

Stapleford Forest Plan 2021– 2030



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



Summary

Space for Felling licence once approved

The Stapleford Forest Plan (FP) summarises proposals by Forestry England for the management of two distinct blocks of plantation woodland, Stapleford Wood (303ha) and Stapleford Moor (131ha). Stapleford is the larger block and sits to the south, straddling the border of Nottinghamshire and Lincolnshire and is bisected north south by a public road. Stapleford Moor sits separate and to the north of Stapleford.

Situated approximately 4 miles to the north east of Newark-On-Trent, which lies at the center of the East Midlands National Character Area (NCA) Profile 48: Trent and Belvoir Vales, is described by Natural England as “*characterised by undulating, strongly rural and predominantly arable farmland centered on the river Trent*”. It also suggests this NCA is “*set within a low-lying rural landscape with relatively little woodland cover*”.

Stapleford Wood and Stapleford Moor are freehold woodlands, providing significant informal pedestrian access, some cycling and horse riding and occasional organised recreational use. Stapleford wood has a small car park and a walking trail that is popular with local visitors. A public right of way passes through the north-west part of Stapleford Wood, whilst a Bridleway intersects the eastern part of Stapleford Moor.

Both of the woodlands take the form of conifer plantations, mixed with areas of broadleaves, designed rides and open space. 42% of the FP area is secondary woodland (new woodlands), 10% ancient semi-natural woodland (woodland for several centuries with a naturally arisen tree canopy) and 42% Plantations on ancient woodland sites (PAWS).

Principle management objectives for the FP will be to; diversify the species and age structure to mitigate against the impacts of climate change, pests and disease; grow sustainable commercial crops; gradual reversion of PAWS back to mixed woodlands dominated by broadleaves; facilitate public access on freehold land; conserve the landscape and conservation value of the woodlands and manage the natural resources to maintain soil and water quality.

Central Forest District - Stapleford Forest Plan

Contents:

	Page No.
Summary	1
A Application for Forest Plan Approval	3
1. What are Forest Plans?	4
2. Description	
3. Management Objectives	5
3.1 Economic	
Table 1. Production forecast for cleafell volume for current stands	6
3.2 Environmental	
3.3 Social	8
4. Harvesting Operations	7
5. Intended Landuse	9
Table 2. Stapleford Forest Plan Contribution towards the Central District Commitments to UWAS and UKFS	
6. 2021 Forest Pan comparison against old Forest Plan	
7. Meeting and Monitoring Management Objectives	10
Appendix I — Glossary	11

Maps

Location Map	13
Survey Data	14
Current Species	15
Analysis Map	16
Concept Map	17
Silvicultural Systems	18
Felling Map Stapleford Wood	19
Intended Landuse Stapleford Moor	22
Felling Map Stapleford Wood	21
Intended Landuse Stapleford Moor	22

Pictures

Pic 1	Mature Corsican pine in Stapleford Wood
Pic 2	Forwarder collecting logs to be taken to roadside for collection and transportation to the timber mills.
Pic 3	Old enclosure field boundaries still remain to the south of Stapleford Wood.
Pic 4	Common frog
Pic 5	Bell heather
Pic 6	Cross leaved heath
Pic 7	Common lizard
Pic 8	Common toad
Pic 9	Stapleford car park entrance

A Application for Forest Plan Approval

Total clear fell area 74.7 ha

Forest Plan maps are attached

i Plan Area Identification:

Forest District: Central Forest District
 Beat: Sherwood South
 Name: Stapleford Forest Plan
 Nearest Town: Newark—Upon—Trent
 OS Grid Reference: Stapleford SK 8589 5627
 Stapleford Moor SK 8652 5836

Local Planning Authority Nottinghamshire/Lincolnshire
 Newark & Sherwood District/North Kesteven District

ii Designations:

Ancient Woodland, Plantation on Ancient Woodland (PAWS), Secondary Woodland, Local Wildlife Site and lies in the Trent and Belvoir Vales—National Character Area Profiles No.48.*

iii Date of Commencement of Plan

As soon as possible once approved.

	Conifers	Broadleaves
Clear Fell	74.7	
Restocking	34.2	40.5

NB - All above figure's refer to the gross area and excludes thinning operations that take place on a 5 year cycle in conifers and 10 year cycle in broadleaves.

In addition to the above felling 143 ha will be managed using Low Impact Felling Silvicultural Systems (LISS)*. This will be done through the removal of single and small groups of trees, removing no more than 40% of the stems within any single management unit/compartiment over the plan period. This operation will include; provide sufficient light to boost growth of understorey and ground flora, allow adequate space for the development of crowns and stem form for quality timber and accelerate individual tree growth.

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

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

I undertake to obtain any permission necessary for the implementation of the approved plan.

Signed Approved

FDM

District Conservancy

Date Date

All of our forests and woodlands in this Forest District are certified by the Forest Stewardship Council®(FSC®) and the Programme for the Endorsement of Forest Certification (PEFC). All Forestry England forests and woods are independently certified as sustainably managed, to continue to benefit future generations. The FSC is an international, non-governmental organisation dedicated to promoting responsible management of the world's forests. The PEFC is an international non-profit, non-governmental organisation dedicated to promoting sustainable forest management.



1. What are Forest Plans?

Forest Plans are produced by Forestry England as a means of communicating our management intentions to a range of stakeholders. They aim to fulfil a number of objectives:

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

The Forest Plan is a 'felling and restock' plan and is written at a landscape scale and 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. Before operations are undertaken Operational Plans are written by the forester before each felling and restock operation takes place. These outline in detail the site specific details that need taking into account when undertaking the felling and restocking operations.

All tree felling in the UK is regulated and a licence is required before trees can be felled; the scale of tree felling in Central England Forest District, which this plan forms part of, 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 the Forestry Commission, formally known as Forest Services. If all the criteria are met, full approval is given for the management operations in the first ten years (2021 - 2030) and outline approval for the medium term vision (2031 - 2069).

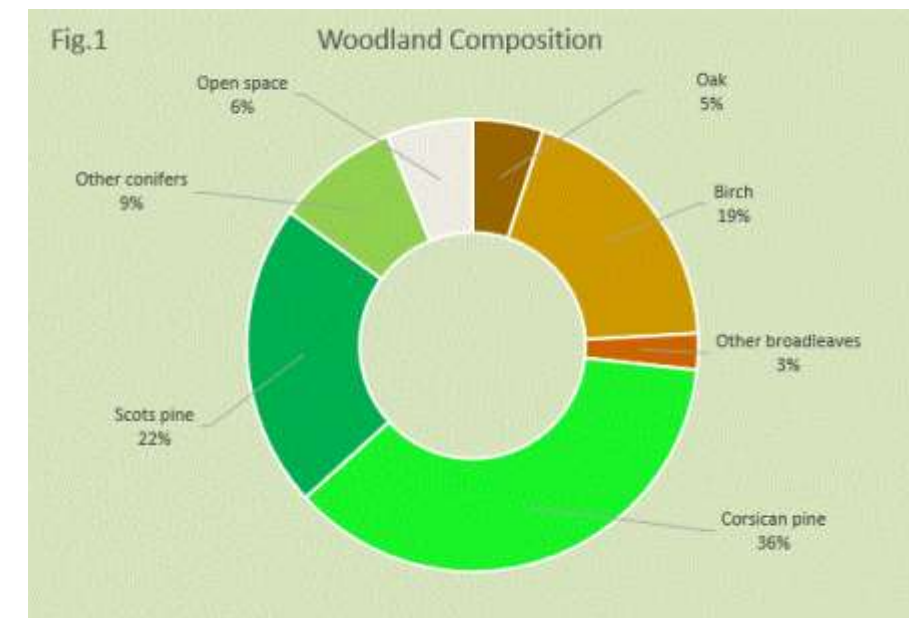
All of our forests and woodlands in this Forest District are certified by the Forest Stewardship Council® (FSC®) and the Programme for the Endorsement of Forest Certification (PEFC). All Forestry England's forests are independently certified as sustainably managed, to continue to benefit future generations. The FSC is an international, non-governmental organisation dedicated to promoting responsible management of the world's forests. The PEFC is an international non-profit, non-governmental organisation dedicated to promoting sustainable forest management.



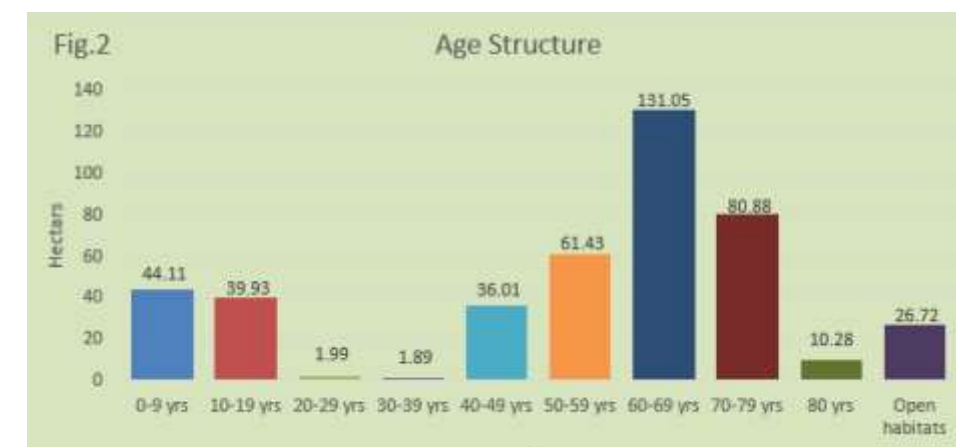
We use some technical words and phrases in the text because they best describe what we are doing. These technical words are identified throughout the plan with an asterisk * and their meaning shown in a glossary at the back of the plan (Appendix II).

2. Description

Stapleford Wood and Stapleford Moor comprise of 434ha which is made up of 67% conifers, 27% broadleaves and 6% open habitats. Corsican pine, Scots pine and Birch are the 3 key species that occupy three quarters of the design plan area, see Fig1



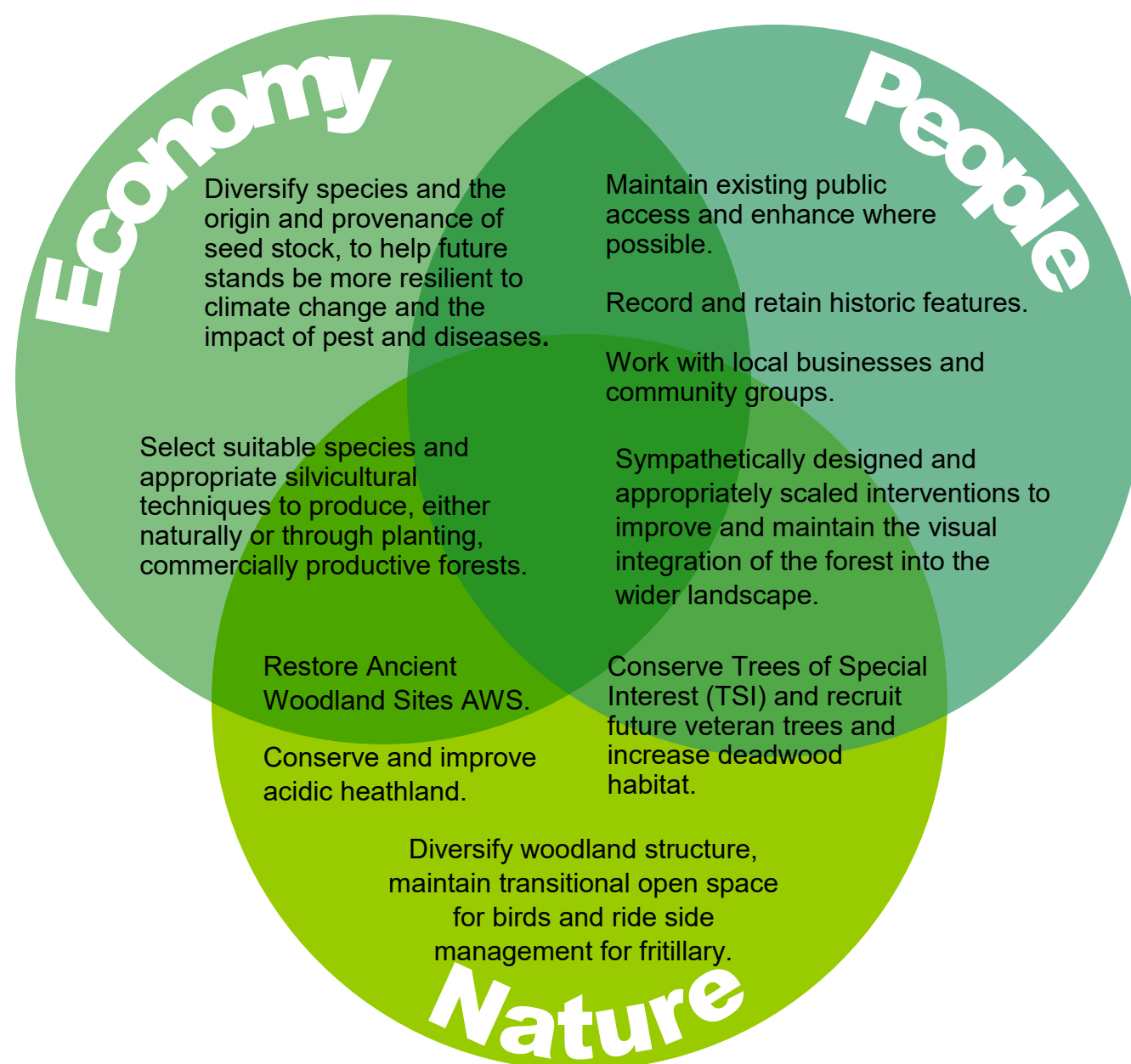
The woodland is dominated by mature pine stands with 50% of the woodland aged between 60 and 100years, see Fig.2



The soils in the area are very fertile Typical Brown Earth, hence the intensive agriculture within the region. The woodlands lie within the River Trent flood plain and the water table is high in the winter months with some areas being submerged during prolonged wet periods and dropping to 60-90cm in the summer months. This has caused gleying in the soil and subsoil, limiting rooting depth due to the anaerobic conditions. A network of deep dykes were installed over a century ago but drainage on the whole is unsatisfactory and water does not drain away as rapidly which will limit species suitability within the woodlands.

3. Management Objectives

Protecting and Expanding England's Forests and Woodlands and Increasing their Value to Society and the Environment



*We are growing the future:
We think beyond our own generation. We are developing forests today while carefully planning the future.*

*We are managing something that is growing, active and evolving:
What separates us from other organisations that protect the environment or historical assets is that we are always adapting; from cultural changes over time to bigger issues like a changing climate. It's a job that never stops growing.*

3.1 Economic

The primary income source is through timber production and at present there is no secondary income from recreation or sporting lets. Access is good with a main public road running down the centre of Stapleford Wood, a good network of forest roads within both woodlands and level ground conditions will reduce extraction costs. The quality of the timber varies between species with average yields in the pine stands of 12-14m³ and 4-6m³ in the broadleaves. The Scots pine planting in the norther half of Stapleford wood pre 1950's has poor form where as the Scots pine in the southern half planted later in the 1970's is displaying much better timber quality.

240ha of timber has now reached its maximum economic rotation and is due to be felled. In line with the UKFS and UKWAS only 10% of AWS (30ha) and 20% (42ha) of a secondary woodland can be felled in any 5 year period. The proposed felling plan will phase in the removal of these mature stands over the next 35 years retaining the better quality logs and removing stands with poor form first. This will ensure there is no sudden loss of high forest as the replanted areas of forest mature.



Pic 1 Mature Corsican pine in Stapleford Wood

Dothistroma needle blight* is effecting the young Corsican pine and these young stands are unlikely to survive. The extensive mature Corsican pine stands do still currently have a high needle count and show limited sign of infection but their projected yield will continue to decline as the tree become increasingly stressed by Dothistroma.

Over the course of the next rotation with the move to more mixed woodland dominated by broadleaves the rotation length will increase and long-term predictions for annual yields will drop off towards the end of this century.

The production forecast* for the new design plan is outlined in Table 1 with a comparison to the old forest plan. The volume of timber produced is based solely on clearfell volumes from the current stands and does not take into account timber produced from thinnings*, LISS* or future rotations. For this reason you can see a drop off in volumes as the last of the current

mature conifer stands are removed in the 2040 to 2055 period and no additional volume from the next rotations thinnings or LISS is being modelled.

Table 1. Production forecast for cleafell volume for current stands

New Forest Plan			Old Forest Plan		
Year	Volume m3	Hectares	Year	Volume m3	Hectares
2022-2026	15,228	41.7	2022-2026	9,342	31.1
2027-2031	13,327	43.8	2027-2031	17,804	48.0
2032-2036	11,904	41.7	2032-2036	5,333	69.6
2037-2041	20,131	44.5	2037-2041	2,656	7.1
2042-2046	8,552	29.0	2042-2046	0	0
2047-2051	9,681	31.3	2047-2051	0	0
2052-2056	8,513	37.3	2052-2056	0	0
2057-2061	2,112	8.72	2057-2061	6,310	25.7

In addition to the above felling 143ha will be managed using Low Impact Felling Silvicultural Systems (LISS)*. This will be done through the removal of single and small groups of trees, removing no more than 40% of the stems within any single management unit/compartiment over the plan period. This operation will include; provide sufficient light to boost growth of understorey and ground flora, allow adequate space for the development of crowns and stem form to produce quality timber and accelerate individual tree growth.



Pic 2 Forwarder collecting logs to be taken to roadside for collection and transportation to the timber mills.

3.2 Environmental

The long-term objective for Stapleford Wood is to gradually revert the 255ha of Plantation on Ancient Woodland sites (PAWs)* back to a broadleaved dominated woodland. Conifers currently dominate the woodlands and the reversion will be phased in over the next 35 years to ensure there is no sudden loss of woodland cover in this arable landscape. Due to the limited number of broadleaved seed trees* and their sparse distribution throughout the woodlands enrichment planting* of climax species* will be used to restore the PAWs areas, complimented by birch regeneration. This will help retain local provenance stock while providing the opportunity to introduce alternative broadleaved and conifer, that it is hoped, will be more resilient to climate change, pests and diseases.

There is a limited volume of deadwood habitat within the woodlands currently and a number of future Trees of Special Interest (TSI) will be identified and retained in perpetuity, where it is safe to do so, increasing the volume of deadwood. In addition to the TSI individual trees like the large sequoia in Stapleford Wood, small groups of feature trees like some of the large pine around the walking trail will be managed as long-term retentions and retained for the aesthetic and ecological value. Two groups of Scots pine and broadleaves covering an area of 4.2ha will be managed as longterm retentions to provide future deadwood habitats and increase biodiversity.

The only remnant landscape features (old field boundaries) lye to the south of Stapleford Wood. The creation of broadleaved woodland adjoining these features will be given priority and these broadleaved areas will create corridors to link into the AWS.

Rhododendron remains a problem in Stapleford Wood supressing the growth of plants and trees. It was originally planted in Victorian times and over the last 20 years Forestry England has been removing it. Due to its rapid growth and seed dispersal this removal programme will be ongoing to ensure it does not supress the nationally an regionally rare species present.



Pic 3 Old enclosure field boundaries still remain to the south of Stapleford Wood.

Before felling operations take place Forestry England ecologists will survey the woodlands ground flora and areas with remnant AWS features will be targeted for restoration, to help conserve these indicator species. Wetland habitats, streams and drainage ditches cross the woodlands and support a wide range of associated species such as Common frog, Toad, lizard, alder, willow and water starwort. Open spaces and ride edges provide a diverse mosaic of habitats that support amphibians, reptiles, mammals and flora and along with the wetland habitats transect the woodland have created wildlife corridors linking up habitats. Mosey Stonecap is present and this species is a national and regional rare plant of conservation concern. Creeping Willow and Hard Fern area also present and these are rare within the region.

Most of the design plan area is designated as a Local Wildlife Site in recognition of the woodlands diverse range of habitats and species. One ecologically rich site and a rarity in Lincolnshire lies to the northwest of Stapleford Moor containing acidic heathland which supports two species of heather.



Pic 4 Common frog



Pic 7 Common lizard

The design plan objectives for this area are to clearfell the dense woodland adjacent and ensure when restocking takes place the acidic heathland is left open to ensure the associated flora and fauna can be conserved. The network of rides are currently quite narrow and heavy shade cast by adjacent trees limits light along the woodland edge. The previous planting patterns stopped at the roads and rides which has created a hard edge and abrupt change in canopy levels which will limit the available habitat to species unable to cross the surfaced forest roads. Some of the new management coupes will straddle forest roads creating interlocking shapes that will soften the current uniform woodland edge along the road and help link the trophic levels between ground vegetation and the high canopy. When restocking takes place the tree line will be moved back from the forest roads and species such as cherry will be planted along the woodland edge as they prefer wider more open growing conditions. This will increase woodland edge habitats and provide varying levels of shade between the open forest road and enclosed woodland.



Pic 5 Bell heather.



Pic 6 Cross leaved heath



Pic 8 Common toad

3.3 Social

Stapleford Wood and Stapleford Moor are freehold woodlands, providing significant informal pedestrian access and are situated just 4 miles northeast of Newark-On-Trent. The woodlands have been popular with visitors for centuries who came to enjoy the flowering rhododendron which was widespread in the woodlands.

Stapleford Wood today has a small car park with a short walking trail that takes visitors on an attractive path through mixed woodland before you reach mature pine trees that tower above. Dog walkers, runners and horse riders are regular visitors and the wide network of forest roads and rides provides extensive access throughout the whole area. The well surfaced level forest roads also provide easy safe access for families, pushchairs and young children on bicycles. There is no formal parking provision at Stapleford Moor and with a more limited linear network of forest roads there are no surfaced circular routes.



Pic 9 Stapleford car park entrance

The woodlands are linked into the surrounding countryside by a public footpath that passes through the north-west part of Stapleford Wood and a Bridleway that intersects the eastern part of Stapleford Moor.

There are no scheduled ancient monuments within the woodlands and any historical features that may be found will be taken into consideration when operational plans are written to ensure features of cultural significance are conserved and enhanced where possible.

4. Harvesting Operations

The forest plan area will be managed through a combination of clearfell and Low Impact Silvicultural Systems * (LISS). Clearfells will be used where there is no seed source to regenerate the forest from, remove diseased crops and create transitional open space for ground nesting birds and insects and remove the large areas of over mature conifers.

Broadleaved stands will be managed through a group felling system which will allow small clearings (<2ha) to be created which will help diversify the age range and species composition. The size and shape of group fellings will be based on the light requirements of the trees to become established, the orientation of the clearing and shade cast by the adjacent stands of trees. No more than 10% of the broadleaves on AWS will be removed within any 5 year period.

Some exotic conifer stands on AWS will be managed using a selective felling system where up to 40% of the conifers could be removed at each intervention. The intensity and frequency of selective felling operations will be targeted to release any broadleaf trees in mixed stands, encourage and release any natural regeneration, suppress invasive ground vegetation and create planting sites where the regeneration of climax species is limited.

In addition to the above felling operations the remaining stands will be thinned (conifers every 5 years, broadleaves every 8-10 years) to provide adequate space for the remaining tree to mature and remain windfirm.

Intended landuse

There will be no major changes in the areas of woodland cover, open habitats and wetlands habitats in the new plan. The key change will be the gradual move from evergreen conifers back to deciduous woodland.

Natural regeneration will be used as the preferred method to restock AWS, with enrichment planting used where necessary to ensure full stocking is achieved (1,100 stems/ha for broadleaves) and to diversify the species mixtures. Regeneration of birch has been successful across all areas in the past but with increasing problems caused by browsing by muntjac and Roe deer these will need actively managing to ensure successful levels of regeneration can be maintained.

5. Intended Landuse

Due to the predicted impacts of climate change over the next century there is some uncertainty as to how well our native species will survive. Acute Oak Decline, Chalara and *Phytophthora* pose a serious threat to the survival of oak, ash and Sweet chestnut in the British landscape. For the benefit of the woodland ecosystem and associated flora and fauna up to 20% of AWS will be restocked with naturalised species*. This will provide a greater selection of tree species which will lessen any possible loss of woodland cover due to pest, disease, or climatic impacts in the future. Natural regeneration of evergreen conifers will be retained as a minor component in the mixed deciduous stands where it does not suppress AWS features.

Within the secondary woodland areas conifer species will be diversified using a selection of species the future climate models predict will be better suited to the more extreme weather events likely to occur. Evergreen conifers will be the dominant woodland type which will provide additional winter cover for wildlife and produce commercial timber on a shorter rotation, <80years. Suitable species include Coastal redwoods, Scots pine, Grand fir, Oriental and Serbian spruce. Any restocking to be used will favour a range of species and genetic type from a provenance 2 to 5 degrees south of the forest plan area that will be better suited to the predicted local climatic conditions in the future. Forestry England will use the Ecological Site Classification* and climate prediction tools developed by Forest Research to help select the most suitable species to restock the woodlands.

Scots pine is seen as a naturalised* species and occupies 21% of the plan area and will be managed in mixed stands rather than as a monoculture. Most of the current stands have poor form and are not suitable to use as seed trees. All planting stock used will be grown from approved seed sources to help ensure improved form and diversify genotypes which will reduce the risk of impacts from biotic elements.

Within the forest plan area there is only currently 6.2% open habitat and this falls short of the recommended 10% outlined in the UKFS and UKWAS. Due to the lack of woodland cover within the region and Stapleford Wood being one of the largest woodland in the local area, it was felt that its ecological value as a woodland outweighed the need to clear woodland to meet this target. Within the local Forestry England woodlands the area of open space equals 10.5% and within the Central District it totals 14.8%.

Table.2 The Stapleford Forest Plan Contribution towards the Central District and commitments to UKWAS and UKFS

	Forest Plan Area	Forest Plan Percentage	Forest District Area	Forest District Percentage
Total Area	434	100	28,170	100
Total Wooded Area	407	86	23,909	84.9
Open Habitat (>10%)	27	6	4,181	14.8
Natural Reserves - Plantation (1%)	0	0	174.3	1.4
Natural Reserves - Semi Natural (5%)	0	0	396	3.3
Longterm Retentions & Low Impact Silvicultural Systems (>1%)	143	33	15,101	53.6

6. 2021 Forest Plan comparison against the old Forest Plans

The main management objectives in the new FP remain unchanged with the focus on the production of sustainable timber, the restoration of AWS and conserving the acidic heathland habitats.

The new plan has placed greater emphasis on the need to begin restructuring the mature conifer stands, but to stagger this over a 40year period to reduce the impact on the woodland ecosystem and loss of mature woodland cover. Greater emphasis will also now be placed on the need to diversify species to reduce the possible impact from climate change on this low-lying woodland situated in eastern England which is likely to become more susceptible to water logged soils in the winter and prolonged drought periods in the summer months.

7. Meeting and Monitoring Management Objectives

National Strategy	District Strategy	Forest Plan Objective	Monitoring
Economy: 1) Maintain the land within our stewardship under UKWAS certification, 2) Improve the economic resilience of our woods and forests, 3) Encourage and support business activity on and around the Estate.	1) Adapting our management practices to suit the character and requirements of local woodlands whilst satisfying national standards and business requirements. 2) We will use the opportunity presented by additional, unscheduled clear felling as a result of disease control to accelerate the diversification of both conifer and broadleaf species appropriate to each local area and site type, and in some areas trialling species which may not have been previously planted in forest conditions, using a range of silvicultural systems.	1) Initiate a structured and sustainable programme of felling and thinning operations to include infrastructure requirements (roads and main drains), support local contractors and businesses. 2) Select suitable species and appropriate silvicultural techniques to regenerate (either naturally or through planting) commercially productive forests. 3) Ensure stands are more structurally and species diverse, making them more resilient to the impacts from climate change, pests and disease.	1) This will be reviewed every 10 years as part of the FP review process and any changes recorded in the sub compartment data base. 2) Stocking density, growth rates, stems/ha, species origin and provenance will be recorded and monitored ensuring a diverse mixture of species develops in future rotations. Production forecasts will be run annually to predict and monitor volumes of timber to be made available to the market. 3) When Operation Plans (Ops1) are written for restock sites the Ecological Site Classification tool, Forest Research notes and local knowledge will be used to help select suitable species to produce and maximise timber yields and deter predation.
Nature: 1) Improve the resilience of the natural environment of the Estate under our Stewardship, 2) Realise the potential of the Public Forest Estate for nature and wildlife, 3) Maintain and improve the cultural and heritage value of the Estate.	1) Adapting more varied timber harvesting arrangements and adopting recent FC guidance on forest operations to reduce the impact of forest operations on soils and ground vegetation on sensitive sites. 2) Contributing to and undertaking control programmes to limit the impact of deer and other species on woodland habitats in order to reduce the adverse impacts of grazing and disturbance to native habitats and their flora and Fauna 3) Where possible, work with interested parties to explore ways to maintain or improve features of cultural or heritage value to the local community.	1) Restore AWS by the gradual removal of exotic species occupying at least 80% of the canopy cover. Introduce a wide distribution of a majority native species that will be better suited to the impacts of climate change, pests and disease. 2) Restoration of PAWS by the gradual removal of exotic species, to gradually move towards a canopy comprising of 80% native species. Ensure components & features that are characteristic of ancient woodland are protected and promoted. 3) Identify existing locations of TSI's and demonstrate appropriate management to recruit future veteran trees and increase the volume and distribution of deadwood. 4) Incorporate management techniques that minimise the future impact and spread of Rhododendron.	1) The restoration of AWS and the introduction of a wider range of species will be monitored via the sub-compartment database as part of the FP review process. 2) The restoration of PAWS and the introduction of a wider range of species will be monitored through the sub-compartment database as part of the FP review process. 3) Trees of Special Interest (TSI), deadwood habitats and future TSI will be identified and recorded on the conservation layer to ensure they are retained in perpetuity. TSI will be monitored as part of the Ops1 process. 4) Demonstrate how the plan links to the Forest District invasive plant strategy.
People: 1) Encourage communities to become involved in the Estate, its management and direction, 2) Provide high quality woodland-based recreational opportunities for people and business, 3) Enable everyone, everywhere to connect with the nations' trees and forests so that they understand their importance and act positively to safeguard forests for the future.	1) Provide safe and accessible woodlands. 2) Offering opportunities for quiet recreation and adventurous activities, to enable people to experience the potential health and wellbeing benefits. 3) Developing partnership with private businesses and public bodies to expand and improve recreational opportunities across the estate. 4) Creating a wide variety of opportunities for schools, groups, families and individuals to engage with and learn about trees and forests in accordance with the National and District Strategies. 5) Encouraging third party environmental educators and other partners to offer learning opportunities on the public forest estate.	1) Recognise our objective of providing an overall cost neutral access programme across the district. 2) Diversify species composition and structure, and plan sympathetically designed and appropriate scaled interventions to improve and maintain the visual integration of the forest for visitors. 3) Reduce the potential for Fly-Tipping & Antisocial Behaviour throughout the FP area.	1) Public access and site facilities will be monitored and maintained by the Beat team on a regular basis throughout the year. 2) Forest operations will be planned and monitored through the Ops 1 process to ensure that works are carried out in accordance with Forestry England management objectives. 3) Recognise these issues within the plan and suggest woodland management and access management that could minimise their impact.

Appendix I

Glossary

Acute Oak decline

Acute oak decline is an emerging disease of oak trees (trees in the *Quercus* genus) which was first observed in the UK late in the 20th century. It can kill oak trees within four to six years of the onset of symptoms.

Aspect

The direction a slope faces. This can have a strong influence on the microclimate, ground vegetation, soils and hydrology.

Canopy

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

Chalara as dieback

Ash dieback is a highly destructive disease of ash trees (*Fraxinus* species), especially the United Kingdom's native ash species, common ash (*Fraxinus excelsior*). It is caused by a fungus named *Hymenoscyphus fraxineus* (*H. fraxineus*), which is of eastern Asian origin. The disease is also known as 'chalara', ash dieback

Clearfell System

The removal of all trees in one operation (>0.5ha).

Climax Species

Tree species that will eventually dominate the canopy of the forest maximising their exposure to sunlight and out competing other species.

Coupes

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

Ecological Site Classification (ESC)

ESC is an online tool set up by Forest Research that assists a user in choosing a tree species for a given site. The system is built on four climatic variables and two edaphic (soil) properties.

Ecosystem

An ecosystem includes all the living things (plants, animals and organisms) in a given area, interacting with each other, and also with their non-living environments (weather, earth, sun, soil, climate).

Ecosystem– Services

Are the variety of goods and services upon which people depend, and that arise from ecosystems. Ecosystem Services are commonly categorised into Provisioning (e.g. water, food production), Regulating (e.g. the control of climate and diseases), Cultural (e.g. aesthetic values, recreational opportunities), and the underpinning Supporting services (e.g. crop pollination).

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

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

Glossary

Enrichment Planting

Trees are planted from to ensure key 'climax' species can become established in the next rotation. This provides the opportunity to introduce new provenance tree stock that may be better suited to future climatic conditions.

Forestry England

The part of the Forestry Commission that following devolution is responsible for the management of the Public Forest Estate woodlands in England.

Forestry and Water guidelines

Forests and Water is one of a series of seven guidelines that support the United Kingdom Forestry Standard (UKFS). The UKFS and guidelines outline the context for forestry in the UK; set out the approach of the UK government to sustainable forest management; define standards and requirements; and provide a basis for regulation and monitoring; including national and international reporting.

Forest Plan (FP)

An approved plan that outlines felling operations over a 10 year period, outlining proposals over the next 50 years. The FP's are reviewed every 5 years and redrawn and approved every 10 years.

Forest Stewardship Council (FSC)

An internationally recognised body made up of non-government organisations promoting sustainable forest management to the forest industry and consumers.

Historic Environment

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

Landscape Character

England is renowned for its rich, diverse and beautiful landscapes which have their own distinct local character. These have been shaped over many thousands of years by natural influences such as soil and landform and by generations of human activity.

Long Term Retention

Trees that are being retained beyond their normal economic / commercial age.

Low Impact Silvicultural Systems (LISS)

Describes a number of felling systems (shelterwood, group felling, selection systems) which avoid large-scale felling coupes and which maintain forest canopy at one or more levels.

Native

Native trees are determined by whether the trees colonised Britain without assistance from humans since the last ice age.

Naturalised

Naturalised trees those that have colonised the British Isles since the land divide from Europe, seen to be within their natural climatic range and are regenerating freely.

Natural regeneration

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

Glossary

Natural Reserve

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

Oak decline

Oak decline is a complex disorder or syndrome in which several damaging agents interact and bring about a serious decline in tree condition. The agents can be abiotic or biotic and the latter often include insects and fungi which are not capable of invading healthy trees but can be very destructive to weakened oaks.

Open grown trees

Trees that have been given space to develop a large crown and natural shape as opposed to tree planted closely in a plantation managed for timber and biomass.

Operational Plans (Ops1)

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.

PAWS – Plantation on Ancient Woodland Sites

Areas that have had continuous woodland cover since 1600 but have been cleared and replanted. PAWS sites can comprise of both broadleaf and coniferous woodlands.

Phytophthora ramorum

Phytophthora ramorum is a highly destructive, algae-like organism called a water mould. It causes extensive damage and death to more than 150 plant species, including some forest species – Larch and Sweet chestnut. The generic name for the diseases which it causes is ramorum disease.

Production Forecast

The projected volume of biomass that the forest will produce each year. Calculations are based on species, age, net area and yield class.

Public Forest Estate (PFE)

The woodlands managed by Forestry England which would include both freehold and leasehold land.

Public Rights of Way (PROW)

Access routes open to the public through legal designation.

Restocking

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

Secondary Woodland

Woodlands that have been established on land that was formally used as pasture, meadow, arable, quarries, etc and has not continually been wooded

Glossary

Seed Trees

Tree with good shape, form and growth patterns. The tree needs to be of an age where it produces fertile seeds and have a good crown sizes in order to produce large quantities of seed.

Selective Felling

Where individual trees of varying sizes are selected and removed from a stand. The whole stand is worked, and the aim is to maintain full stocking of all tree sizes and ages, from seedlings to mature trees, in any one area.

Silvicultural Systems

Techniques of managing a forest through a variety of cutting / felling patterns over varying time scales.

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.

Thinning

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

UK Forestry Standard (UKFS)

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

UK Woodland Assurance Standard (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.

Trees of Special Interest (TSI)

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.

Yield Class

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



Central Forest District

Location

Situated approximately 4 miles north-east of Newark-on-Trent and 1 mile from Stapleford village. The surrounding flat arable landscape has relatively little woodland cover.

Stapleford Wood is the larger block and sits to the south, straddling the border of Nottinghamshire and Lincolnshire and is bisected north south by a public road. Stapleford Moor sits separate and to the north of Stapleford Wood.

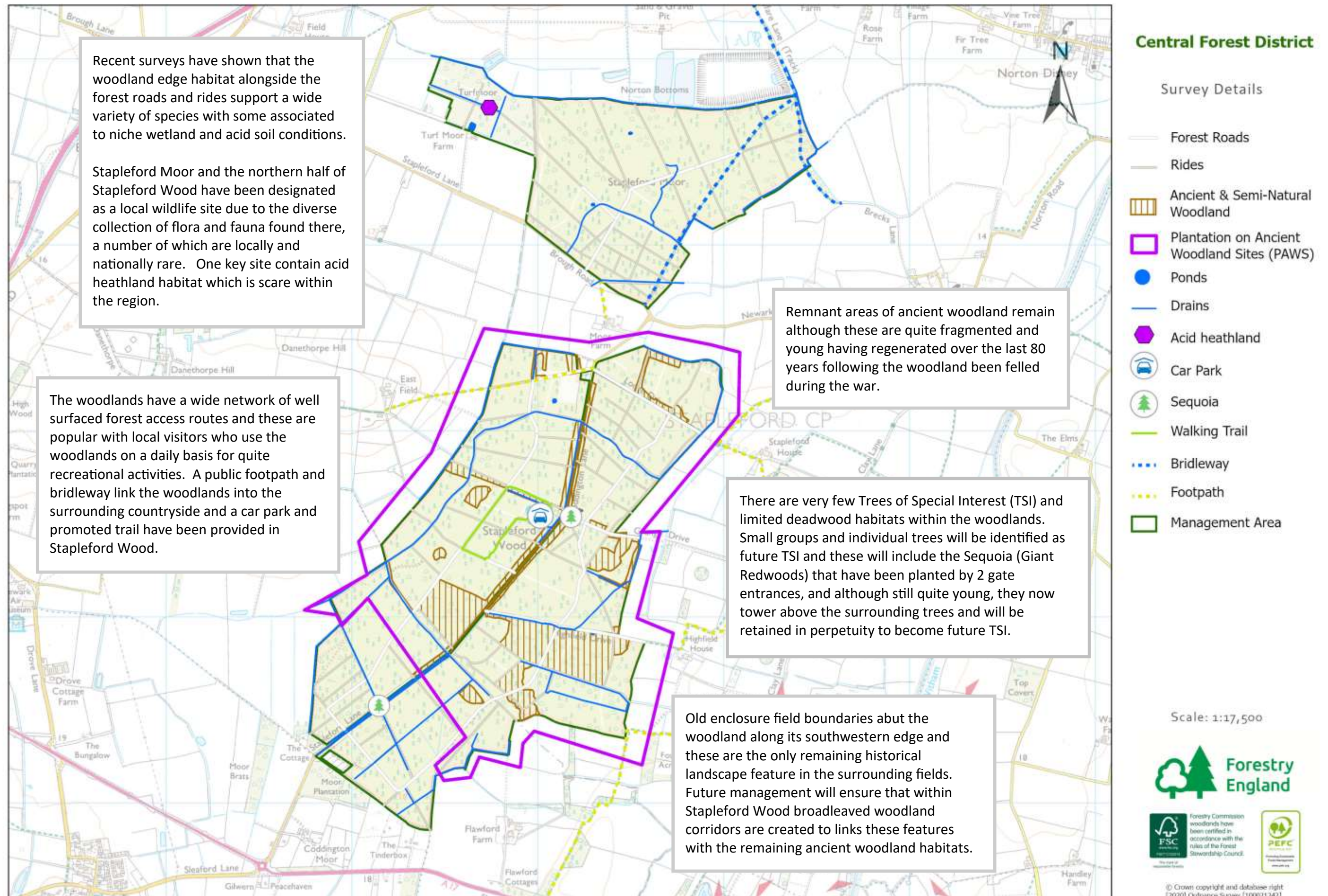
Scale: 1:150,000



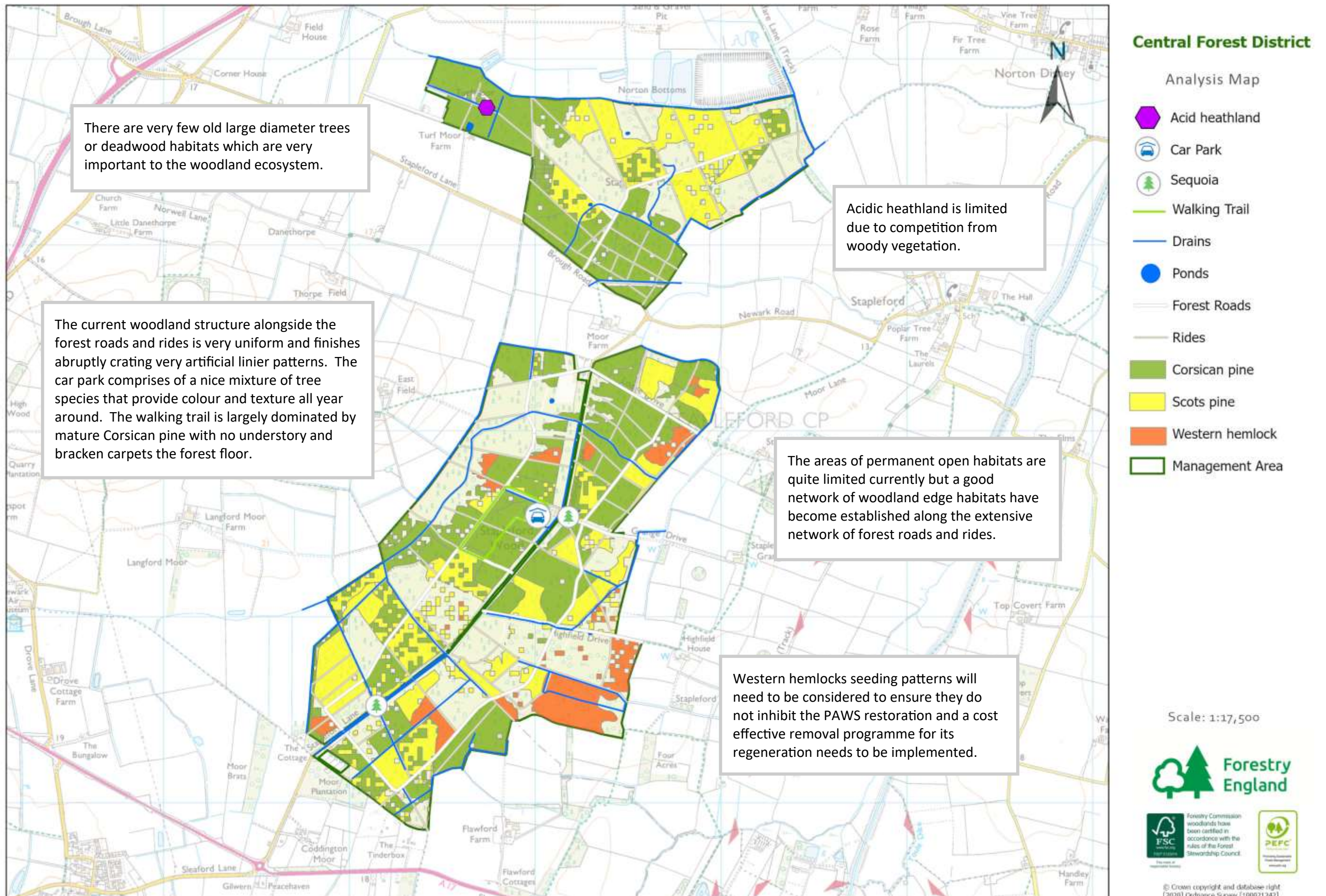
Central Forest District



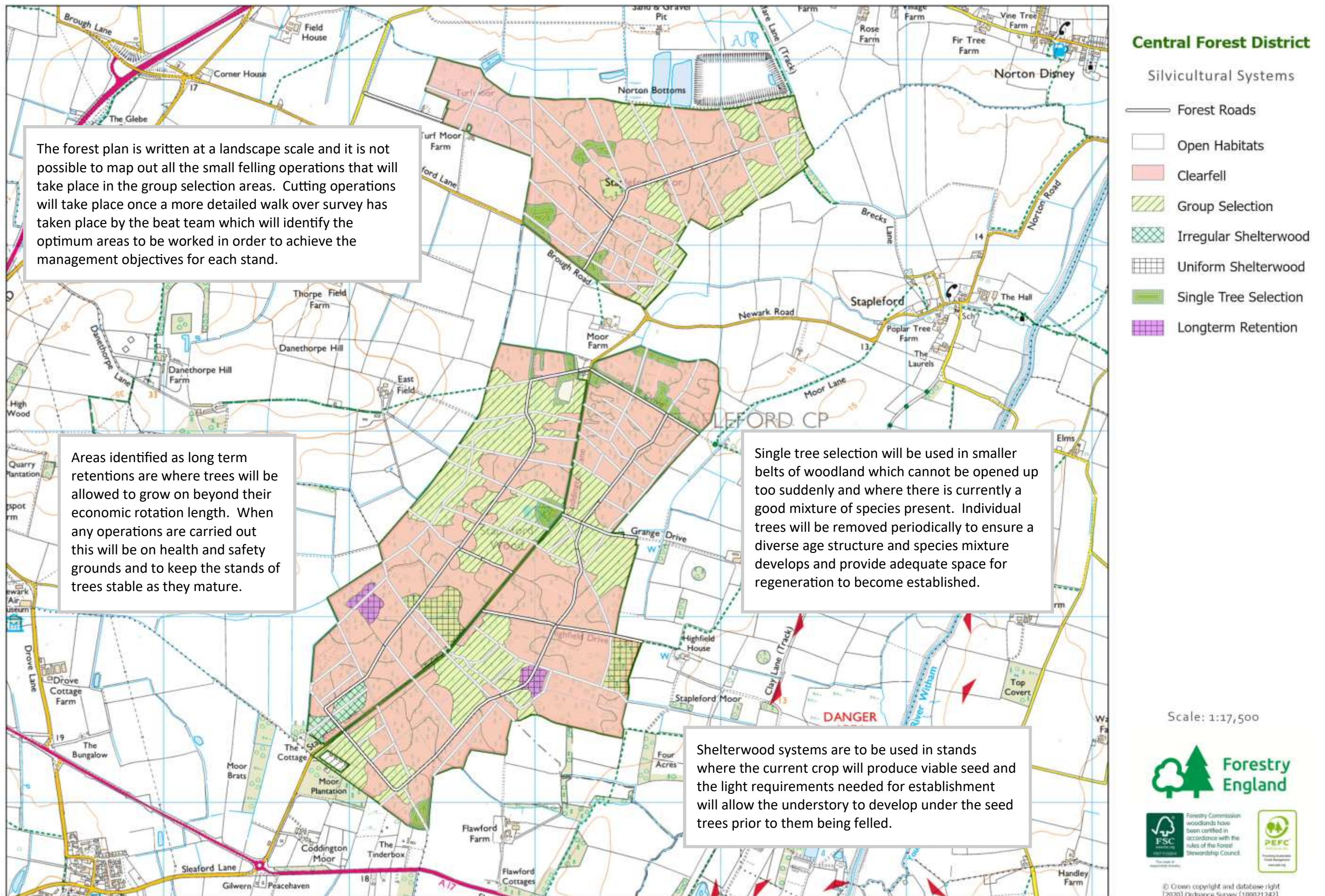
© Crown copyright and database right
[2021] Ordnance Survey [100021242]















Due to the current pressure now facing our woodlands from climate change, pests and disease we cannot accurately predict the composition of the woodlands in 50 years time.

The future woodland structure will consist of a more diverse mixed of species within and between stands. Ancient Woodland sites will be dominated by mixed broadleaves and secondary woodland by mixed conifer species.

Within the AWS and PAWS mixed stands will develop with a small proportion of conifers to provide valuable wildlife resource and winter cover and colour.



To help diversify the stand structure when restocking takes place, a number of naturalised species will be used that will be more resilient to the impacts of climate change, pests and disease.

These naturalised species will be planted as a mixture rather than a monoculture and occupy less than 20% of the planted area.

When restocking takes place it will be through a combination of planting the whole area or the use of enrichment planting and natural regeneration. The areas to be planted adjacent to water bodies and access routes will have their tree line moved back and this will allow a more diverse woodland edge habitat to become established. It is important to leave pinch points along access routes where the trees do come close to the road and this will help reduce wind speed and raise the microclimate on site.

Central Forest District

Intended Landuse

-  Broadleaves with some conifers
-  Conifers with some broadleaves
-  Open habitats
-  Forest Roads

Forest Research has produced models for the areas based on climatic conditions in 2080. These show the following native species as being suited to the region restoration of PWAS . Before any restocking take place ESC will be undertaken to make a more detailed assessment of species choice.

Pedunculate oak
Hornbeam
Black Poplar
Small-leaved lime
Sycamore
White willow
Norway maple
Norway maple
Aspen

Scale: 1:10,000



