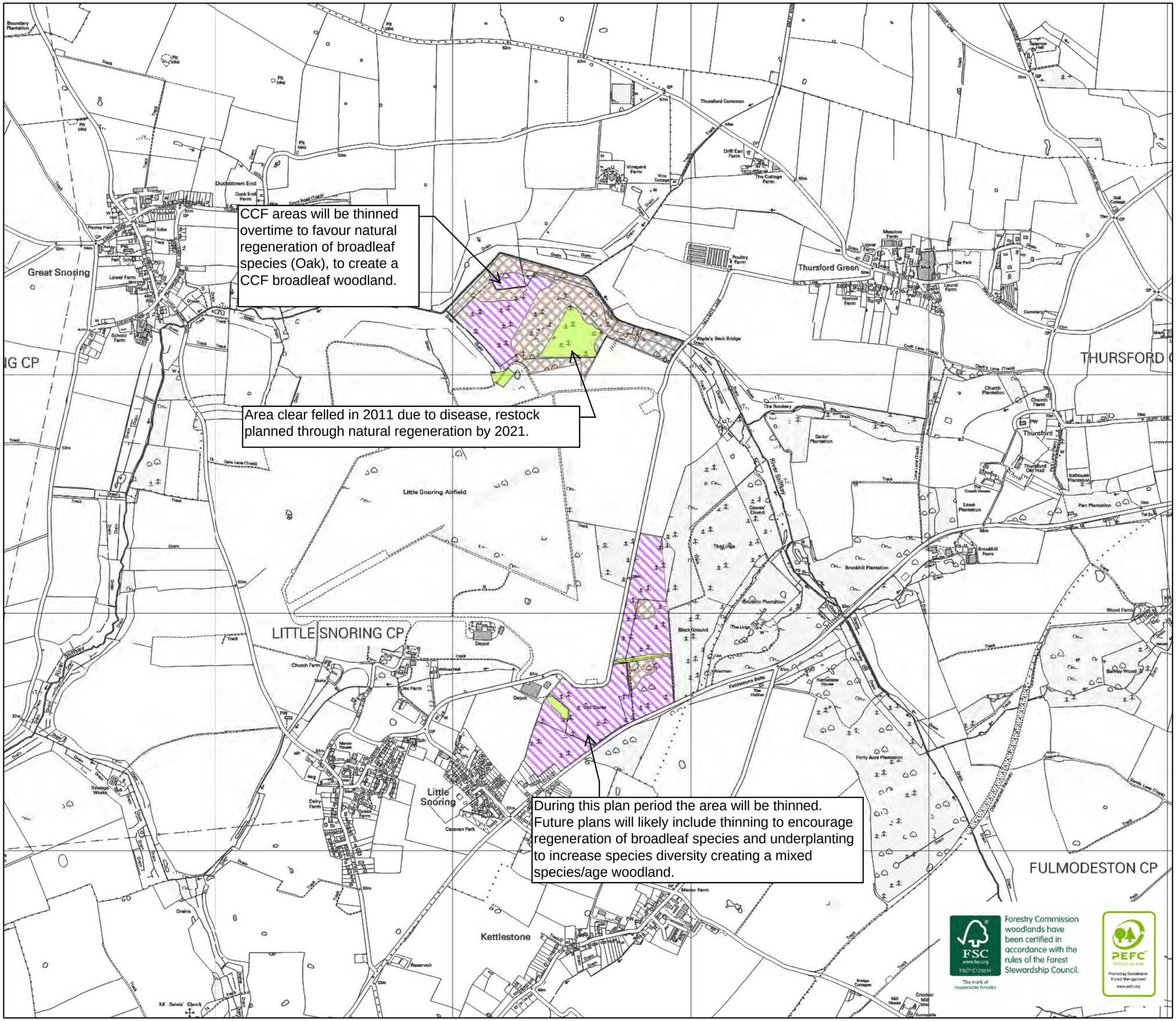

Forestry Commission England

East England Forest District

North Norfolk

Scale:1:15,000

Management area: Wade's Beck & Little Snoring

Legend

Continuous Cover Forest

- CCF - Conifer
- CCF - Broadleaves

Open/Other

- Open

Produced by the planning team
March 2018

N
W E
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Forestry Commission England

East England Forest District

North Norfolk

Scale: 1:15,000

Habitat and restock species map

Wade's Beck & Little Snoring

Legend

- Broadleaves
- Mixed Conifers
- Permanent Open Space

N W E S

Manage riparian zone for favourable condition of river Wensum SSSI/SAC

Over mature conifer close to houses will be clear felled.

Poor form conifer likely due to wetter soils. Area to be underplanted to diversify species/age structure whilst using existing canopy for shelter.

Poor form Corsican pine likely due to wet soils. Conifer will be removed during thinning and broadleaf encouraged to naturally regenerate.

Heavy rhododendron presence. Area split into 3 coupes to be cut back, treated and underplanted with the first coupe to be worked on in 2019.

Area susceptible to windblow now to be managed as CCF. Species/age diversity will be increased through underplanting overtime.

Good natural regeneration of fir species. Single tree and group selection will be used to encourage further regeneration.

Forestry Commission England

East England Forest District

North Norfolk

Scale:1:19,000

Management area: Bintree & Bylaugh

Legend

Clear fell

- 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
- Strip fell 2017-2021

Continuous Cover Forest

- CCF - Conifer
- CCF - Broadleaves
- Minimum Intervention
- Remove Rhododendron & underplant

Open/Other

- Open

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Current conifer woodland will become broadleaf woodland.

Larch planted to increase species diversity and blend with adjoining broadleaf woodlands. It should be noted this will not be within this plan period.

Forestry Commission England

East England Forest District

North Norfolk

Scale: 1:18,000

Habitat and restock species map

Bintree & Bylaugh

Legend

- Conifer
- Larch
- Broadleaves
- Mixed Conifers
- Permanent Open Space

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Open ride connecting north & south SSSI's for the Silver-studded blue butterfly and other species including Adder.

Good natural regeneration of fir makes area suitable to CCF management. Thinning will encourage further regeneration and more recently planted areas will add to age/species diversity.

Natural reserve designated due to biological diversity and therefore, high conservation potential.

Open lowland heathland managed through grazing supporting species including Adder and Nightjar.

Open lowland heathland & connecting rides supporting species including Adder, Nightjar, Bog bush cricket & Marsh gentian.

Good natural regeneration and mix of conifer & broadleaf species in large CCF coupe. Area will be thinned to encourage further regeneration. Other CCF areas provide potential seed source, boundary belts and habitat for raptors.

Pingos/Ponds to be haloed are shown as open.

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

Forestry Commission England

East England Forest District

North Norfolk

Scale:1:26,500

Management area: Haveringland, Marsham, Hevingham, Horsford & The Wilderness.

Legend

Clear fell

- 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;

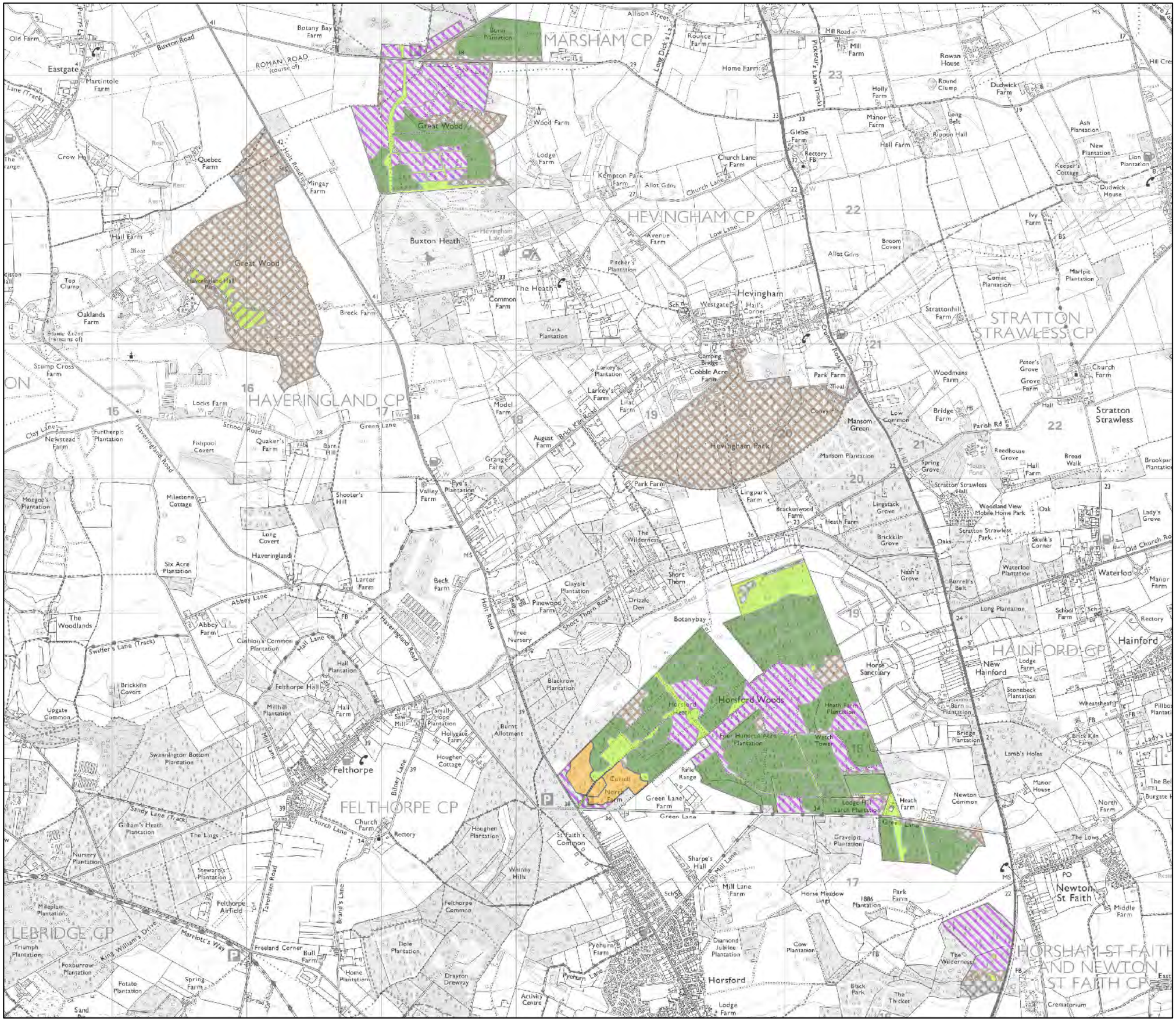
Continuous Cover Forest

- CCF - Conifer
- CCF - Broadleaves
- Minimum Intervention
- Natural Reserve

Open/Other

- Open

Produced by the planning team
March 2018



Forestry Commission England

East England Forest District

North Norfolk

Scale: 1:26,500

Habitat and restock species map

Haveringland, Marsham, Hevingham, Horsford & The Wilderness

Legend

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

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March 2018

N W E S

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Western hemlock known to readily self-set will be removed as stated in the PAWS management plan.
These trees also suffer with butt rot so clear felling will help to maximise the timber value.

CCF broadleaf belts add diversity to a predominantly pine woodland. Bat boxes are also present in these areas with pipistrelle known to be present in the woodland.

Area of poor unstable Corsican pine to be felled during thinning operations.

Natural regeneration is present in many areas to be managed as CCF conifer. Thinning will be used to encourage this further. In the PAWS area the conifer will be thinned out to favour regeneration of broadleaf moving to CCF broadleaf as shown in the habitat and restock map.

Western hemlock & Grand fir present with significant natural regeneration in PAWS reversion area. This will be clear felled as per PAWS management plan.

Line of Veteran Oak trees along forest boundary have been haloed and pruned, allowing more light in & improving structural stability. There are several veteran trees within the woodland of which all will be maintained.

Small fenced pond maintained for Palmate newt

Clear fell coupes offer rotational open space adding diversity and views within the woodland. Tumulus will be maintained as open, shown in the habitat and restock map.

Forestry Commission England

East England Forest District

North Norfolk

Scale:1:10,000

Management area: Bacton

Legend

Clear fell

- Clearfell 2017-2021
- Clearfell 2022-2026
- Clearfell 2027-2031
- Clearfell 2032-2036
- Clearfell 2037-2041
- Clearfell 2042-2046
- Clearfell 2047-2051

Continuous Cover Forest

- CCF - Conifer
- CCF - Broadleaves

Open/Other

- Open

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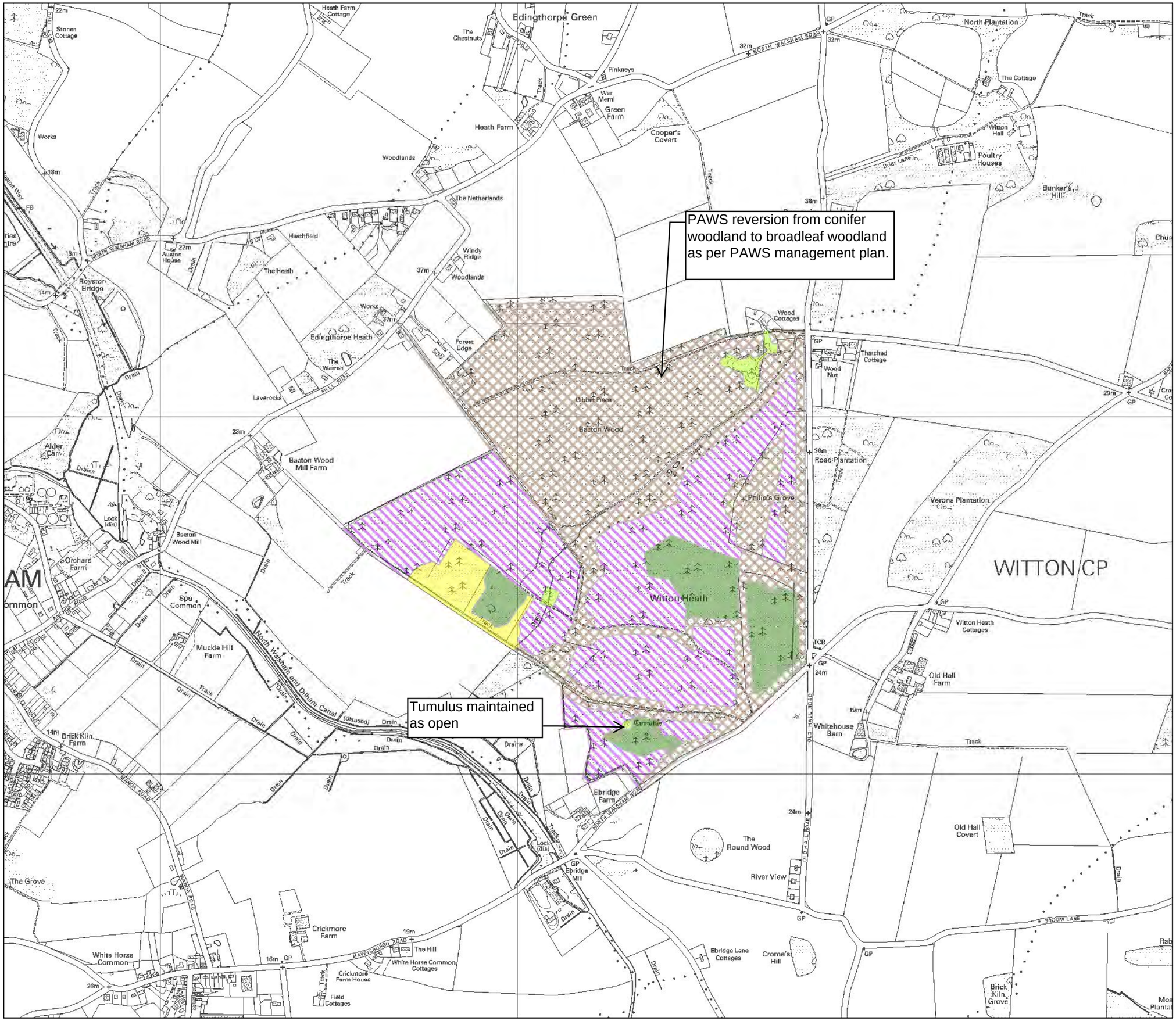

Forestry Commission England

East England Forest District

North Norfolk

Scale: 1:10,000

Habitat and restock species map

Bacton

Legend

- Conifer
- Douglas Fir
- Broadleaves
- Mixed Conifers
- Permanent Open Space

Produced by the planning team
March 2018

N W E S

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8. Plan Appraisal

The appraisal of the revised plan is measured against the design brief on page 7, this has three separate sections and the appraisal relates to these sections:

Nature

- Design brief objective: To protect and enhance areas of ancient semi-natural woodland and restore planted ancient woodland (PAWS) in line with revised PAWS management plans.

PAWS management plans for Haveringland, Hevingham and Bacton created in 2003 have been revised and can be found in appendix 1.

- Design brief objective: To protect, maintain and enhance designated sites.

Cawston and Marsham heath and Buxton heath SSSIs are linked by the Marsham Great Wood lowland heathland corridor. Holt Lowes SSSI and Wensum River SSSIs are buffered by complimentary habitats.

- Design brief objective: To protect, maintain and enhance priority habitats.

There has been no change to the priority habitat and permanent open space provision which remains at 5% as shown on page 18 and 30. There is 12% of permanent open space across the East England Forest District as shown in the UKWAS compliance table on page 26. This meets The UK Forestry Standard and UKWAS requirement to maintain a minimum of 10% across the forest management unit.
Rivers are protected through the designation of non-intervention woodland to buffer them and prevent sediment mobilisation through disturbance. Water bodies will be unshaded and haloed to increase water flora and fauna diversity. This will be tied in with thinning operations which take place on a 5-7 year cycle in conifer plantation and a 10 year cycle in areas managed as continuous cover.
Grassland, Heath and Fen habitats will be maintained and enhanced through a planned programme of scrub management.

- Design brief objective: To protect, maintain and enhance priority species.

Priority species will be maintained and enhanced through the planned programme of management identified for their supporting habitats. They will be operationally protected through the OSA process.

- Design brief objective: Agree management plans for the 10 scheduled monuments across Bodham, Edgefield and Horsford, with Historic England.

Management plans for each Scheduled Monument have been drafted by the Heritage and Conservation officer and are included in appendix 2 to ensure they are revised on a regular basis. These will be agreed with Historic England and do not form part of the consultation process.

- Design brief objective: Maintain and improve cultural and heritage value of the land by protecting sensitive heritage features highlighted through the OSA process.

As detailed on page 16 there is an extensive range of heritage features across the plan area. Site specific heritage features are considered as part of an OSA* process before work commences. A handbook guide to protecting heritage assets has also been produced for forest workers and referred to during operations to increase understanding and protection of heritage features.

People

- Design brief objective: Create a pleasant natural environment for the public to enjoy out-door recreation in a rural woodland setting.

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.

- Design brief objective: Promote public use of open access land by enabling provision of recreational facilities through partnership working.

The majority of the plan area is leasehold land with limited to no public access. However, it has been possible to promote public use of freehold areas such as Bacton through partnership working with North Norfolk District Council. Recreational facilities here include a car park, 3 walk trails and an orienteering course. In other woodlands where public access is permitted including Bodham, Bintree, Haveringland, Hevingham and Horsford parking is available by forest access barriers.

- Design brief objective: Increase area managed through continuous cover to protect and enhance the internal and external landscape, in keeping with the local landscape character.

The majority of the area (62%) will be managed as continuous cover creating more mixed age/species woodlands with no dramatic effect on the landscape. The revision has significantly increased the amount of continuous cover shown on the revised felling chart (page 30), particularly of broadleaf. There are 2 small felling coupes totalling 3ha located in Weybourne, which lies within the designated AONB*. The northern coupe will be quite dramatic in the landscape but increased instability of the stand makes this a necessary operation. In the short term coastal views from walking routes will be quite spectacular whilst long term the planting of broadleaf will create a continuous broadleaf belt important for Lepidoptera as well as improving views and diversity within the woodland.

The size and shape of coupes planned for felling can be seen on the management maps and show continued use of organic shapes that blend well into the landscape. The average coupe size is 5ha. The majority of felling coupes are present in Bintree and Horsford, relatively flat areas where felling will increase internal visual diversity within the woodlands.

8. Plan Appraisal continued ...

Economy

- Design brief objective: Maintain the land within our stewardship under FSC/PEFC certification by meeting standards detailed in UKWAS third edition.

UKWAS audits across Forestry Commission England carried out on an annual basis to attain certification.

- Design brief objective: Improve economic resilience of our forests by increasing species diversity through restock programmes and mixed silviculture practices, to protect future timber supplies and biomass.

The pie chart shows projected habitat proportions by the end of the plan period and beyond which will see a significant reduction in Corsican pine compared to the current species proportions (page 18). Due to climate change concerns 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. Larch, a deciduous conifer susceptible to phytothrora has been separated from conifer to assess vulnerability of the woodland to this disease. There has been an increase from 1% to 2% as Larch will be planted in Bintree and Horsford to increase visual diversity. Larch accounts for such a small proportion of tree species across the plan area and is therefore not considered a risk to forest resilience. There are no plans to plant Corsican pine but a small proportion of mature trees will still remain in small patches within continuous cover, long term retentions, natural reserves and minimum intervention areas.

The percentage of broadleaf has increased by 14% which accounts for the reversion of PAWS to native broadleaf woodland. The conifer has decreased by 11% and the temporary open space by 3% as a result of restocking felled sites in Hempstead, Edgefield and Wade's Beck.

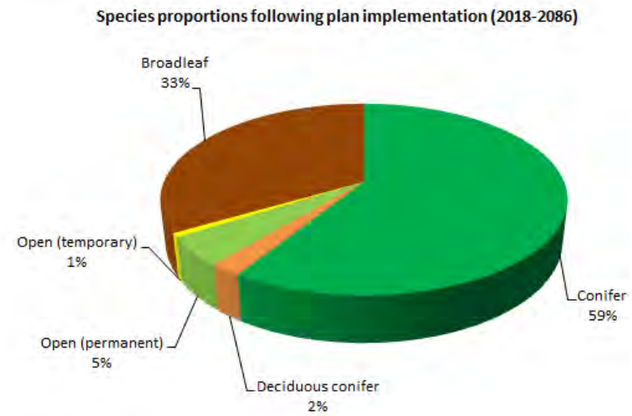
The increase in restock species diversity should improve the resilience of the forest to climate change and the threat from pests and diseases. The habitat and restock maps on pages 20, 22, 24, 26 & 28 indicates the split between conifer, broadleaf and open space. Restock species will be confirmed by 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. Felled coupes will be restocked to a minimum of 2,250 s/ha. The stocking density of continuous cover areas is difficult to define as this is dependant on the silvicultural practice used e.g. group felling or single tree selection to encourage natural regeneration. This is dependant on the species present and therefore natural regeneration will have a variable stocking density with success of stands measured by age structure variation.

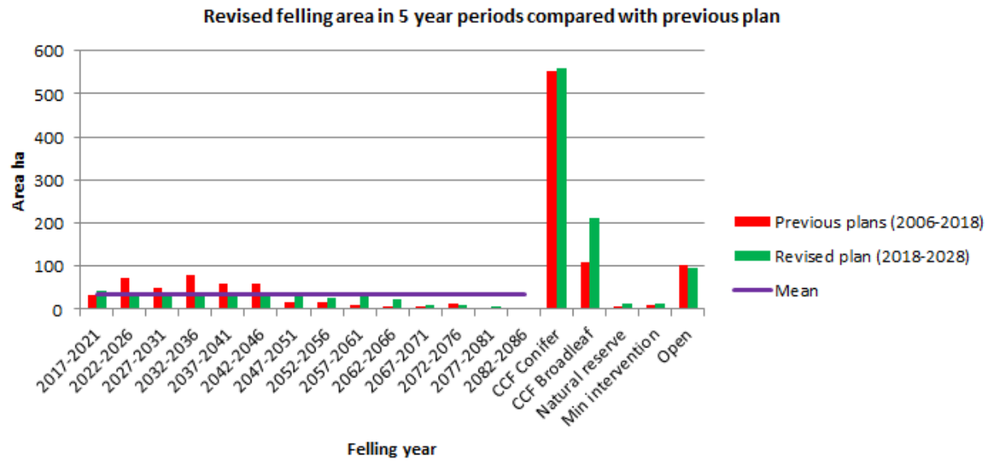
- Design brief objective: The felling plan should aim to smooth production from crops in cyclic clearfell but also meet market commitments.

The felling comparison chart shows how the revised plan has 'smoothed' felling across the plan area. 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 are expected to yield good quality thinning material, and the average coupe size is large enough to allow efficient timber harvesting.

- Design brief objective: Reduce impact of prolific rhododendron particularly in continuous cover management areas to ensure development of future timber crops.

The impacts of rhododendron across the plan area could be quite significant, particularly in areas of continuous cover which rely on natural regeneration. This was particularly prominent in Bylaugh where 3 coupes have been identified for rhododendron removal. These will then be underplanted to increase tree cover, age structure and species diversity in the woodland. The outcome of this operation will be used to guide decisions on further management of rhododendron across the plan area.





The indicative mean is an estimated value based on the area of cyclic clearfell within the FDP divided by 59. The 59 represents an average rotation length of 57 years plus 2 years of fallow while the ground is prepared for the next crop. North Norfolk was previously 5 separate plans with various lifespans covering 2006-2018. These have been combined to form the previous plans calculation in the graph.

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: "To increase the environmental contribution made by the Estate to the range of ecosystem services delivered and to protect and enhance its overall biodiversity and heritage value at both the landscape and local level"	• To protect and enhance areas of ancient semi-natural woodland and restore planted ancient woodland (PAWS) in line with revised PAWS management plans (appendix 1).	Mid term review (October 2023) will assess success of reversion to ASNW through botanical surveys. The sub-compartment database and semi natural scores shp file will be used to assess success of reversion to ASNW at each plan revision.
	• To protect, maintain and enhance designated sites. • To protect, maintain and enhance priority habitats. • To protect, maintain and enhance priority species.	Page 29 details how protecting, maintaining and enhancing designated sites, priority habitats and priority species will be achieved. Further more specific details will be delivered through a conservation plan to be produced between the district ecologist and beat forester in 2018. The mid term review (October 2023) will assess the development and implementation of this plan.
	• Maintain and improve cultural and heritage value of the land by protecting sensitive heritage features highlighted through the OSA process.	Archaeology will be monitored through the OSA process.
	• Agree management plans for the 10 scheduled monuments across Bodham, Edgefield and Horsford, with Historic England (appendix 2).	See agreed scheduled monument plans in appendix 2.
People: "To expand opportunities for communities to become involved with the Estate and take part in activities that improve quality of life, health and learning"	• Create a pleasant natural environment for the public to enjoy outdoor recreation in a rural woodland setting.	As this is subjective it is difficult to monitor. However, feedback through the recreation webpages and stakeholders will be used to monitor success of this objective.
	• Promote public use of open access land by enabling provision of recreational facilities through partnership working.	Continued partnership working with North Norfolk District Council to provide recreational facilities in Bacton woods. Records of permissions granted for recreation events will also measure progress in this area.
	• Increase area managed through continuous cover to protect and enhance the internal and external landscape, in keeping with the local landscape character.	Area managed under continuous cover has increased as part of the plan revision but will be reviewed at each full forest plan revision.

District Strategic Objective	Forest Plan Objective	Monitoring
Economy: "To make a significant contribution to economic activity, woodland access, rural employment and green growth across East England using the assets and advantages of the estate"	• Maintain the land within our stewardship under FSC/PEFC certification by meeting standards detailed in UKWAS fourth edition.	UKWAS audits and certification
	• Improve economic resilience of our forests by increasing species diversity through restock programmes and mixed silviculture practices, to protect future timber supplies and biomass.	The sub-compartment* database is updated after restocking 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 Forest Services – see Tolerance table on page 38. 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. The sub-compartment database will be used to monitor species diversity and assessed as part of the full forest plan revision.
	• The felling plan should aim to smooth production from crops in cyclic clearfell but also meet market commitments.	The revised felling chart on page 30 shows how this has been smoothed across the plan area. This is the first forest plan for Wade's Beck, Snoring, Bintree and Bylaugh which were previously only concept maps with extensive felling planned over the next 10 year period. The revision has reduced felling coupes across these areas which combined with the increase in continuous cover within many of the other woodlands in the plan area will have resulted in a reduction from the previous production forecast. However, these felling coupes were either inappropriately located or too large scale to be carried out and therefore required removal or adjustments to felling coupe size. A production forecast has been run for the revised plan and agreed with the programme manager. 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.
	• Reduce impact of prolific rhododendron particularly in continuous cover management areas to ensure development of future timber crops.	Rhododendron will be removed through cutting back stumps and treating with round up. In areas managed under continuous cover these will then be underplanted to increase species diversity and reduce risk of rhododendron growing back. This method will be trialled first in Bylaugh which has significant rhododendron cover in parts and is predominantly managed through continuous

UKWAS Compliance table [1]

	Forest Plan Area (Ha)	Forest Plan %	Forest District Area (Ha)	Forest District %
Total area	1,249	100	34,696	100
Total wooded area	1,138	91	30,691	88
Natural reserve - Plantation (1%) [2]	11.9	1	331	1
Natural reserves - Semi-natural (5%) [2]	0	0	251	5
Long-term retentions and low impact silvicultural systems	16	1	272	0.8
Area of conservation value (>15%) including designations: PAWS, ASNW, NR, SSSI, SAC, SPA & Conservation zones	320	27	29,294	84

[1] Figures calculated 27th March 2018 and correct at time of publication.

[2] Forest District area totals for natural reserves are calculated using allocated natural reserve area against semi-natural score figures from both ArcGIS and forester web.

10. Application for Forest Design Plan

Forest Enterprise — Property

Forest District:	East England
Woodland or property name:	North Norfolk
Nearest town, village or locality:	Norfolk
OS Grid reference:	TG 138 298
Local Authority district/unitary Authority:	North Norfolk District Council, Breckland District Council & Broadland District Council

Areas for approval

	Conifer	Broadleaf
Felling	219	42
New planting (complete appendix 4)	N/A	N/A

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

2. ~~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.~~

3. 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.

4. I confirm that the proposals contained in this plan comply with the UK Forestry Standard.

5. I undertake to obtain any permissions necessary for the implementation of the approved Plan.

Signed ……..
.Forest Management Director

East England FD

Date……...

Signed ……...
Area Director

East & East Midlands Area

Date of approval……..

Date approval ends……..
*delete as appropriate

I seek approval to clear fell and restock 107ha of the Public Forest Estate (this is the area in yellow, green and orange stripe fell periods—i.e. 2017-2031).

I also seek approval to selectively fell approximately 154ha within an area of 769 hectares (for the purpose of continuous cover forestry) during the period 20/07/2018 to 20/07/2028 as shown on the enclosed plans.

Date of commencement of the plan: **July 2018**

Expiry Date: **July 2028**

Mid-Term Review Date: **July 2023**

11. Glossary of Terms

Area of Outstanding Natural Beauty (AONB)

Area of countryside designated for conservation due to it's significant landscape value

Biodiversity

The richness and variety of wildlife and habitats.

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.

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.

National Park

An area of countryside for public use designated by national government as being of notable scenic, environmental, or historical importance.

National vegetation Classification

The key common standard developed for country nature conservation agencies to produce a comprehensive classification and description of the plant communities of Britain. Each are systematically named and arranged and with standardised descriptions for each.

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.

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.

Riparian

Relating to or situated adjacent to a watercourse or water body.

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.

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.

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.

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 m^3 per hectare has a yield class of 14. A cubic metre is a standard forestry unit of timber volume roughly equivalent to a tonne of timber.

12. Management Prescriptions

(Ref: Management Maps)

Clearfelling

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. Any felling over 0.25ha is defined as a clear fell.

Thinning

This is an important part of the management 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. Thinning is a continual process that works around the forest on a 5-7 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) - Low impact silvicultural systems (LISS)

This is defined as a silvicultural system whereby the forest canopy is maintained at one or more levels without clearfelling. 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 a low impact silvicultural system and within this plan refers to group selection, single tree selection (shelterwood systems) and underplanting.

CCF is often used in areas of high public access to maintain the visual impact of large mature trees for their aesthetic value. It is also a suitable management system on sites where establishment of trees would be difficult if the site were to be clear felled, due to mammal damage or poor soil quality. CCF is also used to manage most of the broadleaf crops and all the mature conifer crops in areas of high conservation value as these trees often provide important nesting habitat.

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, recreation and heritage sites—see priority habitats on page 14.

Minimum Intervention

No systematic felling or planting of trees. Operations normally permitted are fencing, control of exotic plant species and vertebrate pests, maintenance of paths and rides and tree safety works.

Natural Reserves

Predominantly wooded, permanently identified and in locations of particularly high wildlife interest or potential. They are managed by minimum intervention unless alternative management has higher conservation or biodiversity value.

Underplanting

This system involves selectively felling trees across the site or 'coupe' most likely through strip felling 1-2 rows. 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. **PAWS management plans for Haveringland, Hevingham & Bacton**
2. **Scheduled Monument plans for Bodham, Edgefield and Horsford.**

PAWS RESTORATION PLAN

HAVERINGLAND GREAT WOOD – NORTH NORFOLK

2018-2022

1. Background

This plan is a revision of the 2003-2006 PAWS plan and includes key background information, a brief review of progress so far and objectives for the period of this plan.

Haveringland Great Wood was identified as Ancient Woodland in the English Nature Ancient Woodland survey of 1992[1]. The ancient woodland boundary was confirmed in 2002 as part of the Forest Enterprise PAWS survey using historical maps and ground survey of features such as woodland banks[2]. There is a small area on the northern edge of the wood which is not of ancient origin (see map 1).

As detailed in the 2003-2006 plan the wood was historically a mix of wood pasture and woodland. The 2002 survey identified the likely NVC types that could be recreated, predominantly W10 oak woodland with some W16 oak woodland and W6, W7 and W8 wet woodland (see map 2).

The majority of the woodland is conifer plantation with limited understory but this is beginning to change slowly. This is shown through 'naturalness' scores, where a score of 1 is classed as semi-natural and a score of 4 as predominantly conifer plantation. The 2003-2006 plan showed a naturalness score of 4 across the majority of the plan area, with the exception of areas along the south western edge and along watercourses. The naturalness assessment at 2017 shows progression towards ASNW reversion with a more varied range of scores in the west, east and south.

The last fully recorded botanical survey was carried out in 2002/2003 showing a range of woodland flora present such as Bluebell, Primrose (*Hyacinthoides non-scripta*), Lily of the Valley (*Convallaria majalis*), Wood millet (*Millium effusum*) and Wood sorrell (*Oxalis acetosella*)[3] scattered throughout the wood. The plan revision has identified the need to ensure botanical surveys are carried out at 5 year intervals in order to better assess the success of reversion to ASNW. The forest plan mid-term review will be used to monitor this. Another important existing feature is the ancient pollard oak hulks in compartment 1039.

As shown through 'naturalness' scores good progress has already been made towards reversion. However, a policy review in 2015 will influence the speed at which reversion can take place in future. This change in PAWS policy has meant clear fell systems are no longer permitted in PAWS woodlands with the exception of disease and areas of heavily seeding conifer in order to reduce the need to replant. Consequently, all clear fell coupes have been removed from PAWS areas. The majority of those initially planned within the 2018-2022 period were in the north and south. Reversion to ASNW will be implemented through thinning practices that encourage natural regeneration favouring a wide variety of native tree species including those considered as honorary or near native. These are shown as continuous cover forest on map 3. The intention is that areas currently shown as continuous cover conifer forest, will overtime, become continuous cover broadleaf forest.

This plan outlines the steps towards reversion to ASNW to be taken within the plan (map 4). The plan will be revised at the forest plan mid-term review and modified where necessary.

2. Outline Restoration Plan

2.1 Conversion of conifer to broadleaf

2.1.1 These areas have little broadleaf understory and will require a heavy thin to allow natural broadleaf regeneration. These areas were due to be thinned in 2016 but this has not yet happened. This should be carried out at the earliest opportunity.

2.1.2 Haloing around surviving Oak pollards within this area as identified in the 2003-2006 plan has improved light levels helping to encourage survival of epicormic growth. Opportunities should be taken during thinning operations to continue haloing these areas to reduce shading caused by the upper canopy. A heavy thin should be carried out across the area to encourage natural broadleaf regeneration. Based on existing gaps in the crops this is likely to be dominated in the early stages with Bird cherry, Birch and a few Oaks.

2.1.3 Although predominantly conifer a good broadleaf understory is beginning to form. A heavy thin should be carried out at the earliest opportunity to further encourage natural broadleaf regeneration.

2.2 Existing broadleaf and mixed woodland areas

2.2.1 The Poplar in compartment 1038 should be removed as required through dangerous tree surveys and the broadleaf woodland allowed to regenerate naturally. Any Poplar not removed as part of this process will be left to provide a steady supply of standing and fallen deadwood increasing the conservation value of the area.

2.2.2 The smaller area located north west was originally western red cedar felled in 2011 as per the 2003-2006 plan and will now be left to naturally regenerate. The majority of the larger central area is open with Birch regenerating well. This area will be left to continue to naturally regenerate, with progress being monitored at the forest plan mid-term review (2022).

2.2.3 The Poplar in this area should be left in situ to provide a steady supply of standing and fallen deadwood increasing the conservation value of the area.

2.2.4 Area should be thinned to encourage natural regeneration. The small proportion of Scots pine remaining should be retained where appropriate to maintain diversity within wood land.

2.2.5 The hedge along the eastern boundary of compartments 1041 contains a few Small-leafed limes which probably date back to the origins of the wood. Coppicing of the hedge would be beneficial, but is of secondary importance in this plan period.

2.3 Area not within ancient woodland boundary

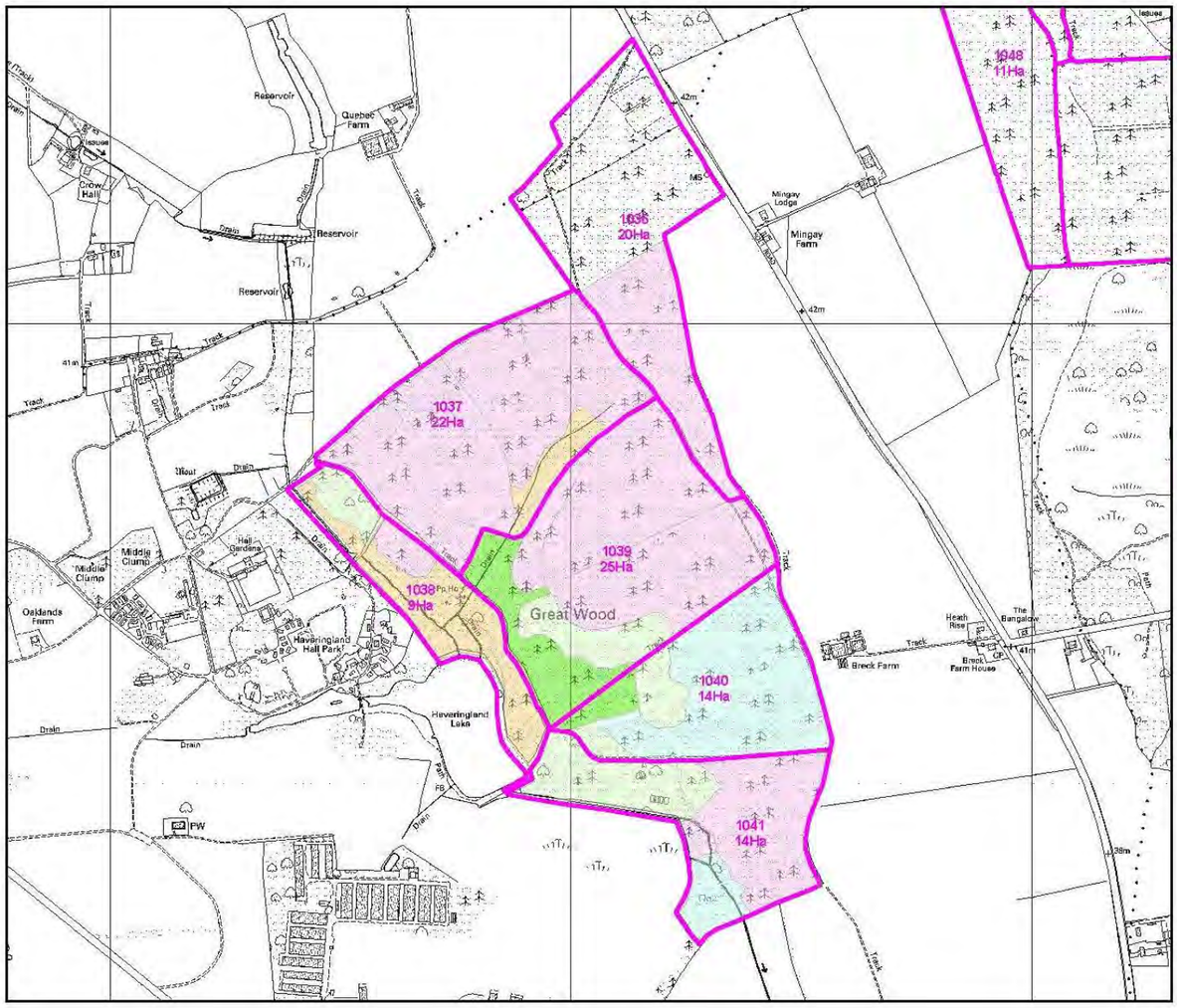
2.3.1 The area in the northeast of the wood of compartment 1036 that is not inside the ancient woodland boundary is a mixture of hardwoods and conifers of varying ages. The forest plan (map 3) designates the area as continuous cover broadleaf although this will be predominantly broadleaf conifer will be allowed to regenerate to create a mixed continuous cover woodland.

References

1. Spencer.J and Thomas.R. EN (1992) Norfolk Inventory of Ancient Woodland

2. Gibbons.N and Leatherdale.S (2001) Ancient and Native Woodland Ecological Survey for East Anglia Forest District.

3. Ellis.R (2002) A Botanical Survey of Three East Norfolk Woods (Unpublished).



Forestry Commission England

Haveringland

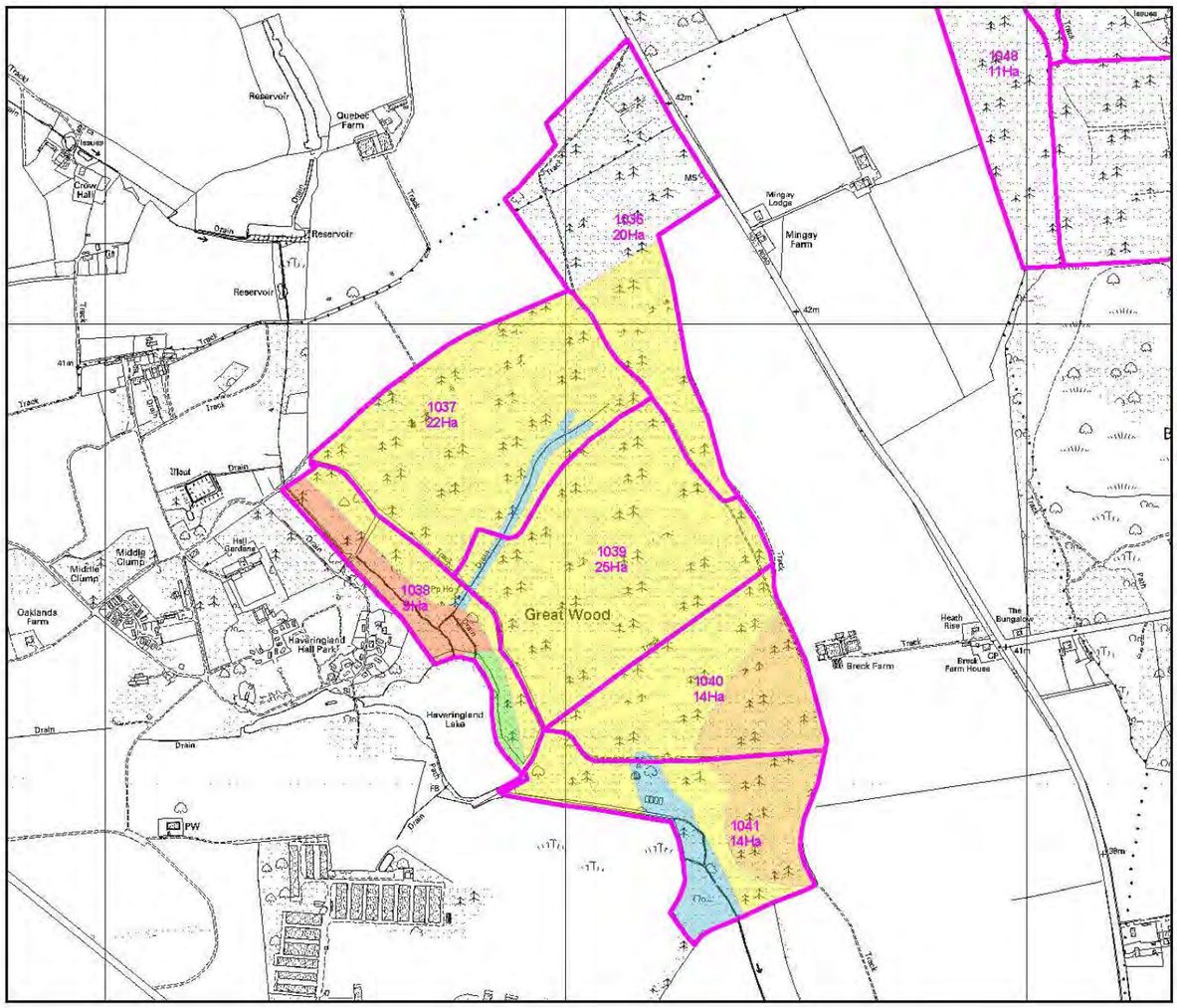
MAP 1

Ancient woodland area and semi natural scores at 2017

Legend

- 1
- 2
- 3
- 4
- Open space
- Compartments

Scale: 1:11,000
Date: January 2018



Forestry Commission England

Haveringland

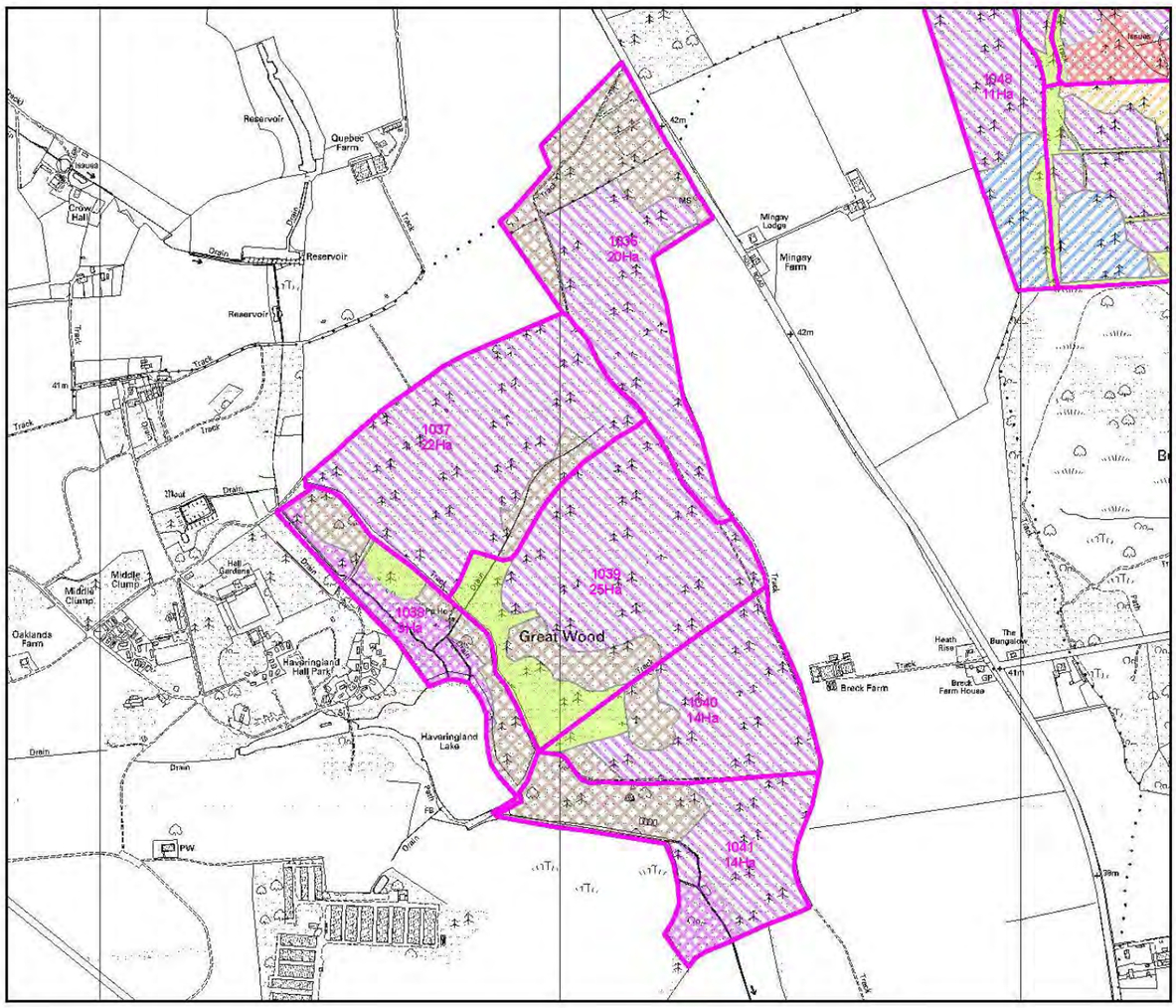
MAP 2

Ancient woodland area & potential NVC type

Legend

- W6
- W7
- W8
- W10
- W16
- Compartments

Scale: 1:11,000
Date: January 2018



Forestry Commission England

Haveringland

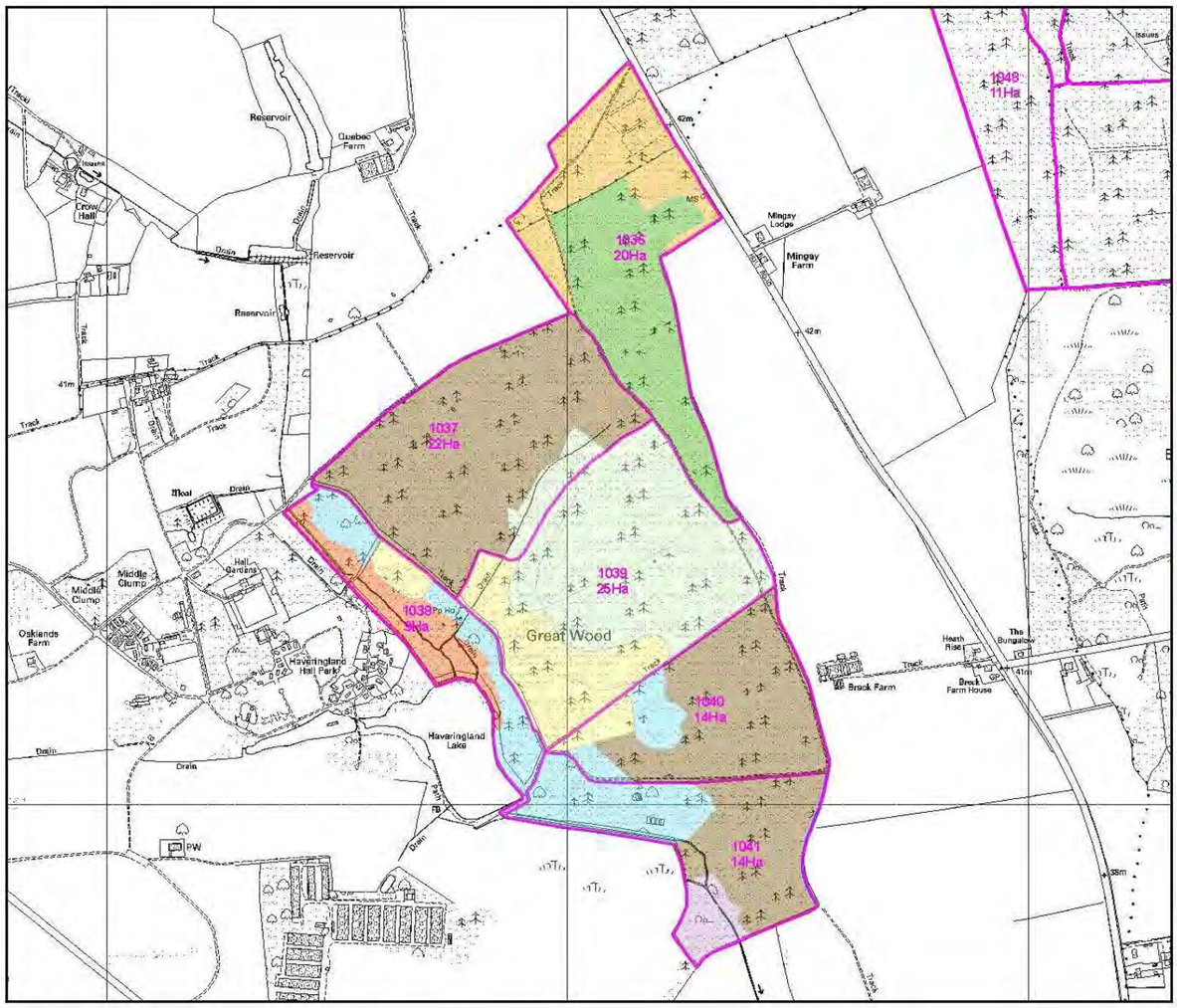
MAP 3

Forest plan management map 2018-2028

Legend

- Continuous cover forest (Conifer)
- Continuous cover forest (Broadleaf)
- Minimum Intervention
- Temporary open space
- Compartments

Scale: 1:11,000
Date: January 2018



Forestry Commission England

Haveringland

MAP 4

PAWS restoration plan

Legend

- 2.1.1
- 2.1.2
- 2.1.3
- 2.2.1
- 2.2.2
- 2.2.3
- 2.2.4
- 2.2.5
- 2.3.1
- Compartments

Scale: 1:11,000
Date: January 2018

PAWS RESTORATION PLAN

HEVINGHAM PARK – NORTH NORFOLK

2018-2022

1. Background

This plan is a revision of the 2003-2006 PAWS plan and includes key background information, a brief review of progress so far and objectives for the period of this plan.

Hevingham Park was identified as Ancient Woodland in the English Nature Ancient Woodland survey of 1992[1]. The ancient woodland boundary was confirmed in 2002 as part of the Forest Enterprise PAWS survey using historical maps and ground survey of features such as woodland banks[2]. There are four areas, on the north, east and south of the wood, which are not of ancient origin (see map 1).

As noted in the 2003-2006 plan the wood was historically likely to have been a mix of wood pasture and woodland. The 2002 survey identified the likely NVC types that could be recreated, predominantly W10 oak woodland with some W16 oak woodland (see map 2).

The ancient woodland area can be divided into two sections. The western end of the block is one of mature conifer plantation with limited understory. The eastern end is much more diverse and contains a much wider mix of trees and large areas with Oak/Scots pine plantations that would readily revert to oak woodland. This is shown through 'naturalness' scores, where a score of 1 is classed as semi-natural and a score of 4 as predominantly conifer plantation. The 2003-2006 plan showed a naturalness score of 4 across the majority of the plan area particularly on the western side. The 'naturalness' assessment at 2017 shows significant progression towards reversion to ASNW with the majority of scores ranging between 1-3 on the eastern side. There have also been some improvements on the western side with a now more varied range of scores between 1-4 across the area (see map 1).

The last botanical survey carried out was in 2002/2003 which showed a good range of ancient woodland flora present including Lily of the Valley *(Convallaria majalis),* Herb paris (*Paris quadrifolia*), Bluebell (*Hyacinthoides non-scripta*), Wood spurge (*Euphorbia amygdaloides*) and Wood sorrel (*Oxalis acetosella*) [3]. This is mainly concentrated in the eastern half of the wood. It is important to identify areas that are rich in woodland flora and to minimise ground disturbance in these areas during future operations. The plan revision has identified the need to ensure botanical surveys are carried out at 5 year intervals in order to better assess the success of reversion to ASNW. The forest plan mid-term review will be used to monitor this. As identified in the 2003-2006 plan (map 3) the eastern end of 57.6ha remains the main priority area for reversion with the western half to be converted over a longer period of time.

As shown through 'naturalness' scores significant progress has already been made on the eastern side. However, a policy review in 2015 will influence the speed at which reversion can take place. This change in PAWS policy has meant clear fell systems are no longer permitted in PAWS woodlands with the exception of disease and areas of heavily seeding conifer in order to reduce the need to replant. Consequently, all clear fell coupes have been removed from PAWS areas. The majority of those initially planned within the 2018-2022 period were on the western side of the plan area. Reversion to ASNW will be implemented through thinning practices that encourage natural regeneration favoring a wide variety of native tree species including those considered as honorary or near native. These are shown as continuous cover forest on map 4. The intention is that areas currently shown as continuous cover conifer forest will overtime become continuous cover broadleaf forest.

There are two areas currently planted with poplar that are outside the ancient woodland boundary but would certainly be compatible with the restoration of broadleaf woodland adjacent. These have felling coupes planned for 2017-2022 and will be reverted to ASNW along with the Ancient Woodland area. A further area of poplar was felled in 2016 and shown as temporary open space on map 4. This will be left to naturally regenerate.

This plan outlines the steps towards reversion to ASNW to be taken within the plan period (map 5). The plan will be revised at the forest plan mid-term review and modified where necessary.

2. Outline Restoration Plan.

2.1 Conversion of conifer to broadleaf

2.1.1 These areas have little broadleaf understory and will require a heavy thin to allow natural broadleaf regeneration. This should be done at the earliest opportunity.

2.1.2 These areas were identified in the 2003-2006 plan to be retained as plantation for economic reasons. These areas showed little presence of ground flora associated with ancient woodland in the 2002 survey. There is little broadleaf understory so these will require heavy thinning to allow natural broadleaf regeneration to gradually take place overtime. The next thinning intervention will likely be carried out in 2019.

2.1.3 This area was felled in 2005 and replanted in 2007 with Scots pine as per 2003-2006 plan. This area will eventually be managed as 2.1.2 but due to its young age will not be thinned for quite some time.

2.2 Existing broadleaf and mixed woodland areas

2.2.1 The mixture is predominantly of oak and Scots pine. In some areas the oak has grown well and in these areas the majority of pine should be removed. Scots pine is considered an honorary native species and will be retained in the woodland in order to maintain diversity but this will be no more than 20%. Where oak has largely failed the pine should be heavily thinned to stimulate natural regeneration.

2.2.2 This area is predominantly mixed broadleaf woodland with species including Alder, Oak, Birch and Hazel. There is less than 10% Scott's pine in this area which will be retained for diversity. The area is particularly wet in places with Pingo's present across the area. These will be haloed to improve light reaching the ponds. There is a belt of Rhododendron along the southern edge of the PAWS area that could potentially cause long term problems. This should be cut and stumps herbicide treated at the earliest opportunity as a first step in its eradication.

2.2.3 These areas have been left to naturally regenerate and Birch is currently the main species present. There is dense bracken present across the area which will be assessed at the mid term review to ensure sufficient natural regeneration is obtained.

2.3 Area not within ancient woodland boundary

2.3.1 The poplar was identified for removal in the 2003-2006 plan. These areas are currently being worked and the poplar removed.

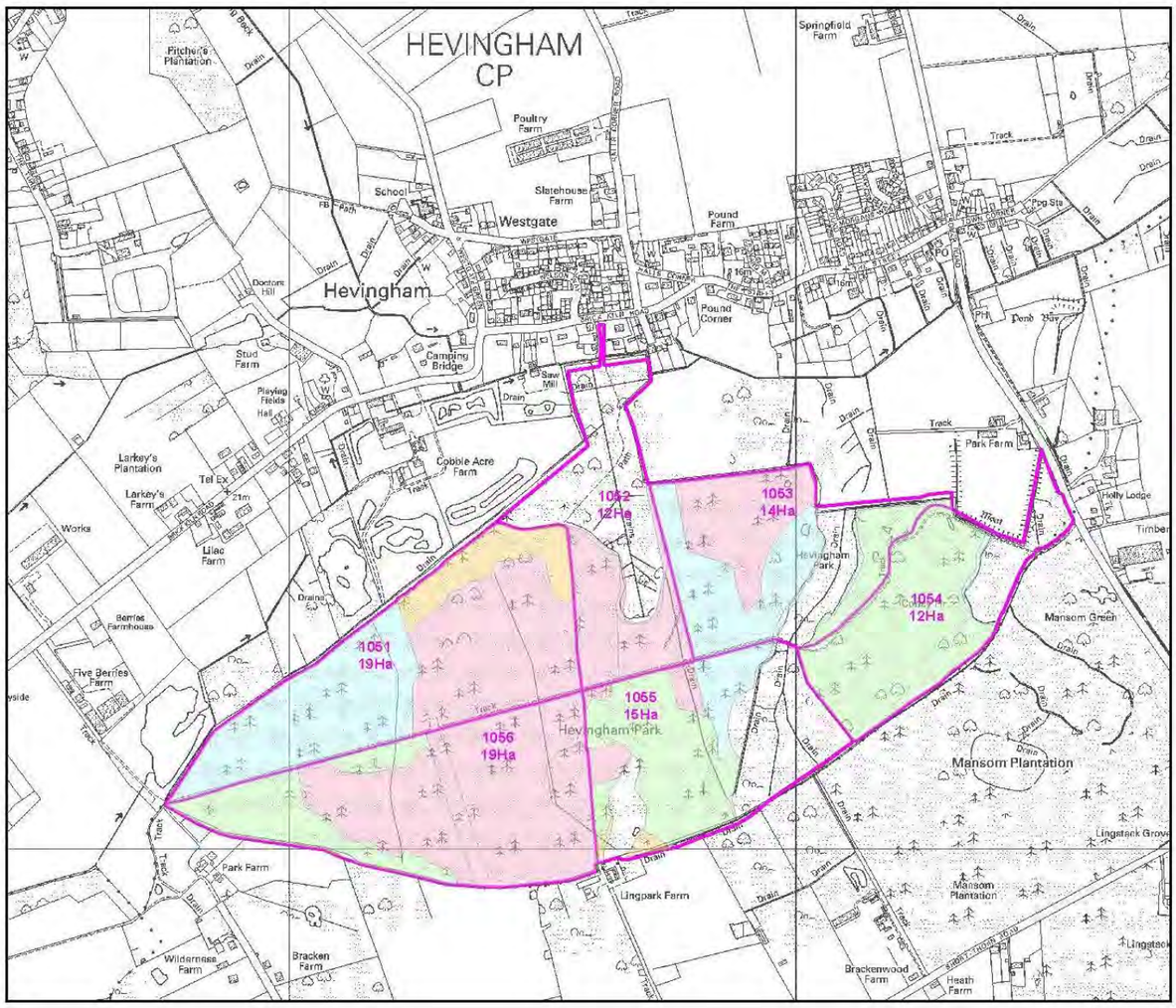
2.3.2 This area was identified for felling in the 2002-2006 period of the 2003-2006 plan. The area was felled in 2016 and has now been left to naturally regenerate. The forest plan mid-term review will be used to assess the success of this.

References:

1. Spencer.J and Thomas.R EN (1992) Norfolk Inventory of Ancient Woodland

2. Gibbons. N and Leatherdale. S (2001) Ancient and native Woodland Ecological Survey for East Anglia Forest District

3. Ellis. R (2002) A Botanical Survey of three East Norfolk Woods (unpublished)



Forestry Commission England

Hevingham

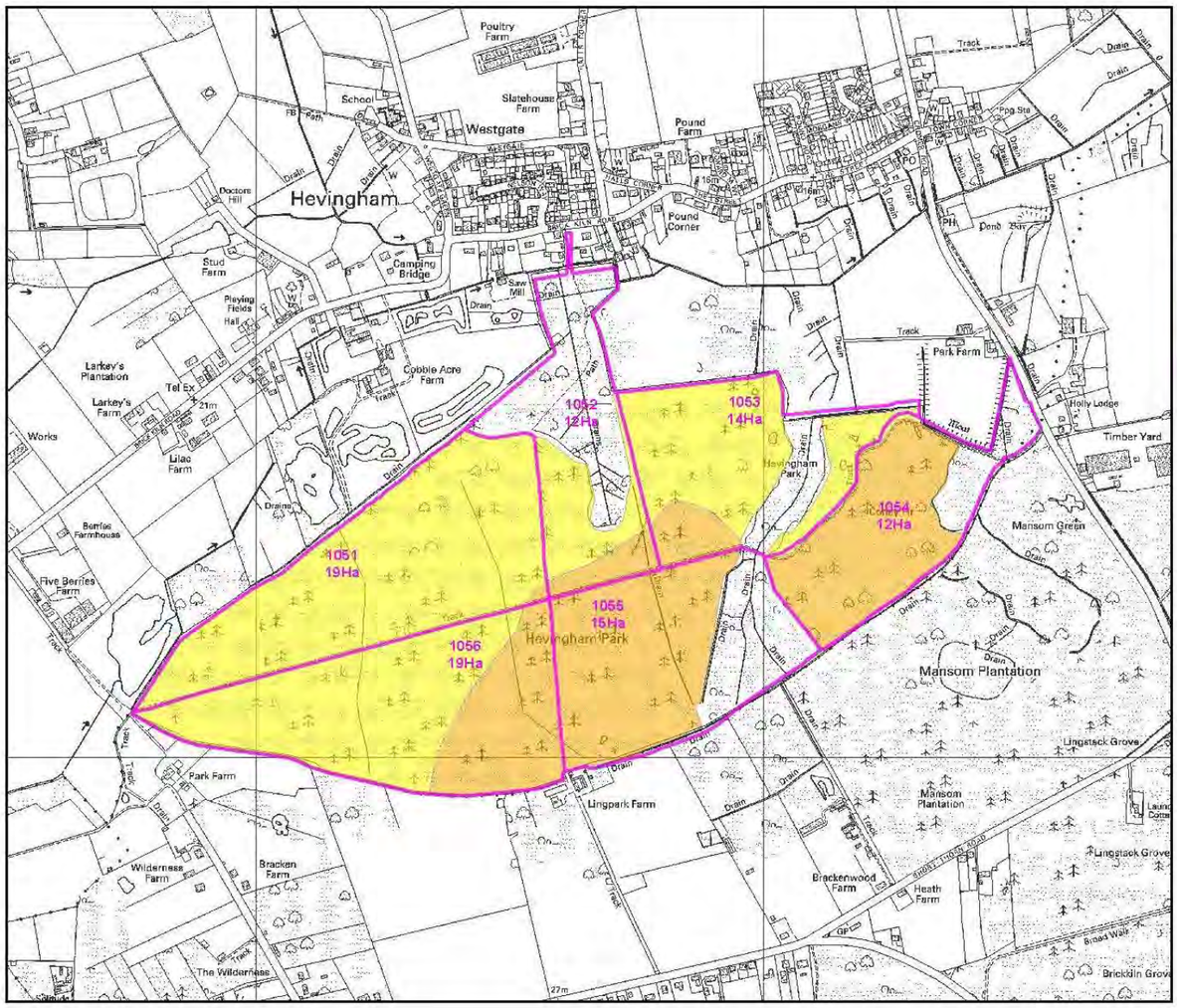
MAP 1

Ancient woodland area and semi natural scores at 2017

Legend

- 1
- 2
- 3
- 4
- Compartments

Scale: 1:10,000
Date: January 2018



Forestry Commission England

Hevingham

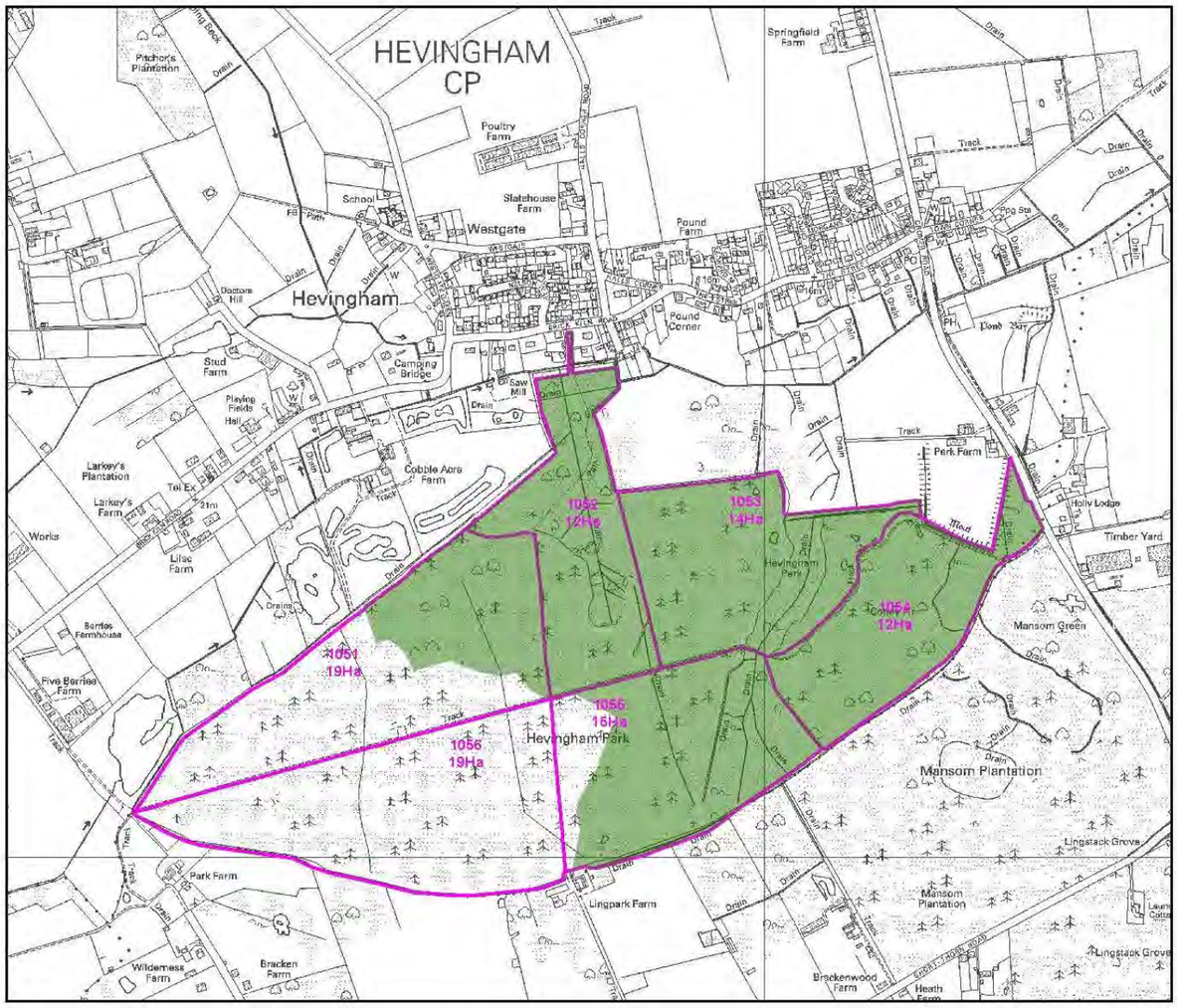
MAP 2

Ancient woodland area & potential NVC type

Legend

- W10
- W16
- Compartments

Scale: 1:10,000
Date: December 2017



Forestry Commission England

Hevingham

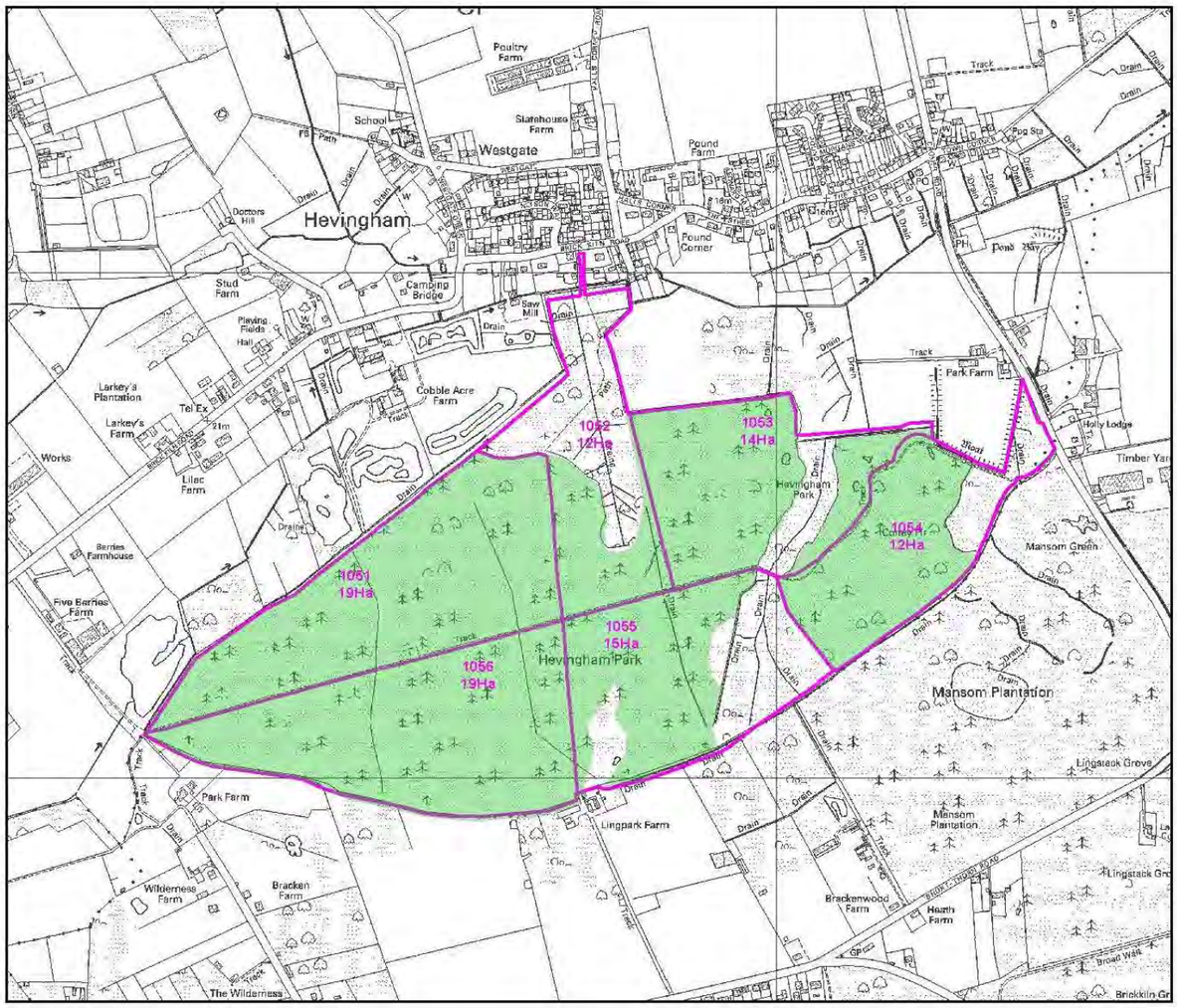
MAP 3a

Ancient woodland reversion area

Legend

- Eastern reversion area
- Compartments

Scale: 1:10,000
Date: January 2018



Forestry Commission England

Hevingham

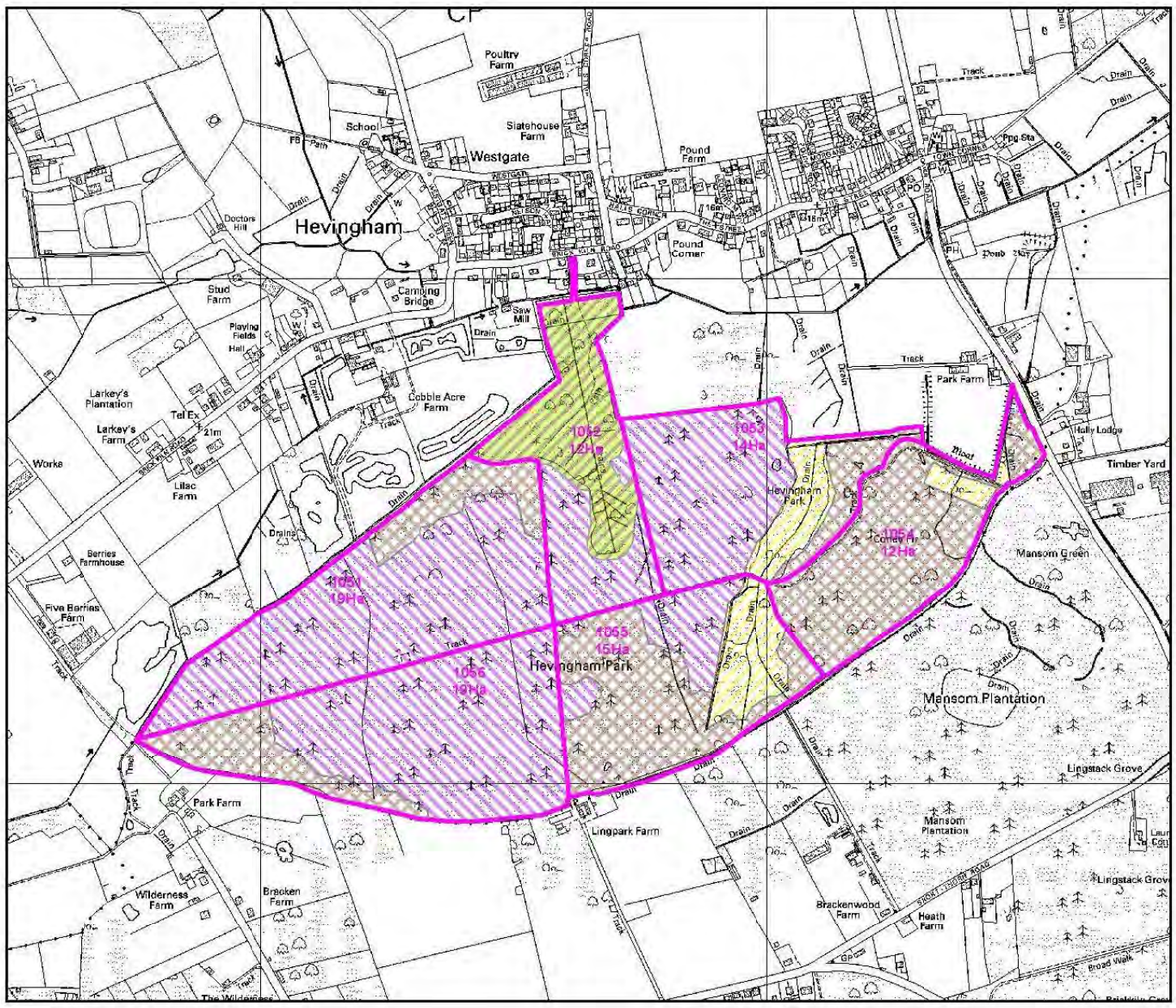
MAP 3b

Ancient woodland reversion area

Legend

- Ancient woodland area (reversion area)
- Compartments

Scale: 1:10,000
Date: December 2017



Forestry Commission England

Hevingham

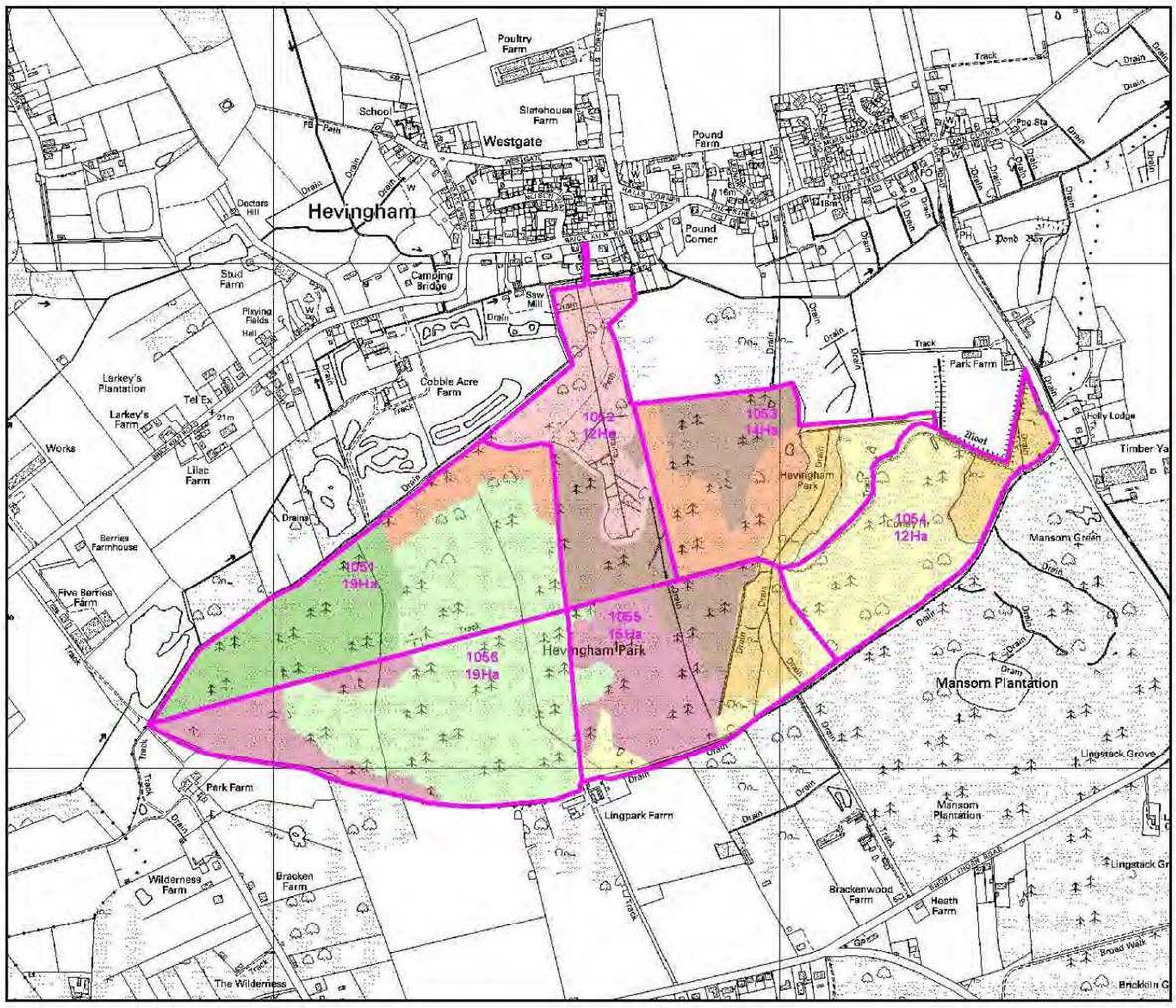
MAP 4

Forest plan management map 2018-2028

Legend

- Clearfell 2017-2021
- Continuous cover forest (conifer)
- Continuous cover forest (broadleaf)
- Temporary open space
- Compartments

Scale: 1:10,000
Date: January 2018



Forestry Commission England

Hevingham

MAP 5

PAWS restoration plan

Legend

- 2.1.1
- 2.1.2
- 2.1.3
- 2.2.1
- 2.2.2
- 2.2.3
- 2.3.1
- 2.3.2
- Compartments

Scale: 1:10,000
Date: January 2018

PAWS RESTORATION PLAN

BACTON WOOD – NORTH NORFOLK

2018-2022

1. Background

This plan is a revision of the 2003-2006 PAWS plan and includes key background information, a brief review of progress so far and objectives for the period of this plan.

Bacton Wood was identified as Ancient Woodland in the English Nature Ancient Woodland survey of 1992[1]. The ancient woodland boundary was confirmed in 2002 as part of the Forest Enterprise PAWS survey using historical maps and ground survey of features such as woodland banks[2]. The survey demonstrated that a large part of the wood was not of ancient origin but had been converted to coppice woodland from arable/heathland in the 19th century. The ancient woodland was found to consist of two separate areas (See map 1).

The 2002 survey identified the likely NVC type that could be recreated is W16 oak woodland (See map 2).

The majority of the area is conifer plantation with limited understory but this is beginning to change slowly. This is shown through 'naturalness' scores, where a score of 1 is classed as semi-natural and a score of 4 as predominantly conifer plantation. The 2003-2006 plan showed a naturalness score of 4 across almost the entire plan area. The naturalness assessment at 2017 shows progression towards ASNW reversion with 3 areas having moved from a 4 to a 3 showing a reduction in the conifer component and increase in broadleaf in these areas (map 1).

The last fully recorded botanical survey was carried out in 2002/2003 and showed ancient woodland species found to include Wood sorrel (*Oxalis acetosella*), Hairy woodrush (*Luzula pilosa*), and Scaly male fern (*Dryopteris affinis*)[3]. Also of interest and species that should be taken into account during any forest plan were some of the heathland species such as Western gorse (*Ulex galii*), Bell heather (*Erica cinerea*) and Trailing cinquefoil (*Potentilla anglica*). Although the majority of the ancient woodland flora fell in the area found to be of ancient origin there was considerable interest in the separating compartments. As detailed in the 2003-2006 plan this area will therefore continue to be incorporated into the reversion area (map 3).

The plan revision has identified the need to ensure botanical surveys are carried out at 5 year intervals in order to better assess the success of reversion to ASNW. The forest plan mid-term review will be used to monitor this.

As shown through 'naturalness' scores some progress has already been made towards reversion. However, a policy review in 2015 will influence the speed at which reversion can take place. This change in PAWS policy has meant clear fell systems are no longer permitted in PAWS woodlands with the exception of disease and areas of heavily seeding conifer in order to reduce the need to replant. Consequently, all clear fell coupes have been removed from PAWS areas. The majority of those initially planned within the 2018-2022 period were in the south of ancient woodland area. Reversion to ASNW will be implemented through thinning practices that encourage natural regeneration favoring a wide variety of native tree species including those considered as honorary or near native. However, it is recognised that species which can readily self-set are present in the area and complete removal may be necessary in the future. The intention is that areas currently shown as continuous cover conifer forest on the management map (map 5) will overtime become continuous cover broadleaf forest.

This plan outlines the steps towards reversion to ASNW to be taken within the plan (map 4). The plan will be revised at the forest plan mid-term review and modified where necessary.

2. Outline Restoration Plan.

2.1 Conversion of conifer to broadleaf

2.1.1 These areas are predominantly mixed conifer species. Some species including Western hemlock, Grand fir and Douglas fir are known to readily self-set and therefore could cause a problem with natural regeneration. In areas where these species are mixed with pine such as Douglas fir and Corsican pine, the Douglas fir should be preferentially taken to reduce natural conifer regeneration. The research area shown on the SCDB called Thetford 310 is now closed. Forest Research should be made aware if the area is felled. This is scpt 1082h.

2.1.2 These areas of predominantly conifer species with some mixed broadleaf present should be thinned to encourage natural broadleaf regeneration. Some Douglas fir and Western hemlock in the central area which can readily self-set may require total removal. Close monitoring of regeneration will be needed starting at least 2 years after operations within the area. The research area shown on the SCDB called Thetford 310 is now closed. Forest Research should be made aware if the area is felled. This is scpt 1081e.

2.1.3 These areas contain mixed conifer species of predominantly Western hemlock and Grand fir. There is significant natural regen of conifer making it difficult for native broadleaf species to regenerate. The Norway spruce present is also very poor quality. The close proximity of the crop to the main access route which is subject to heavy public use and potential susceptibility to wind blow are all additional factors that contribute to the decision to clear fell the area.

2.2 Existing broadleaf and mixed woodland areas

2.2.1 These areas of mixed broadleaf and conifer woodland should have the conifer removed through thinning operations and allowed to naturally regenerate. Most of these areas have little or no conifer present so rapid reversion is anticipated.

2.2.2 This is the car park and is mostly open with a mixture of broadleaf and conifer surrounding parking bays. Conifer should be gradually removed during thinning operations in adjacent compartments in a way that encourages regeneration of broadleaf species and avoids susceptibility to wind blow.

2.3 Area not within ancient woodland boundary

2.3.1 The Forest Plan has a clear fell coupe for the period 2017-2021. The whole area is Western Hemlock with no vegetation at the ground level due to reduced light levels owing to the dense canopy. This species creates very dark woodland at the ground level and is known to readily self-set. Therefore, in order to allow natural regeneration of broadleaf species and ground flora complete removal in one operation is proposed. The area is also known to have trees suffer with butt rot so clear felling will help to maximize the timber value.

2.3.2 This area was clear felled in 2006 and natural regeneration of predominantly Birch and Sweet Chestnut is present. However, there are still areas with little regen. These will be monitored through the forest plan mid-term review and if necessary supplementary planting will be carried out.

2.3.3 These areas of mixed broadleaf and conifer woodland should have the conifer removed through thinning operations and allowed to naturally regenerate. There is little conifer present here so rapid broadleaf regeneration in these areas is anticipated.

2.3.4 These areas of mixed broadleaf and conifer woodland should be heavily thinned to encourage broadleaf regeneration. Douglas fir and Western hemlock are present in the small triangular part of the area, which are known to readily self-set so total removal of these species may be required. Close monitoring of regeneration will be needed starting at least 2 years after operations within the area.

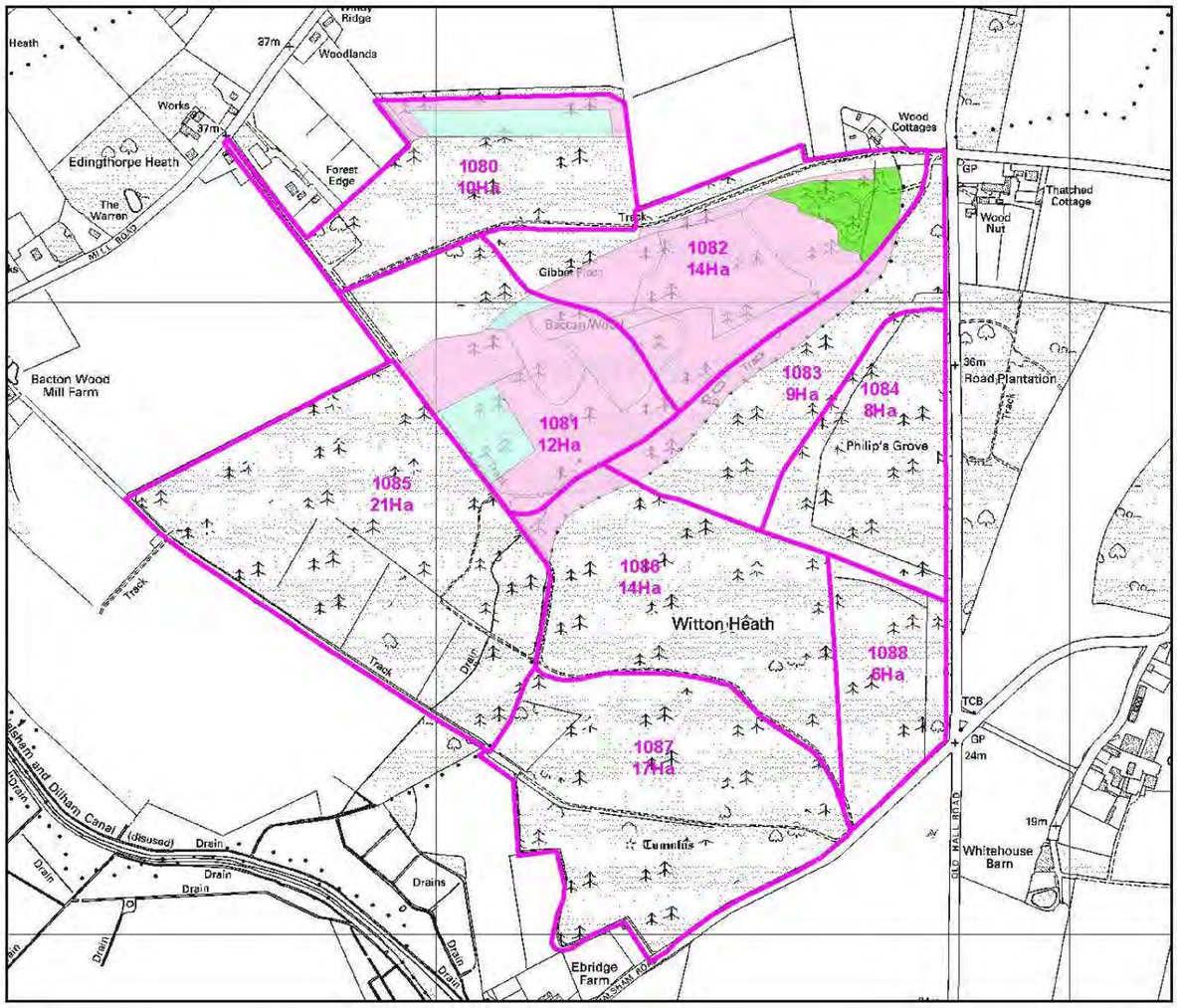
2.5 This research area is an open experiment called Wensum 5. Any plans or operations for the area require consultation with Forest Research. If given a period of 12 months' notice Forest Research may be able to assess and mark the site for necessary thinning operations.

References:

1. Spencer.J and Thomas.R. EN (1992) Norfolk Inventory of Ancient Woodland

2. Gibbons.N and Leatherdale.S (2001) Ancient and Native Woodland Ecological Survey for East Anglia Forest District.

3. Ellis.R (2002) A Botanical Survey of Three East Norfolk Woods (Unpublished).



Forestry Commission England

Bacton

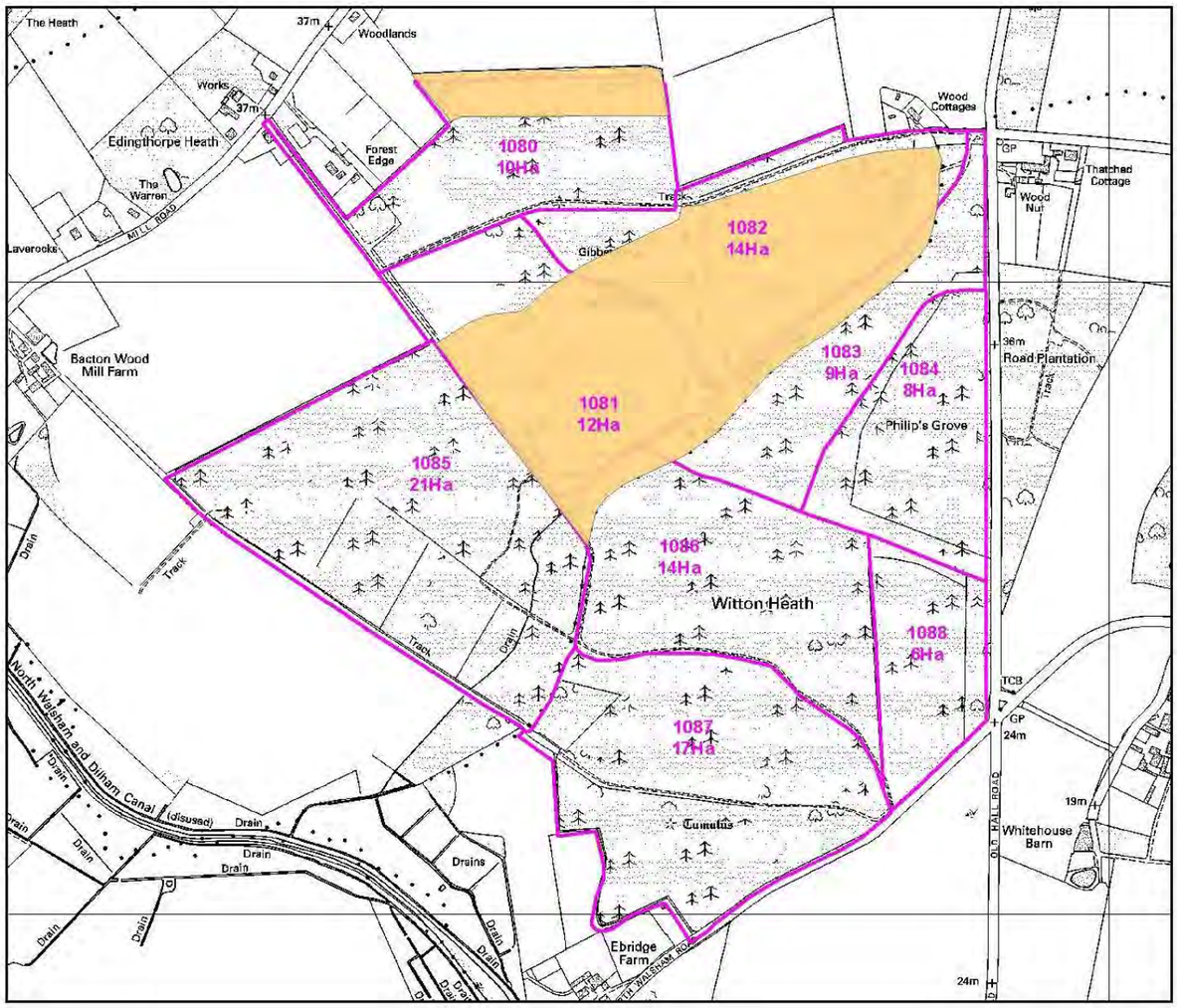
MAP 1

Ancient woodland area and semi natural scores at 2017

Legend

- 1
- 2
- 3
- 4
- Open space (car park)
- Compartments

Scale: 1:8,000
Date: February 2018



Forestry Commission England

Hevingham

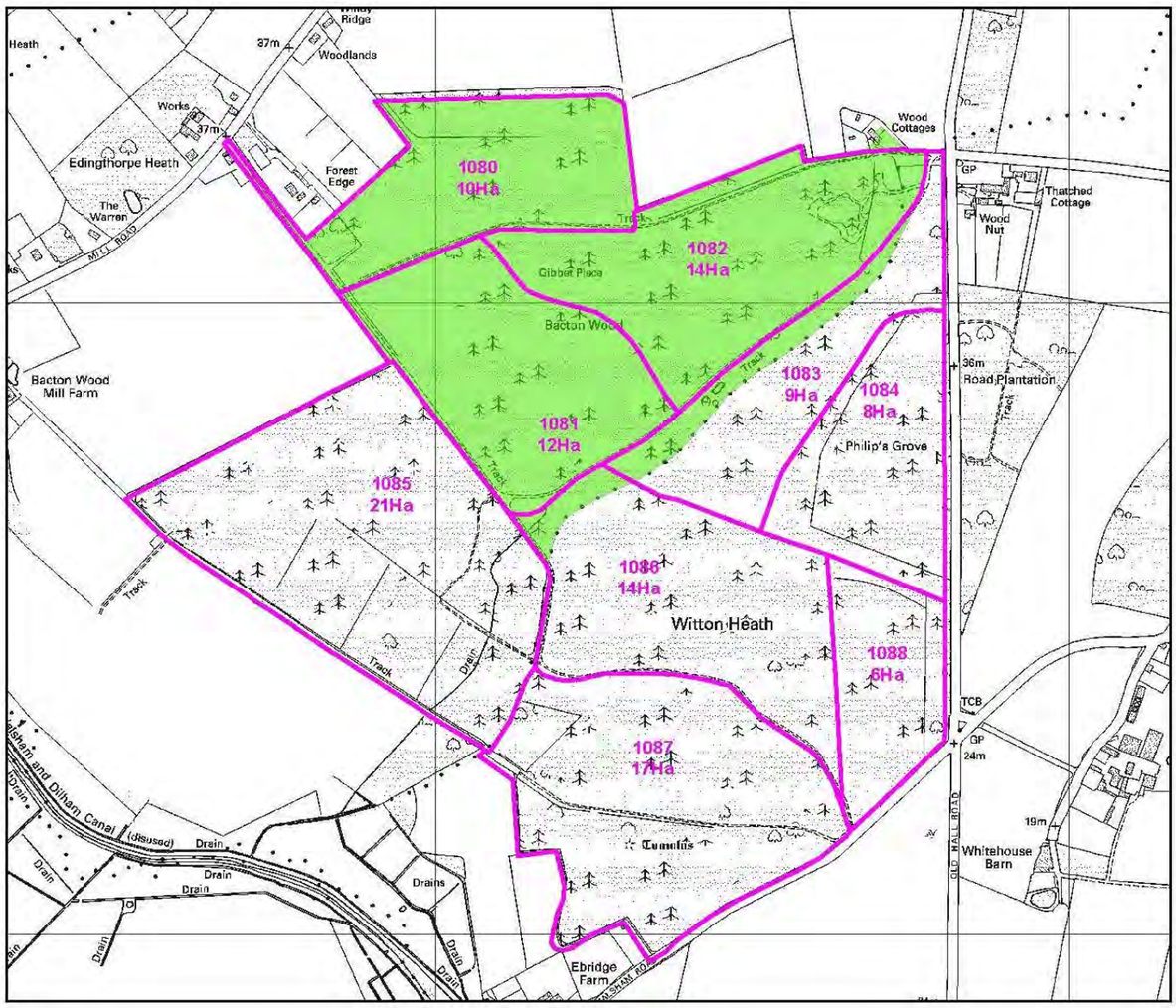
MAP 2

Ancient woodland area & potential NVC type

Legend

- W16
- Compartments

Scale: 1:8,000
Date: December 2017



Forestry Commission England

Bacton

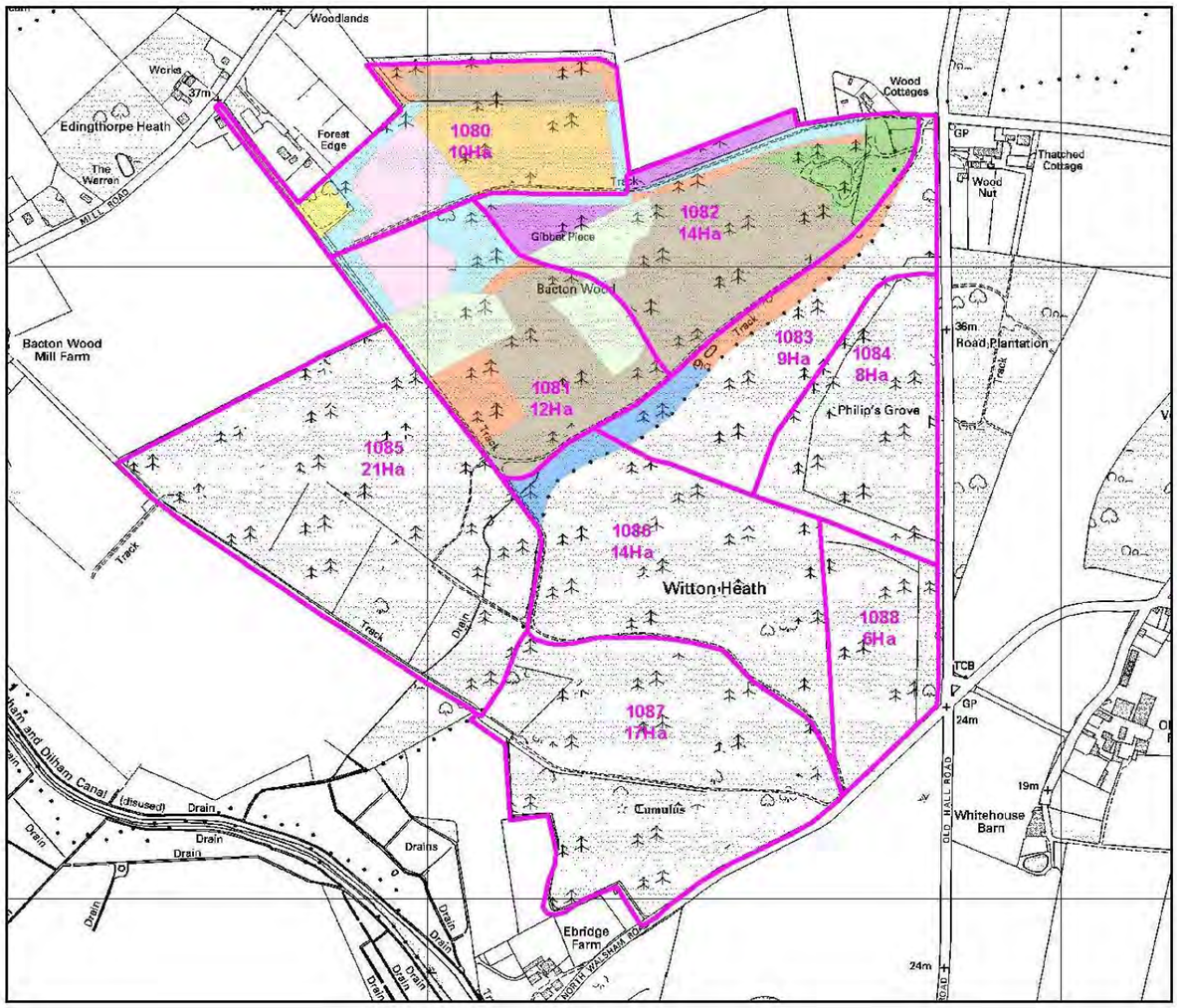
MAP 3

Complete area to be reverted to Ancient Woodland

Legend

- Reversion area
- Compartments

Scale: 1:8,000
Date: February 2018



Forestry Commission England

Bacton

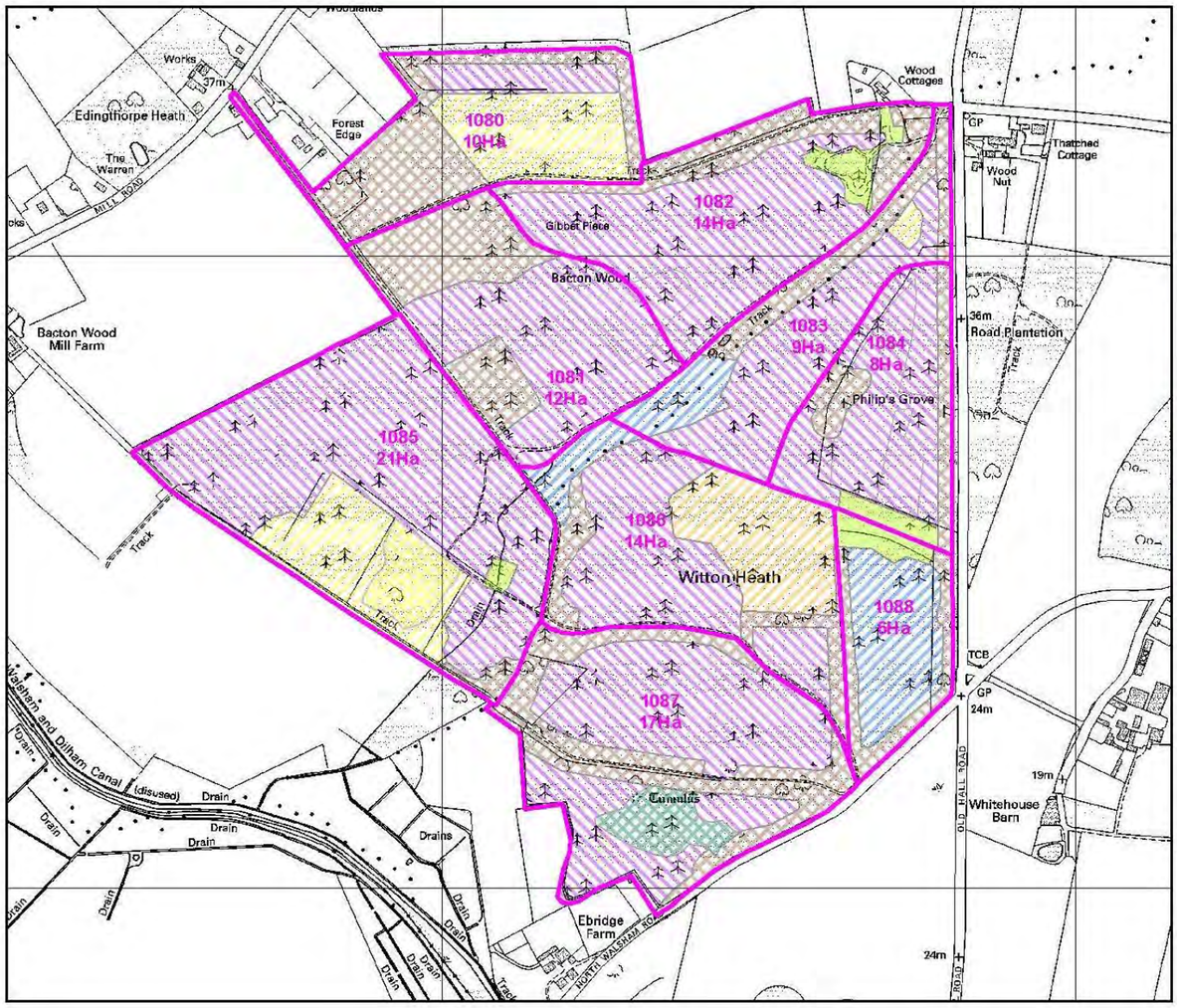
MAP 4

PAWS restoration plan

Legend

- 2.1.1
- 2.1.2
- 2.1.3
- 2.2.1
- 2.2.2
- 2.3.1
- 2.3.2
- 2.3.3
- 2.3.4
- 2.5
- Compartments

Scale: 1:8,000
Date: February 2018



Forestry Commission England

Bacton

MAP 5

Forest plan 2018-2028

Legend

- Clearfell 2017-2021
- Clearfell 2022-2026
- Clearfell 2027-2031
- Clearfell 2032-2036
- Clearfell 2037-2041
- Clearfell 2042-2046
- Clearfell 2047-2051
- CCF - Conifer
- CCF - Broadleaves
- Open/Other
- Compartments

Scale: 1:8,000
Date: February 2018

Oval barrows are funerary and ceremonial monuments of the Early to Middle Neolithic periods, with the majority of dated monuments belonging to the later part of the range. They were constructed as earthen or rubble mounds of roughly elliptical plan, usually delimited by quarry ditches. These ditches can vary from paired "banana-shaped" ditches flanking the mound to "U-shaped" or unbroken oval ditches nearly or wholly encircling it. Along with the long barrows, oval barrows represent the burial places of Britain's early farming communities and, as such, are amongst the oldest field monuments surviving visibly in the present landscape. Where investigated, oval barrows have produced two distinct types of burial rite: communal burials of groups of individuals, including adults and children, laid directly on the ground surface before the barrow was built; and burials of one or two adults interred in a grave pit centrally placed beneath the barrow mound. Certain sites provide evidence for several phases of funerary monument preceding the barrow and, consequently, it is probable that they may have acted as important ritual sites for local communities over a considerable period of time. Similarly, as the filling of the ditches around oval barrows often contains deliberately placed deposits of pottery, flintwork and bone, periodic ceremonial activity may have taken place at the barrow subsequent to its construction.

Oval barrows are very rare nationally, with less than 50 recorded examples in England. As one of the few types of Neolithic structure to survive as earthworks, and due to their rarity, their considerable age and their longevity as a monument type, all oval barrows are considered to be nationally important.

The oval barrow in Bodham Wood is one of two examples of this rare class of monument which have been identified in this area of Norfolk, the other being c.2.5km to the north east. It survives well, and will contain archaeological information concerning its construction and the manner and duration of its use, as well as evidence for the local environment at and prior to that time, which is likely to be preserved in soils buried beneath the mound and in the fill of the buried ditches. It is one of a large number of barrows of varying type and date located on glacial sands and gravels along the northern part of the Cromer Ridge, south of the coast. These barrows, as a group, are of importance for the study of the distribution, character and development of the prehistoric population of the area.

Scheduled Monument Number: 21375; 1013567.

Name of Monument: Oval barrow in Bodham Wood, 600m ESE of Warren Farm.

OS Grid Reference: TG 10889 40488

Size: 0.12ha (EH designated sites shapefile)

Description: The monument includes an oval barrow located on the high ground of the Cromer Ridge, c.3km south of the coast. The barrow is visible as an oval mound measuring c.29m on a northeast to southwest axis by 22m northwest to southeast, standing to a maximum height of c.1.6m near the north eastern end, and shelving slightly towards the southwest. There is a hollow c.5m wide and of uneven depth in the ground surface along the northern side of the mound, and very slight hollows of similar width can also be traced around the western end and along the south side. These hollows are considered to mark ditches, now almost completely infilled, from which earth was quarried and used in the construction of the barrow.

Current condition: The barrow is next to a forest track in a clearing in conifer plantation. The dominant vegetation on the mound is bracken, with thicket stage conifer and birch regeneration on the base of the mound and within the ditchline on the north, west and south sides. There are 6 or 7 mature conifer within the ditchline/buffer on the western edge of the monument. There are several mature broadleaves along the edge of the track on the eastern edge of the monument.

Threats to monument:

Windblow of mature broadleaves and plantation trees

Root growth of regenerated trees

Root growth of bracken

Management purpose:

To establish a grass sward

Work proposed in the plan period:

Monitor condition of the track-side broadleaves, planning their removal should they become unstable.

Remove plantation trees when harvesting machinery is next in Bodham Woods, monitoring their stability in the meantime.

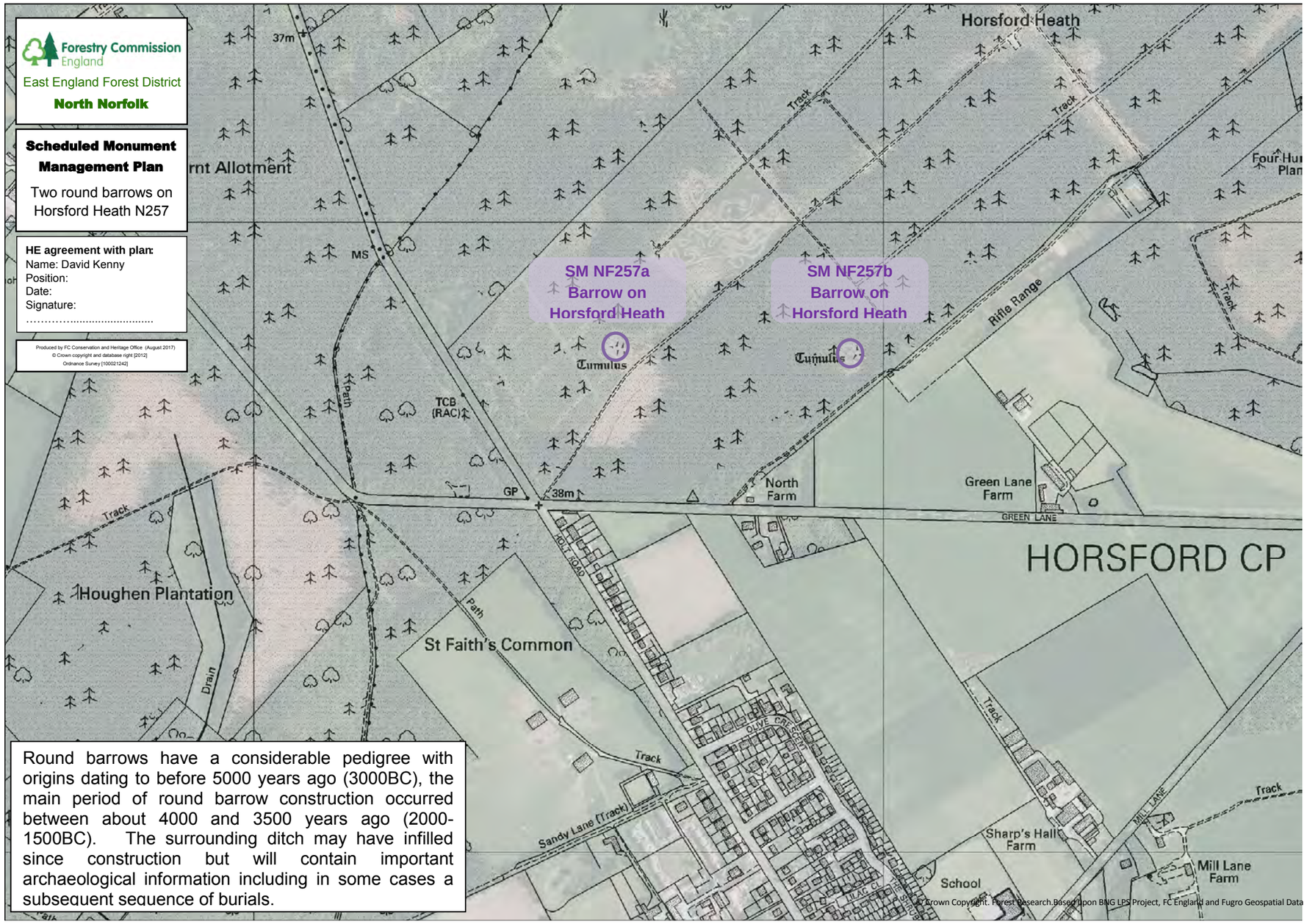
Remove regenerated trees from the mound, ditchline and buffer.

Strim mound and ditch line annually to encourage a grass sward and prevent establishment of further tree regeneration, controlling bracken with chemical if necessary.

Monitoring plan:

Periodic visits by Historic England staff

Photographs supplied by David Kenny Historic England



Round barrows have a considerable pedigree with origins dating to before 5000 years ago (3000BC), the main period of round barrow construction occurred between about 4000 and 3500 years ago (2000-1500BC). The surrounding ditch may have infilled since construction but will contain important archaeological information including in some cases a subsequent sequence of burials.

Scheduled Monument Number: NF257a and b; 1003164.

Name of Monument: Two round barrows on Horsford Heath

OS Grid Reference: TG 18630 17834 and TG 18944 17797.

Size: 0.19 and 0.2ha (EH designated sites shapefile)

Description: The two barrows are approximately 290m apart, each around 300m north of North Farm, on the Green Lane at Horsford. The barrows are on sandy soil at about 40m above sea level, on the west side of a gentle ridge between the River Wensum and River Bure, on the north face of a shoulder between two streams that flow in to the River Bure.

The barrows are both are less than 40m across and under 2m high with flattened tops and no visible ditch. The exact barrow dimensions are not formally described in the schedule.

Current condition: The westernmost barrow is in open scrub next to the main forest access track with young pine plantation to the south and west and mature pine plantation to the west and north. Current vegetation is grass with heather and bracken and developing self-seeded gorse and young birch scrub. The easternmost barrow is close to a footpath/rifle range club access track in a large clearing in mature pine plantation. Current vegetation is predominantly bracken with maturing birch on the barrow. There is a cutting/depression approximately 50x50cm on the top, now vegetated and of indiscernible origin.

Threats to monument:

Root growth of gorse and birch

Root growth of bracken

Public access

Management purpose:

To establish a grass/heather sward.

Work proposed in the plan period:

Cut and remove gorse and birch from the mound, ditchline and buffer

Strim mound and ditch line annually to encourage a grass sward and prevent establishment of further scrub, controlling bracken with chemical if necessary

Look for opportunities to interpret sites (both barrows abut well used paths which are anticipated to undergo increased use as a result of ongoing housing developments in Horsford Village)

Monitor public access and prevent the development of "desire lines" (currently none apparent).

Monitoring plan:

Periodic visits by Historic England staff

Photographs supplied by David Kenny Historic England

Forestry Commission England

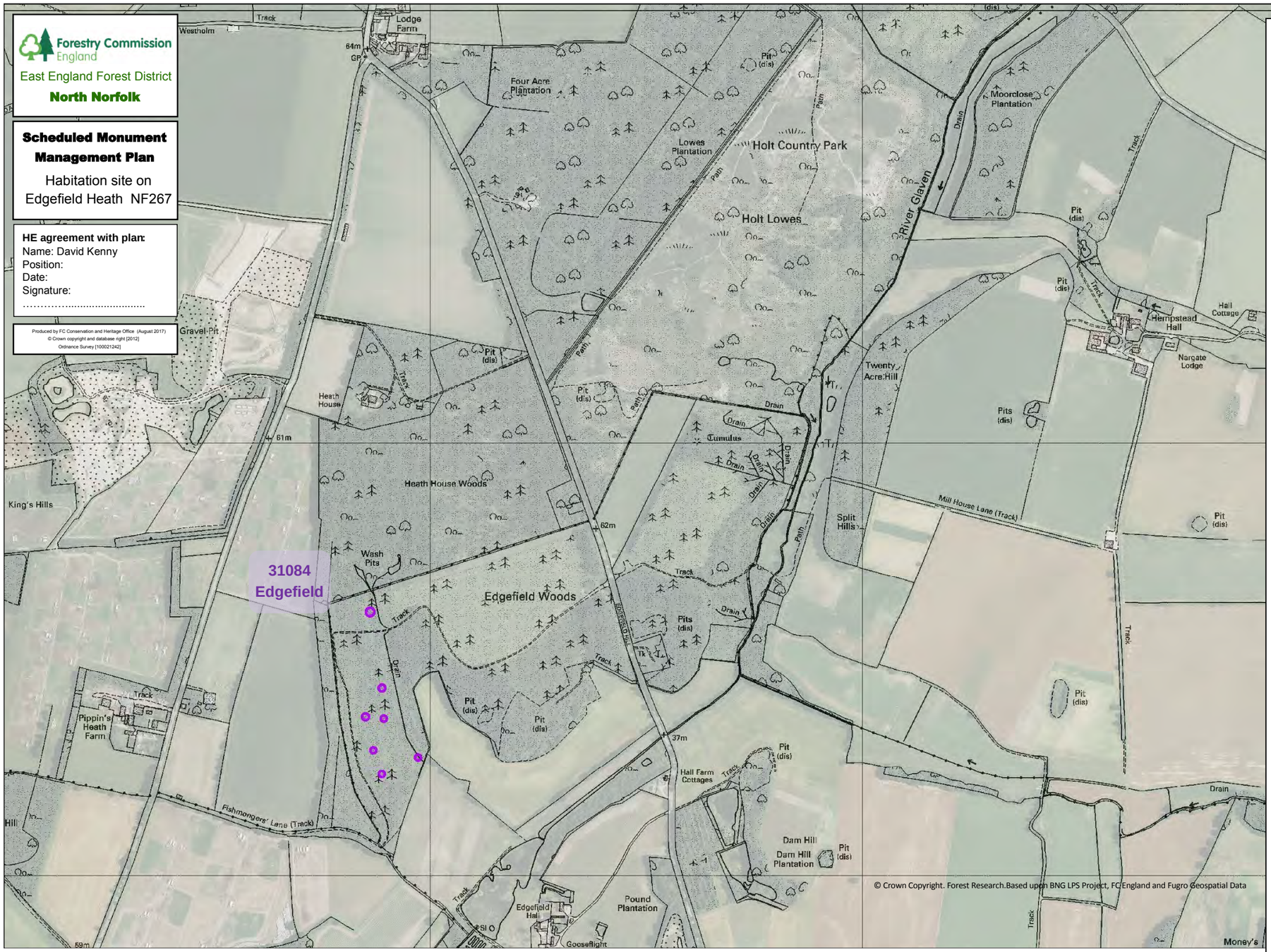
East England Forest District

North Norfolk

Scheduled Monument Management Plan

Habitation site on Edgefield Heath NF267

HE agreement with plan:
Name: David Kenny
Position:
Date:
Signature:
……



Scheduled Monument Number: NF267; 1003165.

Name of Monument: Habitation site on Edgefield Heath

OS Grid Reference: TG0784936368, TG0786036610, TG0786836291, TG0788736235, TG0788736434, TG0789236364, TG0797136274.

Description: This scheduled monument is named as a habitation site because it comprises artefacts considered to signify settlement. It is located in an area of woodland in a small stream valley 1.5km south of Holt, North Norfolk, described as a series of ?Early Bronze Age 'concentrations' of burnt and fractured flint within a dark grey / black silty clay ('pot-boilers' or burnt mounds?). Seven mounds (0.4-1.0m high and 5m in diameter) were originally scheduled following a 1958 survey but a 1999 survey identified 10 mounds in all.

Size: 0.13ha (EH designated sites shapefile)

Current condition: The discrete concentrations of burnt flint occur along a small valley where forest operations have been minimal due to the wet ground and uncertainty about the type and extent of the archaeology. The area is shown as woodland on 21st edition OS maps and current management allows natural processes to develop.

Some of the mound locations are still marked with the original wooden posts, sites marked following the 1999 survey used black plastic posts. Some of recorded sites appear to have no visible marker.

Threats to monument:

There is uncertainty over extent and significance of this feature which has not been reviewed since scheduling in the 1950s

Historic England classify the site as vulnerable because its condition is deteriorating as falling trees create exposures and erode the deposits, and root systems penetrate deposits.

Management purpose:

To improve understanding of the monument and recommend appropriate management

Work proposed in the plan period:

Carry out a literature review and site investigation to improve understanding about the significance and context of the site, date the burnt flint deposits and ascertain their extent.

Historic England will lead on this project and the results will be used to recommend appropriate future site management.

Monitoring plan:

A revised scheduled monument management plan taking into account these recommendations will be included at the 5 year mid-term design plan review.

Photographs supplied by David Kenny Historic England