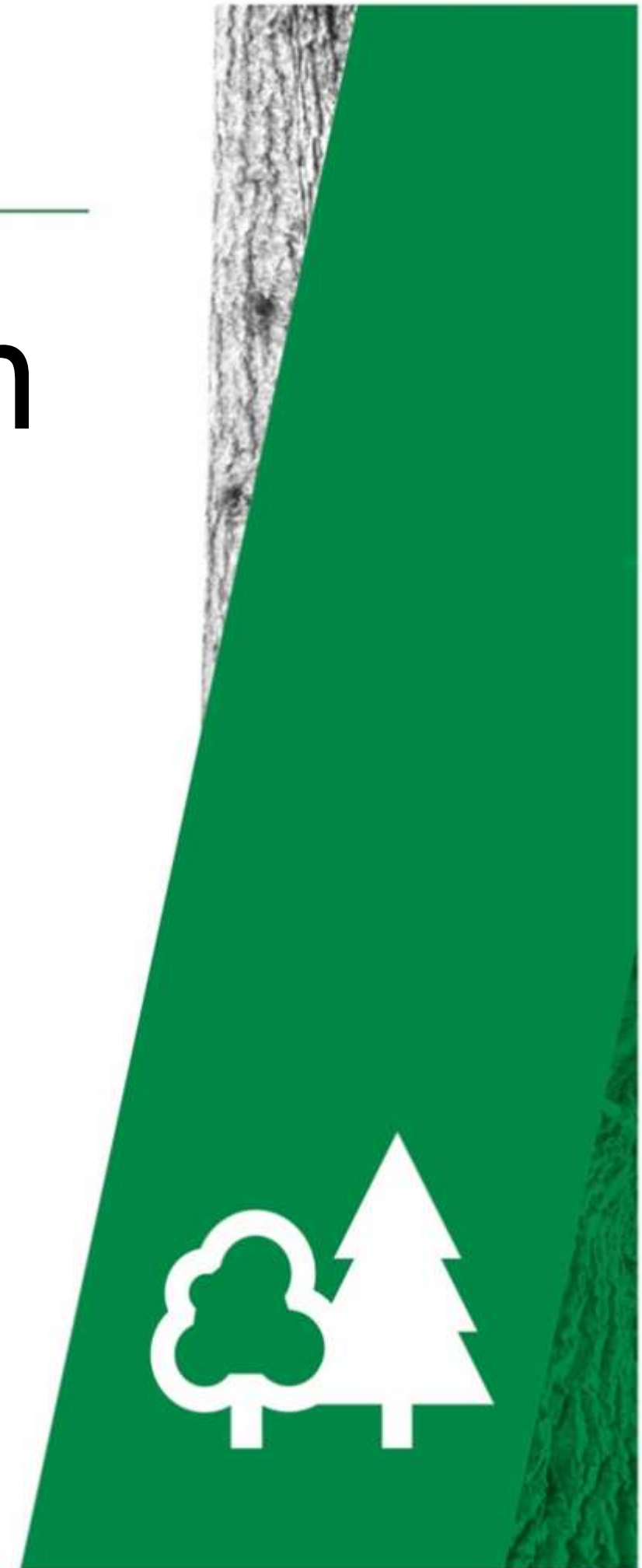


Silverstone Forest Plan 2025 – 2035



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



Summary

The Silverstone Forest Plan (FP) covers **726ha** and comprises 5 woodlands; Plumpton (61ha); Bucknell (192ha); Hazelborough North (136ha); Hazelborough South (263ha); Whistley (74ha) which lie in Northamptonshire, 20km west of Milton Keynes and 15km east of Banbury. They sit in a gently rolling landscape dominated by agriculture and large settlements. Woodland cover is sparse in the area and Bucknell and the Hazelborough woodlands are the largest single blocks of woodland in the region.

The overarching management objectives for the forest plan are to continue to balance conservation aims with marketable and sustainable timber production. This will be achieved using traditional and/or Lower Impact Silvicultural Systems* (LISS) that regenerate native woodland through natural processes, where possible, whilst retaining and recruiting veteran trees and deadwood. The restoration of plantations on ancient woodlands sites* (PAWS) will continue with the gradual removal of non-native species and the establishment of a wider range of broadleaf species that will be better suited to the impacts of climate change, pests and diseases.

The woodlands have been dedicated as Open Access Land under the Countryside and Rights of Way Act providing the public with access on foot across each of the woodlands. The woodlands are used on a daily basis, predominantly by the local community, with a low to moderate number of visitors. A good network of forest roads in each of the woodlands enable informal access and a number of public rights of way connect each of the woodlands to the surrounding countryside.

The woodlands today were first recorded in the Middle Ages (1220AD) and still contain many historical and cultural features associated to past land uses. Each of the woodlands have banks around them typical of the former coppice management. There are two small enclosures, Medieval ridge and furrow and post-medieval ponds found throughout the plan area. In Hazelborough South concrete footings and tracks associated to Silverstone aerodrome service buildings still remain from when it was active as an air force base during the second world war.

Central Forest District - Silverstone Forest Plan

Contents:	Page No.
Summary	1
1. What are Forest Plans?	2
Application for Forest Plan Approval	
2. Review of Previous Forest Plans	
3. Management Objectives	3
3.1 Economic	4
Fig1. Age structure across the forest plan area 2025	
Table.1 Predicted Timber Production	5
3.2 Nature	
3.3 People	
4. Harvesting Operations	
5. Intended Landuse	7
Table 2. Silverstone Forest Plan Contribution towards Central District Commitments to UKWAS and UKFS	8
Table.3—Species likely to be most favourable to the predicted climate in the area in 2080	
6. Terms of Reference	9
Appendix I Glossary	10
Maps	
Location Map	14
Survey Data	15
Current Species	17
Analysis & Concept Map	18
Silvicultural Systems	20
Felling Map	21
Intended Landuse Map	23
Pictures	
Pic.1 Oak logs presented for sale	3
Pic.2 Mature conifers allowing light to forest floor to encourage regeneration while suppressing invasive weeds.	
Pic.3. Well used trail, marking boundary between ASNW and PAWS	5
Pic.4 Wood Sorrel, an ancient woodland indicator plant	
Pic.5 Common Toad	
Pic.6 Open glade within the forest surrounded by mixed woodland of varying age and structure.	6
Pic.7 Infected ash losing leaves and unlikely to survive another season	7
Pic. 8 Squirrels ringbarking and killing a young oak that was fully established.	
Pic.9 Silver-washed fritillary	8
Pic.10 Fungi breaking down decaying wood and helping maintain the humus layer in the soil.	

1. What are Forest Plans?

Forest Plans are produced by us, Forestry England, for each local forest area to set out how we aim to manage the woodlands in our care over the next 30 or more years and to communicate this to a range of stakeholders. They:

- Provide a description of the woods as they are now
- Outline the main points considered when deciding what is best for the woods
- Describe how the forest will develop over time
- Give specific information about approved tree felling, replanting and regeneration over the next ten years
- Help ensure our plans are economically, environmentally, and socially sustainable, supporting certification of our forest management and timber products

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, means that the Forest Plan is the best way to apply for this licence. Responsibility for checking that the plan meets all relevant standards and statutes lies with the Forestry Commission. If all criteria are met, full approval is given for management operations in the next ten years from the approval date and outline approval is granted for our medium-term vision (ten to fifty years). Plans are reviewed every ten years to renew our felling licence and check we are on track to deliver this vision. 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 (Appendix I, p).

A Forest Plan is a ‘felling and restocking’ plan written at 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 in which year a particular operation will take place, but we can say in which five-year period it should happen. Forest Plans do not detail the management of recreation, ecological or heritage features. Planning for these elements is taken into account but follows a different management cycle and process. This includes Operational Plans* written by the Beat Forester before each operation takes place. These outline the site-specific features that need to be considered when we undertake felling and restocking.

Terms of Reference (page 9) are agreed at the start of the planning process to set out our management objectives for the plan area, how these relate to Forestry England’s District and national priorities, and how these will be monitored.

Application for Forest Plan Approval

i Plan Area Identification:

Forest District:	Central Forest District	
Beat:	Northants South	
Name:	Silverstone Forests Plan	
Nearest Town:	Towcaster	
OS Grid Reference:	Plumpton Wood	SP 6035 4946
	Whistley Wood	SP 6106 4133
	Bucknell Wood	SP 6515 4475
	Hazelborough North	SP 6515 4299
	Hazelborough South	SP 6563 4144
Local Planning Authority	South Northamptonshire Council	

ii Designations: Ancient Woodland*, PAWS*, Natural Character Area (NCA) Profile: 91 Yardley Whittlewood Ridge - NE501, NCA Profile: 89 Northamptonshire Vales - NE527, NCA Profile: 95 Northamptonshire Uplands - NE565

iii Date of Commencement of Plan—

Proposed felling and restocking summary for 10 year FP period:

	Conifers	Broadleaves	Total area
Clearfell	54.5ha	12.5ha	67ha
Restocking	9.6ha	40.6ha	50.2ha
Regeneration Felling (LISS)	Up to 34ha	Up to 209ha	Up to 243ha

Total felled area 67 ha — Forest Plan maps are attached

The above figures refer to the gross area and exclude routine thinning operations.

Restocking refers to natural regeneration and planted stock.

In addition to the above felling 609ha will be managed using Lower Impact Silvicultural Systems (LISS)*. This will be done through the removal of small groups of trees, removing no more than 40% of the stems within any single management unit/compartment over the plan period. This operation will 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.

All of our forests and woodlands are sustainably managed, ensuring they will continue to benefit future generations. Our management meets best practice standards summarised in the UK Woodland Assurance Standard (UKWAS) and is independently certified under UKWAS to Forest Stewardship Council® (FSC®) and Programme for the Endorsement of Forest Certification (PEFC) standards. (Licence codes FSC-C123214 and SA-PEFC-FM-006972).



2. Review of Previous Forest Plans

The Silverstone FP area was previously covered by separate plans for each wood:

- Plumpton
- Whistley Wood
- Bucknell Wood
- Hazelborough North
- Hazelborough South



Pic.1 Oak logs presented for sale

These individual FPs were originally approved in 2008 and expired in 2018. Given the close alignment of

objectives across these woodlands it is appropriate to combine their management under a single FP. The former plans were written against different criteria from recent FPs. Whilst they provide a valuable summary of the ecological and historical records, they do not detail forest management operations.

Objectives.

The primary objectives in the old plans were:

- I. To grow and harvest marketable timber
- II. Restore PAWS*
- III. Manage rides for the benefit of flora and fauna.

Outcomes

- I. The restoration of ancient woodland* has progressed, been achieved by gradually removing conifers in mixed stands and leaving the broadleaves. A number of small conifer clearfells totaling 8ha took place.
- II. Timber products from the PAWS restoration along with the thinning of broadleaved stands has released quality broadleaved and conifer logs to the market.
- III. The ride side management did progress during the former plan periods with summer and



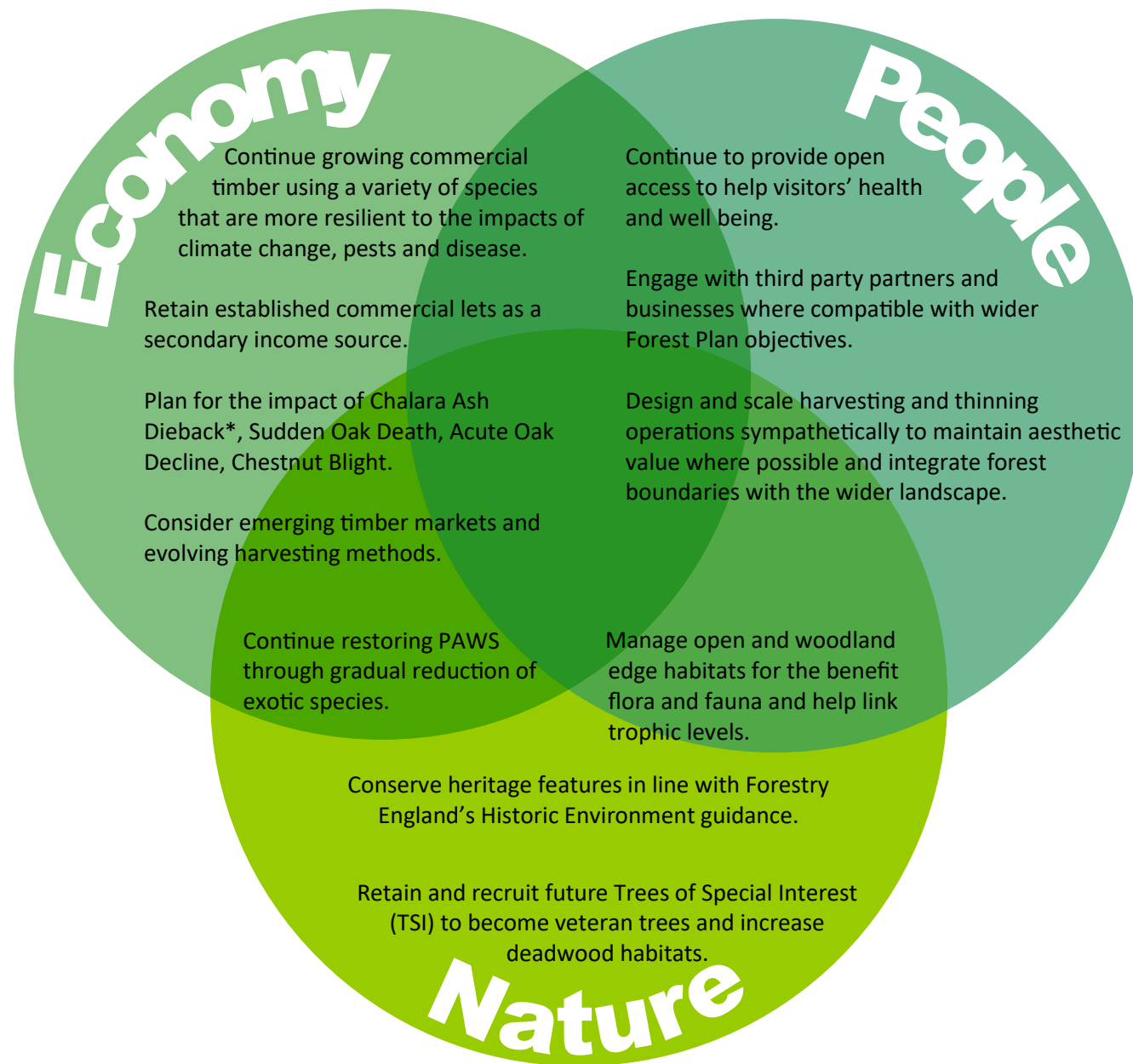
Pic.2 Mature conifers allowing light to forest floor to encourage regeneration while suppressing invasive weeds.

autumn cuts. Now selected rides are cut in May and again in the autumn to facilitate deer management and aid flora and fauna.

3. Management Objectives

Forestry England’s mandate is to protect and expand England’s forests and woodlands and increase their value to society and the environment. Our mission is to connect everyone with the nation's forests by creating and caring for our forests for people to enjoy, wildlife to flourish and businesses to grow.

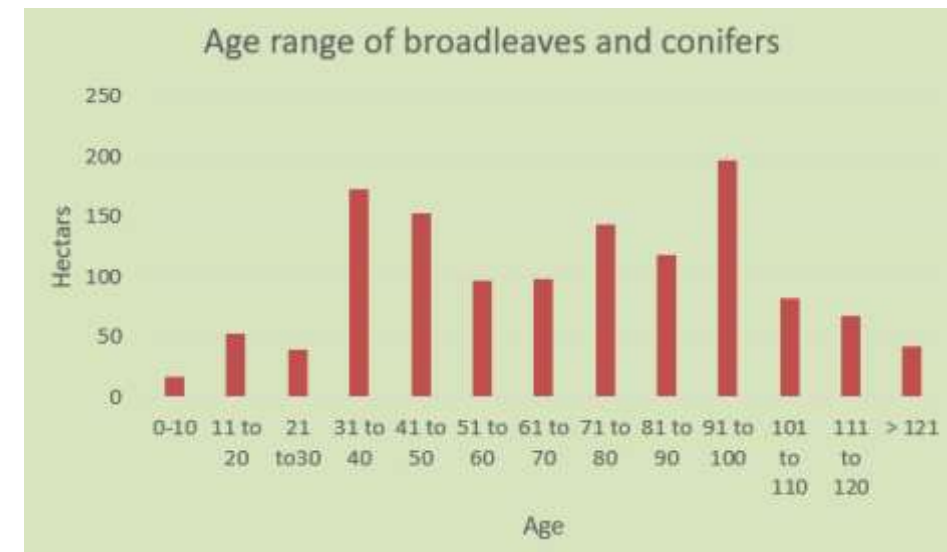
In the Silverstone FP area we aim to achieve the following management objectives:



3.1 Economic

The woodlands are dominated by mature broadleaves with just 35% (244ha) occupied by conifers. Most of the stands are uniform in age with limited understory*. The age structure (Fig1) shows that over 41% of the trees are over 80 years old, 54% 30-80 years and 5% under 30years. The current age structure is slightly out of balance with too few young trees and a lot of mature trees. The long-term objective is to develop a woodland structure closer to 25% <30yrs, 50% 31-80 yrs and 25% >80yrs. This should ensure sustainable timber yields while maintaining a diverse woodland structure.

Fig1. Age structure across the forest plan area 2025



Over the next 40 years the conifers (consisting of Norway spruce, Corsican and Scots pine) which are now close to their economic rotation will be gradually removed as the PAWS* areas are restored. The Norway spruce will be removed first as it is more susceptible to windblow* and the pine felled later. The phased removal of conifers will also help increase the area of young woodland (<30yrs).

Timber production will be managed on a sustainable basis, improving future revenues by focusing on quality broadleaf and conifer sawlogs and by maximizing yield. Emerging markets, such as woodfuel will be targeted using shorter rotations creating transitional open habitats, more typical of traditional woodland management practices.

Any opportunities to engage with third party partners or businesses to generate secondary income sources will be considered where there is alignment with wider FP objectives.

Forecast Period	All Species	Area to be Clearfelled
2025-2026	4,228	6.88
2027-2031	24,485	33.73
2032-2036	18,185	12.5
2037-2041	13,305	9.89
2042-2046	6,365	5.6
2047-2051	4,175	2.72
2052-2056	4,725	0
2057-2061	4,835	7.76
2062-2066	4,950	0
2067-2071	5,020	0

Table 1. displays the predicted timber production (from clearfelling, selective felling and thinning combined) alongside the average annual clearfell area for the next 45 years. The annual combined volumes are split approximately 56% from conifers and 44% from broadleaves for the next 10 years. Then broadleaves dominate the sustainably produced timber. In response to ash dieback Forestry England will target diseased ash during thinning and bring forward the felling of the worst affected ash-dominated stands.

Table.1 Predicted Timber Production

3.2 Nature

The objectives for the Silverston FP include to conserve the wide variety of flora and fauna associated to the woodlands and to restore the remaining areas of PAWS*. Ancient* and native woodlands support high levels of biodiversity and host many priority species. They also deliver important ecosystem services including water and soil regulation, carbon storage, and support for people’s wellbeing and cultural values. Continuing to protect and gradually restore these woods to predominantly native species is a priority for this plan. In the next 10 years 75% of the PAWS* areas will be restored by Forestry England. This will be a big step towards the restoration of ancient woodland.



Pic3. Well used trail marking boundary between AWS and PAWS

Much of the biodiversity of ASNW* is reliant on continued management which mimics natural disturbance. The forest management set out in this plan will help ensure transitional open space and more varied stand structure creating a wider range of habitats.

The ride system and wood edge habitats are important features of the woodlands. Botanically rich rides cross each of the woodlands and support a wide variety of flora and fauna including Glow worms, Early purple orchid, Common spotted orchid, Violet Helleborine, Purple emperor, White letter hairstreak, White admiral, Wood white, Silver-washed fritillary. In the ponds (which date back to the Post Medieval Period) smooth newt, common toad, palmate and greater crested newts have all been recorded.



Pic.4 Wood Sorrel, an ancient woodland indicator plant



Pic.5 Common Toad

17 Trees of Special Interest* (TSI) (including apple, English elm, poplar, lime, beech, Corsican pine, oak) have been identified and these will be conserved and allowed to reach their biological maturity and increase the volume of deadwood habitats in the woodlands. We will continue to record TSI and future TSI as they are identified, so they can also be conserved and protected during management operations. Ancient, veteran and notable trees are highly important for biodiversity and an invaluable part of our natural heritage, providing unique ecological conditions and supporting entire ecosystems. Similarly, where appropriate, dead and dying trees may be retained to increase ecologically valuable deadwood habitat.

39.3ha of woodland is to be retained as Natural Reserve* and will be managed under minimum intervention to allow the woodland to evolve naturally and reach biological maturity. Interventions would be limited to where they are likely to have higher conservation or biodiversity value.

Operations will be carried out in line with all relevant regulations and best practice guidance as summarised in UKFS* and UKWAS*. Forestry operations may take place at any time of the year. This

is necessary to strike a balance between the greatly increased risks of damage to flora and increased soil compaction associated with working during the wetter winter months and the need to minimise disturbance to designated habitats, species and breeding birds.

3.3 People

The woodlands are freehold and have all been dedicated as Open Access Land under the Countryside and Rights of Way Act 2000 (CROW) providing the public with informal access on foot throughout the year. The only public access facility is a small car park at Hazelborough North. The woodlands are all used on a daily basis but the level of use is low.

The woodlands have a long history dating back to the Middle Ages with Plumpton first recorded in 1200AD. The woodlands were managed as coppice through much of the medieval period and banks mark the boundaries of the woodland, with some internal marking coppice banks and ridings (see Survey map). There are two small enclosures, Medieval ridge and furrow and concrete footings associated to WWII activities in Hazelborough Wood. None of these features have been designated as scheduled monuments but Forestry England has mapped and surveyed these features and will ensure that, wherever possible, they are managed in accordance with Forestry England’s Historic Environment policy.

4. Harvesting Operations

A total of 50.2ha of clearfell will be undertaken during the 10 year FP approval period comprising 21 coupes (see Felling Phases Maps, p.21-22). These clearfell coupes are mainly coniferous, involving the economic felling of mature conifer crops, focusing on the removal of Norway spruce which is prone to windblow. The majority of the broadleaves will be felled in these mixed stands as they will not remain windfirm. Broadleaves that will remain windfirm or provide a good seed source will be retained to form part of the next rotation.

Management of remaining broadleaf stands will be mostly through LISS* felling systems (such as group selection and small coupe felling). This entails creating small clearings of 0.25 - 2ha to restructure the crops and diversify their age and species composition, also improving the woodlands’ resilience and adaptive capacity. The size and shape of the clearings will be designed around the light requirements

of the trees to become established (considering aspect* and shade cast by adjacent stands), helping create optimum growing conditions. For the benefit of wildlife larger clearings will be elongated to maximise edge habitat. The use of LISS should also offer greater protection to soils and ground flora by maintaining canopy cover; thus reducing the likely impacts of extreme weather events, invasive plants (Bramble, Calamagrostis, Bracken) and variation in micro climates throughout the day and between seasons.



Pic.6 Open glade within the forest surrounded by mixed woodland of varying age and structure.

In addition to the aforementioned felling programme, thinning assessments will be made every 5 years and thinning operations planned accordingly. Managing stand density and light availability through thinning is essential for each tree’s crown and root system to develop fully, helping ensure the trees remain stable in the wind as they mature. Thinning operations are also an important source of timber and timber revenue.

When thinning operations take place diseased ash will be felled and any live ash retained to become Trees of Special Interest* (TSI). Where safe to do so any large diameter diseased ash will be retained as deadwood.

Before any forestry operations outlined in this landscape scale plan take place a detailed operational plan* will be written. As part of our operational planning process, all forest operations are carefully considered beforehand and their delivery takes the specific ecology, heritage, and constraints of the site into account. Operations will be carried out in line with all relevant regulations and UKWAS*.

5. Intended Landuse

On AWS/PAWS our aim is for the proportion by canopy cover at maturity of native tree species to be at least 80% (which can include a proportion of honorary/near native species*). The natural woodland classification for these woodlands is largely W10 lowland oak / birch woodland with hazel on the more acidic soils and W8 lowland ash and hazel woodland with hawthorn on the less acidic soils. Oaks in the region have been badly defoliated over successive years by oak leaf roller moth *Tortrix viridana* whose caterpillars feed on emerging leaves and the bark of tender young shoots. Over successive years this has contributed to thinning foliage, progressive die back and minimal growth for the last 20 years.

To maintain a functional woodland canopy and mitigate the impact of Oak leaf roller moth and ash die back Forestry England will continue to introduce compatible species and species mixes to improve resilience against future pests and diseases and ensure woodland habitats can be adapted to the rapid climate change we are now seeing.



Pic.7 Infected ash losing leaves and unlikely to survive another season

In the 61ha of secondary woodland commercial conifer species will be used to restock a large proportion of these areas. This will enable us to continue to provide sustainable timber resources needed by society while maintaining other woodland ecosystem services* including biodiversity, water and soil regulation, carbon storage, and support for people’s wellbeing and cultural values.

Challenges for the woodlands include the high incidence of deer and grey squirrel, which will be proactively managed by Forestry England. Browsing pressure from deer, rabbit and hare mean most restock coupes will likely need fencing. The appetite of non-native grey squirrels for bark stripping increases the susceptibility of young trees (especially beech, oak, sycamore and birch) to secondary infections and can often lead to tree death. Further adverse effects include stunted tree development and inhibited form, plus reduced carbon capture potential and yield.

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. In accordance with forestry guidelines honorary native species* will be introduced to help ensure the woodland ecosystem is more stable in our AWS.

Diverse forests are more resilient to climate change, pests and pathogens, and extreme environmental conditions. Different tree species respond in different ways, so by increasing the diversity in our forests, we can increase adaptation and manage the risks associated with an uncertain future. Increasing diversity also supports our other objectives such as timber production, biodiversity, carbon capture and recreation.



Pic. 8 Ringbarking by squirrels killing a young oak that was fully established.

Table.2 Silverstone Forests Plan Contribution towards Central District commitments to UKWAS and UKFS

	Forest Plan Area	Forest Plan Percentage	Forest District Area	Forest District Percentage
Total Area	726	100	28,101	100
Total Wooded Area	702	96.7	23,571	83.9
Open Habitat (>10%)	24	3.3	4,530	16.1
Natural Reserves - Plantation (1%)	32	4.4	59.1	2.1
Longterm Retentions & Low Impact Silvicultural Systems (>1%)	570	78	14,648	53.5
Area of Conservation Value (>15%) including LISS	609	84	17,666	64.5

Table.3—Species likely to be most favourable to the predicted climate in the area in 2080.

Native	Non-native
Aspen	Scots pine (near native)
Common alder	Coastal redwood
Hornbeam	Grey alder (near native)
Pedunculate oak	Macedonian pine
Black Poplar	Norway maple (near native)
Small leaved lime	Oriental spruce
Wild Cherry	Red oak
Willow	Serbian Spruce
	Sycamore (near native)
	Western red cedar

Table 3 was derived from Forest Research’s Ecological Site Classification Tool (ESC) ([Forest Research Decision Support Tools Portal v2.0 \(forestdss.org.uk\)](https://forestdss.org.uk)). This suggests that soil moisture content will become the most limiting factor for tree growth for the majority of species in this area. ESC is a useful broad guide but does not account for all aspects of suitability. Species choice for restock will be determined by the Forestry England Beat team and conform to the requirements of any underlying land designations. Consideration will also be given to site-specific factors including hydrology, browsing pressure, pests and diseases, competition from ground vegetation, planting stock provenance and availability.



Pic.9 Silver-washed fritillary



Pic.10 Fungi breaking down decaying wood and helping maintain the humus layer in the soil.

6. Terms of Reference

National Strategy	District Strategy	Forest Plan Objective	Monitoring
<p>Economy:</p> <p>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.</p>	<p>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 clearfelling 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.</p>	<ul style="list-style-type: none"> Continue growing commercial timber using a variety of broadleaved and conifer species and increase use of species mixes, building resilience to the impacts of climate change, pests and diseases to maximise yields. Continue management and restoration of Ancient Woodland. Increase structural diversity, actively managing the woodland to promote age and species diversity. Retain established sporting and commercial lets as a secondary income source. 	<ul style="list-style-type: none"> Forestry operations and restocking recorded in the FE sub-compartment database and monitored at 5-year mid-term review and 10-year renewal. Monitored at 5-year mid-term review and 10-year renewal. Monitor as part of 10-year forest plan renewal. Monitor via FE's lease system.
<p>Nature:</p> <p>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.</p>	<p>1) Adapting more sensitive 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.</p>	<ul style="list-style-type: none"> Continue restoring planted Ancient Woodland through gradual reduction of exotic species and introduction of a variety of species better suited to the impacts of climate change, pests and diseases. Identify key species and habitats appropriate provision for their requirements. Manage open and woodland edge habitats for the benefit flora and fauna. Identify existing Trees of Special Interest and manage appropriately to retain these, recruit future veteran trees and increase the volume and distribution of deadwood. Conserve heritage features in line with Forestry England's Historic Environment guidance. 	<ul style="list-style-type: none"> Ancient Woodland restoration monitored as part of the 10 year forest plan renewal. Reviewed by the Environment team during operational planning. Reviewed by the Environment team during operational planning. Existing and future TSI to be mapped and reviewed during operational planning. Review TSI at forest plan scale during 5 year and 10 year review. Reviewed by the Environment team during operational planning.
<p>People:</p> <p>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.</p>	<p>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.</p>	<ul style="list-style-type: none"> Sustain informal public access throughout Silverstone Woodlands, maintaining car parking facilities at Hazelborough North. Diversify species composition and structure and design and scale harvesting and thinning operations sympathetically to maintain aesthetic value where possible and integrate forest boundaries with the wider landscape. Continue established sporting & commercial lets. Engage with third party partners and businesses where compatible with wider Forest Plan objectives. 	<ul style="list-style-type: none"> Access provision monitored at 5-year mid-term review and 10-year renewal. Species composition, age structure and coupe design reviewed as part of the 5and 10 year review. Monitor via Forestry England's lease system. No monitoring required.

Appendix I

Glossary

Acute Oak Decline

Acute oak decline is a complex syndrome in which several damaging agents interact and cause a serious decline in tree condition, and can kill oak trees within four to six years of the onset of symptoms. The agents can be abiotic or biotic; the latter often include insects and fungi which are not capable of invading healthy trees but which can be very destructive to stressed oaks. Symptoms include characteristic weeping cankers/lesions in the bark.

Ancient Woodland

Areas of semi-natural native woodland that have had continuous woodland cover since at least 1600. They are particularly rich in biodiversity and this is often notable in their characteristic ground flora.

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. The shade it casts has a strong influence on the plants, trees and shrubs beneath it.

Carr Woodland

A wet woodland area, usually dominated by willow, birch and alder species.

Chalara Ash Dieback

Ash dieback is a highly destructive fungus killing native ash trees across the UK. Young and coppiced trees will die quickly once infected, more mature ash may survive for a number of years once infected. Causes the timber to lose strength, become brittle and trees to start dropping limbs. It differs from acute oak decline (above), which causes a much faster, and usually fatal, decline in tree health.

Clearfell System

Cutting down of an area of woodland (if it is within a larger area of woodland it is typically a felling greater than 0.25 ha). Sometimes scattered or small clumps of trees may be left standing within the felled area.

Climax Species

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

Coppice

Coppicing is a Lower Impact Silvicultural System (LISS) based on regeneration by regrowth from cut stumps (coppice stools). The same stool is used through several cycles of cutting and regrowth. Coppice can also refer to an area of woodland in which the trees or shrubs are periodically cut back to ground level to stimulate growth and provide wood products. 'Coppice with standards' refers to coppice with a scatter of trees grown on a long rotation to produce larger-sized timber and to regenerate new seedlings to replace worn out stools.

Coupes

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

Dothistroma Needle Blight (DNB)

DNB is a fungal disease affecting mainly pine species. The fungus affects the needles of the infected tree, which are eventually shed. This can continue year on year and gradually weaken the tree, significantly reducing timber yields. It can also eventually lead to mortality.

Ecological Site Classification (ESC)

ESC is an online tool developed by Forest Research to help a forester choose tree species that are suited to a specific site. It models how well each species is likely to grow using information on climate and soil properties. It can also be used to forecast how climate change may impact suitability.

Ecosystem

An ecosystem is an interconnected network formed of all the living things in a given area (plants, animals and organisms) and their interactions with each other and their non-living environments (eg: weather, earth, sun, soil & climate).

Ecosystem Services

Ecosystem services are the goods and services that people depend on that arise from ecosystems. They are usually categorised into Provisioning (eg: timber, water, food production), Regulating (eg: regulation of climate and diseases), Cultural (eg: recreational opportunities, aesthetic value) and Supporting services that underpin these (eg: crop pollination).

England Trees Action Plan

Sets out the Government's long-term vision for the treescape it wants to see in England by 2050 and beyond.

Forestry England

Forestry England is the executive agency of the Forestry Commission that is responsible for managing the Nation's Forests in England.

Forests and Water Guidelines

One of seven sets of guidelines that support the United Kingdom Forestry Standard (UKFS). The UKFS and guidelines outline the context for forestry in the UK; set out the UK Government's approach 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 FP is primarily a landscape-scale felling and restocking plan. It provides a holistic, long-term approach to planning and forest design, detailing felling operations over a 10 year period for the purposes of licencing felling and outlining proposals over the next 50 years. FPs 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.

Group Selection

A method of managing irregular stands in which regeneration is achieved by felling trees in small groups. Group selection involves felling groups of trees (generally <0.25 ha per group)

Glossary continued

Historic Environment

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

Landscape Character

England is renowned for its rich, diverse and beautiful landscapes which have their own distinct local characters. 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

Individual, stable stands and clumps of trees retained for environmental benefit significantly beyond their normal economic age or size.

Lower Impact Silvicultural Systems (LISS)

Silvicultural systems including group selection, shelterwood or under-planting, small coupe felling, coppice or coppice with standards, minimum intervention and single tree selection systems which are suitable for windfirm conifer woodlands and most broadleaved woodlands.

Minimum Intervention

Management with 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 safety work. Management only involves the basic inputs required to protect the woodland from external forces or ensure succession of key habitats and species.

The Nation's Forests

The woodlands managed by Forestry England. These include both freehold and leasehold land. (Previously referred to as the Public Forest Estate.)

National Character Area (NCA)

Broad divisions of landscape form the basic units of cohesive countryside character, on which strategies for both ecological and landscape issues can be based. There are 159 Character Areas, each of which is distinctive with a unique 'sense of place'.

National Nature Reserve (NNR)

NNRs were established to protect some of our most important habitats, species and geology, and to provide 'outdoor laboratories' for research. Most NNRs offer opportunities to the public to experience wildlife first hand and learn more about nature conservation.

Native

Native tree species colonised Britain without human assistance at the end of the last ice age, before the English Channel cut Britain off from mainland Europe.

Naturalised

Naturalised trees have colonised Britain since the land divide with mainland Europe and are growing and reproducing successfully within their natural climatic range without human intervention.

Natural Regeneration

The growth of new trees from seed found in the soil or cast from adjacent trees. Regeneration only occurs where suitable seed sources and conditions are present.

Natural Reserve

Natural Reserves are areas which are predominantly wooded, usually mature and intended to reach biological maturity. They are permanently identified and in locations which are of particularly high wild-life interest or potential. They are managed by minimum intervention unless alternative interventions have higher conservation or biodiversity value.

Nest Planting

Trees planted in small groups which are distributed across the restock site with remaining unplanted areas left to naturally regenerate. A useful way to introduce new species or provenances to a site.

Near Native / Honorary Native

In a changing climate many tree species native to continental Europe will spread north. These species are classified as 'honorary/near-native': a species previously considered to be non-native, but whose climate envelope will expand over England as a result of climate change.

Notifiable Disease

Some tree pests and diseases are notifiable, which means that, in England, they must be reported to the Forestry Commission or Animal & Plant Health Agency. Notifiable tree pests and diseases are typically those with the potential to cause greatest damage to our trees, woods and forests.

Open Grown Trees

Trees that have been given space to develop a large crown and natural shape. In comparison trees planted closely in a plantation managed for timber or biomass tend to have a more uniform shape.

Open Space

Areas within a forest without trees, such as glades, stream sides, grass or heathland, water bodies, rocky areas, roads and rides.

Operational Plans

Detailed site plans prepared in advance of all major forest operations providing guidance to Forestry England staff and contractors. They identify site constraints, opportunities and areas requiring special treatment or protection.

Phytophthora ramorum and *P.pluvialis*

P. ramorum is a very destructive pathogen affecting over 150 plant species, particularly larch trees. Some broadleaved plants (such as sweet chestnut and rhododendron) can also host *P. ramorum*. *P. pluvialis* was first recorded in the UK in 2021 and affects a range of species including Douglas fir and western hemlock.

Glossary continued

Plantation on Ancient Woodland Site (PAWS)

Ancient Woodland areas where semi-natural woodland has been cleared and replaced by plantation, often including non-native species. PAWS sites can include both broadleaved and conifer woods and often retain remnant ancient woodland features like species-rich ground flora or undisturbed soils. Also known as Ancient Replanted Woodland.

Pollarding

A form of pruning where the upper branches of a tree are removed, promoting a dense head of foliage and branches. Cutting is usually around 2.4 metres above ground – the height that wild animals or domesticated stock could reach. Traditionally, trees were pollarded for fodder or for wood. Fodder pollards are generally pruned every two to six years, wood pollards at longer intervals, usually of eight to 15 years, to produce upright poles for egg: fence rails and posts.

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 Rights of Way (PROW)

Access routes open to the public through legal designation. These include footpaths, by-ways and bridleways.

Respacing

Thinning of dense natural regeneration at a young age (generally when trees are 2-5m tall) to produce a more consistent crop, focus available resources on the remaining trees and promote good development.

Restocking

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

Ride

Forestry term for unsurfaced roads, paths and tracks within a woodland which provide access for management and other activities.

Scheduled Ancient Monument (SAM)

A scheduled monument is a site that is legally protected because of its historical importance.

Secondary Woodland

Woodland that has been established on land formerly used for another purpose (egg: as pasture, arable fields, quarries, etc.). Unlike ancient woodland it has not been continuously wooded in the past.

Seed Trees

Trees with good shape and growth rates chosen to produce seed for restocking. Seed trees need to be of an age and size where they produce fertile seeds in large quantities.

Selective Felling (Regeneration 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.

Semi-natural woodland

Those woodlands which are comprised mainly of locally native trees and shrubs, and have some structural characteristics of natural woodland.

Shade Tolerant Species

Trees that have adapted to lower light levels and will regenerate and establish freely under the shade of the surrounding tree canopy, as opposed to light demanding species which require full sun/high light levels to establish and grow.

Silvicultural Systems

Silviculture is the process of tending, harvesting and regenerating a forest. Different patterns of felling and regeneration form distinct 'silvicultural systems'. Different systems may be suitable for different management objectives (egg: conservation in an ancient woodland vs timber production in a conifer plantation).

Site of Special Scientific Interest (SSSI)

A SSSI is a formal conservation designation. Usually, it describes an area that is of particular interest to science due to the rare species of fauna or flora it contains - or even important geological or geographical features that may lie in its boundaries.

Small Coupe Felling

A small-scale clear-felling system. The system is imprecisely defined but coupes are typically up to 2 ha in extent, with the larger coupes elongated in shape so the edge effect is still high.

Special Area of Conservation (SAC)

SACs are protected areas in the UK designated under the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales. These areas form an internationally important network of high-quality conservation sites that make a significant contribution to conserving Annex I and Annex II habitats and species.

Special Protection Area (SPA)

SPAs are protected areas selected to protect one or more rare, threatened or vulnerable bird species listed in Annex I of the Birds Directive, or specific regularly occurring migratory species. They form an internationally important network of high-quality conservation sites that make a significant contribution to conserving important habitats and species.

Strategic Plan

Forestry England's guide to the management of woodland in Central England Forest District. It divides the district into zones for the purpose of management and ensures forestry activities reflect the local ecological, social and cultural individuality of each woodland.

Glossary

Strip Felling

Strip felling involves removal of some trees in rows, leaving strips of mature trees in place rather than clear-felling a crop in one operation. This creates space between remaining trees suitable for planting new trees (especially species that require sheltered growing conditions) and maintains woodland cover while new trees are established. The width of strips may vary and multiple strips are removed from one stand at a time.

Sub-compartments

Areas of forest that form a homogeneous crop in terms of age, species composition and condition. They may be split across several locations and their boundaries may change as the forest develops after felling and restocking.

Thinning

The removal of a proportion of trees in a forest after canopy closure, usually to promote growth and greater value in the remaining trees.

Trees of Special Interest (TSI)

Trees that are of interest biologically, aesthetically or culturally because of their age, or trees that are in the ancient stage of their life, or trees that are old relative to others of the same species. Also referred to as Veteran or Ancient trees.

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 sustainable forest management in the UK. The Scheme has been developed by a partnership of forestry and environmental organisations in response to growing consumer demand for timber products from sustainably managed forests.

Understorey Woodland Species

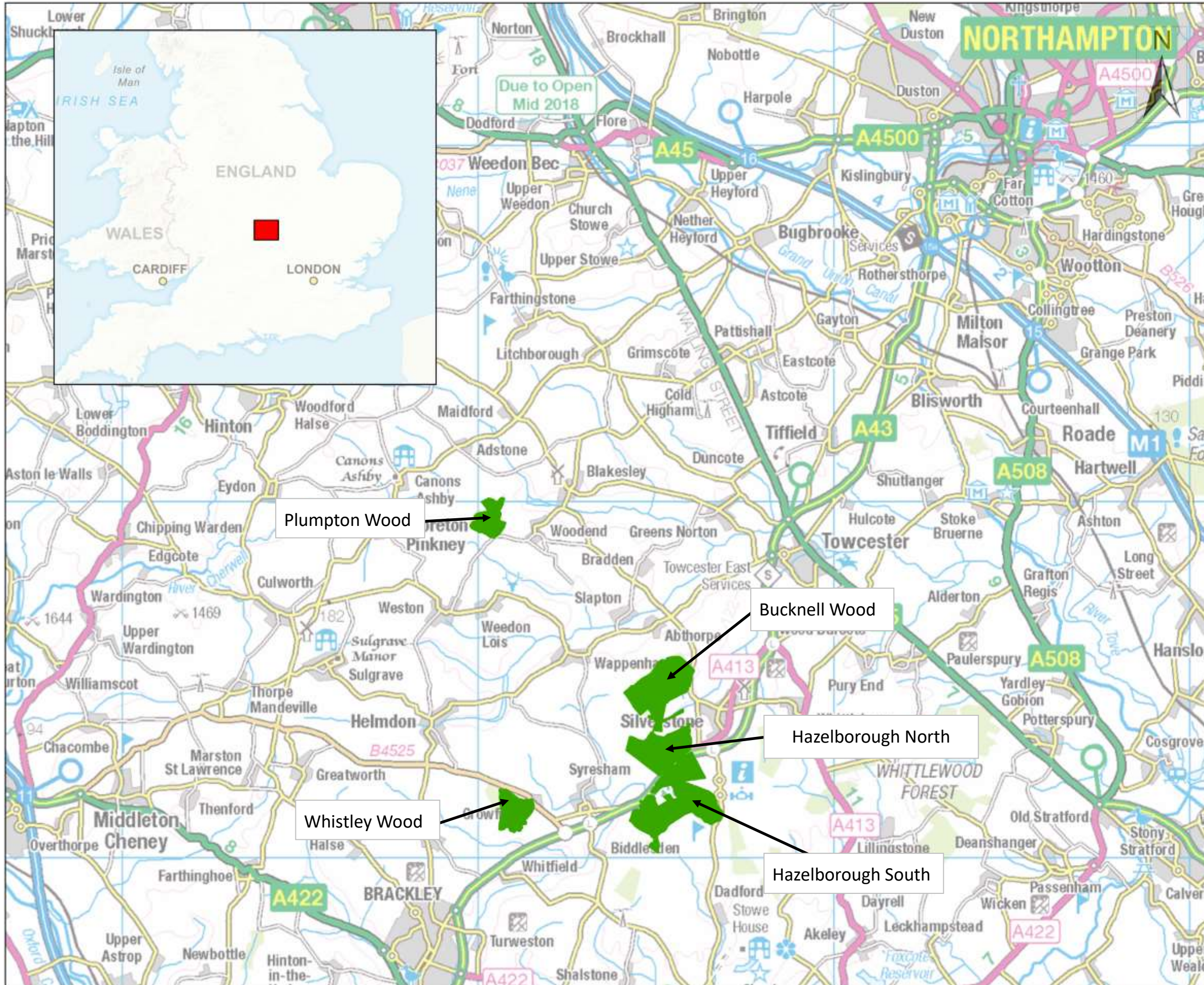
Minor tree species that live under top canopy trees or are 'pioneer' species that arrive in clearings before climax species become established. Once the overstorey is established understorey species are more common on woodland edges and clearings where light levels are higher.

Wood Pasture

Wood pasture is derived from the traditional practice of managing trees in tandem with grazing, characteristically combining at least some open grown or pillared veteran trees or shrubs and diverse and dynamic open and open-woodland habitats.

Yield Class

Yield class is a measure of the growth rate of a tree crop on a given site. It describes the maximum average volume increase that a particular crop can achieve on 1 ha of land each year. For example, a crop capable of a maximum annual growth of 14 m³ per hectare has a yield class of 14. Yield Class varies depending on factors including the species, how it is managed and local site conditions.



Central Forest District

Location Map

The woodlands lie in an open gently rolling landscape dominated by mixed agricultural use, mostly pasture and arable, and woodland is sparse, especially to the west. The woodlands are largely ancient and support a wide range of species including particularly scarce species of butterfly such as the white admiral and wood white.

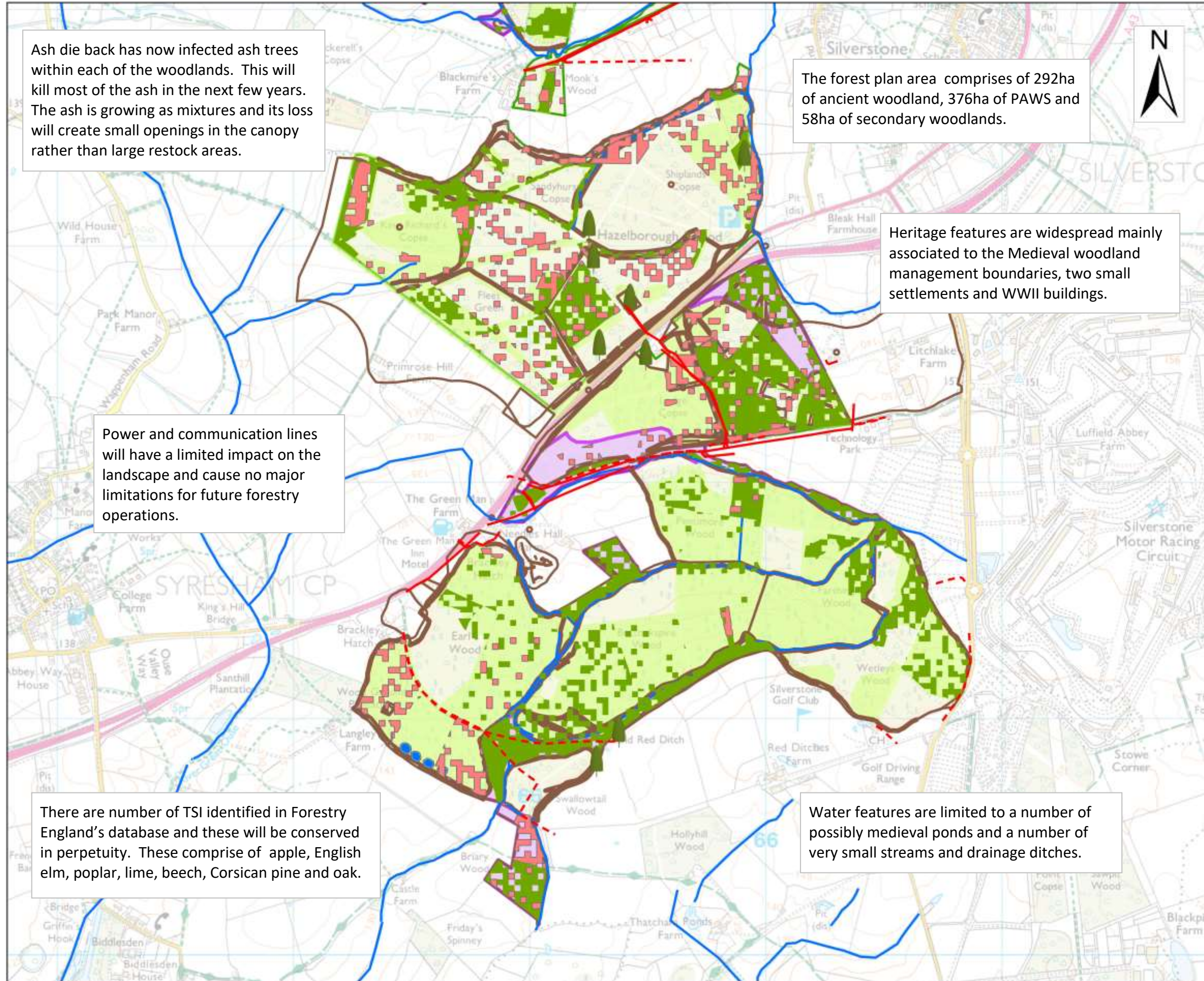
The woodlands are freehold and all designated under the Countryside and Rights of Way Act as open access land. Footfall is limited by the rural location and limited parking. A good network of forest roads provides access through each of the woodlands.

Scale: 1:100,000



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





Ash die back has now infected ash trees within each of the woodlands. This will kill most of the ash in the next few years. The ash is growing as mixtures and its loss will create small openings in the canopy rather than large restock areas.

The forest plan area comprises of 292ha of ancient woodland, 376ha of PAWS and 58ha of secondary woodlands.

Heritage features are widespread mainly associated to the Medieval woodland management boundaries, two small settlements and WWII buildings.

Power and communication lines will have a limited impact on the landscape and cause no major limitations for future forestry operations.

There are number of TSI identified in Forestry England's database and these will be conserved in perpetuity. These comprise of apple, English elm, poplar, lime, beech, Corsican pine and oak.

Water features are limited to a number of possibly medieval ponds and a number of very small streams and drainage ditches.

Central Forest District

Survey Map

- Ash
- Conifers
- Plantation on Ancient Woodland Site (PAWS)
- Watercourses
- Open Water
- Heritage Feature
- Trees of Special Interest (TSI)
- Secondary Woodland
- Overhead Powerline / Communications
- - - Underground Powerline / Communications
- Management Boundary

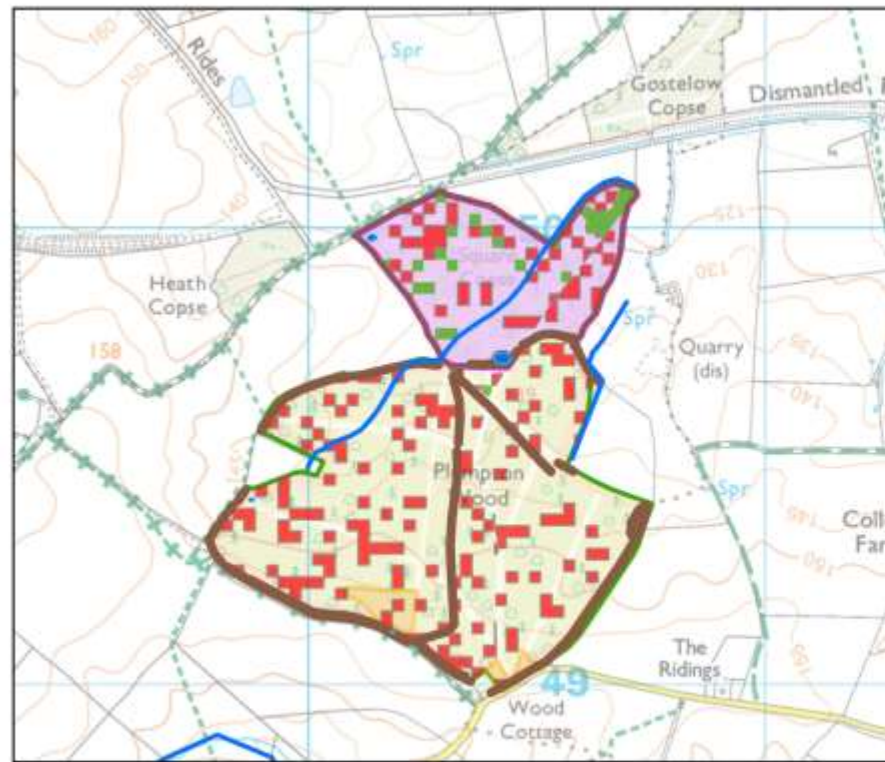
Scale: 1:15,000



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

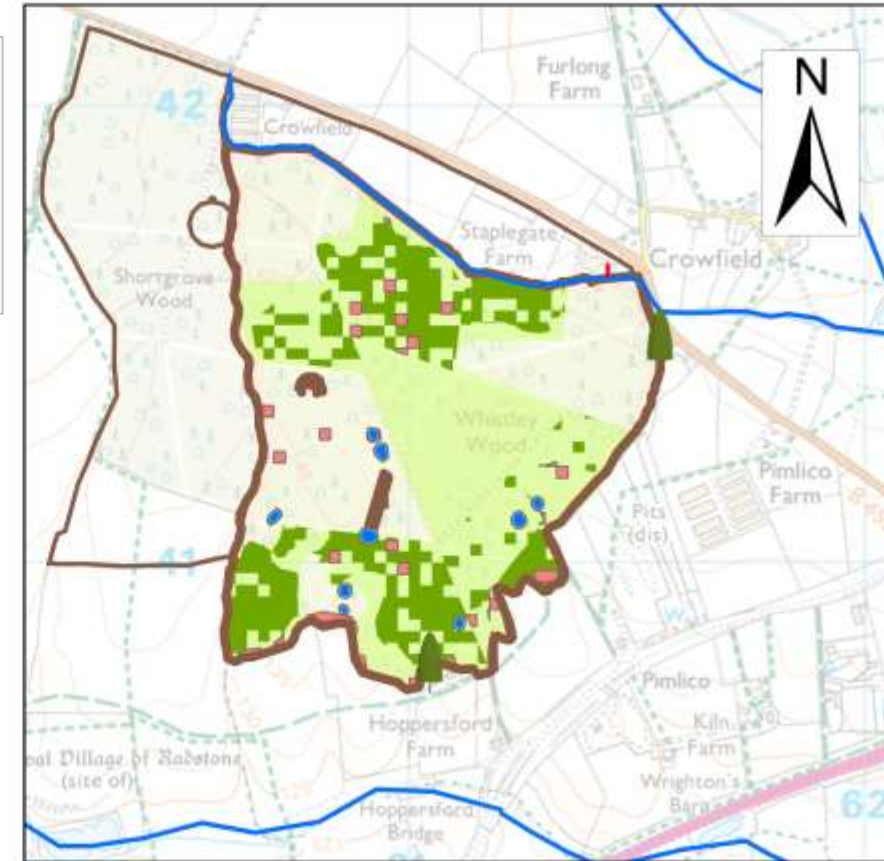
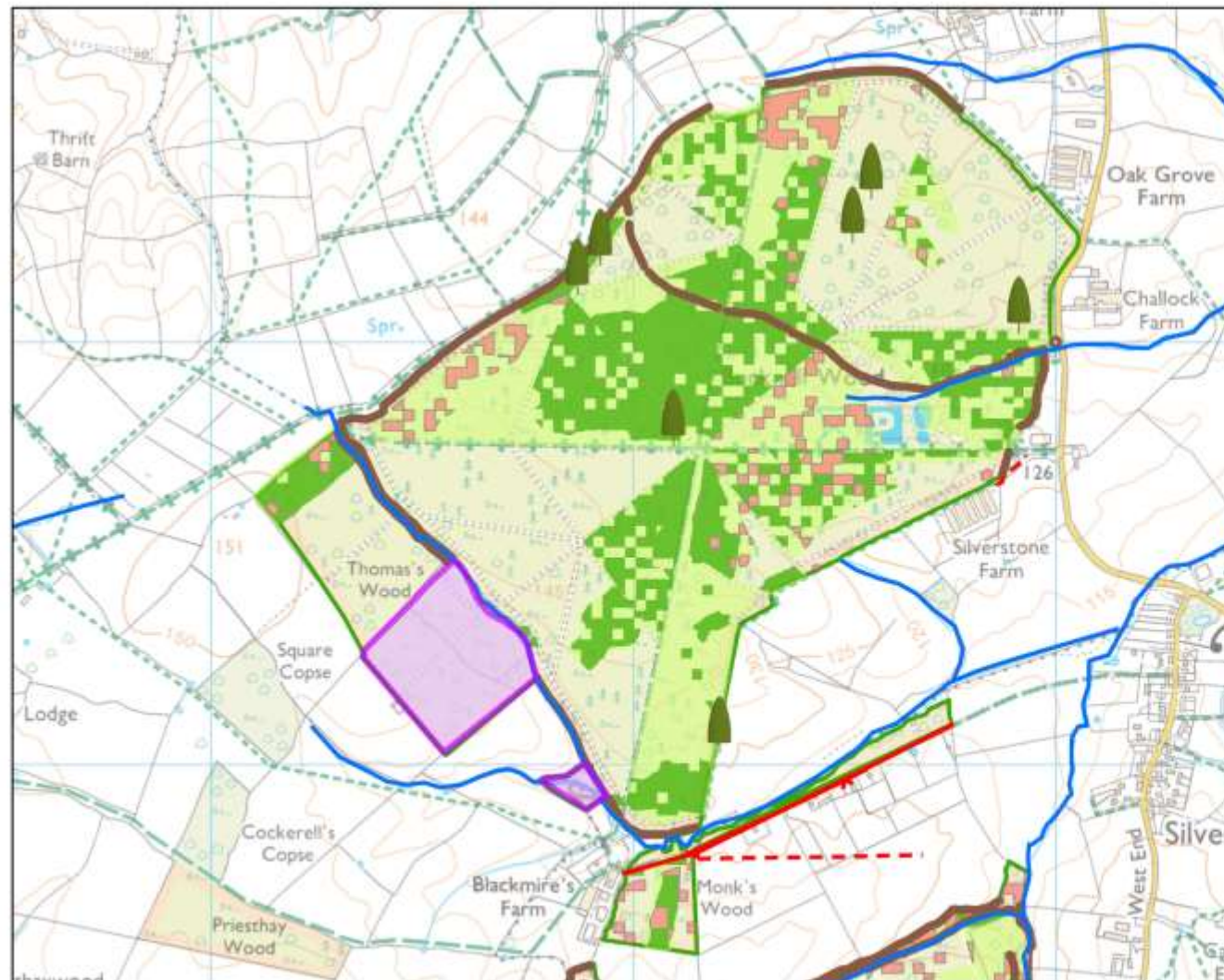


Designed by Alastair Semple



TSI will be retained in perpetuity, where safe to do so. These will become future veteran trees, providing deadwood habitats which are essential for a healthy woodland ecosystem.

The secondary woodland areas (61ha) which have not been continually woodland since 1600 AD will be managed as more commercial stands of timber.



Central Forest District

Survey Map

- Ash
- Conifers
- Plantation on Ancient Woodland Site (PAWS)
- Watercourses
- Open Water
- Heritage Feature
- ▲ Trees of Special Interest (TSI)
- Secondary Woodland
- Overhead Powerline / Communications
- - - Underground Powerline / Communications
- Management Boundary

Squirrel damage is widespread causing tops to snap out and leaving open wounds on the bark. The damage by squirrels leaves the trees susceptible to disease and attack by insects. Deer damage is also visible with signs of bark fraying at 0.2 to 1m height on tree trunks. Heavy browsing damage on ground vegetation has resulted in low levels of oak regeneration.

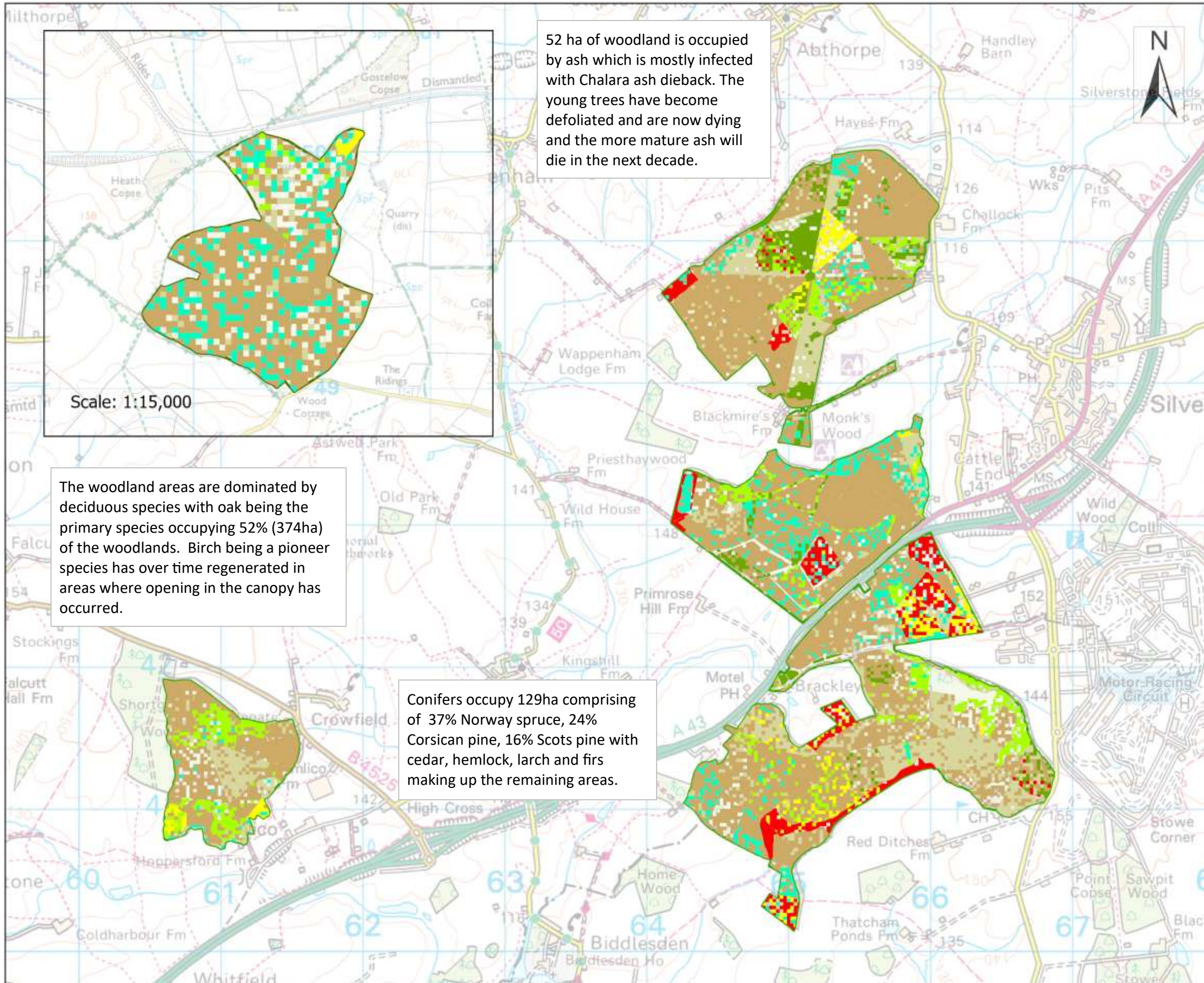
Scale: 1:15,000



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



Designed by Alastair Semple



52 ha of woodland is occupied by ash which is mostly infected with Chalara ash dieback. The young trees have become defoliated and are now dying and the more mature ash will die in the next decade.

The woodland areas are dominated by deciduous species with oak being the primary species occupying 52% (374ha) of the woodlands. Birch being a pioneer species has over time regenerated in areas where opening in the canopy has occurred.

Conifers occupy 129ha comprising of 37% Norway spruce, 24% Corsican pine, 16% Scots pine with cedar, hemlock, larch and firs making up the remaining areas.

Central Forest District

Current Species

- Scots pine
- Corsican pine
- Norway spruce
- Other conifers
- Oak
- Birch
- European Ash
- Other broadleaves
- Management Boundary

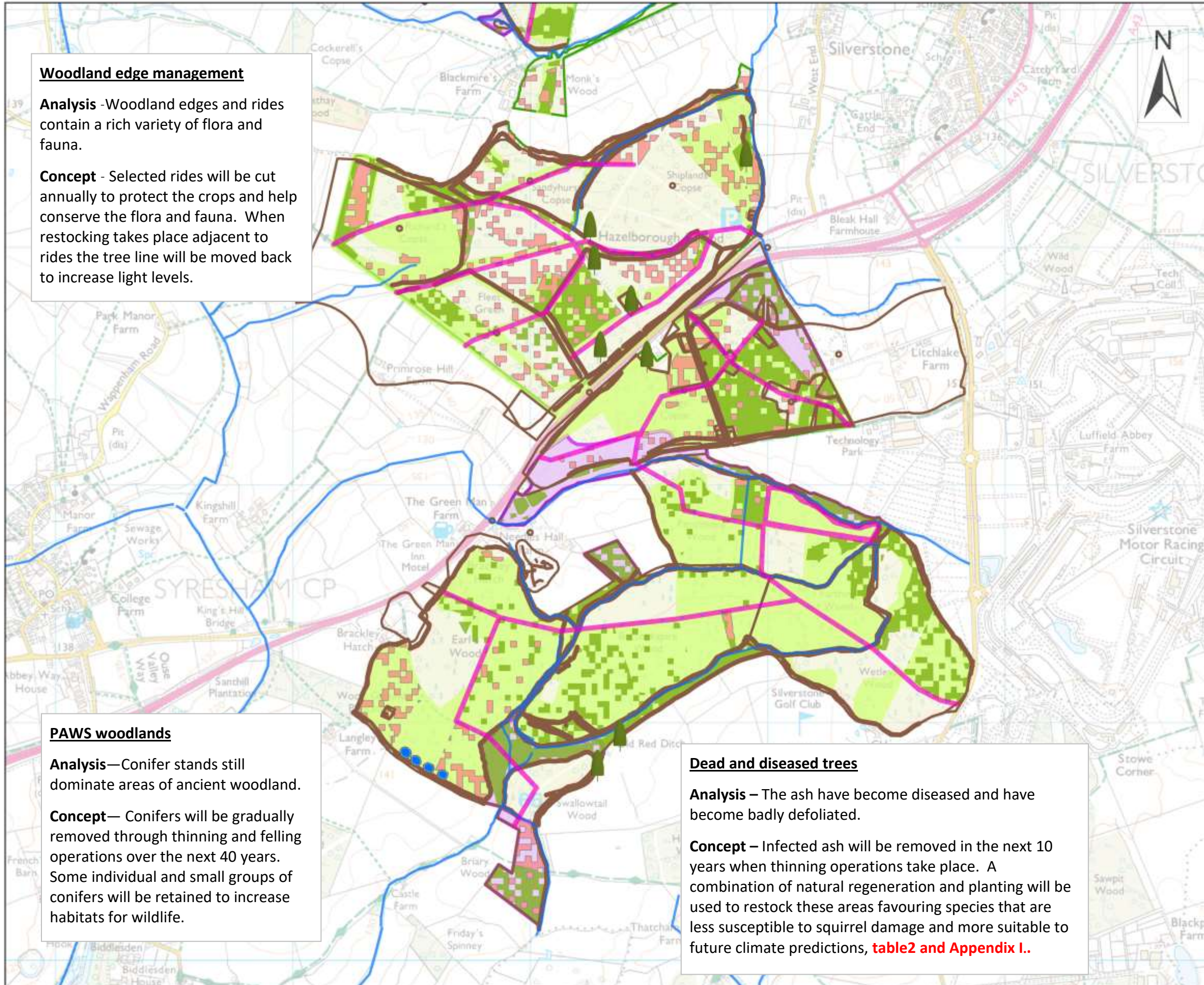
The coloured squares on the map represent the proportion of each species in mixed stands rather the precise location of each species within the forest.

Scale: 1:25,000



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





Central Forest District

Analysis & Concept

- Ash
- Conifers
- Plantation on Ancient Woodland Site (PAWS)
- Watercourses
- Open Water
- Heritage Feature
- ▲ Trees of Special Interest (TSI)
- Secondary Woodland
- Botanically Rich Rides
- Management Boundary

Woodland edge management

Analysis -Woodland edges and rides contain a rich variety of flora and fauna.

Concept - Selected rides will be cut annually to protect the crops and help conserve the flora and fauna. When restocking takes place adjacent to rides the tree line will be moved back to increase light levels.

PAWS woodlands

Analysis—Conifer stands still dominate areas of ancient woodland.

Concept— Conifers will be gradually removed through thinning and felling operations over the next 40 years. Some individual and small groups of conifers will be retained to increase habitats for wildlife.

Dead and diseased trees

Analysis – The ash have become diseased and have become badly defoliated.

Concept – Infected ash will be removed in the next 10 years when thinning operations take place. A combination of natural regeneration and planting will be used to restock these areas favouring species that are less susceptible to squirrel damage and more suitable to future climate predictions, **table 2 and Appendix 1.**

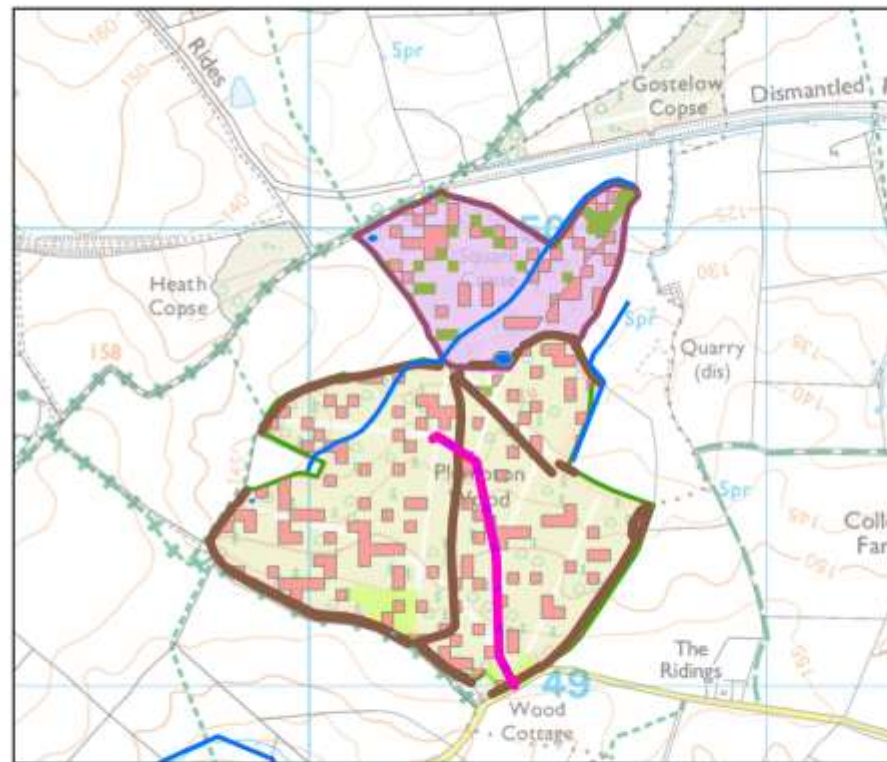
Scale: 1:15,000



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



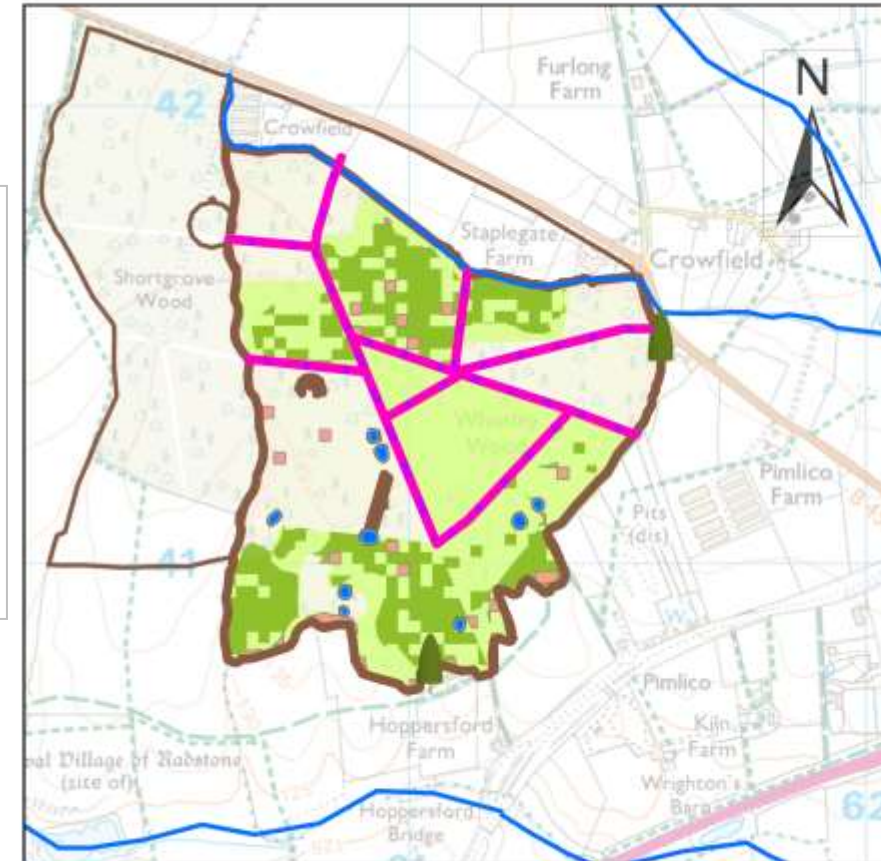
Designed by Alastair Semple



Trees of Special Interest (TSI)

Analysis – TSI provide a wide range of habitats and structural diversity in the woodlands.

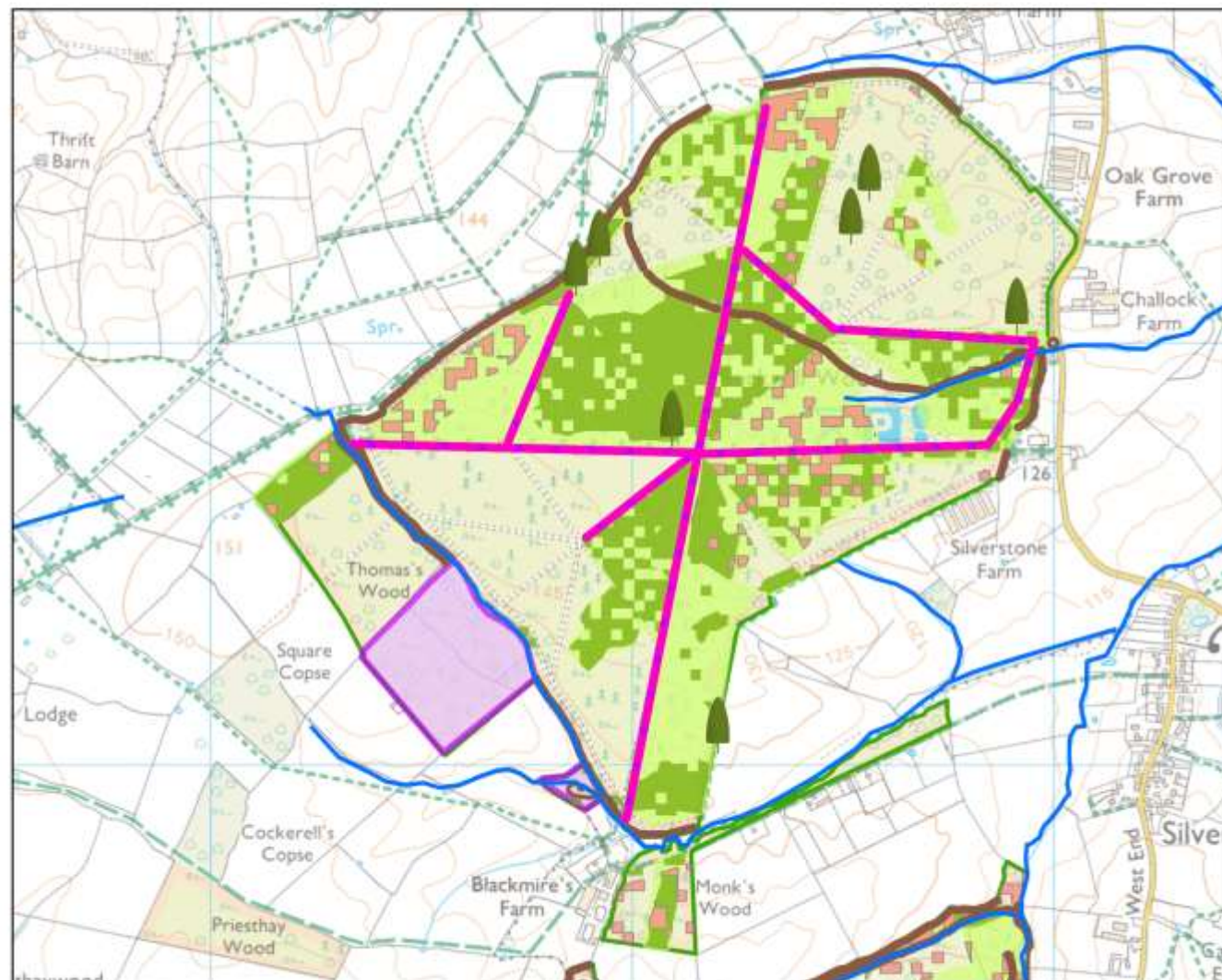
Concept – Retain TSI in perpetuity, where safe to do so and recruit TSI that will become veteran trees in the future and increase the volume of deadwood habitats.



Central Forest District

Analysis & Concept

- Ash
- Conifers
- Plantation on Ancient Woodland Site (PAWS)
- Watercourses
- Open Water
- Heritage Feature
- Trees of Special Interest (TSI)
- Secondary Woodland
- Botanically Rich Rides
- Management Boundary



Non-woodland Habitats

Analysis – Non-woodland habitats (open areas and ponds) will be managed for conservation.

Concept – Ensure tree cover adjacent to these habitats does not encroach. Open up the ponds and streams by selectively felling trees along the southern side of the water creating varying levels of dappled shade and full sun over the water.

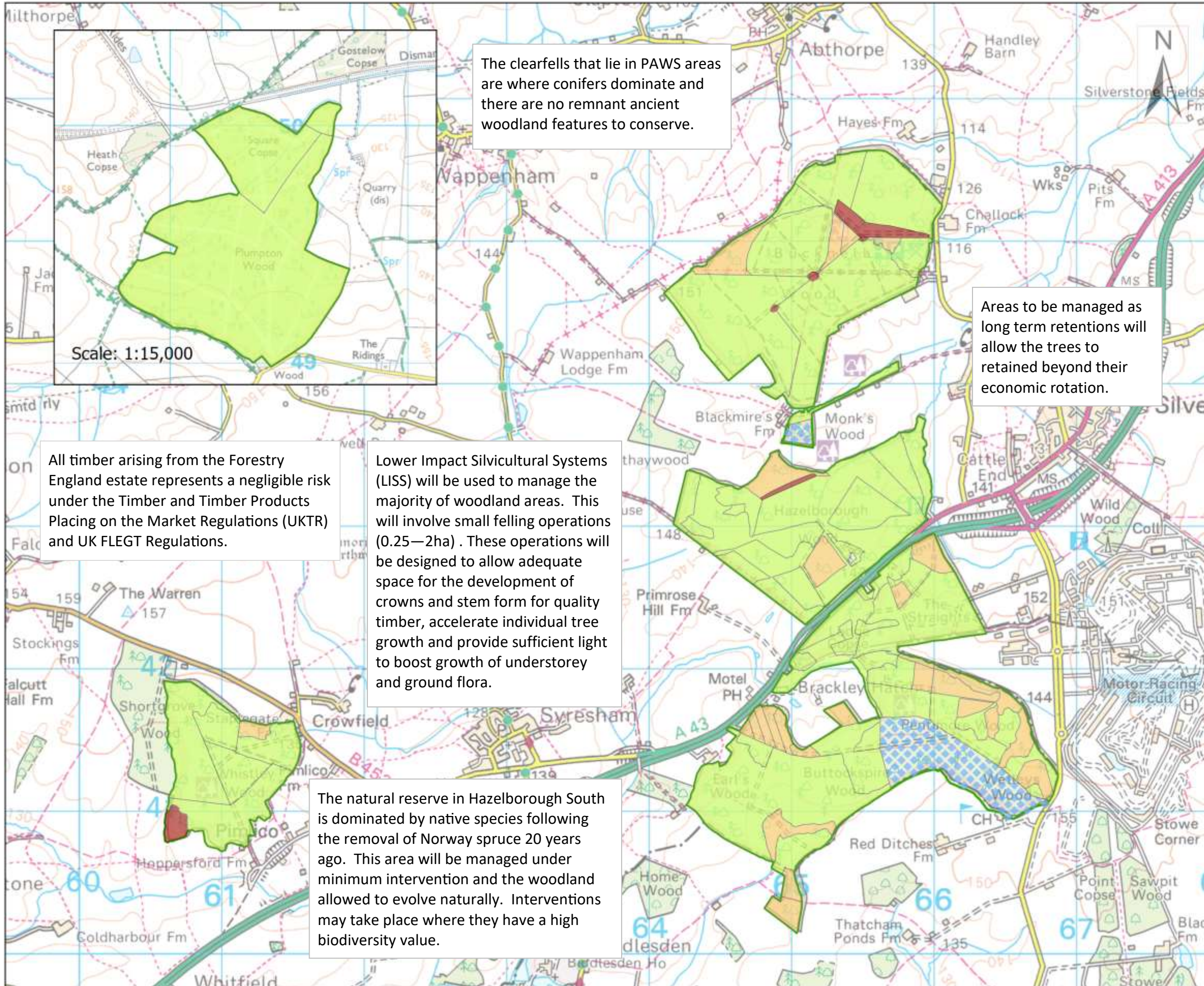
Scale: 1:15,000



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



Designed by Alastair Semple



The clearfells that lie in PAWS areas are where conifers dominate and there are no remnant ancient woodland features to conserve.

Areas to be managed as long term retentions will allow the trees to be retained beyond their economic rotation.

All timber arising from the Forestry England estate represents a negligible risk under the Timber and Timber Products Placing on the Market Regulations (UKTR) and UK FLEGT Regulations.

Lower Impact Silvicultural Systems (LISS) will be used to manage the majority of woodland areas. This will involve small felling operations (0.25—2ha). These operations will be designed to allow adequate space for the development of crowns and stem form for quality timber, accelerate individual tree growth and provide sufficient light to boost growth of understorey and ground flora.

The natural reserve in Hazelborough South is dominated by native species following the removal of Norway spruce 20 years ago. This area will be managed under minimum intervention and the woodland allowed to evolve naturally. Interventions may take place where they have a high biodiversity value.

Central Forest District

Silvicultural Systems

- Clearfell
- Lower Impact Silvicultural Systems (LISS)
- Minimum Intervention (Natural Reserve)
- Long Term Retention
- Other/Open land
- Management Boundary

Scale: 1:25,000

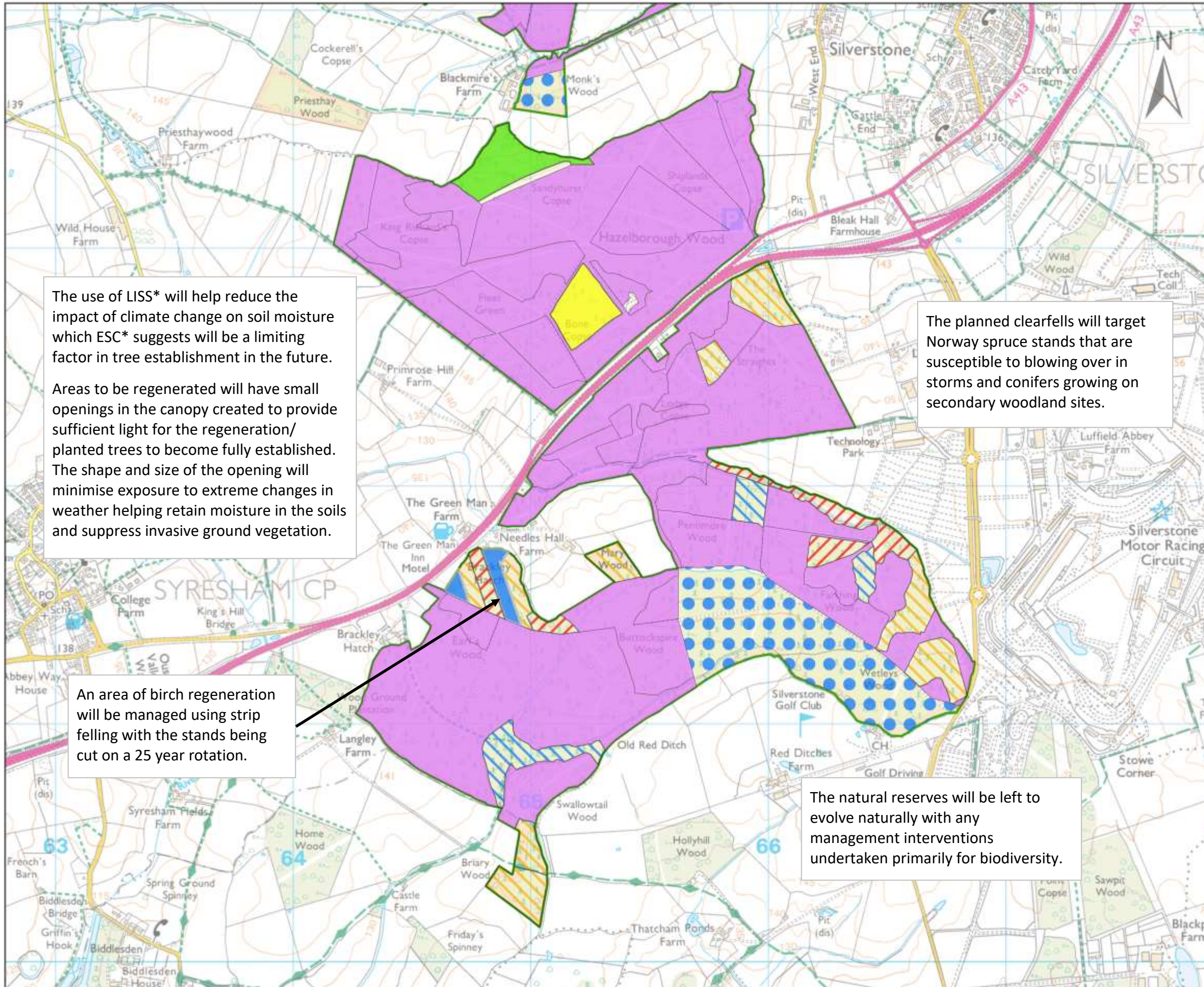
Forestry England



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



PEFC



Central Forest District

Felling Periods

- Open habitats
- 2025-2026
- 2027-2031
- 2032-2036
- 2037-2041
- 2042-2046
- 2047-2051
- 2052-2056
- 2057-2061
- Beyond 2062
- Lower Impact Silvicultural Systems (LISS)
- Natural Reserve
- Long Term Retention (LTR)
- Management Boundary

The use of LISS* will help reduce the impact of climate change on soil moisture which ESC* suggests will be a limiting factor in tree establishment in the future.

Areas to be regenerated will have small openings in the canopy created to provide sufficient light for the regeneration/ planted trees to become fully established. The shape and size of the opening will minimise exposure to extreme changes in weather helping retain moisture in the soils and suppress invasive ground vegetation.

The planned clearfells will target Norway spruce stands that are susceptible to blowing over in storms and conifers growing on secondary woodland sites.

An area of birch regeneration will be managed using strip felling with the stands being cut on a 25 year rotation.

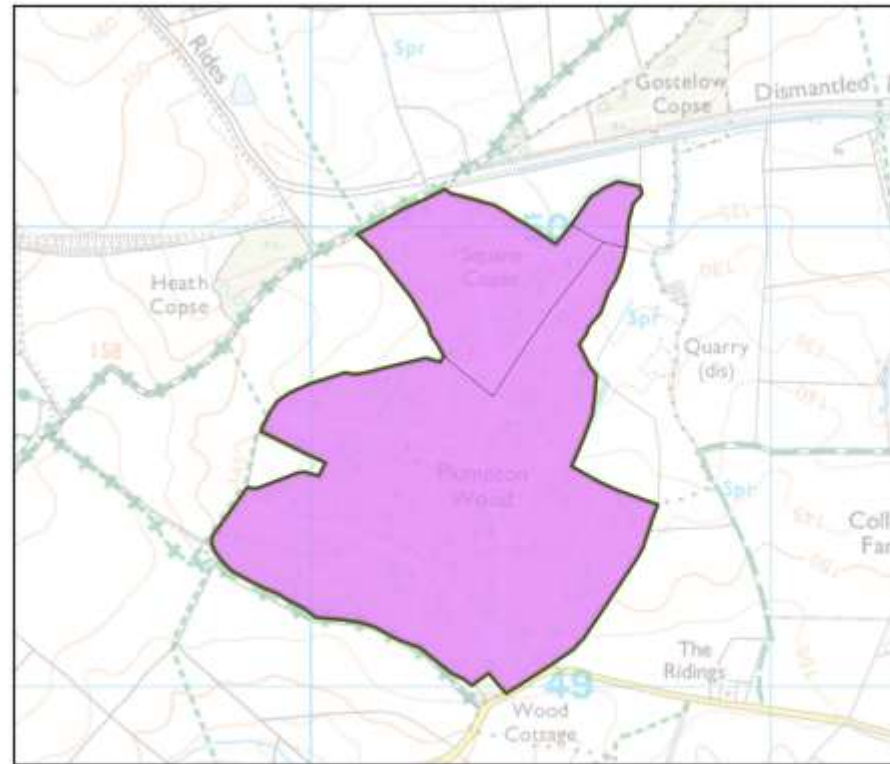
The natural reserves will be left to evolve naturally with any management interventions undertaken primarily for biodiversity.

Scale: 1:15,000

Forestry England

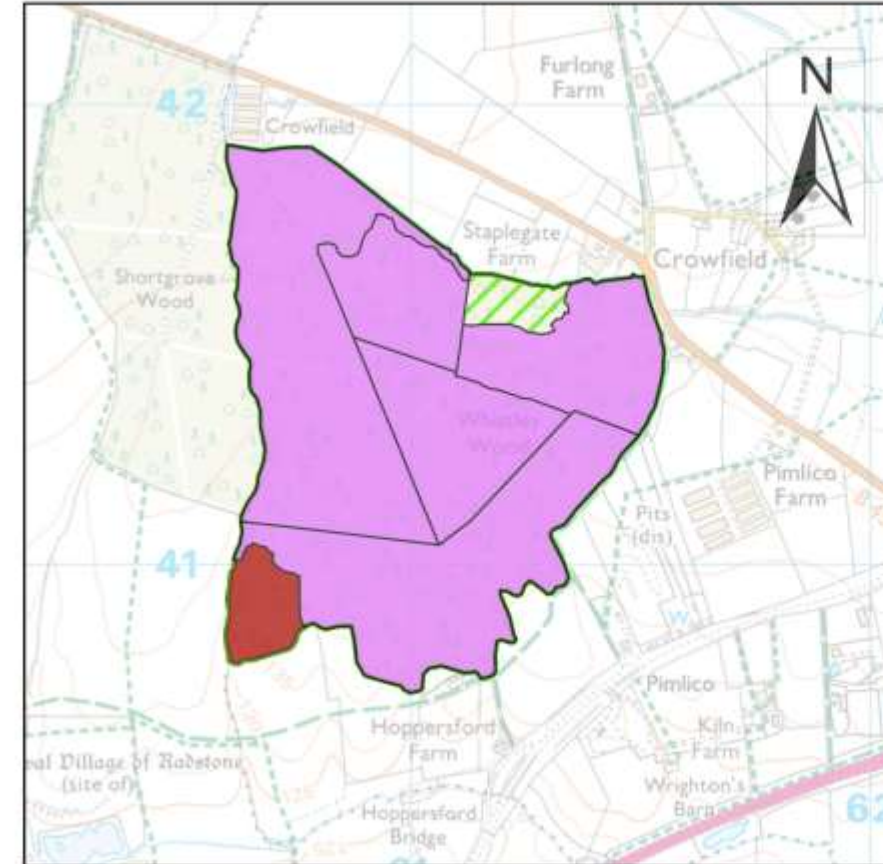
Forestry England forests and woodlands have been certified in accordance with the UK Woodland Assurance Standard (UKWAS)

PEFC



LISS* will be used to promote natural regeneration through the creation of small gaps in the canopy (<2ha). The size of coupes will vary according to the light requirements of individual species to become established in the coupes and may also be determined by the extent of advanced regeneration.

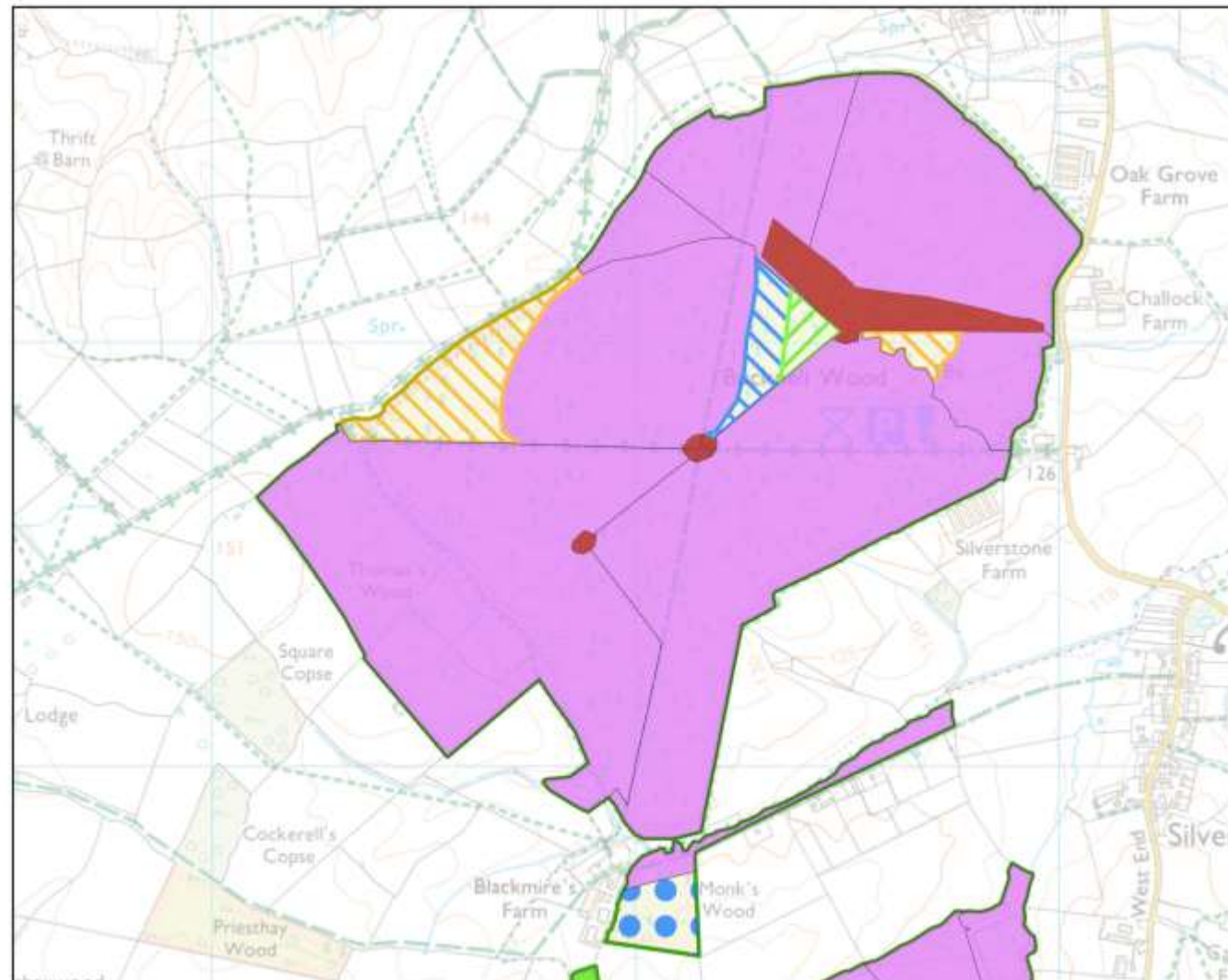
LISS will allow a more varied age structure to develop which should help reduce the impact of wind as opposed to a more uniform age structure.



Central Forest District

Felling Periods

- Open habitats
- 2025-2026
- 2027-2031
- 2032-2036
- 2037-2041
- 2042-2046
- 2047-2051
- 2052-2056
- 2057-2061
- Beyond 2062
- Lower Impact Silvicultural Systems (LISS)
- Natural Reserve
- Long Term Retention (LTR)
- Management Boundary



Long term retentions are stands of trees that will be retained for their wildlife or aesthetic value. These stands will be eventually felled but retained far beyond their normal economic rotation. These areas will help increase deadwood habitats and help recruit future veteran trees.

The clearfell operations will focus on the removal of poor crops that have failed due to disease and wind damage and PAWS restoration.

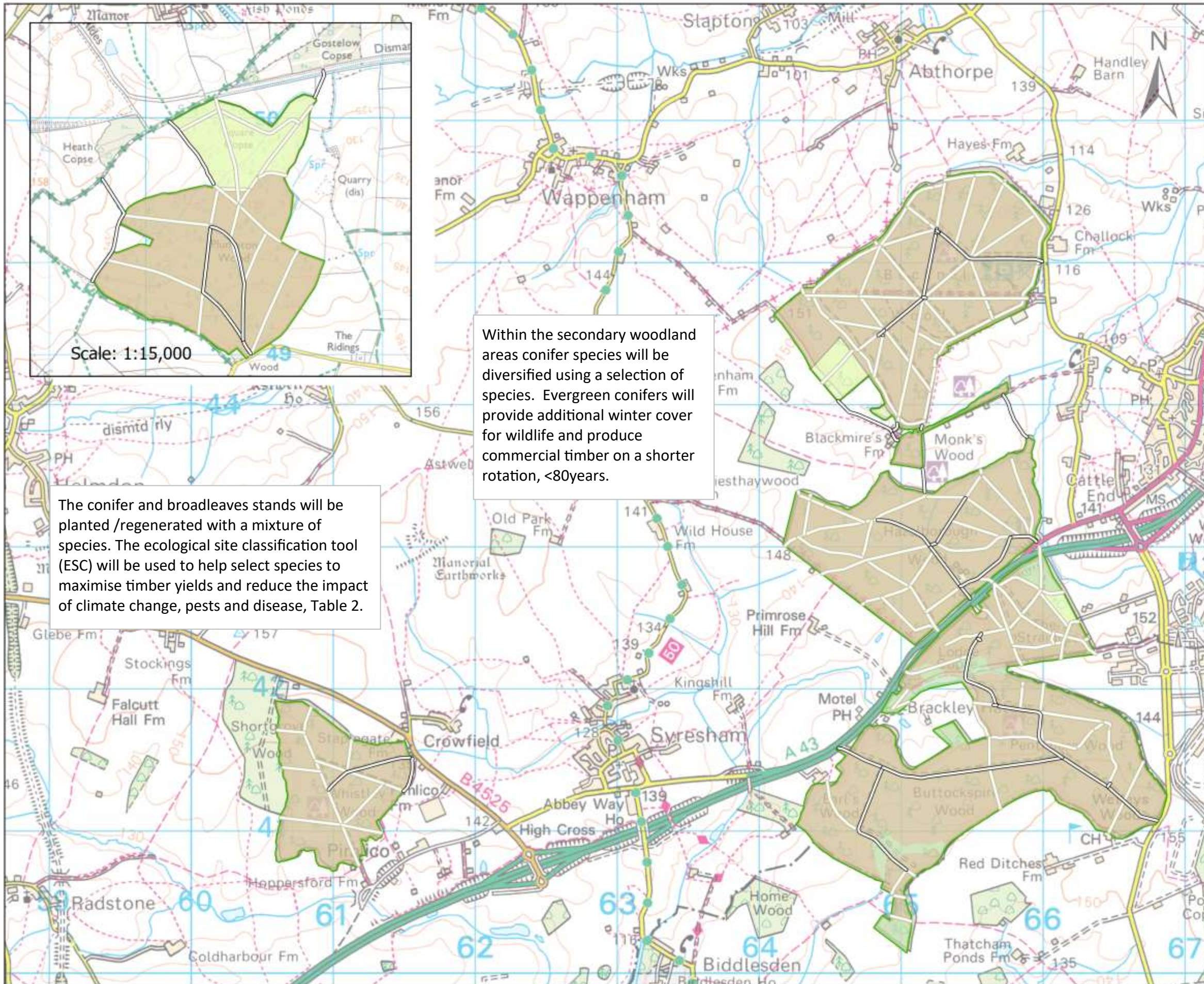
Scale: 1:15,000



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



Designed by Alastair Semple



Central Forest District

- Intended Landuse**
- Forest roads & rides
 - Mixed broadleaves & conifers
 - Dominated by conifers
 - Dominated by native broadleaves
 - Management Boundary

Scale: 1:25,000



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



Designed by Alastair Semple
 © Crown copyright and database right [2025]
 Ordnance Survey [100021242]
 © Getmapping Plc and Bluesky International 2025