

# North Staffordshire

## Forest Plan 2019 to 2028

## **Certificate of Approval for Tree Felling**


*This is to certify that tree felling under*

**Forest Plan ref.  
North Staffordshire FDP**

*has been approved by the Forestry Commission as  
being in accordance with Government policy for  
the sound management of a renewable resource.*

*This certificate is valid only for the  
period of the felling approval.*

Signed

  
Forestry Commission Officer

Date

21st January 2019

### **Summary**

The North Staffordshire Forest Plan (FP) summaries proposals by the Forestry Commission for the management of six woodlands, Big Bishops (352ha), Little Bishops (81ha), Burnt Wood (88ha), Tittensor (72ha), Swynnerton Old Park (329ha) and Walton's Wood (13ha). The plan area of 935ha lies 8km west of Stoke on Trent and 19km northwest of Stafford, with easy access from the M6 and local conurbations. The proposed management for each woodland will contribute to the landscape character area (Staffordshire Plain Regional Character Area 61) and landscape policy objectives through no loss of woodland cover, the restoration of former ancient woodland sites and the continued active management of woodlands in the landscape.

The FP woodlands are largely (88%) ancient woodland sites now planted with conifers. Pine is the main conifer species covering 50% of the woodland area. Felling operations carried out over the last 25 years as the conifer crops have matured has created a diverse woodland structure across most of the FP and the transitional open space has created niche habitats for ground nesting birds and a wide selection of Lepidoptera have been recorded.

The management plans objectives will be to grow commercial crops on a sustainable basis, gradual restoration of ancient woodlands, diversify further the forest structure through thinning and felling, increase deadwood habitats and the number of Trees of Special Interest (TSI) and maintain the public access. The principal ecological interest in the plan is associated with the transitional open space, ride sides and associated fauna. These now provide valuable nesting and feeding habitat for a range of ground nesting birds, butterflies and moths.

The FP will help to develop a more diverse woodland structure through active forest management. This will be achieved specifically through the retention of some stands of trees in perpetuity, the development of mixed open stands around water, natural regeneration and enrichment planting on AWS sites and increased length of woodland edge habitat. There are no formal recreational facilities in the woodlands but the public do enjoy quiet recreational activities in all but Tittensor Wood where the lease agreement prohibits public access.

## Central Forest District - North Staffordshire Forest Plan

Contents:	Page No.	
	Summary	1
A	Application for Forest Plan Approval	3
2.	Review of the 2007 Forest Plans	4
3.	Management Objectives	
3.1	Environment	5
	Pic 1. Old Birch in Tittensor Wood	
	Pic .2 Pond in Little Bishops Wood	
3.2	Economic	6
	Pic.3 Timber harvester	
	Pic.4 Corsican pine infected by DNB	
3.3	Social	
3.3.1	Access	
3.3.2	Heritage	
3.4	Intended Landuse	7
	Fig 2. Current Species	
	Table 1. North Staffordshire Forest Plan Contribution	
	towards the Central District Commitments to UWAS and UKFS	
4	Consultees	8
5	Meeting and Monitoring Management Objectives	9

Any technical words are identified throughout the plan with an \*. (apteryx). And an explanation for these can be found I the Glossary.

## Maps

Location Map	11
Survey Data- Burnt Wood, Big & Little Bishops	12
Survey Data- Swynnerton Old Park, Tittensor & Walton's Wood	13
Current Species - Burnt Wood, Big & Little Bishops	14
Current Species- Swynnerton Old Park, Tittensor & Walton's Wood	15
Silvicultural Systems - Burnt Wood, Big & Little Bishops	16
Silvicultural Systems - Swynnerton Old Park, Tittensor & Walton's Wood	17
Big Bishops Felling Map	18
Big Bishops Intended Landuse	19
Little Bishops Felling Map	20
Little Bishops Intended Landuse	21
Burnt Wood Felling Map	22
Burnt Wood Intended Landuse	23
Tittensor and Walton's Wood Felling Map	24
Tittensor and Walton's Wood Intended Landuse	25
Swynnerton Old Park Felling Map	26
Swynnerton Old Park Intended Landuse	27
<b><u>Future Forest Structure 2020, 2040 and 2060:</u></b>	
Big Bishops	28-29
Little Bishops	30-31
Burnt Wood	32-33
Tittensor Wood	34-35
Swynnerton Old Park South East	36-37
Swynnerton Old Park North	38-39
Appendix I— Terms of Reference	40
Appendix II—Glossary	41
Appendix III—What is a Design Plan	43

## A Application for Forest Plan Approval

### i Plan Area Identification:

Forest District: Central Forest District  
 Beat: North Staffordshire  
 Name: North Staffordshire Forest Plan  
 Nearest Town: Stoke on Trent  
 OS Grid Reference: Big Bishops SJ 753 310  
 Little Bishops SJ 747 334  
 Burnt Wood SJ 736 352  
 Tittensor SJ 880 365  
 Swynnerton SJ 830 398  
 Walton SJ 778 462  
 Local Planning Authority: Staffordshire

### ii Designations:

*Ancient Woodland\*, Plantation on Ancient Woodland (PAWs)\*, Secondary Woodland\*, Site of Special Scientific Interest (SSSI)\*, and lies in the Shropshire, Cheshire and Staffordshire Plain Natural Area\* Profile No.61, Scheduled Ancient Monument (SAM)\*.*

### iii Date of Commencement of Plan

As soon as possible once approved.

Area (ha)	Conifers	Broadleaves
Felling	41.2	0.5
Restocking	9.9	31.3

*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*

Total clear fell area 41.2ha

Forest Plan maps are attached

In addition to the above felling 744ha 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/compartment over the plan period. This operation will include; encourage initial seeding, 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. This operation will also be supported, where needed by; supplementary planting in order to increase species diversity.

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

*Andrew Jones*

Approved

*Keith Jones*

FDM

pp Keith Jones - NWWM Area Director

District

*Central England*

Conservancy

North West and West Midlands Area

Date

*27.11.18*

Date

21st January 2019

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 Commission forests and woods are independently certified as sustainably managed, to continue to benefit future generations.



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





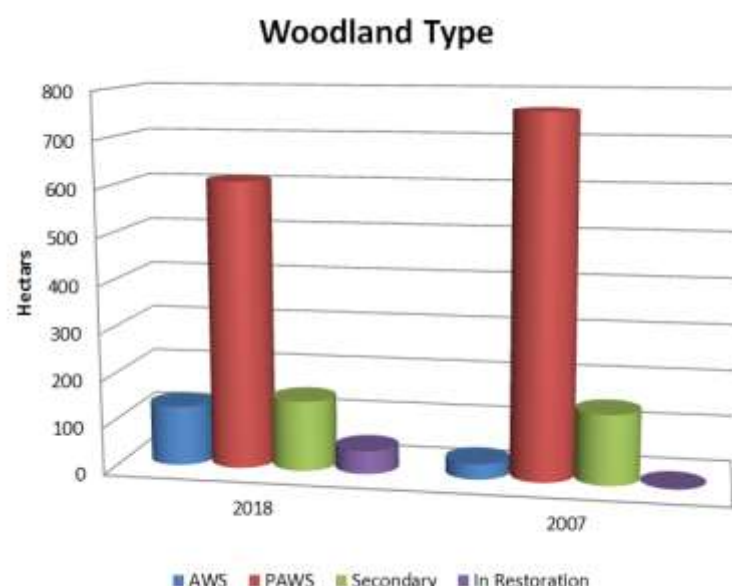
## 2. Review of the 2007 Forest Plans

The management objectives set out in the original Swynnerton and Bishops Forest Plans 2006-2017 for the gradual restoration of PAWS sites and the conservation of flora and fauna remain unchanged. In the last 10 years the Forestry Commission (FC) has restored 102ha of AWS, expanding the AWS by over 300%. An additional 49ha is now in restoration. The scale and speed of restoration has been influenced heavily by disease now affecting the health of the pine which has led to the early removal of some stands and extensive storm damage in Swynnerton Old Park. The sudden loss of high forest was not anticipated and rate of removal of high forest (conifers) will be reduced in the future to ensure a more diverse woodland can be maintained longterm across all sites for wildlife and landscape benefits. The use of regeneration thinnings\* has had limited success within the PAW's areas with little regeneration taking place and dense invasive vegetation becoming established. Where natural regeneration has been achieved this has been limited to birch and rowan.

Phytophthora has also been identified in trees in Burnt Wood and on private woodlands adjacent to Swynnerton Old Park Wood. This is a notifiable disease affecting a number of species including larch and sweet chestnut with infected stands having to be felled and infected material removed under special conditions. The presence of Phytophthora will influence the species choice and suitability in future rotations.

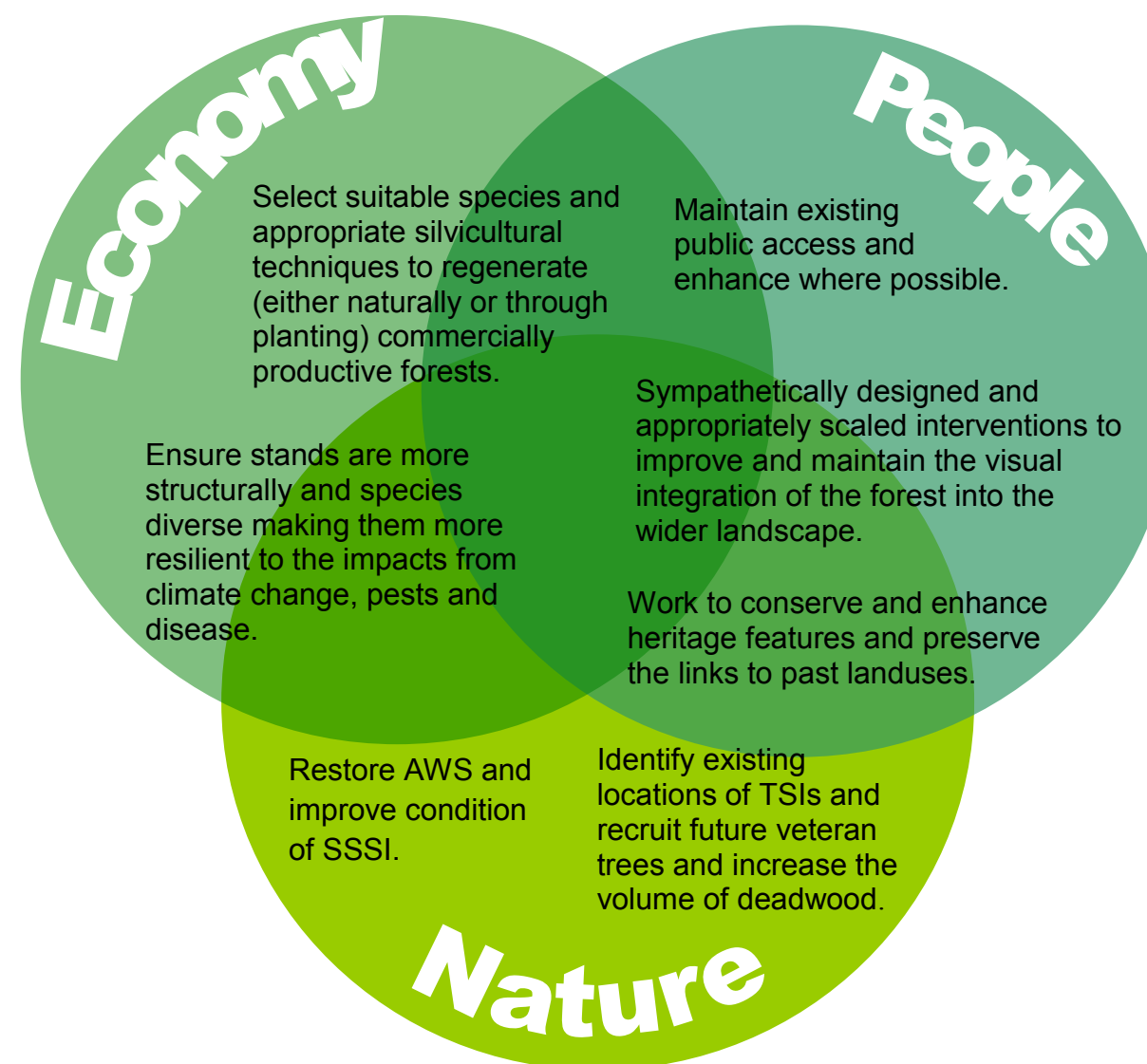
Ride widening has begun to increase available habitats for insects and lepidopteran and surveys undertaken in 2015 by Butterfly Conservation found that the majority of rides surveyed were in good condition.

Fig. 1 Transformation of woodland composition 2007 to 2018



## 3. Management Objectives

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



*NB—Management objectives arise from the Terms of Reference (Appendix I) written at the outset of each plan by the senior district management staff, beat team and planner.*

## 3.1 Environmental

The primary objective for this Forest Plan will be the gradual restoration of AWS through the phased removal of conifers which will diversify the forest structure. The shape, size and frequency of felling patterns will be designed to create temporary open space and naturally regenerated native species that are sympathetic to the life cycles of some of the birds and invertebrates that reside in the forest. A variety of silvicultural\* systems will be used to achieve this based on the level of natural regeneration and light requirements of the tree species and any special consideration for soil and water protection in accordance with the Forestry and Water Guidelines, see silvicultural systems map. Ground flora surveys are due to take place in 2019 and 2020 and these will help prioritise remnant AWS features for restoration.

Roads and rides will continue to be widened as adjacent stands of trees are felled and restocked. A rolling cutting programme will then be introduced with each area being cut approximately every 4 years, depending on the target species and ground vegetation. The Forestry Commission will continue to work in partnership with Butterfly Conservation to ensure its future management provides a continuity of habitats needed by target species found within each forest.

There is currently a limited number of TSI\* present but there are a large number of potential future TSI. Surveys have begun and will continue to identify the 'character' trees and they will be recorded within the FC conservation database as TSI to ensure they are retained in perpetuity. Any dead or dying trees will be retained where it is safe to do so to increase the volume of standing deadwood which is important to the lifecycle of many invertebrates.

Some stable stands of broadleaves and conifer trees will also be retained as Long Term Retentions (LTR) beyond their biological maturity to create future TSI and increase deadwood habitat. Fallen deadwood will be retained in areas where it does not inhibit other management objectives.



**Pic.1. Birch tree in Tittensor Wood**

3 areas have been identified as Natural Reserves\* (2 in Big Bishops and 1 in Walton's wood) where a management policy of minimum intervention will be introduced to allow natural ecological processes to take place in the forest and create an undisturbed/unmanaged area for wildlife.

36ha of Burnt Wood has been designated as a SSSI\* for the ancient semi-natural oak woodland communities it supports, with 672 species of invertebrates recorded. A new SSSI management plan has just been written by the FC and Natural England which outlines the specific operations needed to bring the SSSI and associated habitats into favourable or favourable recovering condition. All forestry operation within the SSSI area will be carried out in accordance to the approved SSSI management plan and any forestry operation adjacent to the SSSI will be designed to complement the SSSI management objectives.

There are a number of small water courses, open water and wet woodland habitats (W4\* and W7\*) found within each of the woodlands. These will be carefully managed when forestry operations are carried out in adjacent stands creating buffer zone around the water features which will reduce the risk of siltation, create varying light levels, allow an understorey\* to develop and provide valuable habitats for the flora



and fauna associated with these wetland habitats. **Pic .2 Pond in Little Bishops Wood**

The key species that have been recorded and need to be taken into consideration when planning forestry operations are; Wood ants, badgers, Woodlarks, Nightjar, Argent and Sable Moth, over 400 hundred recorded Lepidoptera and caddis flies, adders, grass snakes and Dormouse although not seen since 2009 in the SSSI.

Rhododendron Ponticum species and Holly are invasive species most notably in the SSSI and the systematic cutting followed by treatment with herbicide to prevent or kill re-growth will be carried out when forestry operation are undertaken to ensure these two species do not inhibit the restoration of the AWS and associated ground flora.



## 3.2 Economic

Future felling patterns and silvicultural\* systems used have been selected to achieve the management objectives for each area of woodland and maximise the economic returns from the timber crops to be removed ensuring the woodlands can be managed sustainably.

Conifer stands\* where stocking density allows will be thinned on a 5 year rotation and

broadleaves on a 10 year rotation with the first thinning operation beginning when conifers reach 20years old and broadleaves 25years. The timing of these first thinnings may vary depending on the management objectives for specific areas or the habitat requirements of native flora and fauna.



Pic.3 Timber harvester

The 150ha of secondary woodland will largely be managed using commercial conifer species in future rotations. Stocking density and rotation length will be designed to maximise the volume of timber produced for each specific species planted.

Due to the recent storm damage following regeneration thinnings\* on PAWS future thinning programmes will be delayed to allow the current stands to reach a higher stocking density and reduce the risk of further damage and loss of woodland habitat. A combination of clearfells and group selection systems will be used to remove the conifers and revert the PAWS\* area back to broadleaved dominated woodland. This will also provide the continuity of transitional open space essential for the woodlark and nightjar population who now use the woodlands. Some of the young Corsican pine stands have become so badly defoliated by DNB it is unlikely they will reach the age of first thinning (20 years). Where necessary these dead or dying stands will be cleared and the areas restocked. Halo thinning\* operations will be used to create space for broadleaves within conifers stands to mature or for natural regeneration to become fully established. This will help mixed stands develop and



Pic.4 Corsican pine infected by DNB

diversify the conifer stands before their eventual removal. Dormice were recorded in Burnt Wood up until 2009 and they will be considered during all operations and the OPS1 process taking into account historic range, recent sightings and suitable habitats. All work is undertaking following best practice from: *Protocol, Version 3, 2018- A protocol for undertaking woodland management in England where dormice are present*

The harvesting programme shows predicted yields from both felling and thinning as 31,000m³ over the next 10 years and 143,000m³ over the next 50years. These figures are based on yield tables\* and there is likely to be a short fall in some of the future yields predicted for young pine stands due to the effects DNB is now having on their growth patterns.

## 3.3 Social

### 3.3.1 Access

Burnt Wood is the only freehold woodland and has been dedicated as Open Access Land by the Forestry Commission. The remaining woodlands are leasehold and managed for forestry purposes only. Walkers, cyclists and horse riders use Swynnerton Old Park on a daily basis through an informal agreement with the landowner. Staffordshire County Council manages a car park adjacent to Swynnerton Old Park but there are no designated parking areas on FC land. Big Bishops, Little Bishops, Tittensor and Waltons Wood are managed under a lease hold agreement that prohibits open public access. The only right of access the public has into the woodlands is along a network of public rights of way that cross through the woodlands and are used on a regular basis

### 3.3.2 Heritage

The woodlands contain a variety of cultural features the most notable is the multivallate hill fort in Tittensor Wood and the Glass Furnace in Big Bishops Wood both of which have been designated as Scheduled Ancient Monuments (SAM). The SAM 's have their own detailed management plans agreed between Historic England and the Forestry Commission and outlines how the surrounding vegetation will be managed. Each of the woodlands have earthworks associated with past landuses (deer park, fish pools, enclosures, woodbanks). Some of these are still present in places and will be taken into consideration when Ops'1 plans are written to ensure features of cultural significance are maintained and enhance where possible.

## 3.4 Intended landuse

The secondary woodland areas will continue to be managed using a variety of commercial conifer crops selected to be more resistant than the pine and larch stands currently being effected by both pests and disease.. Recommended species based on Ecological Site Classification (ESC)\* and climate change models produced by Forest Research show Douglas fir being the most productive species followed by Leyland cypress, Coastal redwood, Western red cedar, Giant Redwood, Oriental Spruce, Maritime and Monterey/ Radiata pine. When restocking takes place the felled areas will be restocked with 2,800 to 4,000 stems / ha depending on each species preferred habitat requirements. Planting will be distributed evenly across the whole site.

All other areas will be gradually reverted back to broadleaved woodland. The native species for this area is sessile oak and silver birch and these will be the favoured species. To help mitigate against the risk from climate change, pest and diseases a number of honorary native species will be used to enrich the future stands. These have been selected using ESC and will include Sweet Chestnut, Norway maple, Hornbeam, Sycamore and Wild service tree. Some individuals and small groups of conifers will be retained to increase biodiversity in future stands, provide winter cover and roosting sites for high nesting birds. The above species selection is not conclusive and alternative species may be considered as a minor component.

Due to the limited seed source available in the PAWS enrichment planting will be used following felling operations. Group planting across the felled area will be used to ensure a wide distribution of the desired species and natural regeneration will be encouraged in between groups to ensure all areas are fully stocked. This will allow mixed stands to develop in the next rotation that will be dominated by the natural regeneration of birch with small blocks of oak and honorary native species across each restock site.

Fig 2. Current Species

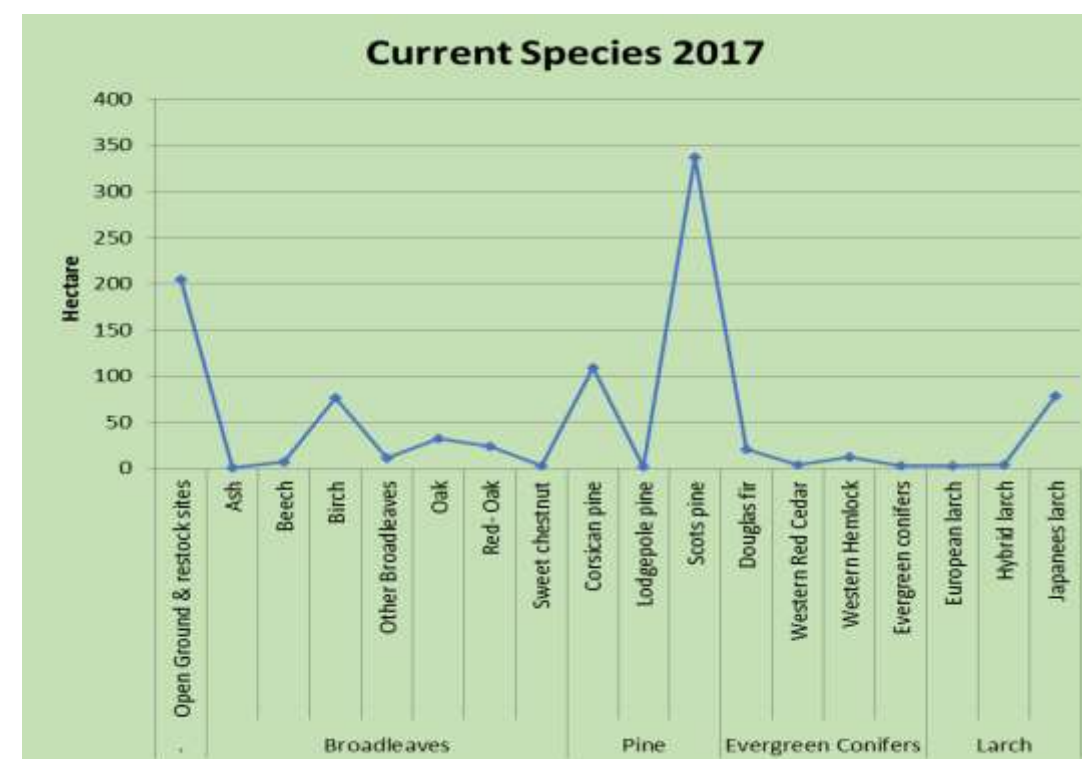


Table 1. North Staffordshire Forest Plan Contribution towards the Central District

### Commitments to UWAS and UKFS

	Forest Plan Area	Forest Plan Percentage	Forest District Area	Forest District Percentage
Total Area	935	100	28,121	3.3
Total Wooded Area	895.9	95.8	23,820	84.7
Open Habitat (>10%)	30.8	3.2	4,301	15.3
Natural Reserves - Plantation (1%)	0	0	171	1.4
Natural Reserves - Semi Natural (5%)	18.3	2	370	3.2
Longterm Retentions & Low Impact Silvicultural Systems	16.9	1.8	14,462.8	60.7
Area of Conservation Value (>15%) including designations, PAWS, AW, ASNW,	796	85.13	15,122	3.2



## 4. Consultees

The consultation undertaken in the preparation of this plan has been wide ranging and extensive. Full documentation including letters, notes of conversations etc. are held at our District Offices.				
Consultee	Date Contacted	Date Response Received	Issues Raised	Forest District Response to Issues
Shane Kelleher—Staffordshire CC County Archaeologist	31/7/18	29/8/18	Overall support for the plan and it management objectives with questions raised over areas of landscape importance and reference to the landscape character areas for the woodlands. Clarification was sort on the impact of some felling operations in the landscape and ride side cutting programmes.	FEE has amended the plan to incorporate some of the information provided by Staffordshire CC regarding heritage features and Dormice and included in the Conservation and heritage records for each site. Clarification on the programme for ride and road side cutting was explained. Site visits were made to inspect the clearfells that were thought to have some impact on landscape views and photographic evidence taken to clarify this would not be the case.
Nick Carter—Inspector of Ancient Monuments—Historic England (HE)	31/7/18	31/8/18	Would like to see the inclusion of non-designated historic features in the plan. HE asked for clarification for the status of SAM* management plans and inclusion of detailed works required on these.	FEE explained that the Forest Plan is written at a landscape scale and the more details works to be carried out on and around heritage features would be detailed in the Ops1* plans and in the approved management plans for each of the SAM*. Reference has been made in the FP to the non designated features supplied by Staffordshire CC and FEE conservation and heritage records now include these.
Rachel Hamer—Environment Agency	2/8/18	4/9/18	Consideration should be given to water courses and Natural Flood Management.	FEE will undertake all operation following the approved Forestry and Water Guidelines.
Alastair Hotchkiss—Woodland Trust (WT)	Via public consultation website		Wanted to see more emphasis on the restoration of PAWS based on threat and questioned why there is still so much clearfell proposed on the PAWS areas. Questions were raised on the affect felling would have on the wood ants. WT identified a notable lichen (Stemocybe septate) on an old holly .	FEE has reviewed the plan and increased the areas of LISS* on the PAWS. FEE confirmed that the wood ants nest would be mapped at the Ops1 stage and the tree cover adjacent conserved. The agreement with NE* to remove holly in the SSSI will be amended to retain some mature holly including the one identified by the WT. Clarification was given that the FP was a landscape scale plan and many of the points raised by the WT would be addressed as part of the Ops1* planning process.
Karen Watkins MBE—Loggerheads PC	Via public consultation website		Supported the proposals for Nature Reserve near playing fields and would like to see the SSSI shown on the maps	FEE to amend maps to show the areas designated as SSSI.
Roger William Harding Swinnerton	Via public consultation website		Pleased with FP management objectives and would like to see the retention of the American Red Oak and due consideration given to the Wood Ants	FEE confirm that the American oak are to be retained and form part of future rotations and wood ants are always taken into account when Operational Plans are written and nests are recorded in the conservation database.
Jo Stocks	Via public consultation website		Concerned by the timber left across bridleways making the routes unsafe and the overgrown vegetation along these rights of way.	FEE will ensure following forestry operations public rights of way are left clear and Jo was advised to speak to the Highways Authority regarding cutting back natural vegetation that was encroaching on the public rights of way.
Andy Jukes	Via public consultation website		Wanted to see reference to dormice and the increased volume of deadwood and areas of non-intervention	FEE will include reference to dormice and areas of non-intervention and longterm retention have been identified to increase the volume of deadwood habitats.

Consultee	Date Contacted	Date Response Received	Issues Raised	Forest District Response to Issues
Tom Holland—Natural England (NE)	Via public consultation website		Pleased with restoration of PAWS but questioned the speed of restoration and if this could not take place more quickly. Questioned if FEE and NE have a sufficient grasp on the conservation value of these and other woodlands in the North Staffordshire area. Concerned about use of 'honorary' native species in the SSSI. Thought if conifers were to be used in future rotations Scots pine would be the least damaging to the soils and woodland ecology. Welcomed the acknowledgement to the importance of these sites for ground nesting birds.	FEE confirmed that their team of ecologists do survey FEE woodland to identify and appraise the conservation value of their woodlands and this is then used to help steer future woodland management objectives. The time scale for restoration was to ensure a good percentage of high forest could be maintained at all times throughout the restoration phase. FEE confirmed that no honorary native species would be planted in the SSSI and they welcome NE support for the use of Scots pine in future rotations. FEE will use group felling (up to 2ha in size) to ensure there is a good distribution of transitional open space throughout the FP area for ground nesting birds.
Derek Crawley—Staffordshire Mammal Group	Via public consultation website		Would like to see dormice considered in all woodlands as they were recorded in Burnt Wood up until 2009. Asked that deer should not be considered as a pest and should be favourably managed.	FEE to include reference to dormice within the FP and all woodlands will be managed in accordance with FEE Protocol Version 3 April 2018 'A protocol for managing woodlands in England where dormice are present'. FEE except deer as part of the British landscape but population needs to be monitored and controlled or the level of damage they cause would be to the detriment of the woodland ecosystem.
As part of the local consultation 22 stakeholders were contacted, notices placed on site, copies of the plan placed in; Loggerheads, Stoke and Stafford Reference libraries and on the FC website. Comments received and the Forestry Commission's responses will be recorded above.				

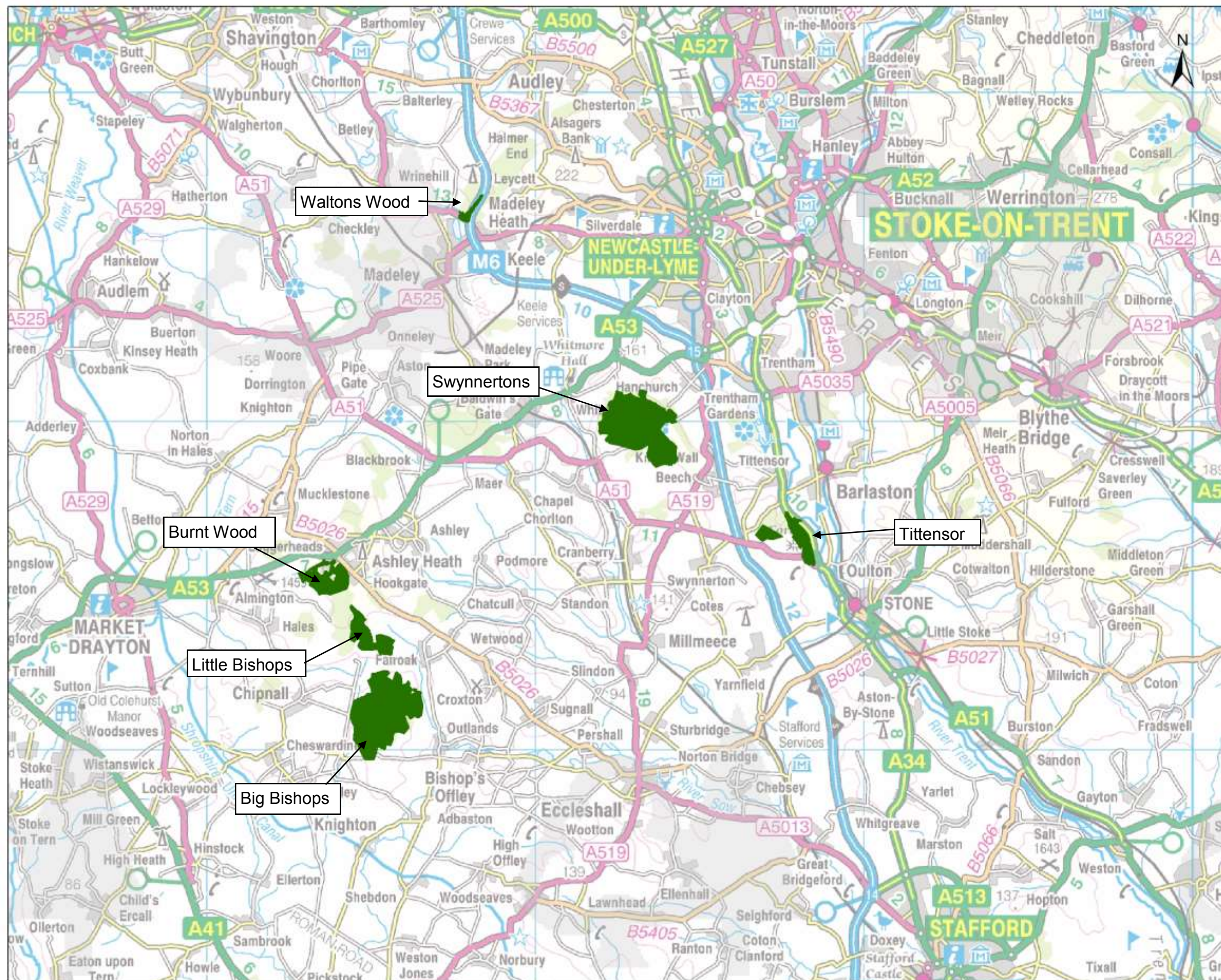
## 6. Meeting and Monitoring Management Objectives

National Strategy	District Strategy	Forest Plan Objective	Monitoring
<b>Economic:</b> <ul style="list-style-type: none"> <li>Maintain the land within our stewardship under UKWAS certification,</li> <li>Improve the economic resilience of our woods and forests,</li> <li>Encourage and support business activity on and around the Estate.</li> </ul>	<p>Adapting our management practices to suit the character and requirements of local woodlands whilst satisfying national standards and business requirements.</p> <p>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.</p>	<p>Initiate a structured and sustained programme of clearfell and thinning to include infrastructure requirements.</p> <p>Select suitable species and appropriate silvicultural techniques to regenerate (either naturally or through planting) commercially productive forests.</p> <p>Ensure stands are more structurally and species diverse making them more resilient to the impacts from climate change, pests and disease.</p>	<p>This will be reviewed every 5 years as part of the FP review process and any changes recorded in the sub compartment data base.</p> <p>Once the crops start to produce commercial timber, production forecasts will be run to quantify the resources available and ensure longterm sustainable forest management. Production forecasts will be run annually and data form part of the Central Districts business plan.</p> <p>Stocking density, growth rates, stems/ha and species origin and provenance will be recorded and monitored.</p>

**6. Meeting and Monitoring Management Objectives (continued)**

National Strategy	District Strategy	Forest Plan Objective	Monitoring
<b>Nature:</b> <ul style="list-style-type: none"> <li>Improve the resilience of the natural environment of the Estate under our Stewardship,</li> <li>Realise the potential of the Public Forest Estate for nature and wildlife,</li> <li>Maintain and improve the cultural and heritage value of the Estate.</li> </ul>	<p>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.</p> <p>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.</p> <p>Where possible, work with interested parties to explore ways to maintain or improve features of cultural or heritage value to the local community.</p>	<p>Employ a variety of silvicultural techniques to maintain soil structure, stability and site infrastructure.</p> <p>Restore AWS by the gradual removal of exotic species over the next 60years, introduce a wide distribution of species that will be better suited to the impacts of climate change, pests and disease.</p> <p>Identify existing locations of TSIs and demonstrate appropriate management to recruit future veteran trees and increase the volume and distribution of deadwood.</p> <p>Ensure the timing and scale of forest management proposals complement the SSSI management objectives and habitat requirements of Lepidoptera and associated ground flora.</p> <p>Continue to work closely with Natural England, Butterfly Conservation, Staffordshire Wildlife Trust and local volunteers in monitoring and recording flora and fauna and review forest management accordingly.</p>	<p>Silvicultural systems are shown in the forest plan and will be reviewed prior to any operations taking place and maintain soil stability.</p> <p>The restoration of AWS and the introduction of a wider range of species will be monitored via the subcompartment database as part of the FP review process.</p> <p>Trees of Special Interest (TSI) and deadwood habitats will be identified and recorded on the conservation layer of ensure they are retained in perpetuity.</p> <p>The 5 year review of the SSSI habitat assessment will measure the improvement based on indicator species. Species records collected on rides and records of the FC ride side cutting programme will be review every 5 years as part of the plan review.</p> <p>As part of the 5 year and 10 year FP review process, but not exclusively, stakeholders will be contacted as part of the forest management review.</p>
<b>People:</b> <ul style="list-style-type: none"> <li>Encourage communities to become involved in the Estate, its management and direction,</li> <li>Provide high quality woodland-based recreational opportunities for people and business,</li> <li>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.</li> </ul>	<p>Provide safe and accessible woodlands. Offering opportunities for quiet recreation and adventurous activities, to enable people to experience the potential health and wellbeing benefits.</p> <p>Encouraging third party environmental educators and other partners to offer learning opportunities on the public forest estate.</p>	<p>Diversify species composition and structure, and plan sympathetically designed. Future felling shapes and patterns will be designed to fit the current landscape patterns.</p> <p>Maintain existing public access and enhance where possible.</p> <p>Maintain and improve the cultural heritage value of the Forestry Commission's estate</p>	<p>As part of the design plan review process the visual impact of harvesting operations on landscape will be made from key viewpoints to ensure their design is still appropriate. Any changes will be recorded in the revised plan.</p> <p>Public access and facilities will be monitored and maintained by the beat team on a regular basis throughout the year.</p> <p>Reviewed as part of Op's1 and SSSI management plan renewals</p>





**Central Forest District**

**Location Map**

The woodlands lie in Northwest Staffordshire and comprises of Walton's, Tittensor and Swynnerton Old Park. The woodlands lie in Northwest Staffordshire which is a predominantly rural landscape surrounded by small settlements and the City of Newcastle-under-Lyme to the Northeast. The design plan within the Mosses and Meres, Potteries and Churnet Valley Natural Areas (Natural England).

The design plan covers an area of 935ha, of which 599ha (70%) is known to be a former Ancient Woodland. The main influences on the future management will be the production of commercial timber balanced with restoring the Plantations on Ancient Woodland Sites (PAWs) back to broadleaf woodland and the encouragement of Biodiversity.



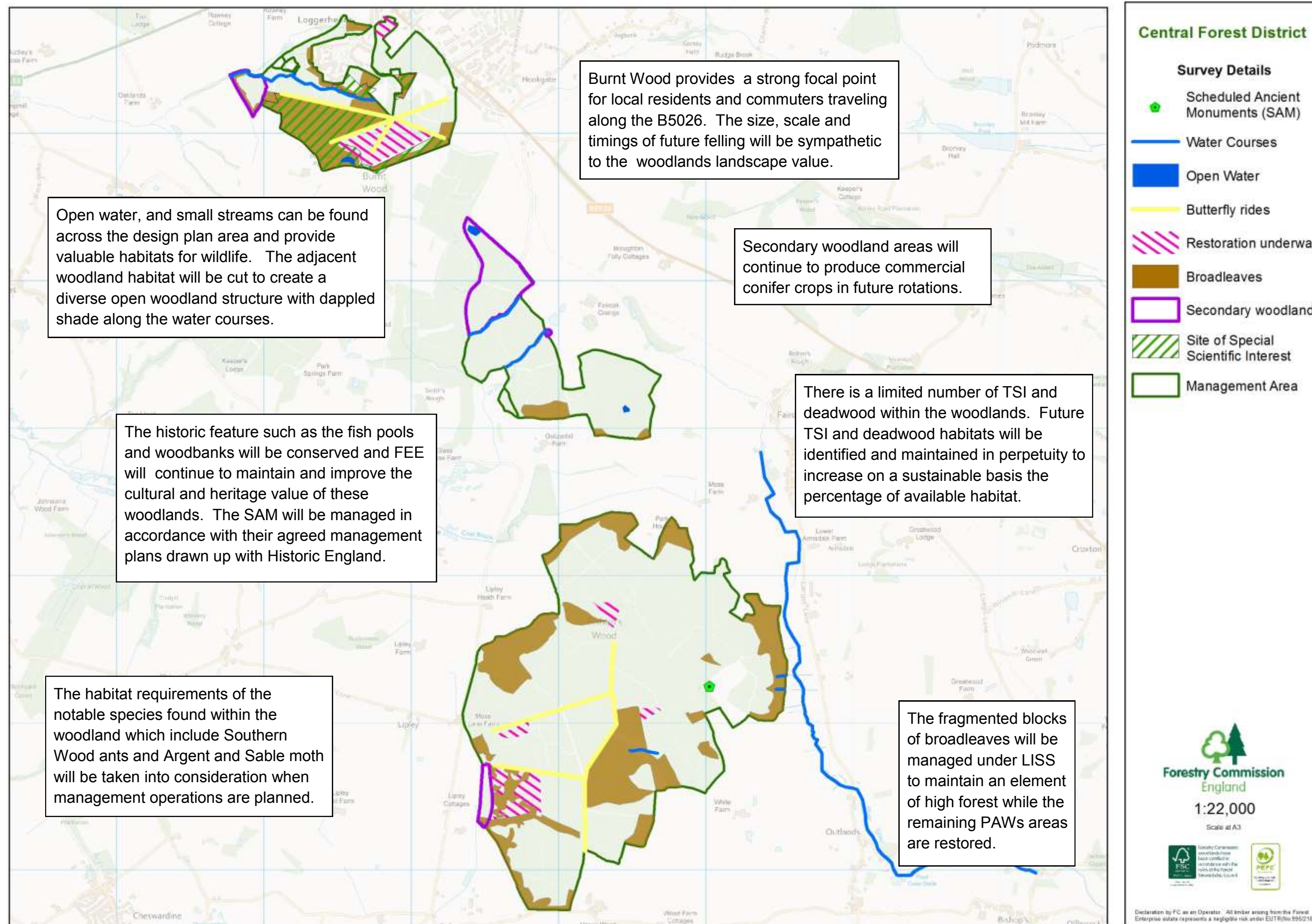
**1:75,000**

Scale at A2



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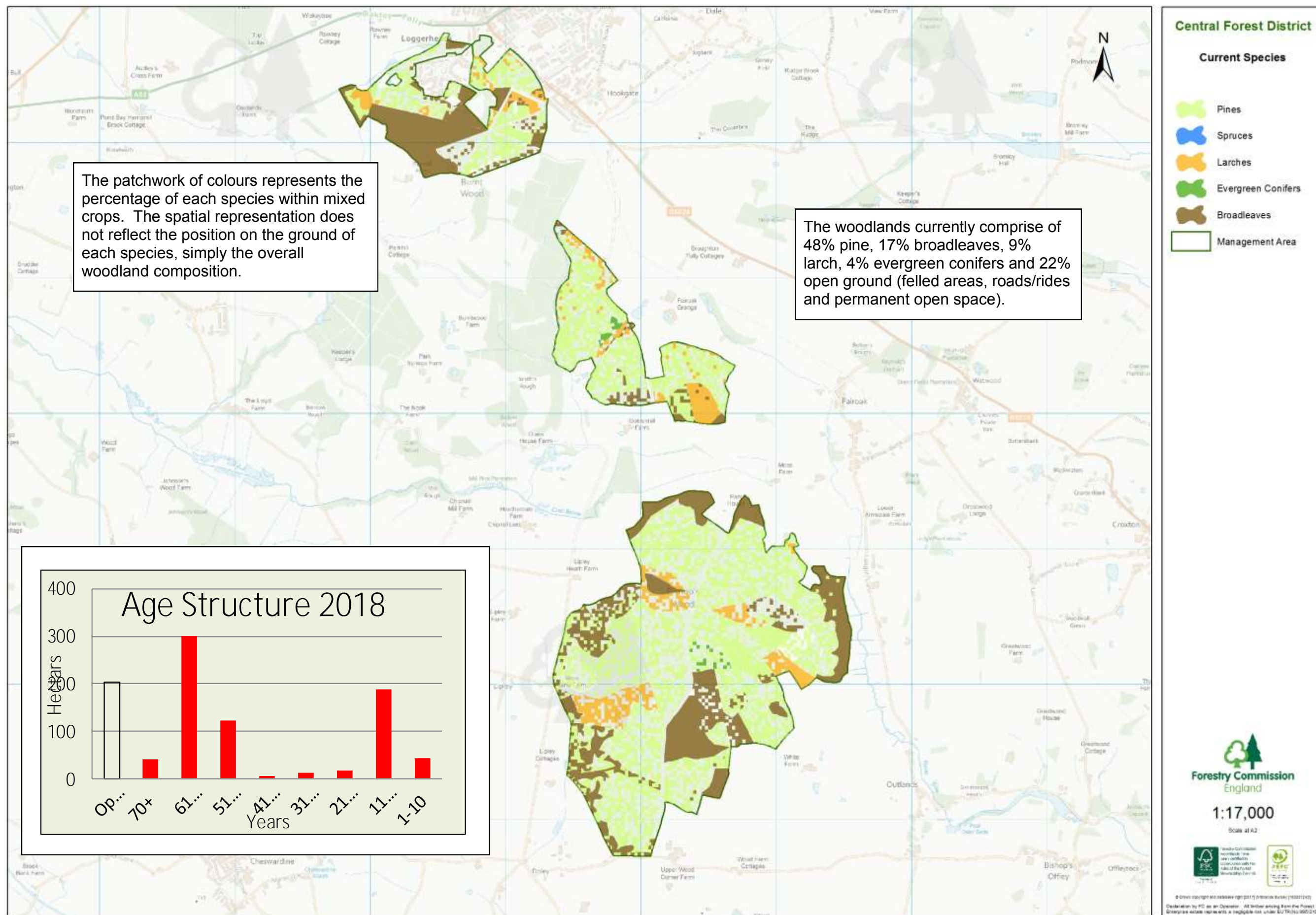




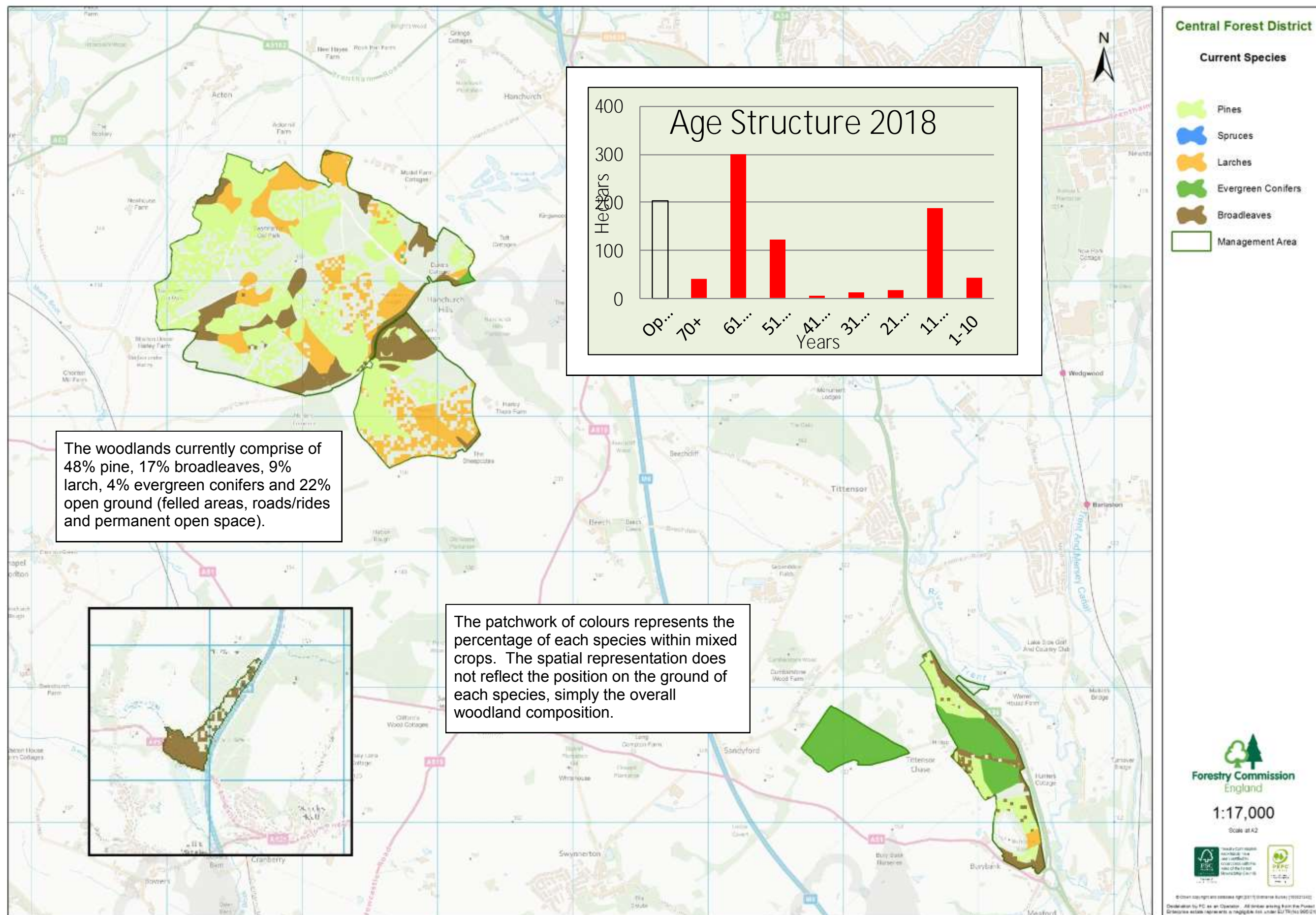




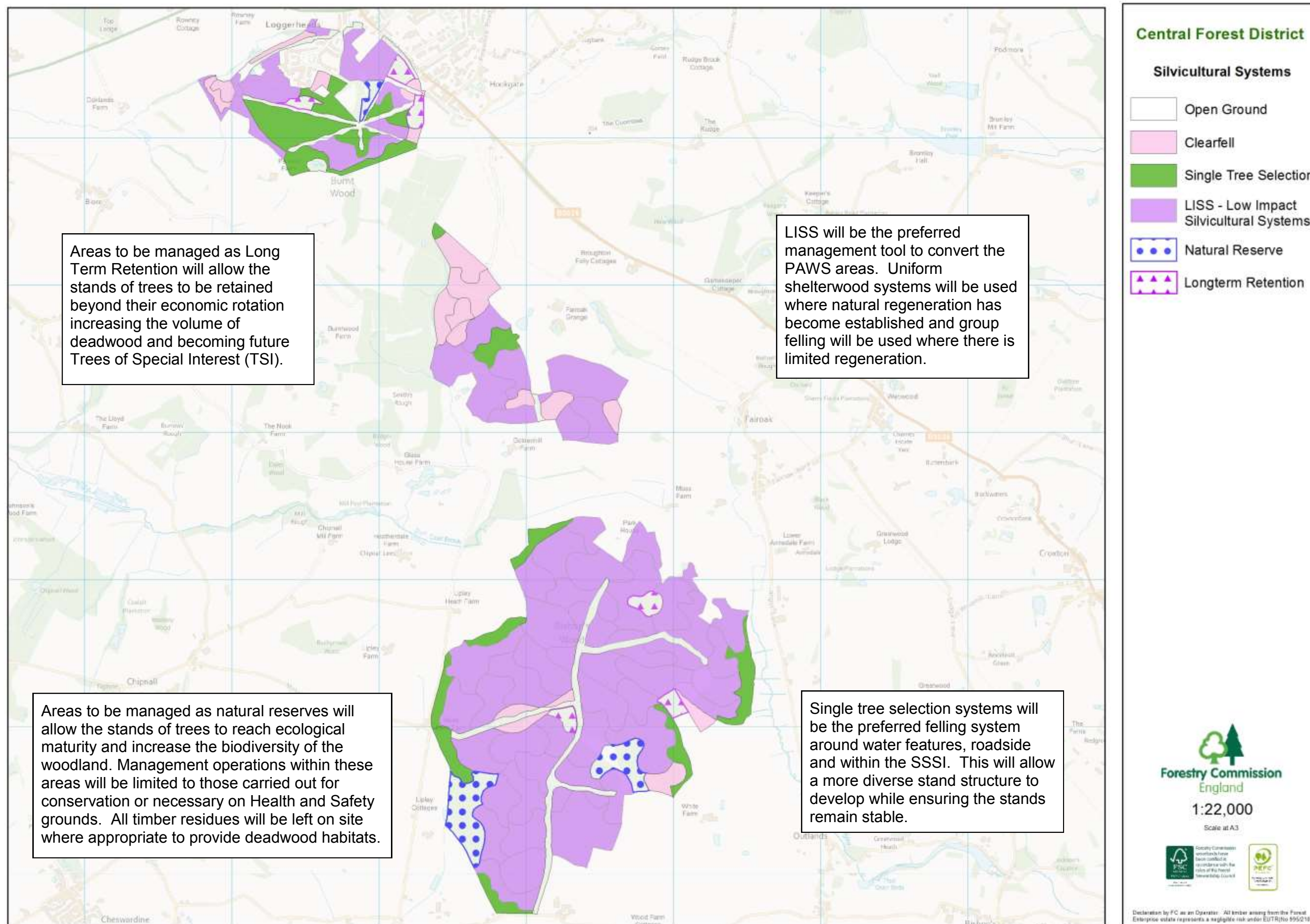




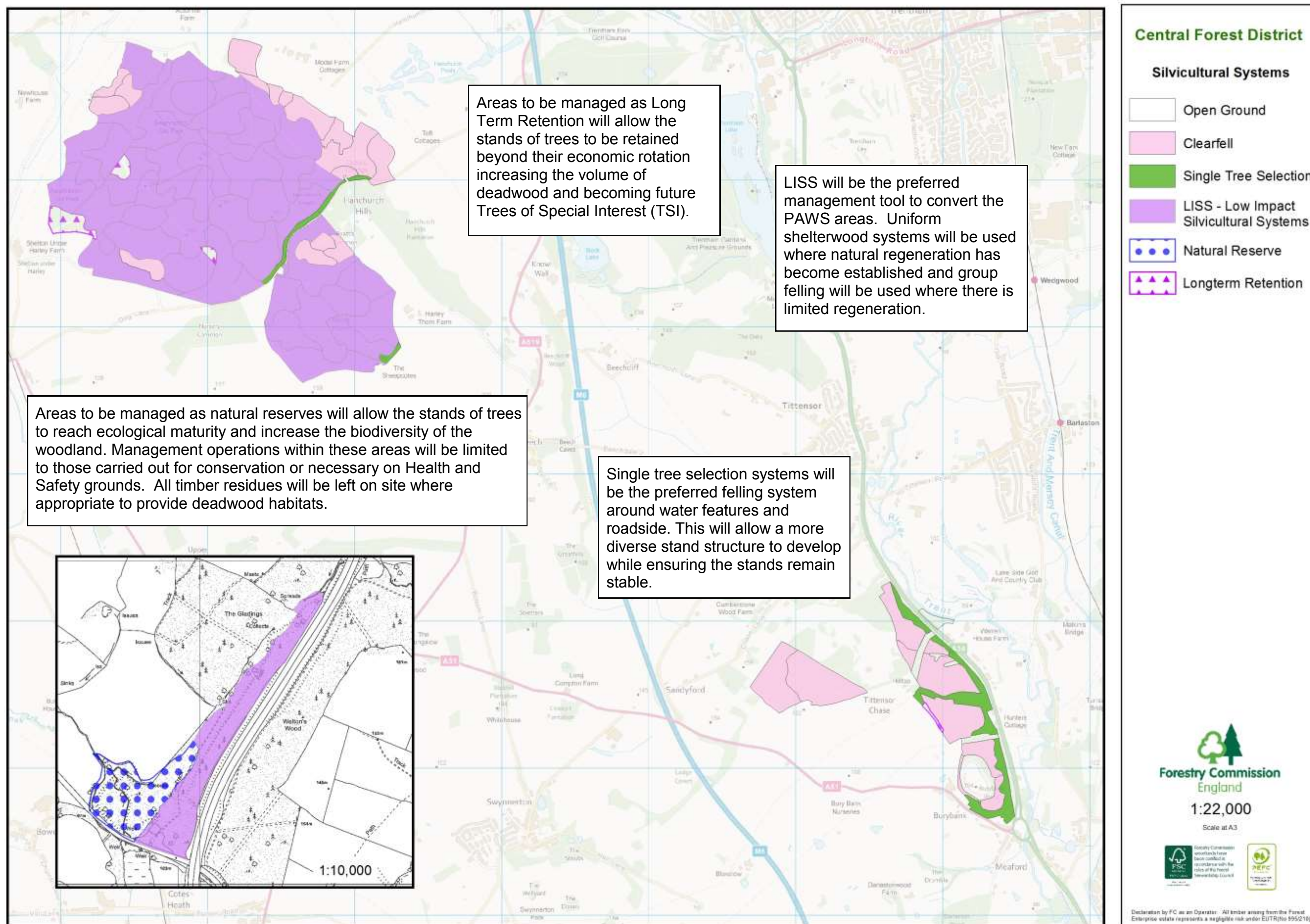




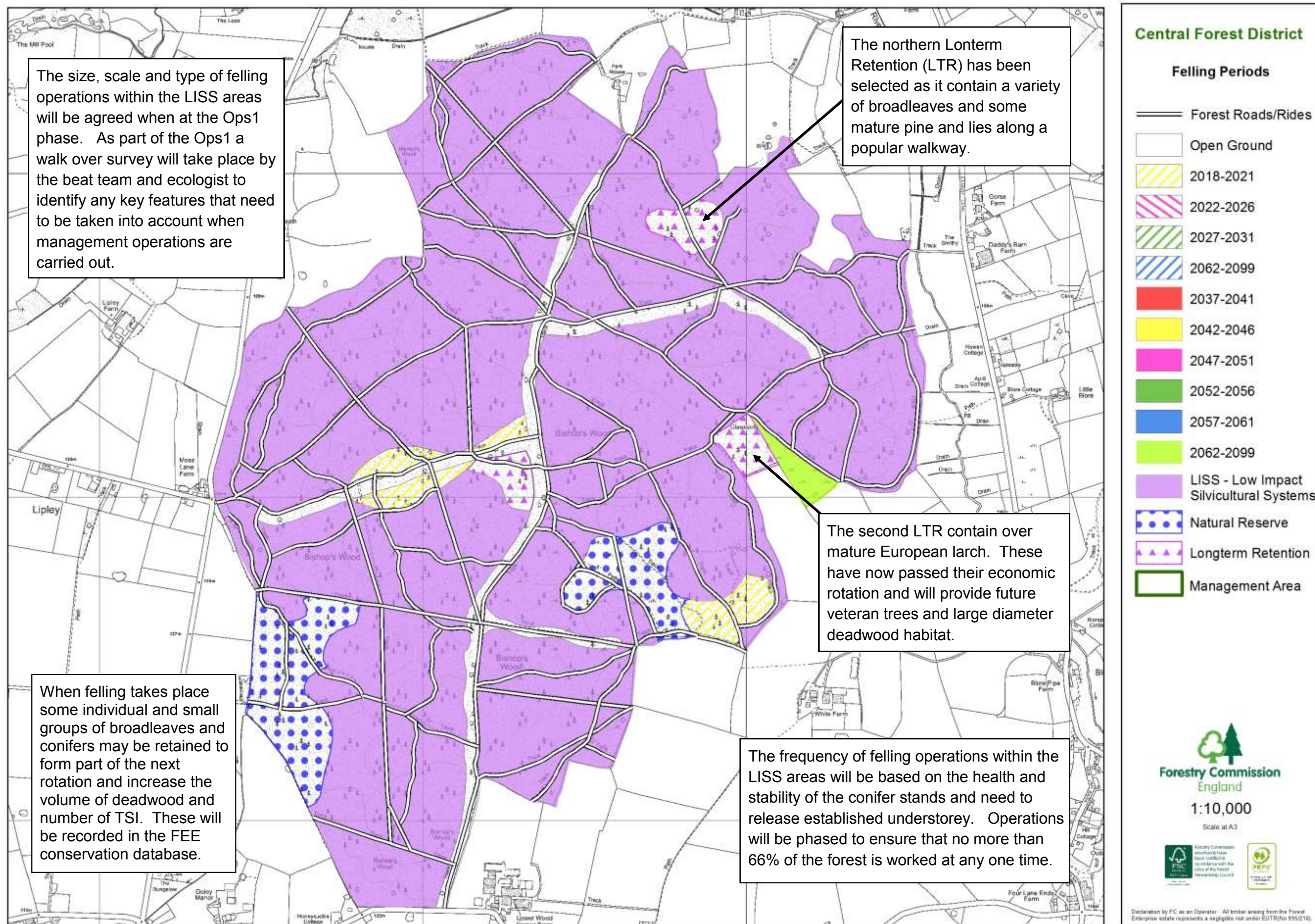




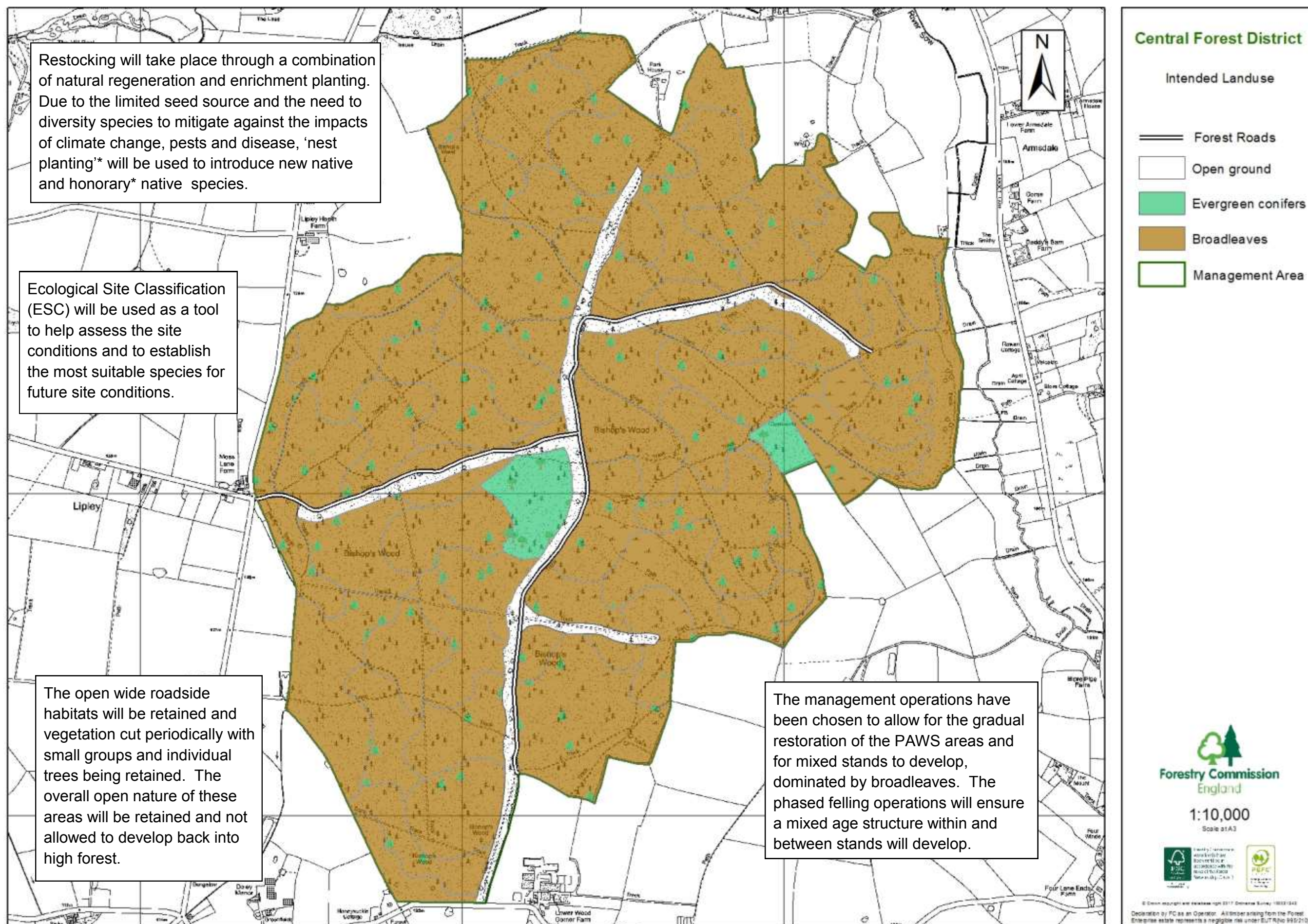




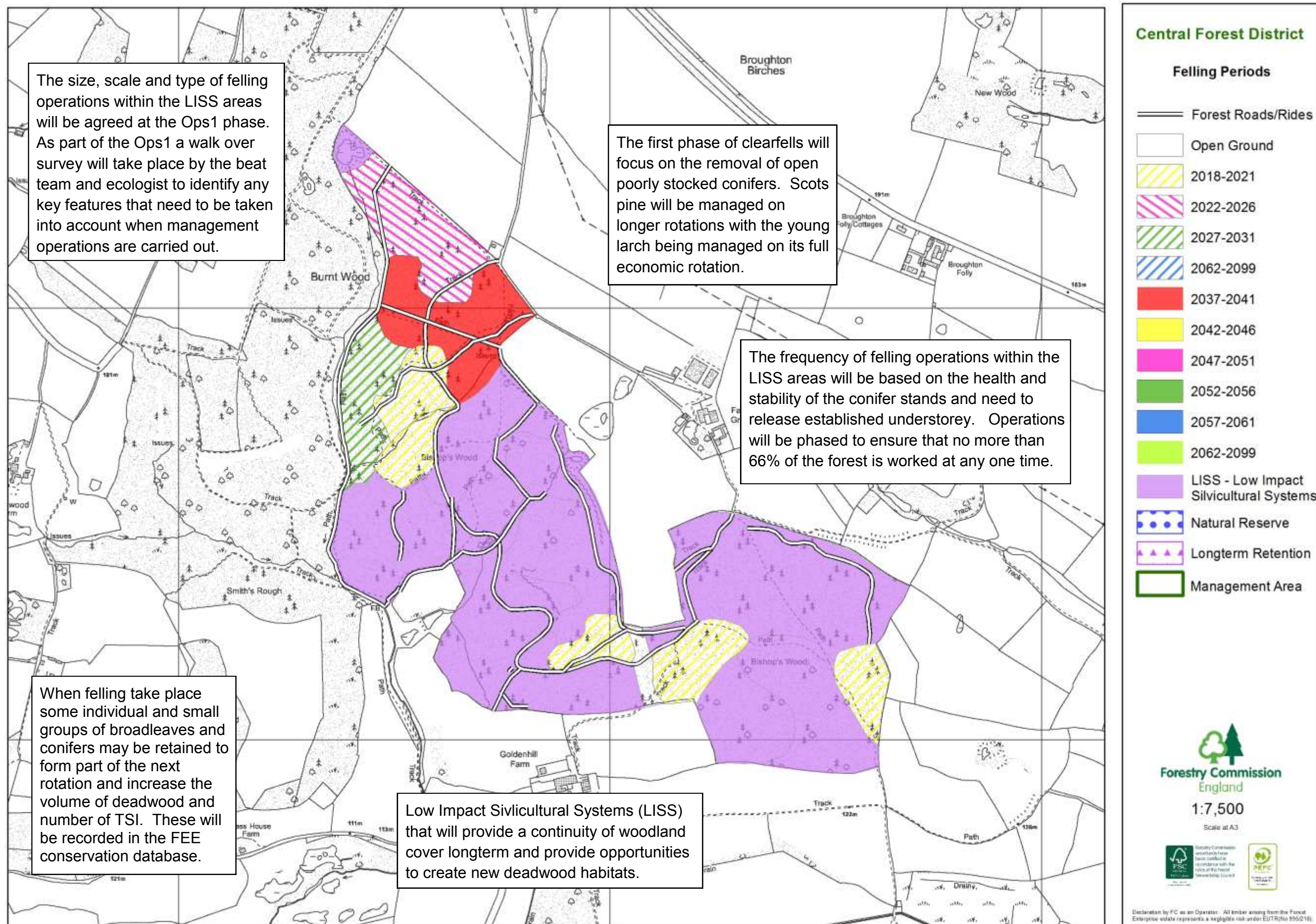




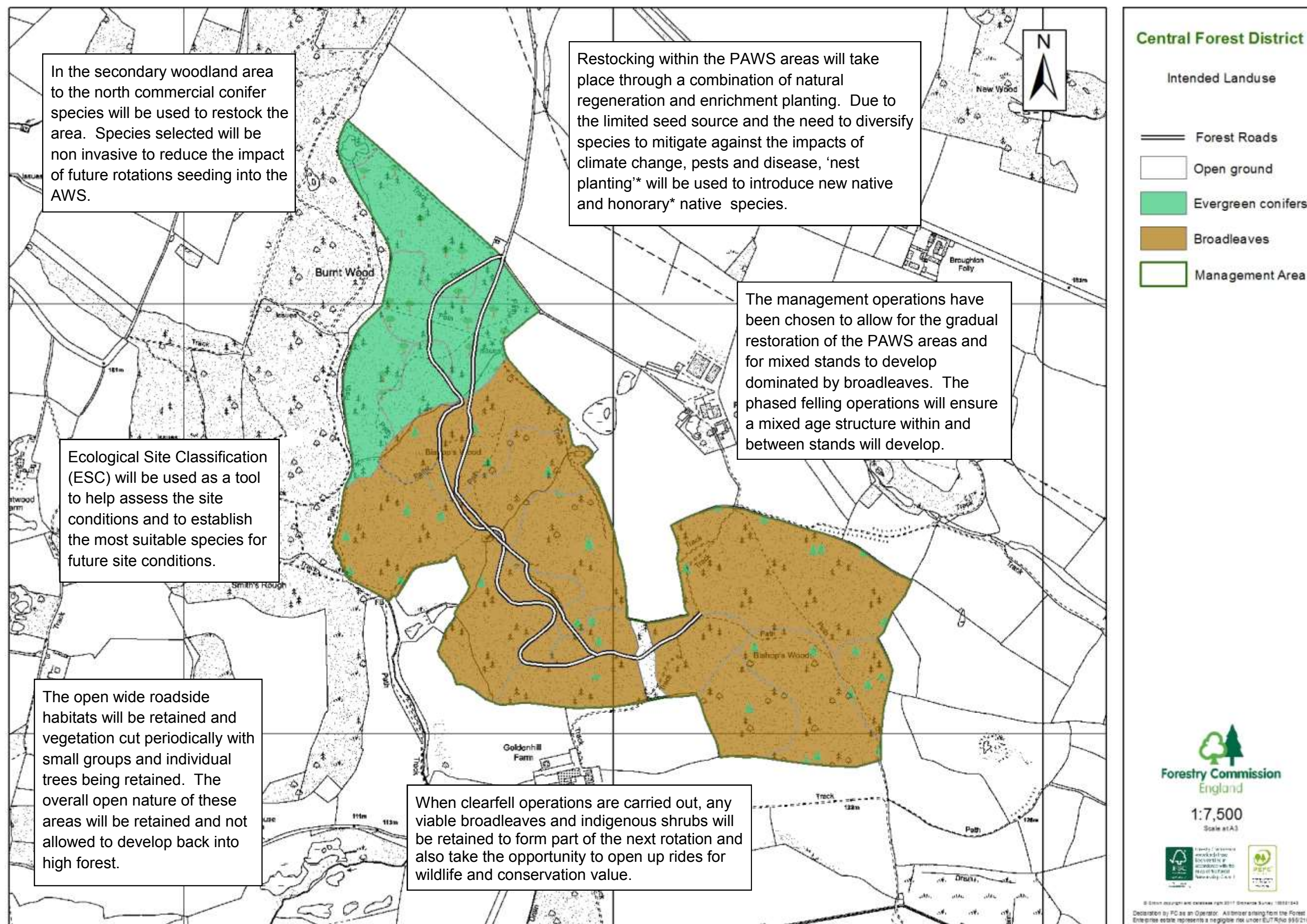








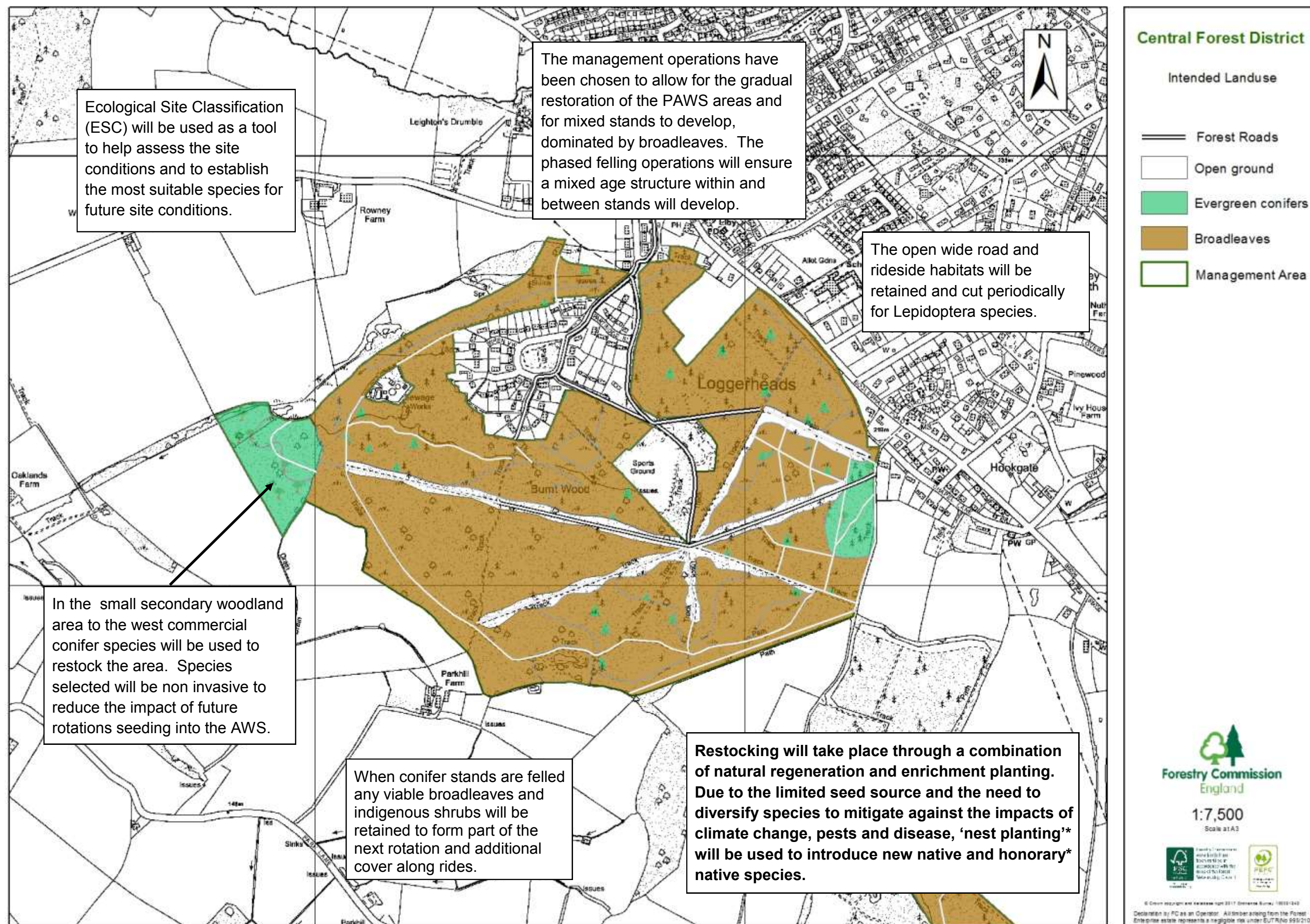




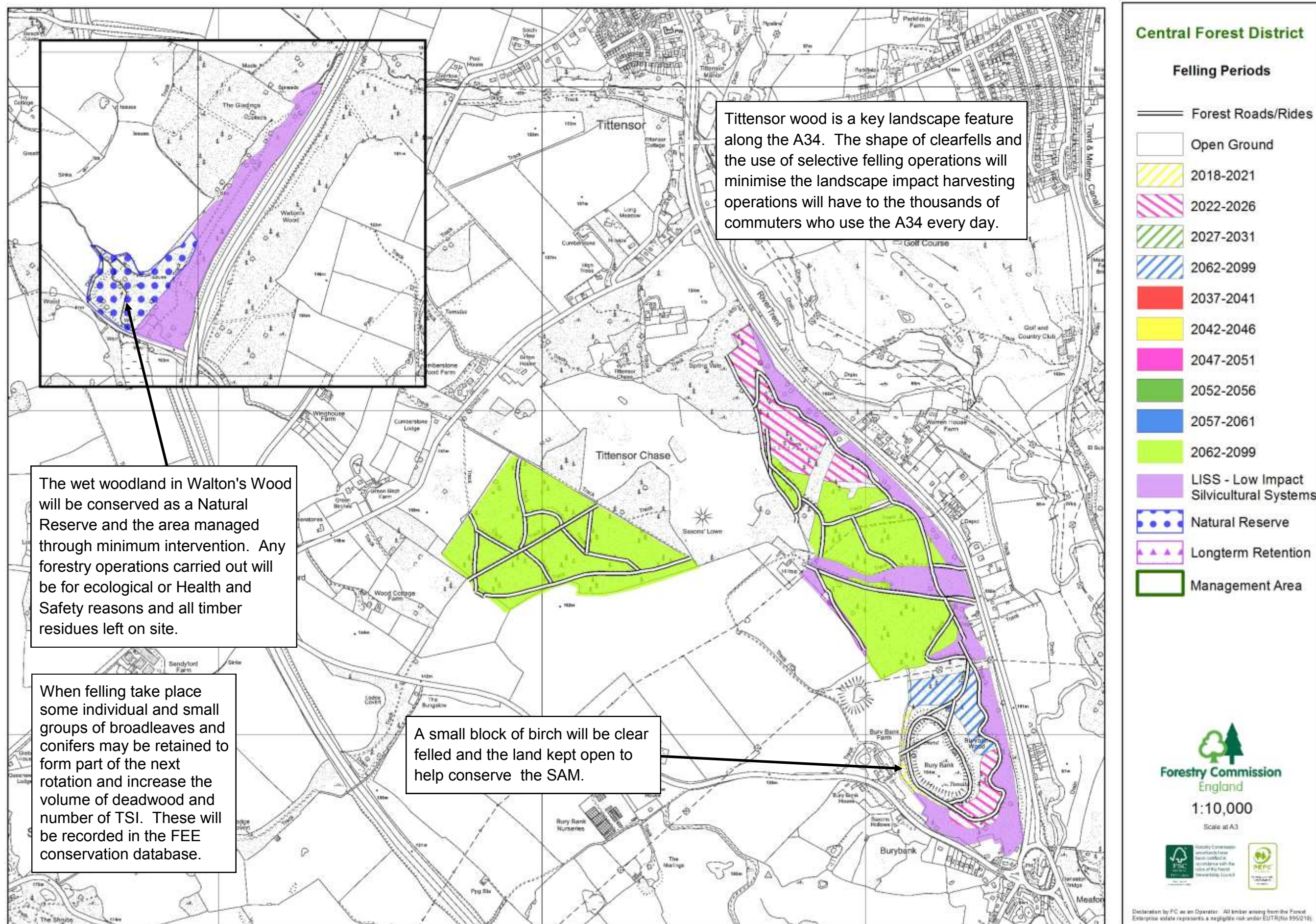




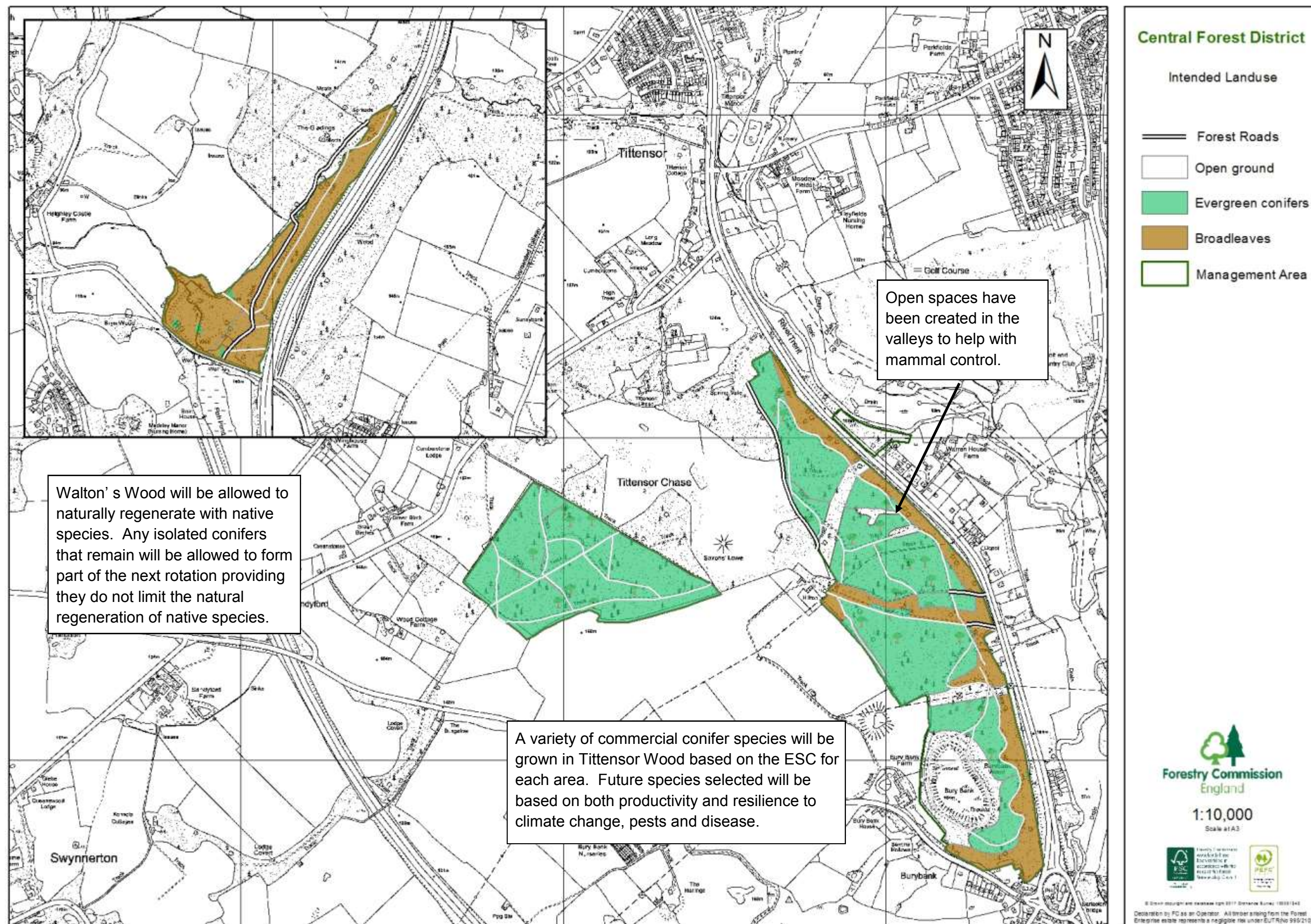




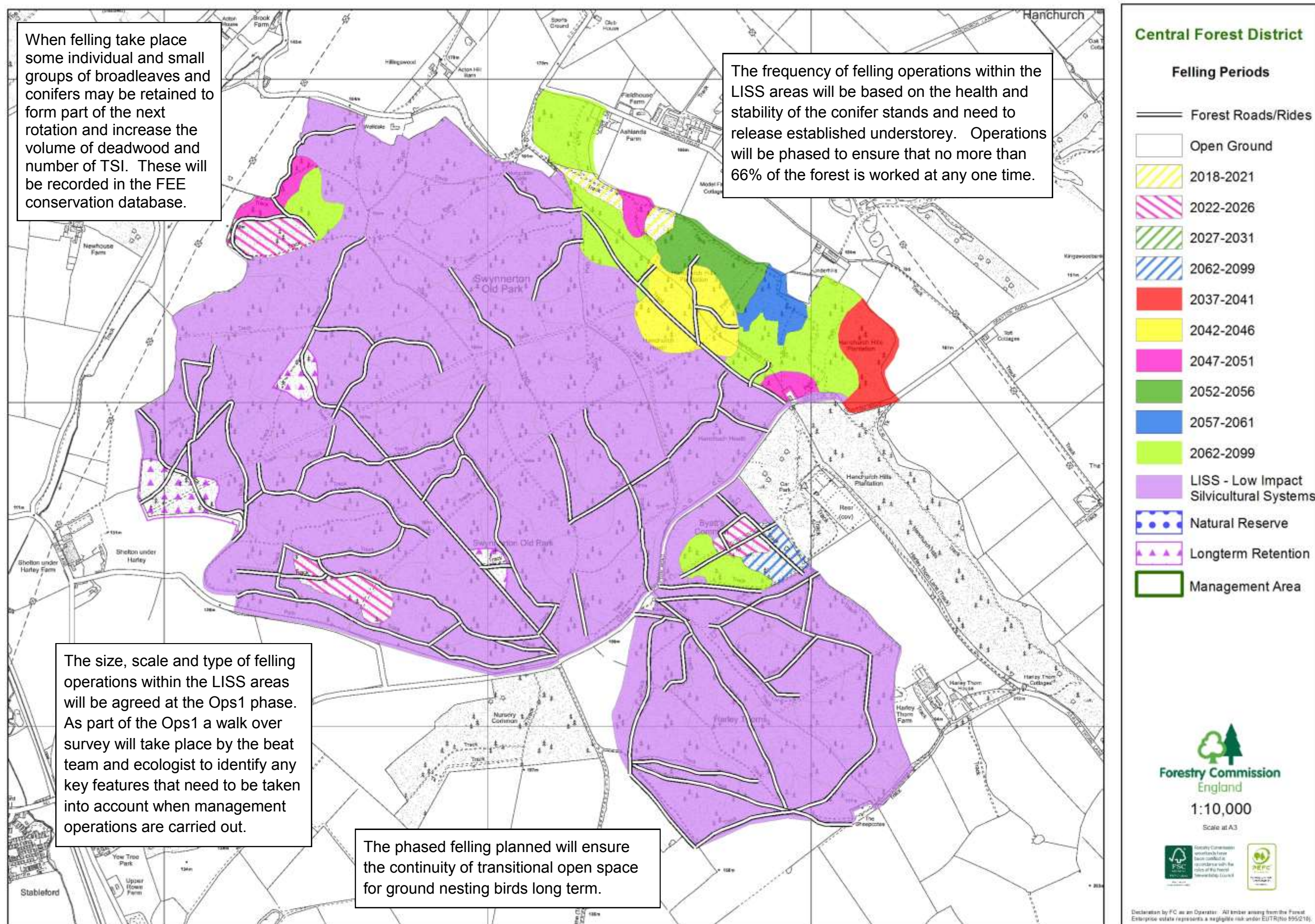




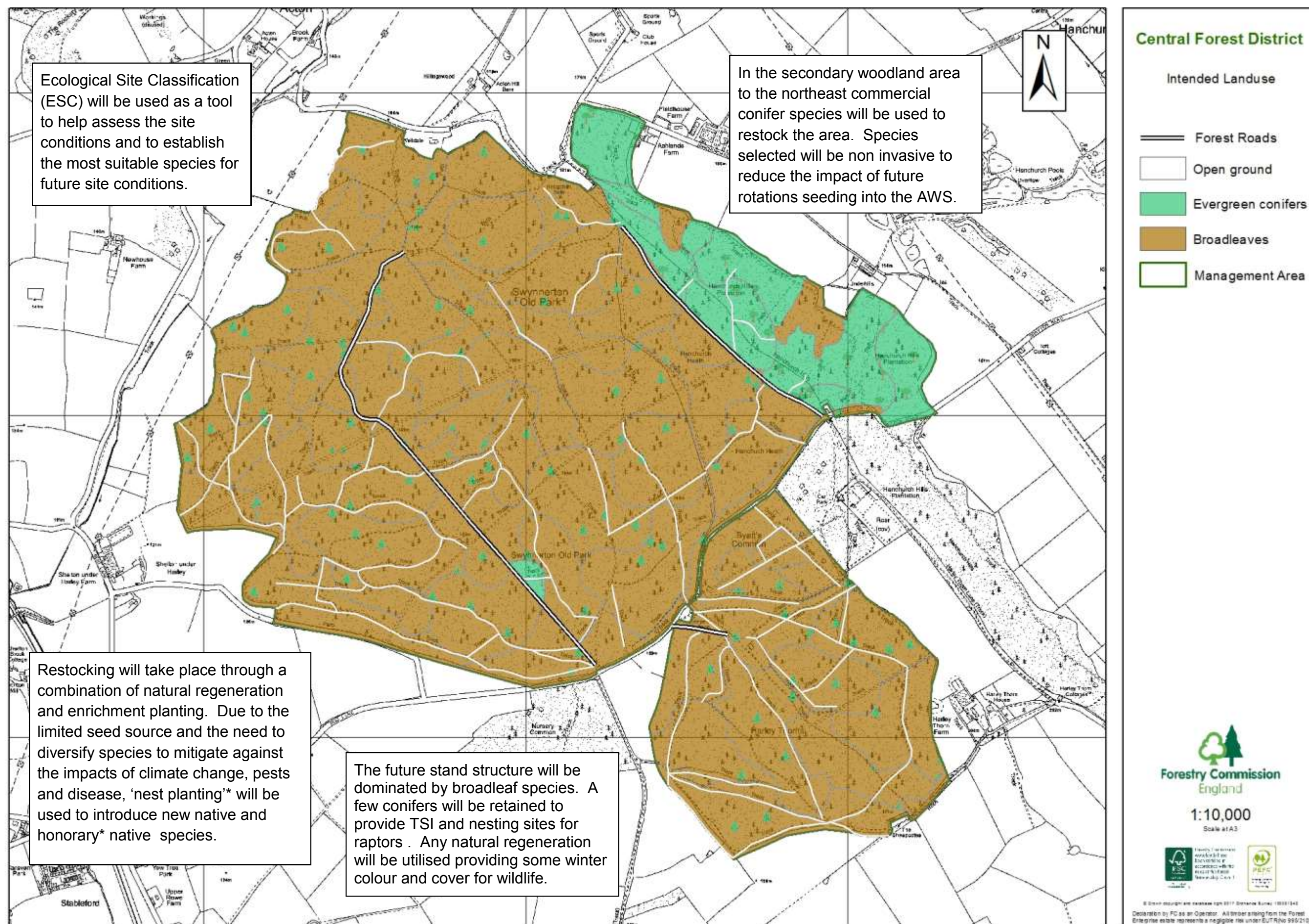












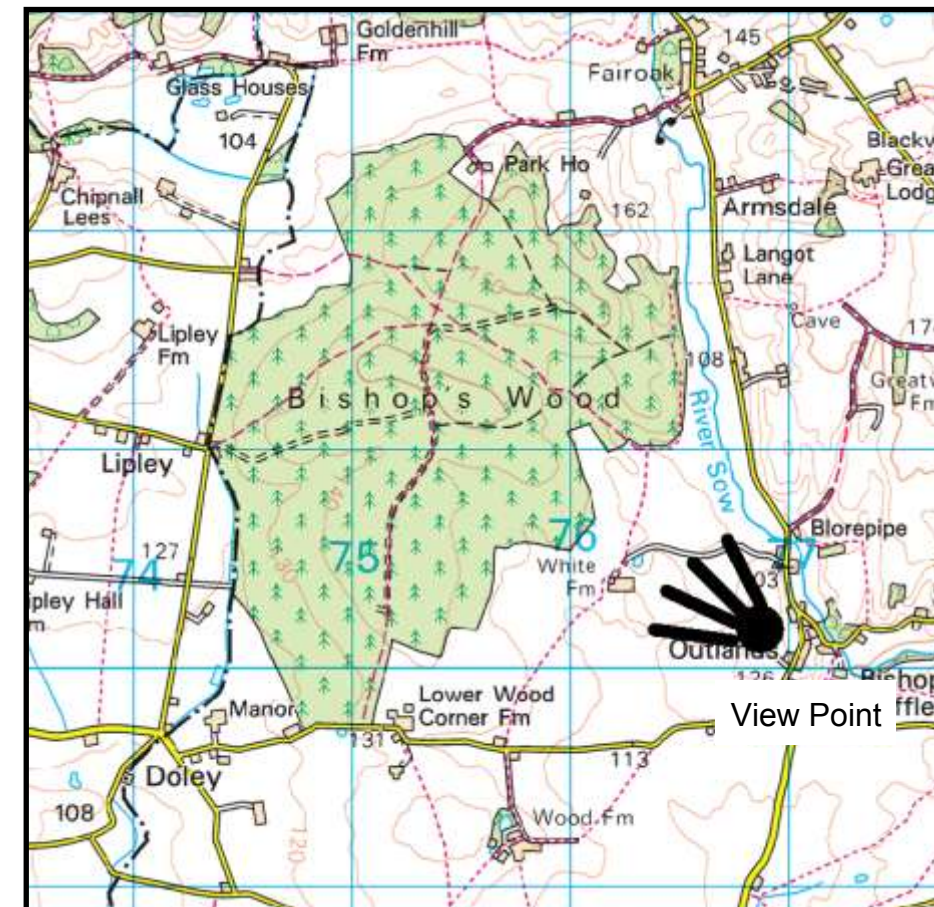


## Big Bishops Wood

The following sequence of 3D oblique images shows the future forest structure based on the current stock data, planned harvesting and restocking programmes in 2020, 2040 and 2060.

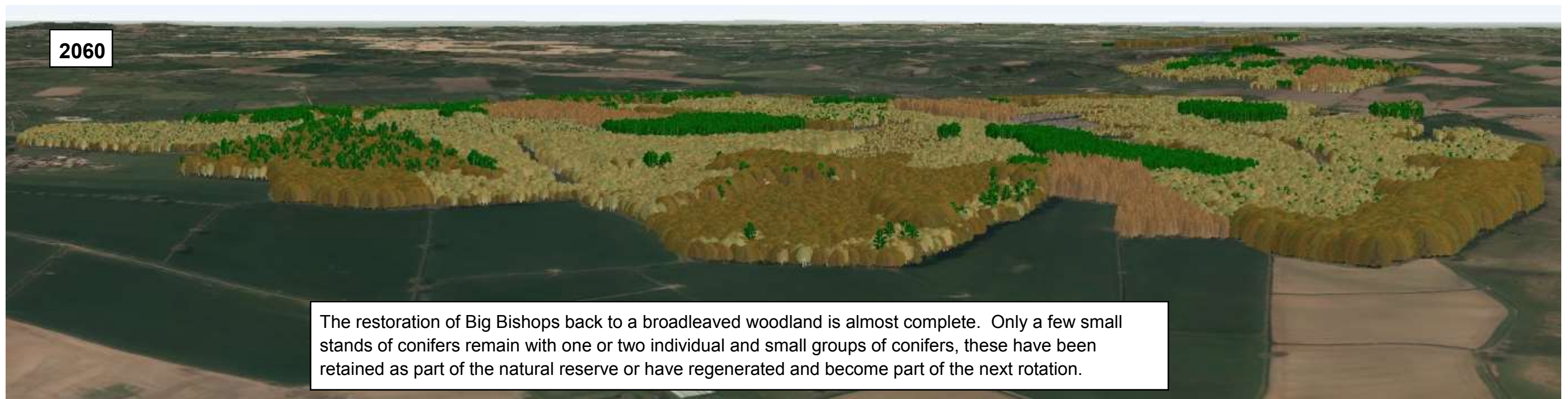
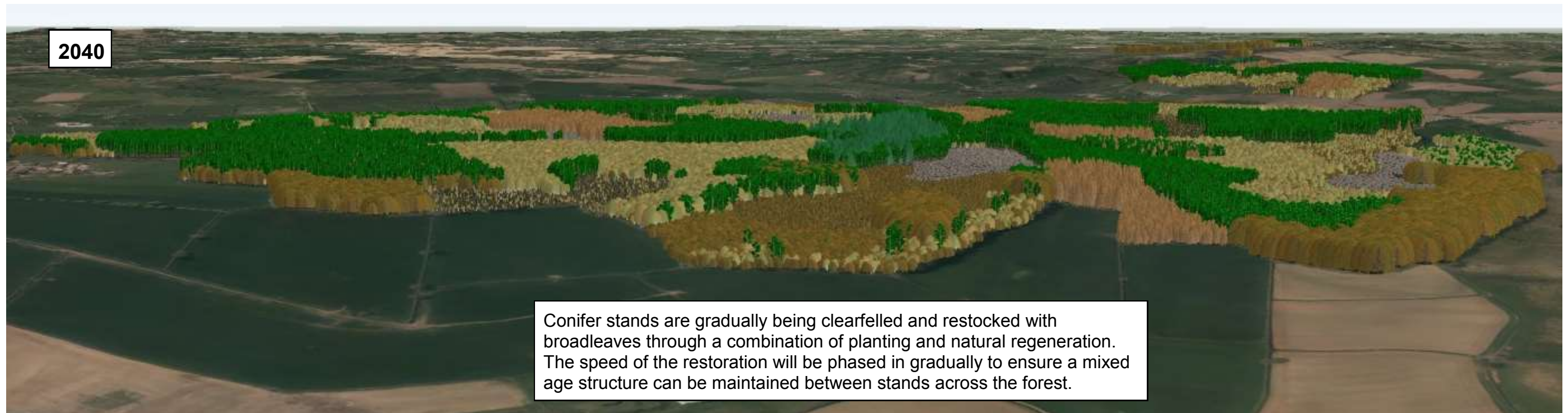
To help distinguish between broadleaves and conifers the images show the autumn colour of trees with the evergreen conifers dark green, larch orange and broadleaves varying shade of brown (oak - dark brown through to birch - light brown).

Big Bishops Wood is still largely dominated by blocks of pine (evergreen conifers) and few small stands of larch.





**Big Bishops Wood**





### Little Bishops Wood

Little Bishops comprises of one third secondary and two thirds former ancient woodland. The woodland is now dominated by pine forest which has been adversely affected by DNB. The light crown structure has allowed some regeneration of birch under the mature pine and this will be incorporated where possible into the next rotation and help stabilise the micro-climate following felling operations.

A small stream surrounded by mixed broadleaves and firs will be managed as continuous cover forestry ensuring the conifers are kept clear of the water course.





**Little Bishops Wood**

**2040**

Phased felling has begun in the mature stands and restocking of both conifers and broadleaves has taken place in the secondary and ancient woodland sites.

**2060**

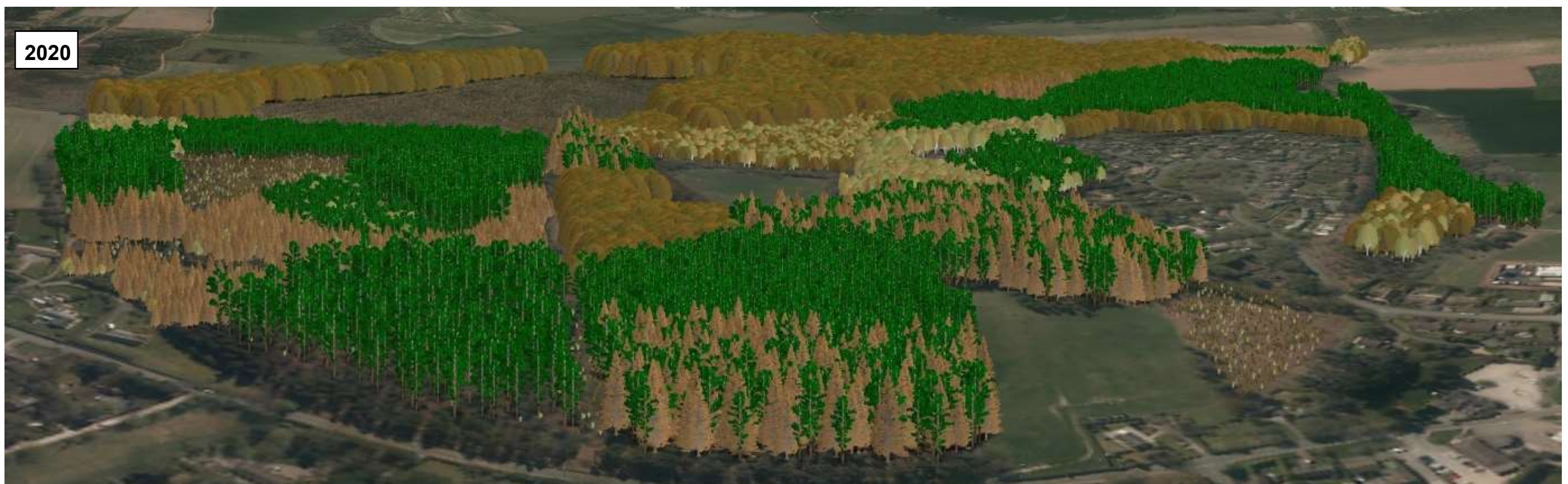
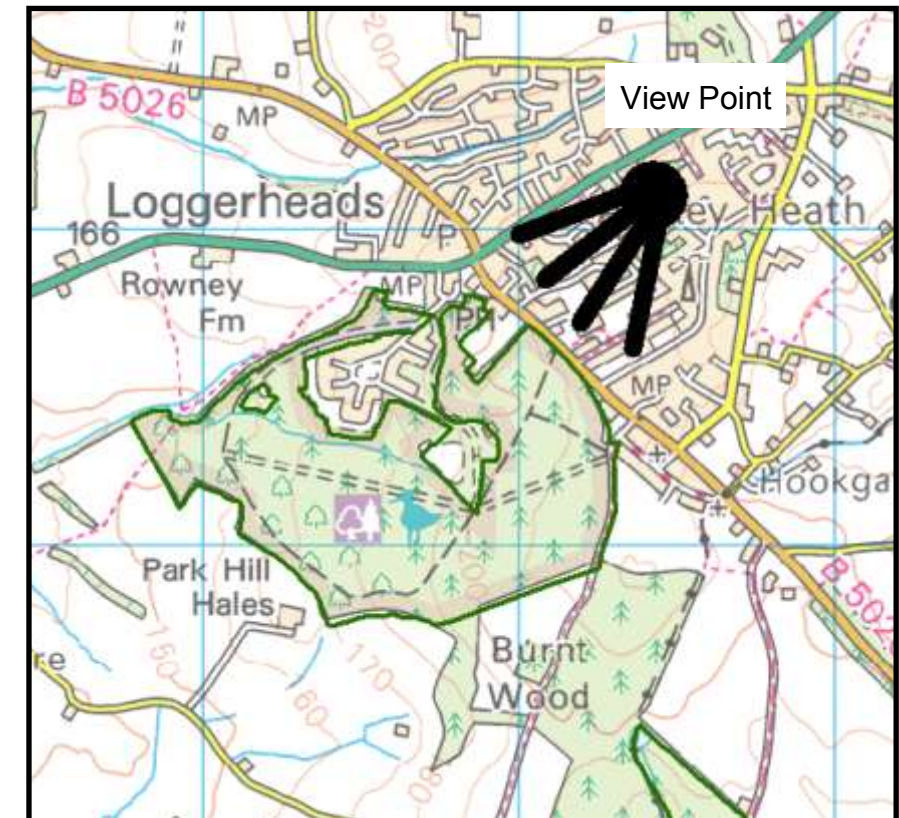
Pine stands have now been replanted with a more diverse mixture of evergreen conifers which will be more resilient to climate change, pests and disease.

The area of ancient woodland is now dominated by broadleaves with the exception of a few individual and small groups of conifers retained for biodiversity and nesting sites for raptors.



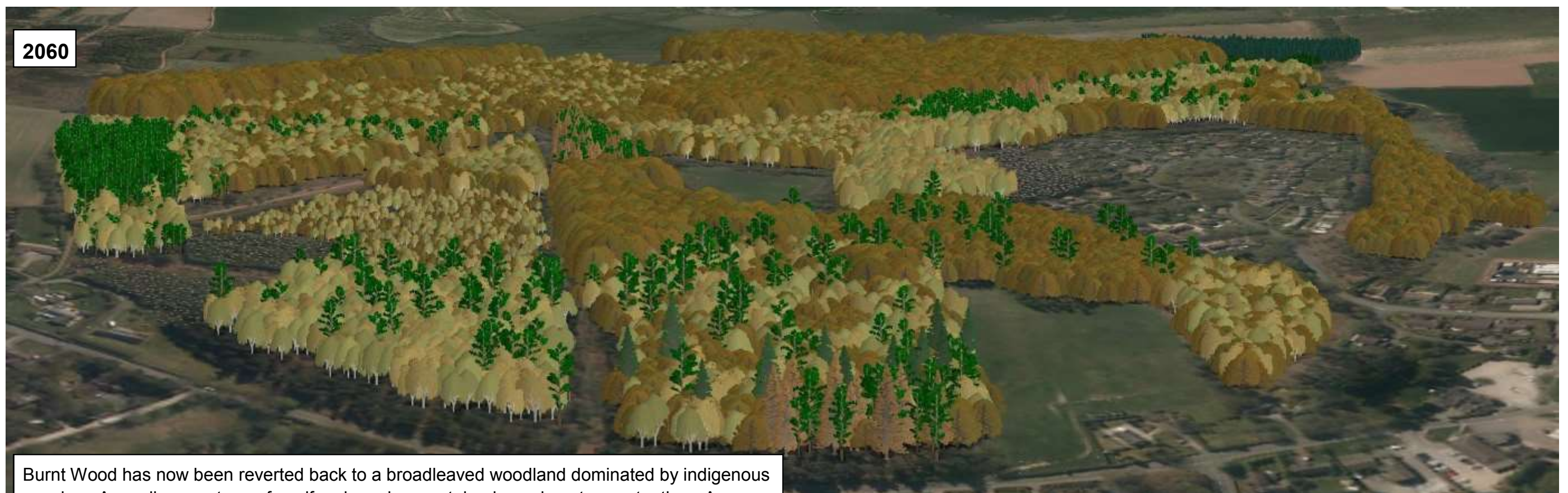
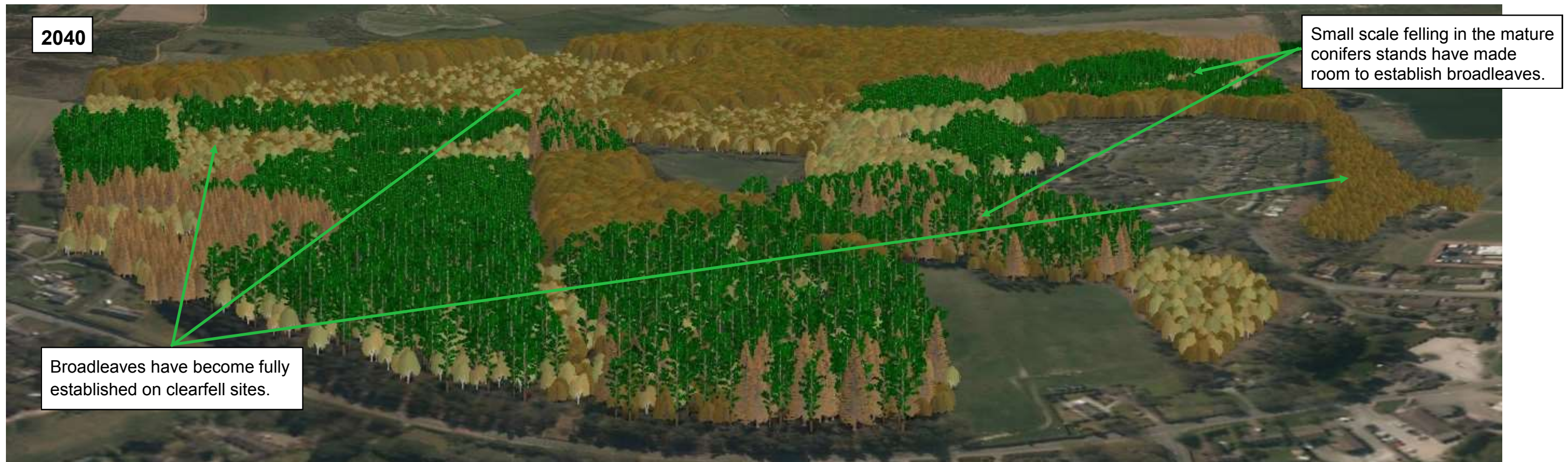
## Burnt Wood

Large mature broadleaved woodland designated as a SSSI dominate the southern half of the woodland with mature conifers most prevalent in the foreground. Burnt Wood has a large percentage of larch grown as mixtures and pure stands.





**Burnt Wood**





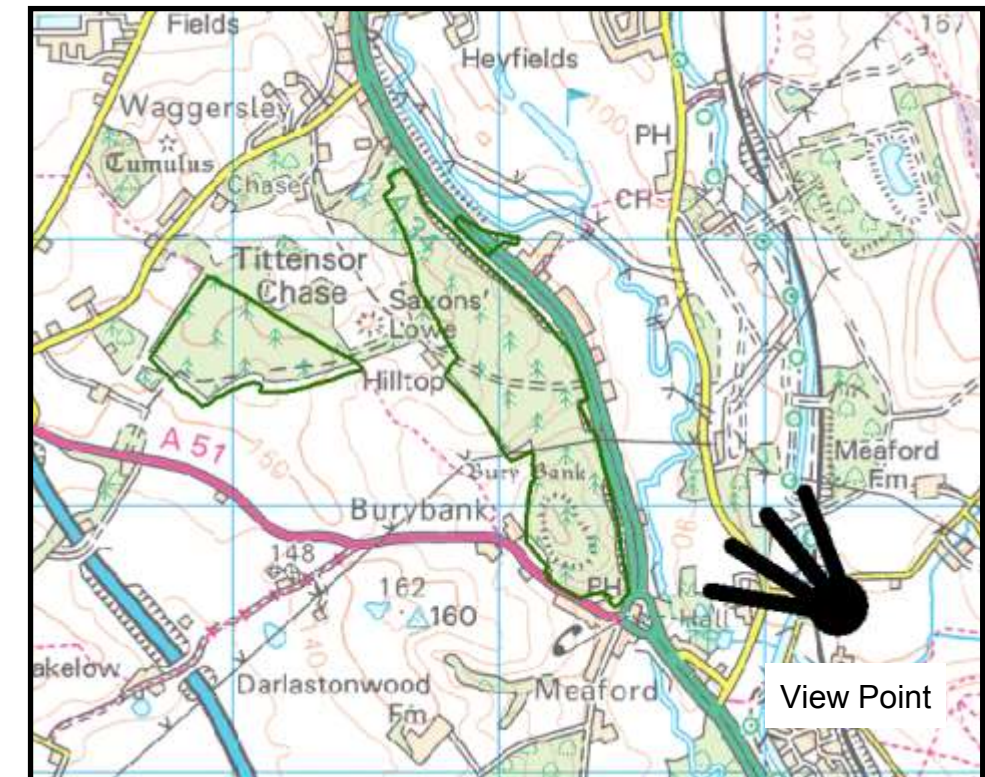
### Tittensor Wood

Tittensor Wood is a secondary woodland dominated by conifers and edged with a stand of mixed broadleaves adjacent to the A34 and A51.

Phased felling of the mature conifer stands has taken place over the last 20 years creating a mixed stand structure.

The woodland contains a large area of open space associated to the hill fort (SAM) and 2 overhead power lines that cross the woodland.

No Future Forest images have been created for Walton's Wood as there will be little structural change in the woodland as it will be managed as a Natural Reserve (non-intervention) and Low Impact Silvicultural Systems (LISS).





**Tittensor Wood**

**2040**

The next phase of felling has seen the removal of the mature pine stands from the northern and southern end of the woodland.

When restocking took place the tree line was lowered away from the hill fort as agreed with Historic England.

**2060**

Thinning operation has continued in the mixed broadleaved and mature larch stands and space created for any natural regeneration to become fully established.



### Swynnerton Old Park Wood East

The southern half of Swynnerton Old Park known as Harley Thorns is dominated by larch with some young pine stands. The management objectives are to grow the conifers on a full economic rotation (60-80 year cycle). A notifiable disease (*Phytophthora ramorum*) has been identified in private woodlands locally and the FC will continue to monitor the larch for any signs of infection. If discovered then the larch would have to be felled under a health notification from DEFRA.



2020



**Swynnerton Old Park Wood East**

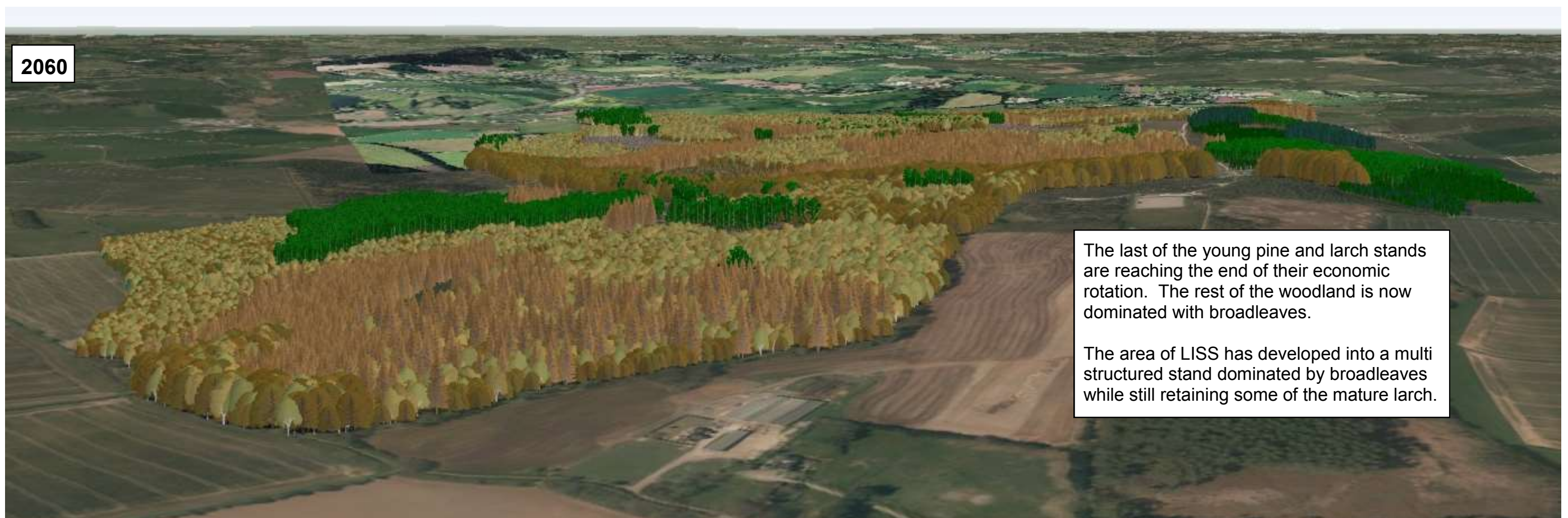
**2040**



Broadleaves have become established on the recent clearfell sites.

A mixed stand is developing in the larch being managed as Low Impact Silvicultural Systems (LISS).

**2060**



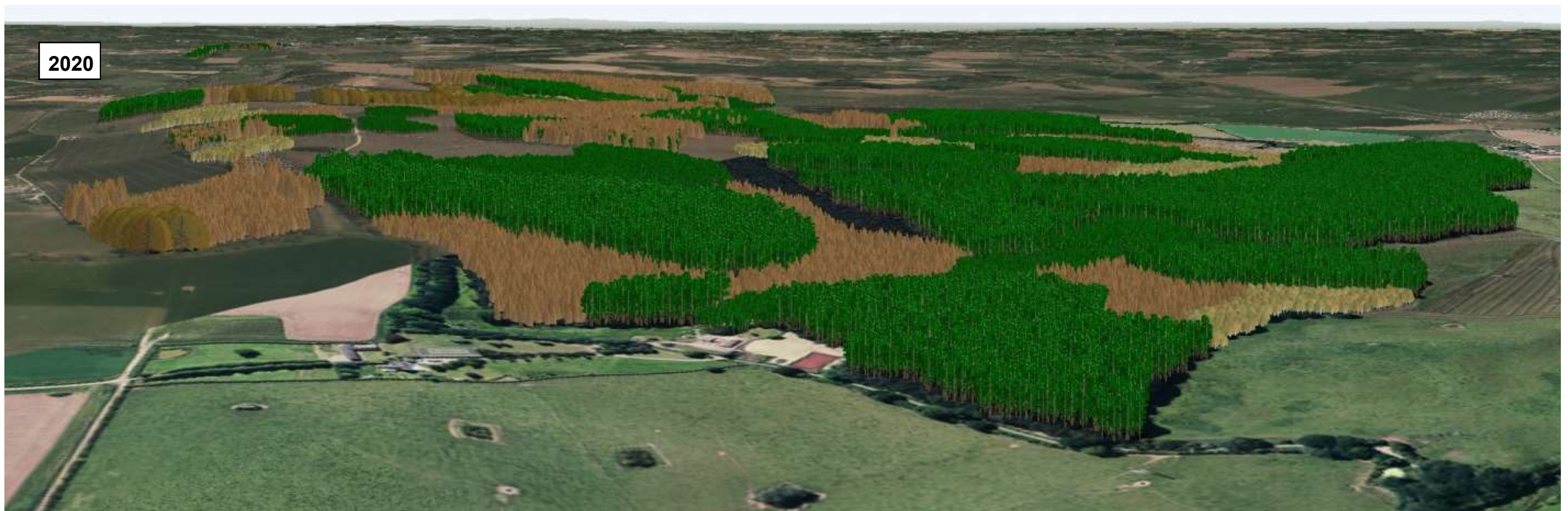
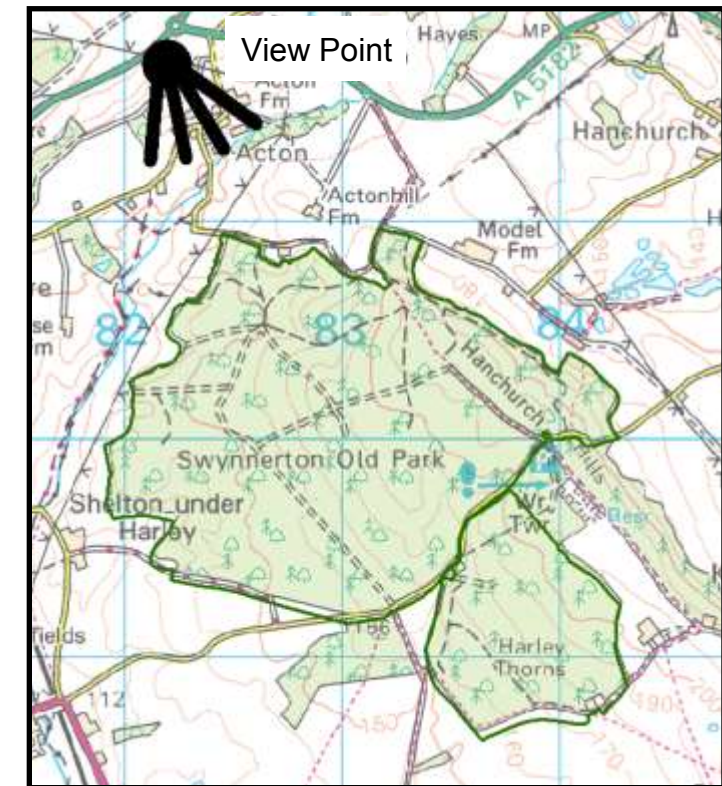
The last of the young pine and larch stands are reaching the end of their economic rotation. The rest of the woodland is now dominated with broadleaves.

The area of LISS has developed into a multi structured stand dominated by broadleaves while still retaining some of the mature larch.



**Swynnerton Old Park Wood North**

Swynnerton Old Park has experienced extensive storm damage over recent years and the rate of future felling's will be reduced as a consequence. A restocking programme has begun on these new 'wind blow' areas.





**Swynnerton Old Park Wood North**

**2040**

Clearfells on the north-eastern edge of Swynnerton Old Park below the forest road have been restocked with conifers as this area is secondary woodland. Restocking within the main block is with broadleaves as this area is former ancient woodland.

**2060**

With the exception of a few areas/groups of conifers retained as long term retentions, the main block of Swynnerton Old Park will be converted back to predominantly broadleaved woodland over the next 60 years. Future rotations will continue to be managed under a clearfell and restocking programme to facilitate the nesting and feeding habitat requirement of ground nesting birds found in the woodland.



## Appendix I - Terms of Reference

FEE Strategic Goal	District Strategy	Forest Plan Objective	Monitoring
<b>Economic</b>	<p>Adapting our management practices to suit the character and requirements of local woodlands whilst satisfying national standards and business requirements.</p> <p>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.</p>	<p>Initiate a structured and sustained programme of clearfell and thinning to include infrastructure requirements.</p> <p>Select suitable species and appropriate silvicultural techniques to regenerate (either naturally or through planting) commercially productive forests.</p> <p>Ensure stands are more structurally and species diverse making them more resilient to the impacts from climate change, pests and disease.</p>	<p>This will be reviewed every 5 years as part of the FP review process and any changes recorded in the sub compartment data base.</p> <p>Once the crops start to produce commercial timber, production forecasts will be run to quantify the resources available and ensure longterm sustainable forest management.</p> <p>Production forecasts will be run annually and data form part of the Central Districts business plan. Stocking density, growth rates, stems/ha and species origin and provenance will be recorded and monitored.</p>
<b>Nature</b>	<p>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.</p> <p>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</p> <p>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>	<p>Employ a variety of silvicultural techniques to maintain soil structure, stability and site infrastructure.</p> <p>Restore AWS by the gradual removal of exotic species over the next 60years, introduce a wide distribution of species that will be better suited to the impacts of climate change, pests and disease.</p> <p>Identify existing locations of TSIs and demonstrate appropriate management to recruit future veteran trees and increase the volume and distribution of deadwood.</p> <p>Ensure the timing and scale of forest management proposals complement the SSSI management objectives and habitat requirements of Lepidoptera and associated ground flora.</p> <p>Continue to work closely with Natural England, Butterfly Conservation, Staffordshire Wildlife Trust and local volunteers in monitoring and recording flora and fauna and review forest management accordingly.</p>	<p>Silvicultural systems are shown in the forest plan and will be reviewed prior to any operations taking place and maintain soil stability. The restoration of AWS and the introduction of a wider range of species will be monitored via the subcompartment database as part of the FP review process.</p> <p>Trees of Special Interest (TSI) and deadwood habitats will be identified and recorded on the conservation layer of ensure they are retained in perpetuity.</p> <p>The 5 year review of the SSSI habitat assessment will measure the improvement based on indicator species. Species records collected on rides and records of the FC ride side cutting programme will be review every 5 years as part of the plan review.</p> <p>As part of the 5 year and 10 year FP review process, but not exclusively, stakeholders will be contacted as part of the forest management review.</p>
<b>People:</b>	<p>Provide safe and accessible woodlands.</p> <p>Offering opportunities for quiet recreation and adventurous activities, to enable people to experience the potential health and wellbeing benefits.</p> <p>Encouraging third party environmental educators and other partners to offer learning opportunities on the public forest estate</p>	<p>Diversify species composition and structure, and plan sympathetically designed and appropriately scaled interventions to improve and maintain the visual integration of the forest into the wider landscape.</p> <p>Maintain existing public access and enhance where possible.</p>	<p>As part of the design plan review process the visual impact of harvesting operations on landscape will be made from key viewpoints to ensure their design is still appropriate. Any changes will be recorded in the revised plan.</p> <p>Public access and facilities will be monitored and maintained by the beat team on a regular basis throughout the year.</p>



## Appendix II

### Glossary

#### Ancient woodland

Is a woodland that has existed continuously since 1600 or before in England, Wales and Northern Ireland (or 1750 in Scotland).

#### Biological Diversity

The richness and variety of wildlife and habitats.

#### Canopy

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

#### Clearfell System

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

#### Coupes

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

#### Ecosystems

An ecosystem includes all of 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).

#### 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.

#### Forest Enterprise England (FEE)

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 5<sup>th</sup> edition 2011

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.

#### Forestry Commission Guidelines

Outline the principles and standards of good management practices in forests and woodlands for landowners, land managers and their advisors.

#### Forest Plan (FP)

An approved plan that outlines felling operation 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

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

#### Honorary Native

Near native and naturalised species such as Sycamore, sweet chestnut, beech in northern and western England, Holm oak, Scots pine in northern England and southern heaths

#### 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.

#### Lepidoptera

Lepidoptera is an order of insects that includes butterflies and moths.

#### LiDAR

Lidar uses ultraviolet or near infrared light to image objects. It can map ground vegetation or strip away vegetation to just show the terrain to a very high resolution.

#### 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 the forest canopy is maintained at one or more levels.

#### Natural Areas

England is divided into 159 distinct natural areas. Each is defined by a unique combination of landscape, biodiversity, geodiversity and cultural and economic activity.

#### Natural regeneration

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

#### 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.

#### Nest Planting

Trees are planted in groups and the areas left between groups will be allowed to naturally regenerate.



## Glossary

### 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.

### Origin

The geographic locality within the natural range of a species where the parent seed source or its wild ancestors grew.

### Plantation's on Ancient Woodland Sites (PAWS)

They are ancient semi-natural woodlands on which the original, "natural" woodland was cleared, and replaced by a plantation of either native or exotic species.

### Provenance

The geographic locality of a stand of trees from where the seed was collected.

### Public Forest Estate (PFE)

The woodlands managed by the Forestry Commission 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 as a term, it is more usually associated with replanting.

### Ride

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

### Scheduled Ancient Monuments (SAM)

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

### Secondary Woodland

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

### Selective Felling

Where individual trees of varying sizes are selected and removed from a stand. The whole stand is worked and its 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.

### Site of Special Scientific Interest (SSSI)

IS a formal conservation designation given by Natural England in England and are protected by law to conserve their wildlife and or geology.

### Sub-compartments

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

### Strategic Plan

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

### 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 Scheme (UKWAS)

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

### 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 m<sup>3</sup> per hectare has a yield class of 14.

### Yield Tables

The Forest Yield tables present values for all the main growth and yield variables for a sequence of stand ages, showing the volume in cubic meters that is available from both thinning and harvesting operations.



## **Appendix III**

### **What are Forest Plans?**

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

- To provide descriptions of our woodlands to show what they are like now.
- To explain the process we go through in deciding what is best for the woodlands' long-term future.
- To show what we intend the woodlands to look like in the future.

To detail our management proposals, for the first ten years so we can seek approval from the statutory regulators.

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

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

All tree felling in the UK is regulated and a licence is required before trees can be felled; the scale of tree felling in 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 another part of the FC (Forest Services). If all the criteria are met, full approval is given for the management operations in the first ten years (2018 - 2028) and outline approval for the medium term vision (2028 - 2067). The plan will be reviewed after the first five years (2022) to assess if the objectives are being achieved.

We use some technical words and phrases in the text because they best describe what we are doing. There is a glossary at the back of the plan (Appendix II) with some commonly used technical forestry terms and abbreviations. These technical words are identified throughout the plan with an \*.