

# Cromford & Shining Cliff

## Forest Plan 2018 — 2068

## Summary

The Cromford and Shining Cliff Forest Plan (FP) summarises proposals by the Forestry Commission for the management of Cromford (84.7ha) and Shining Cliff Woods (79.1ha) which lie 5km south of Matlock and 17km northwest of Derby respectively. Both woodlands form prominent features in the local landscape, with the 'Black Rocks outcrop at Cromford Moor being the highest ground in the local vicinity and Shining Cliff situated adjacent to the A6 that runs between Derby and Manchester. The FP lies within the "*Derbyshire Peak Fringe and Lower Derwent Landscape character area* which forms a picturesque transitional area between the natural beauty of the Peak District National Park to the west and the largely urban, formerly mined Derbyshire Coal Measures to the east.

Cromford Moor is classified as secondary woodland and is situated on what was once moorland; consequently the regeneration of acidophilous dwarf shrub heath along ride sides and across the newly created open areas is now showing. The plateau is dominated by conifer plantation and the escarpment's with mixed woodland that contain some naturally regenerating native woodland characteristics. Shining Cliff Wood is an ancient woodland site designated as a Site of Special Scientific Interest (SSSI) notified for the ancient semi-natural oak-birch woodland, and the flora and associated fauna of its wet flushes and stream sides. Blocks of conifers were planted 50 years ago in the northern half of the woodland and these are now scheduled in the FP for removal.

Principle management objectives for the FP will be to remove the invasive conifers from the SSSI and restore these areas back to broadleaved woodland; diversify the species and age structure to mitigate against the impacts of climate change, pests and disease; grow commercial crops on a sustainable basis; manage public access in both woods; conserve the landscape and conservation value of the woodlands. All operations that take place within the SSSI will be carried out in line with the SSSI management plan that has been agreed with Natural England.

## Central Forest District - Cromford and Shining Cliff Forest Plan

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## 1. What are Forest Plans?

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

- To provide descriptions of 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.

Our aim is to produce a plan that meets your needs for the woodland; meets the needs of the plants and animals that live there and meets our needs as managers.

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, of which this plan forms part, 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 - 2068). The plan will be reviewed after the first five years (2023) 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 \*.

## A Application for Forest Plan Approval

### i Plan Area Identification:

Forest District:	Central Forest District	
Beat:	Peak District and South Yorkshire	
Name:	Cromford and Shining Cliff Forest Plan	
Nearest Town:	Wirksworth	
OS Grid Reference:	Cromford	SK 295 557
	Shining Cliff	SK 335 530
Local Planning Authority	Cromford Derbyshire Dales District Council	
	Shining Cliff Amber Valley Borough Council	

### ii Designations:

Site of Special Scientific Interest (SSSI)\*, Ancient Woodland\*, Plantation on Ancient Woodland (PAWs)\*, Secondary Woodland\* and lies in the Derbyshire Peak Fringe and Lower Derwent Natural Area\* Profile No.50,

### iii Date of Commencement of Plan

As soon as possible once approved.

Area (ha)	Conifers	Broadleaves
Felling	30.6	
Restocking *	13.6	16.8

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.*

*\*The restocking will be through a combination of restocking, natural regeneration and enrichment planting to reach full stocking in areas to be managed as productive high forest.*

Total felling operation 30.4ha



In addition to the above felling 81.4ha 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 ..... Approved .....

FDM

District ..... Conservancy .....

Date ..... Date .....

## 1. Introduction

This is the first forest plan for Shining Cliff and a renewal of the 2006-2016 Cromford FP for an area of considerable scenic and wildlife conservation value. The plan combines the gradual conversion of the existing conifer components to native broadleaves on AWS (Shining Cliff) with the conservation and enhancement of existing ancient semi-natural woodland and the sustainable production of timber from both Shining Cliff (broadleaves) and Cromford Moor (conifer and broadleaf secondary woodland).

Cromford Moor sits on a gently sloping plateau that falls away steeply along its western and northern edge towards the village of Cromford.. This is a popular woodland with locals and tourists with public car parks, waymarked trails, direct access onto the High Peak Trail and a gritstone outcrop known as Black Rocks popular with climbers and walkers, which provides a spectacular view point from its summit.

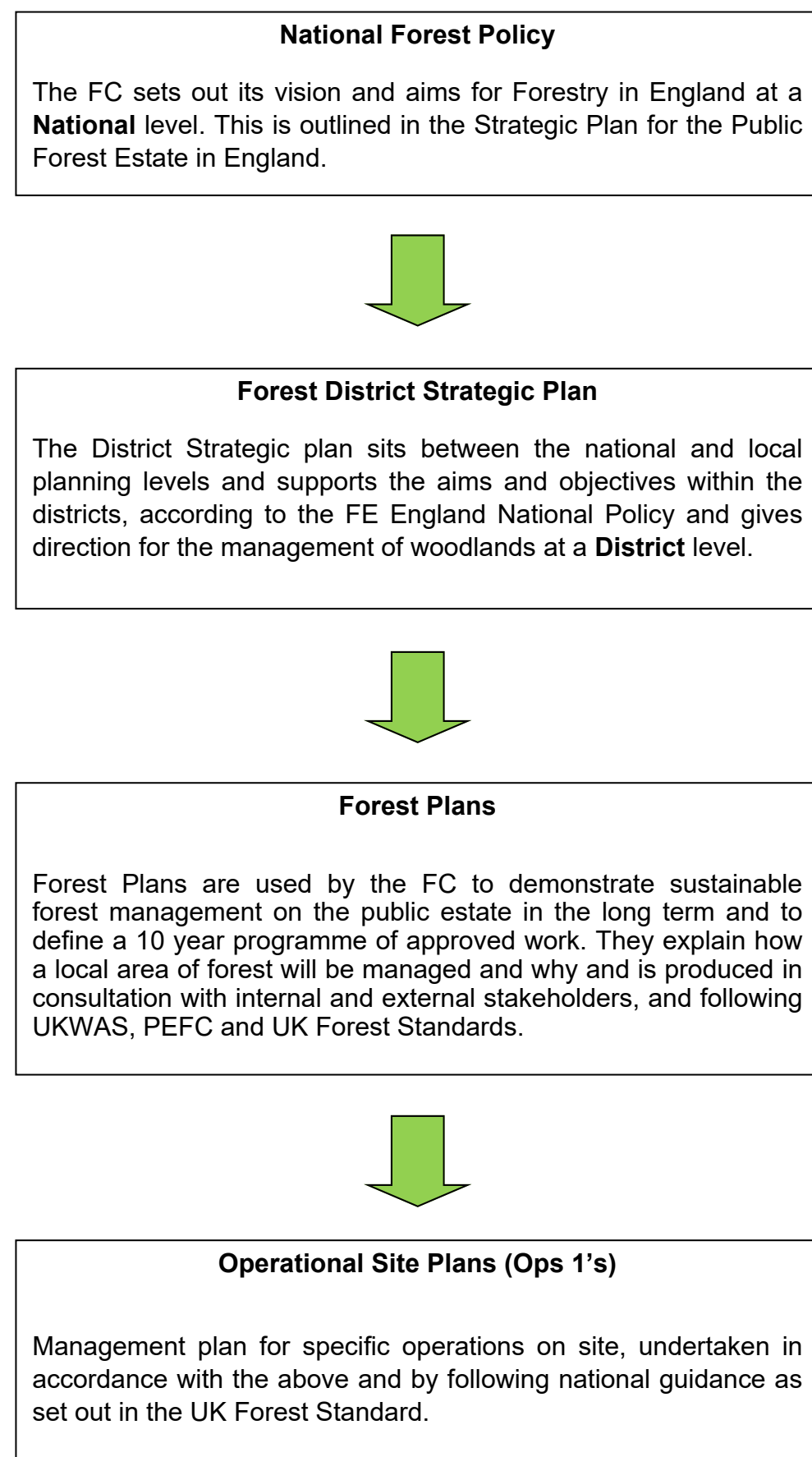
Shining Cliff lies along an eastern escarpment with poor quality acidic soils across much of the woodland and clay-silt soils in the southeast. This ancient semi-natural oak woodland is one of the few remnants of the mediaeval hunting forest of Duffield Frith, whose documented history is traceable back to 1284. Shining Cliff is a much quieter woodland with limited public access and one waymarked trail.

This FP is guided and directed by a number of policies and strategies - the main documents are summarised in Fig.1. with the FC main objective being to secure and grow the economic, social and natural capital value of the Public Forest Estate\* (PFE) for the people of England. Delivering this plan will require the Forestry Commission (FC) to be responsive to shifts in our operating environment and increasingly flexible in our approach, and to sustain this responsiveness over decades to come.

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.

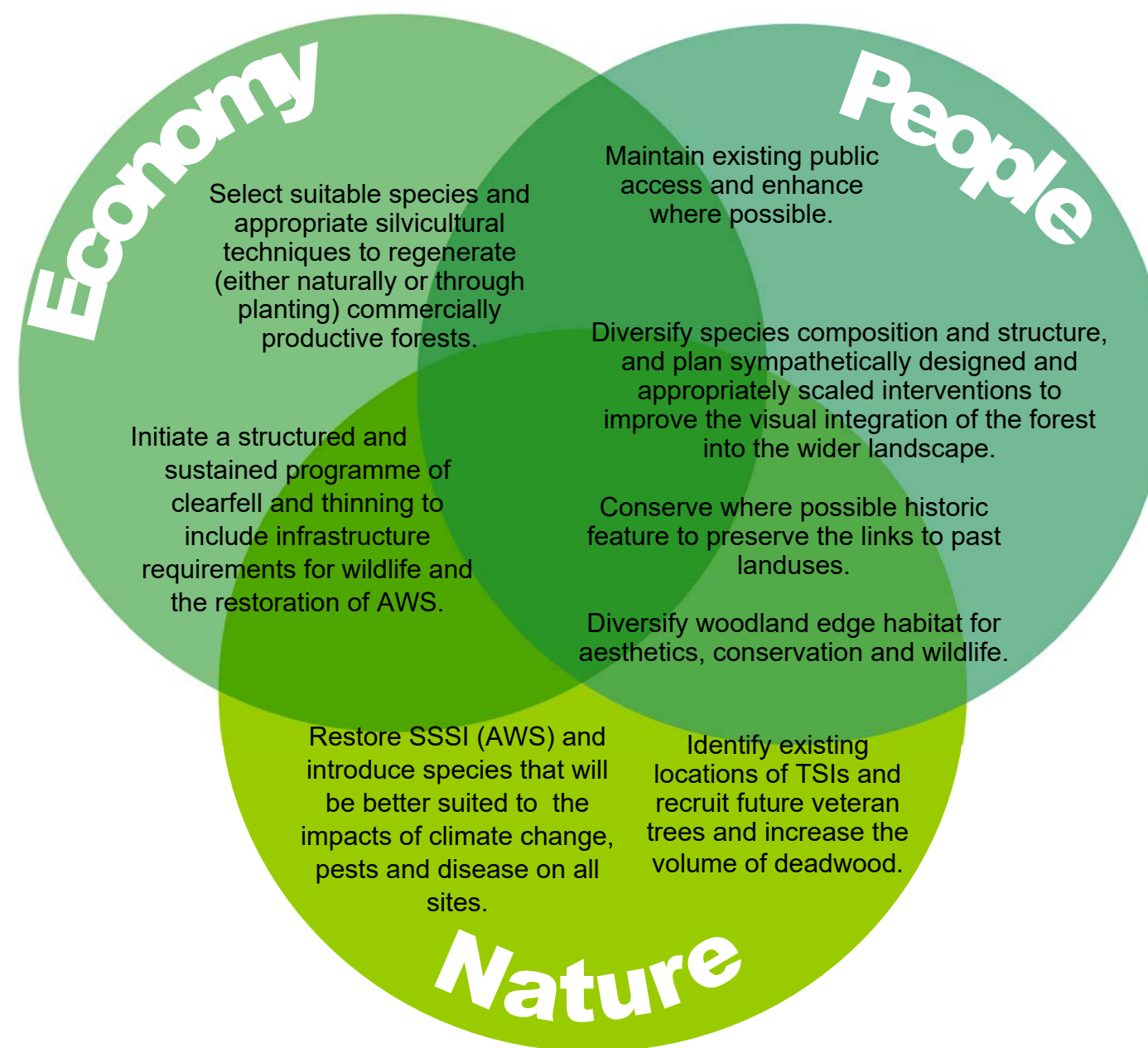


**Fig 1. Forestry Commission England's Planning Strategy**



## 2. 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 forest planner.*



## 2. Review of the old Forest Plans

All the planned harvesting operations outlined in the Cromford FP 2004-2014 were implemented in line with the approved FP. Some of the preferred species for restocking (Corsican pine and larch spp.) were however changed because of Dothistroma needle bight (DNB)\* affecting the Corsican pine and the risk from *Phytophthora ramorum*\* to larch. Spruce, pine and fir have been used as the most suitable alternative species based on soils and climatic conditions. The forest structure has become more diverse following recent harvesting operations and a large area (7ha) in the centre of Cromford Moor is now being grazed to create open heathland, Fig 2. Felling patterns have been sympathetic to the landscape and created more open internal views for visitors using the forest trails. The new open woodland habitats have attracted ecotone birds and nighjar have now been heard churring on heathland and restock areas.

Shining Cliff does not have a FP and forestry management objectives have been outlined in the 2017 SSSI management plan. The planned felling and removal of Western hemlock stands from the SSSI did not take place due a lack of an extraction route for the timber. Agreement has now been reached with the local ex-wireworks to use their bridge for extraction. The bridge has a 26 tonne weight restriction which will however limit the speed and scale of extraction.

## 3. Management Objectives

### 3.1 Economic

The long term management objectives for both woodlands is for them to be managed sustainably and produce commercial quality timber from the conifer and broadleaved stands, in line with the other management objectives. A variety of silvicultural\* systems will be used to deliver this, giving consideration to soil and water protection, slope stability and SSSI management agreements, see Silvicultural Systems map. In addition to the planned felling, conifer stands will generally be thinned\* on a 5 year rotation and broadleaves on a 10 year rotation. The first thinning operation will begin when conifers reach 20 years and broadleaves 25years. The timing of these first thinnings may vary depending on the management objectives for specific areas, or light and habitat requirements of native flora and fauna.

The harvesting programme shows predicted yields from both felling and thinning as 31,000m<sup>3</sup> over the next 10 years and 143,000m<sup>3</sup> 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 due the effects of DNB and *Phytophthora r.*



Fig. 2. Re-instatement of heathland now being managed through cattle and sheep grazing.

There is a small amount of revenue currently generated from recreation at Cromford Moor but the Forestry Commission will look for opportunities to work with other organisations and user groups to deliver a wider range of education and recreation services that may in the future generate income and employment in the local area. Due to the SSSI status and agreed management proposals for Shining Cliff no additional recreation facilities are planned.



## 3.2 Ecology

The two woodlands have very different characteristics and ecological interests. Cromford Moor's elevated location (secondary woodland) on former heathland and pasture has acidic soils which supports a less diverse ground flora. The scarp slopes are exhibiting some emerging characteristics of native woodland and these will be conserved through the use of LISS. Shining Cliff is an ancient oak woodland which has a much more diverse range of habitats associated to the east facing escarpment. These vary from acidic soils on the upper slopes through to more fertile clay soils and wet flushes alongside streams, Fig.3.

The diversification of the woodland structure has already begun at Cromford but Shining Cliff is all even aged high forest\*. Through the introduction of LISS mixed stands will develop with varying age structure and light levels. This will focus on conserving the ecological value of the SSSI by progressive removal of non-native species. Clearfells which will continue to provide transitional open spaces will open up view points, historical features and provide habitat for ecotone birds.

Management objectives will where appropriate, expand remnant grass and heathland communities commonly confined to ridesides and wayleaves. Woodland edge habitat will be a key consideration when felling operations (including thinning) or restocking take place ensuring more open space with varying light levels is created which will provide space for a herbaceous and shrub layer to develop. This is best achieved by ride and glade widening at appropriate opportunities to maintain ecological interests and the establishment of wider corridors following felling operations.

There is limited deadwood habitat available currently and a selection of individual and small groups of conifers and broadleaves will be retained in perpetuity to create future deadwood habitat and TSI (Trees of Special Interest).. The FC is undertaking a survey of TSI in Shining Cliff and these will be tagged and recorded. Candidate TSI for the future will also be identified, tagged and recorded to ensure a continuity of deadwood habitat longterm. Both small-leaved and large-leaved limes are present as rarities in Shining Cliff and these along with TSI on both sites will be conserved by halo thinning the surrounding trees to ensure adequate light and pace for these specimen trees.

Wet flushes, springs and streams in Shining Cliff will be protected from disturbance and changes in microclimate or water regime. Wet flushes identified as containing bryophyte and associated flora (which require continuous cover and shade) will be managed on a minimum intervention basis to preserve deciduous tree cover and avoid disturbance. All operations



Fig.3 Carpets of bluebells

carried out near any watercourse in

Shining Cliff will be in line with the Forestry and Water Guidelines and the Shining Cliff SSSI 2017 plan.

The management plan will continue the long-standing programme of *Rhododendron ponticum* and Himalayan balsam eradication in Shining Cliff both of which are invasive species and are suppressing the indigenous species associated with ancient oak woodland.



Fig.4 & 5 A rich collection of Lichens can be found throughout the woodlands with these photographs taken in Cromford wood.



## 3.3 People

At Cromford Moor the Black Rocks outcrop, its scree slope and the disused quarry nearby are a popular recreational destination for walkers and climbers. The site is served by two car parks managed by Derbyshire County Council's Countryside Management Service (land is owned by both organisations in this area); there are also two circular recreational walking trails on the site. Additionally the High Peak Trail skirts the northern perimeter of the FC's freehold and makes the site a recreational honey-pot destination. A public footpath runs to the trig point above Barrel Edge Quarry, (see Recreation and Access map.).

Shining Cliff has one promoted trail that passes an old yew tree associated with Betty Kenny (Kate Kenyon), a well-known local historical figure, who lived in the woods in the late 18<sup>th</sup> century, raising eight children in a charcoal burners house formed within the hollow yew tree; it is thought that the nursery rhyme "Rock-a-bye-baby" may have originated from the use of a hollowed-out bough of the tree as a cradle. Mountain bikes do use the woodlands and regularly cause conflict with the conservation management objectives of the site, particularly in more sensitive areas. There are no formal parking facilities for the public to use and due to the steep topography and sensitive nature of the site access on bike will be discouraged and no new access facilities are planned.

## 3.4 Cultural Heritage

Shining Cliff Wood was once part of the Royal Hunting Forest of Duffield Frith and within Alderwasley medieval deer park; it is also one of the richest and best preserved sites for woodland archaeology in Derbyshire. Survey work by Carr and Smith 2008, and recent LiDAR\* surveys have identified over 100 features which include charcoal platforms, whitecoal kilns, stone lined saw pits and rotary quern-stone rough-outs. Cromford Moor in contrast has little historical features in the main woodland block with records limited to the quarrying around Black Rocks and Barrel Edge, with a quarry tramway and site of a smithy. When forestry operations are carried out all archaeological features will be taken into account and conserved where possible.

## 4. Future Species and Management

The secondary woodland areas at Cromford Moor will continue to be managed using commercial conifer, broadleaf and mixed crops although future species will be varied due to

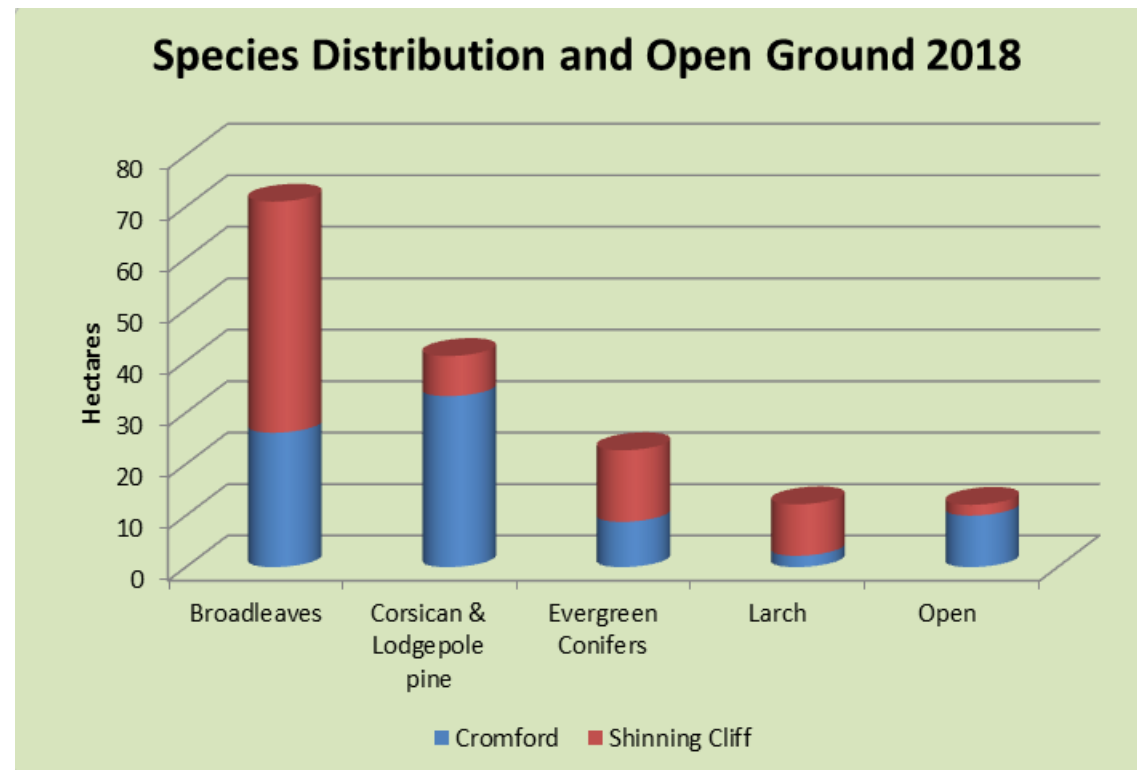
the current effects of pest and disease and impacts of climate change. Recommended species based on ecological site classification\* (ESC) and climate change models produced by Forest Research show Sitka spruce to be the most productive followed by Douglas fir, other spruce species and Scots pine. When restocking takes place the felled areas will be restocked with 2,800 to 4,000 stems /ha depending on each species' preferred habitat requirements.

For the LISS stands natural regeneration will be favoured with enrichment planting used to help diversify the species mixtures and reach full stocking. In the secondary woodland Sessile oak, Sweet chestnut, Sycamore, Aspen and Birch and will be favoured. These will be grown in mixed stands which may include some conifers.

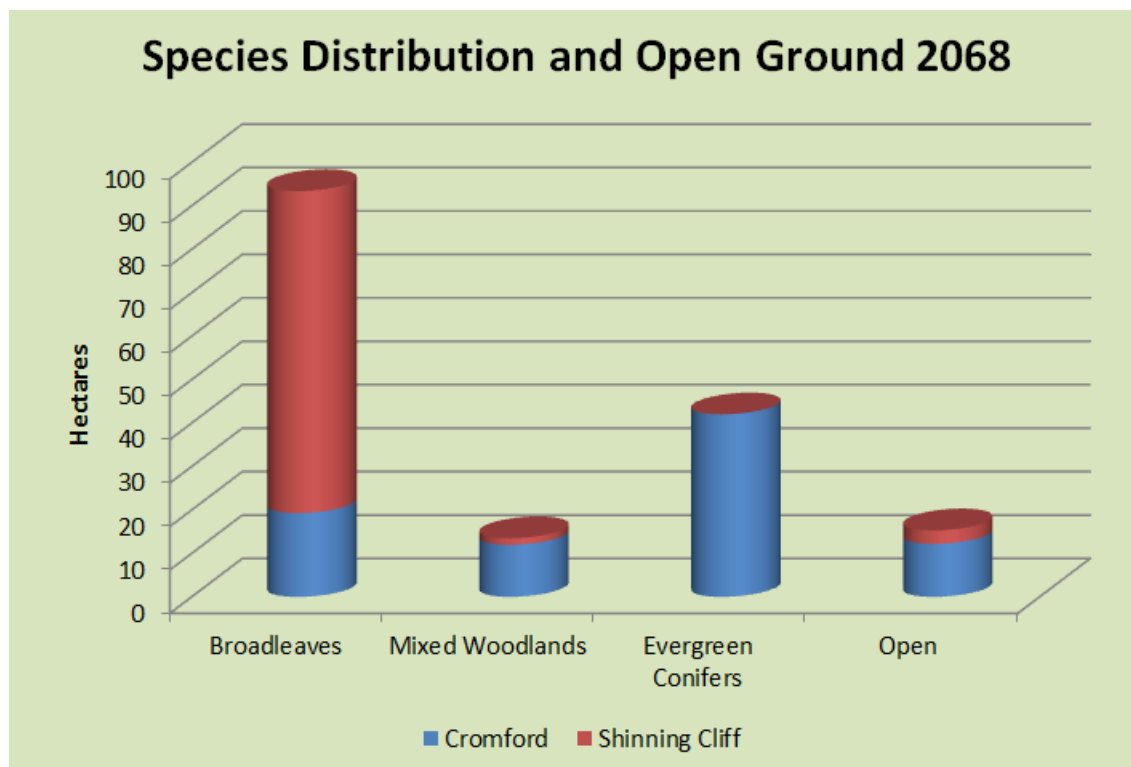
In the SSSI at Shining Cliff natural regeneration of the broadleaved stands will be used to restock areas favouring oak as the dominant canopy species and lime, birch, holly, and hazel as secondary species. Alder with ash and elm will be the preferred woodland type



Fig.6 Internal rides in Cromford wood.



**Fig.4 Current Landuse**



**Fig.5 Intended Landuse**

along streams. Stands consisting entirely of conifers will be felled and re-stocked with a mixture of native broadleaved trees and shrubs via natural regeneration or planting if necessary. A small number of sweet chestnut will be accepted (no more than 20%) as a fast growing back-up species, in case of low survival rates of other broadleaves due to damage by grey squirrels. The future FP structure will be largely dominated by broadleaves with a move diverse canopy structure and open rides. Natural regeneration of native trees and shrubs will be encouraged throughout the SSSI and LISS within plan area. However, for the duration of this management plan, natural regeneration of non-native broadleaved trees will not be actively controlled but will be managed as part of future management plans.

Some individuals and small groups of non-invasive conifers will be retained to increase biodiversity in future stands, provide winter cover and roosting sites for high nesting birds.

**Table 1.** Cromford and Shinning Cliff 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	163.8	100	28,121	0.6
Total Wooded Area	146.5	47.6	23,820	0.6
Open Habitat (>10%)	17.3	52.4	3,492	0.5
Natural Reserves - Plantation (1%)	2.53	1.5	171	1.5
Natural Reserves - Semi Natural (5%)	78.7	48	342	23.0
Longterm Retentions & Low Impact Silvicultural Systems (>1%)	121.8	74.4	14,609	0.8
Area of Conservation Value (>15%) including designations, PAWS, AW, ASNW, NR, LTR and LISS	121.8	74.4	15,122	0.8



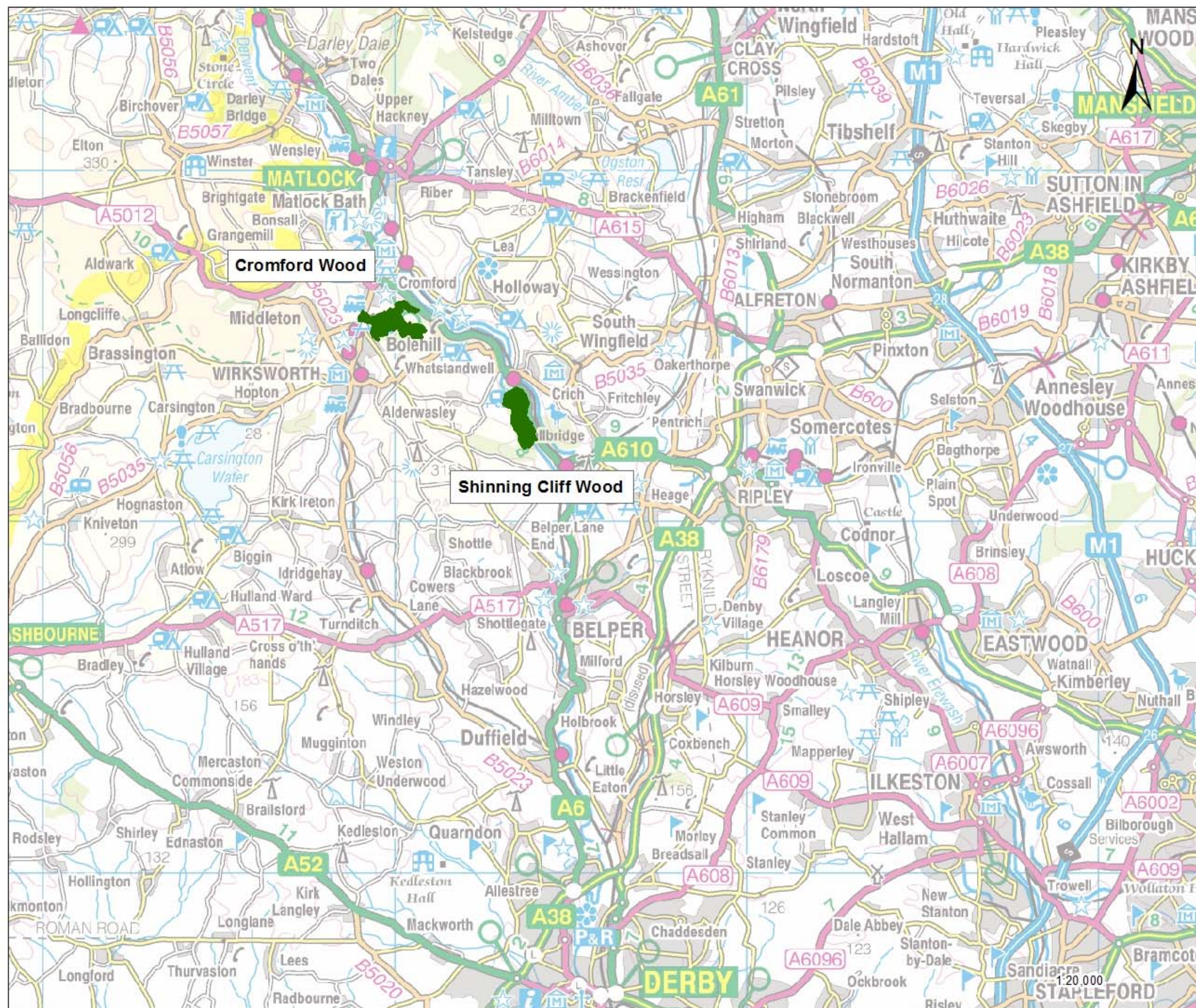
**5. Meeting and Monitoring Management Objectives**

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>	Adapting our management practices to suit the character and requirements of local woodlands whilst satisfying national standards and business requirements. 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.	Initiate a structured and sustained programme of clearfell and thinning to include infrastructure requirements.  Select suitable species and appropriate silvicultural techniques to regenerate (either naturally or through planting) commercially productive forests.  Ensure stands are more structurally and species diverse making them more resilient to the impacts from climate change, pests and disease.	This will be reviewed every 5 years as part of the FP review process and any changes recorded in the sub compartment data base. ESC will be used to help select suitable species for each restock site and production forecasts run annually to inform the Central Districts business plan of predicted yields. Stocking density, growth rates, stems/ha and species origin and provenance will be recorded and monitored
<b>Environment, Nature and History:</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>	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. 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.	Employ a variety of silvicultural techniques to maintain soil structure, stability and site infrastructure. Restore the SSSI (AWS) by the gradual removal of exotic species over the next 20years, introduce a wide distribution of species that will be better suited to the impacts of climate change, pests and disease. Identify existing locations of TSIs and demonstrate appropriate management to recruit future veteran trees and increase the volume and distribution of deadwood. Ensure the timing and scale of forest management proposals complement the SSSI management objectives and habitat requirements.	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. Trees of Special Interest (TSI) and deadwood habitats will be identified and recorded on the conservation layer of ensure they are retained in perpetuity. The 5 year review of the SSSI habitat assessment will measure the improvement based on indicator species.
<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>	Provide safe and accessible woodlands. Offering opportunities for quiet recreation and adventurous activities, to enable people to experience the potential health and wellbeing benefits. Encouraging third party environmental educators and other partners to offer learning opportunities on the public forest estate.	Diversify species composition and structure, and plan sympathetically designed and appropriately scaled interventions to improve and maintain the visual integration of the forest boundaries into the wider landscape. Continue to work with Derbyshire CC ranger service in the provision and maintenance of car parks, trails and interpretation.	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. Public access and facilities will be monitored and maintained by the beat team on a regular basis throughout the year.









## Central Forest District Location Map

Cromford Moor and Shining Cliff Woods lie within the Derwent Valley that extends from Cromford south to Derby. The past industrial landscape is now predominantly rural, being well-wooded in the valley bottoms rising up to become more open pasture on the upper slopes. Situated but a few kilometres away from the Peak District the area attracts a large number of visitors and Black Rocks at Cromford Moor is a busy honeypot site.

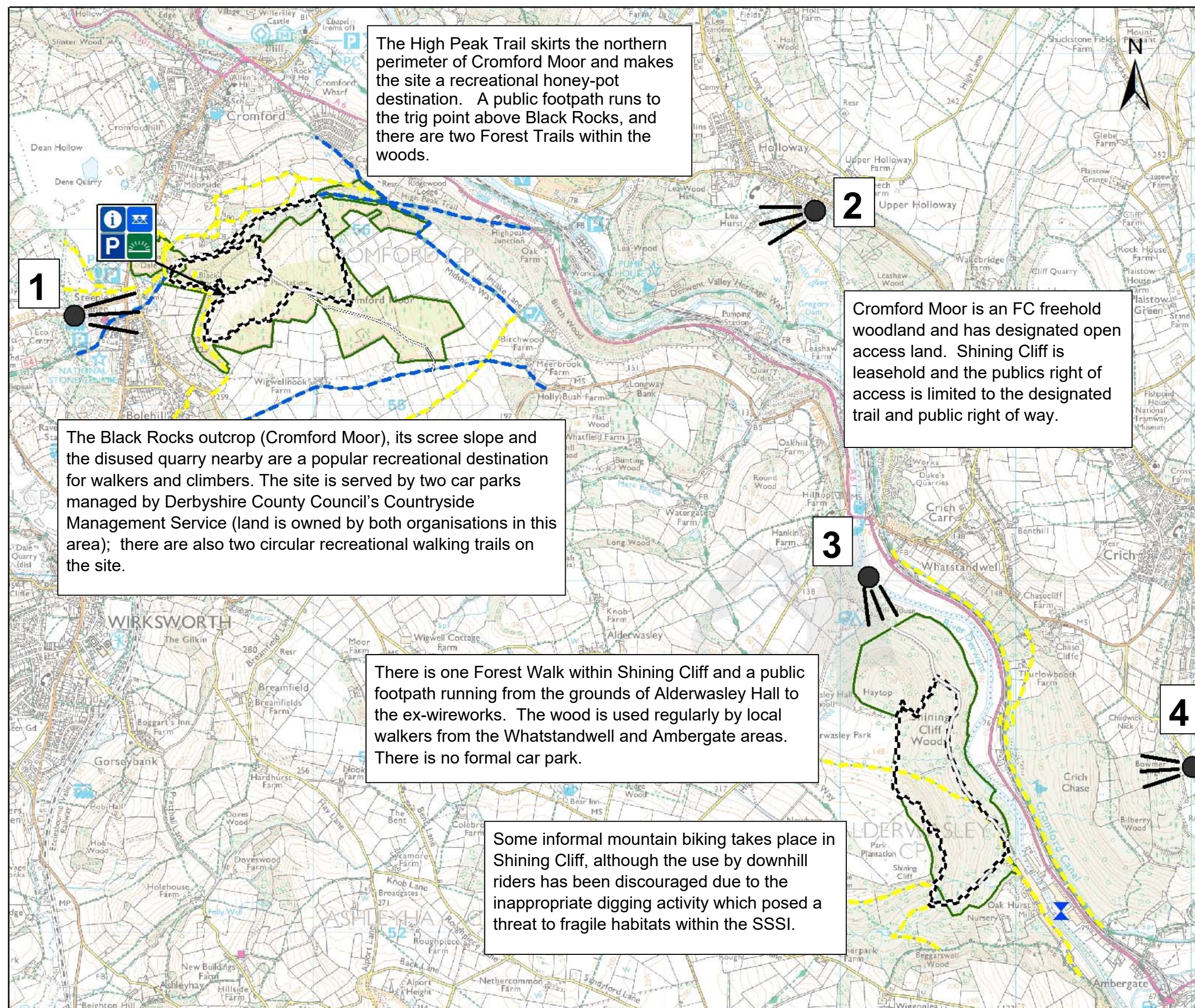


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Declaration by FCE as an Operator: All timber arising from the Forest  
Sustainable estate represents a negligible risk under SUTR (10.002.010)





## Central Forest District

### Recreation and Access

-  Information
-  Picnic Area
-  View Points
-  Car Parks
-  Forest Roads
-  Promoted Trail
-  Bridleway
-  Footpath
-  Private Bridge
-  Viewpoint
-  Management Area

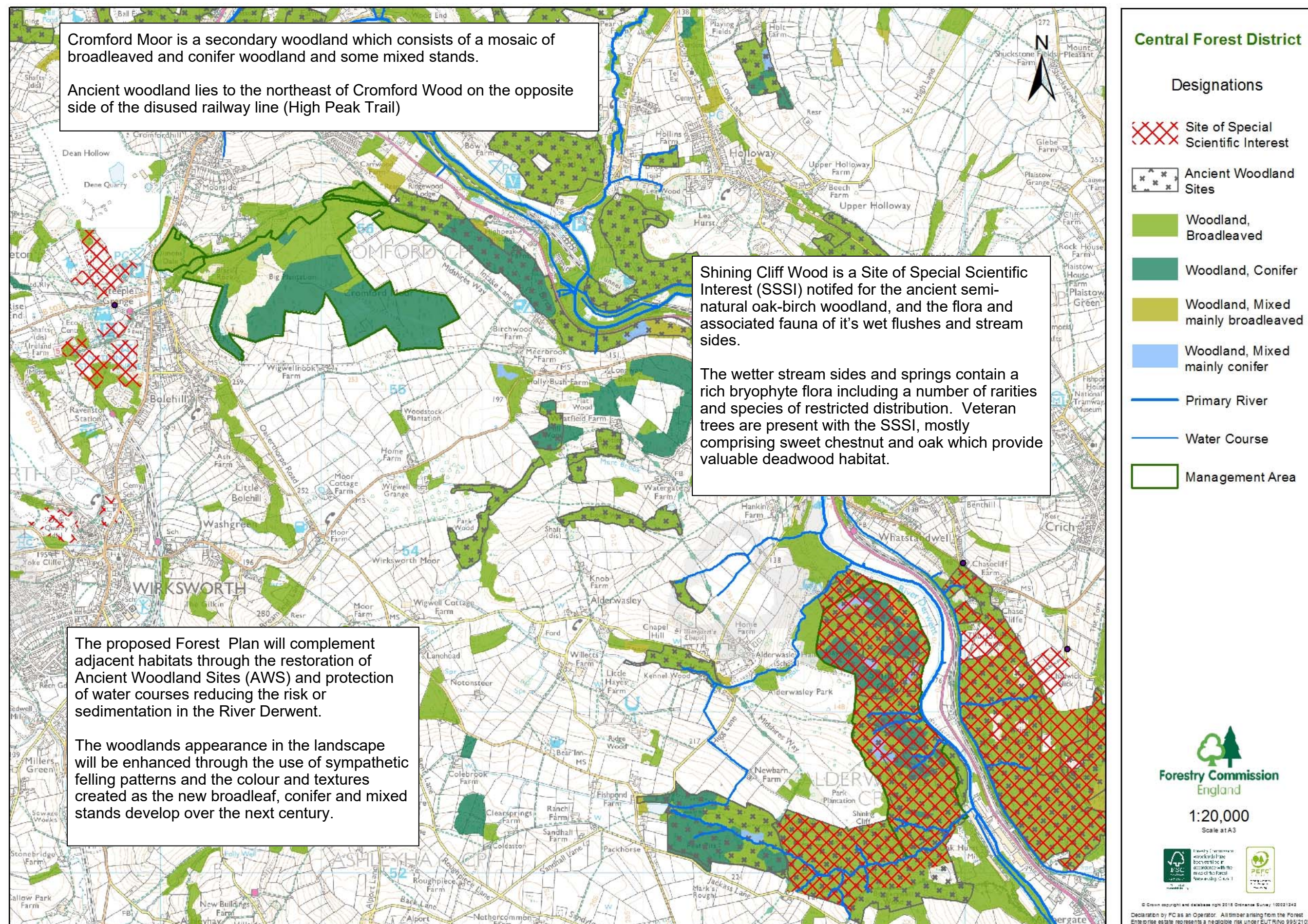


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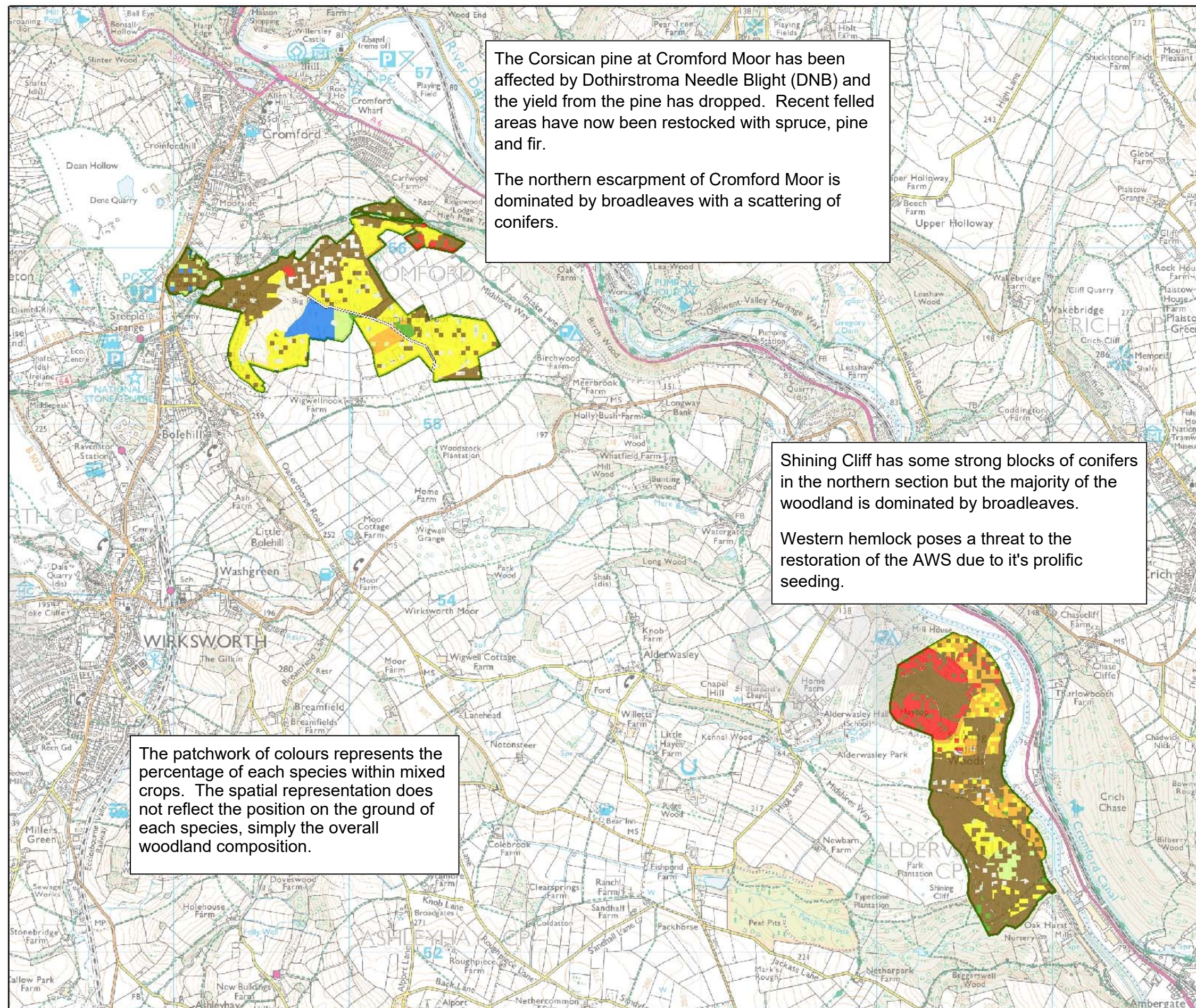


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Declaration by FC as an Operator. All timber arising from the Forest Enterprise estate represents a negligible risk under EUTR (No 995/2010).









## Central Forest District

### Current Species

-  Evergreen conifer
-  Western hemlock
-  Pine
-  Corsican & Lodgepole
-  Spruces
-  Larches
-  Broadleaves
-  Management Area

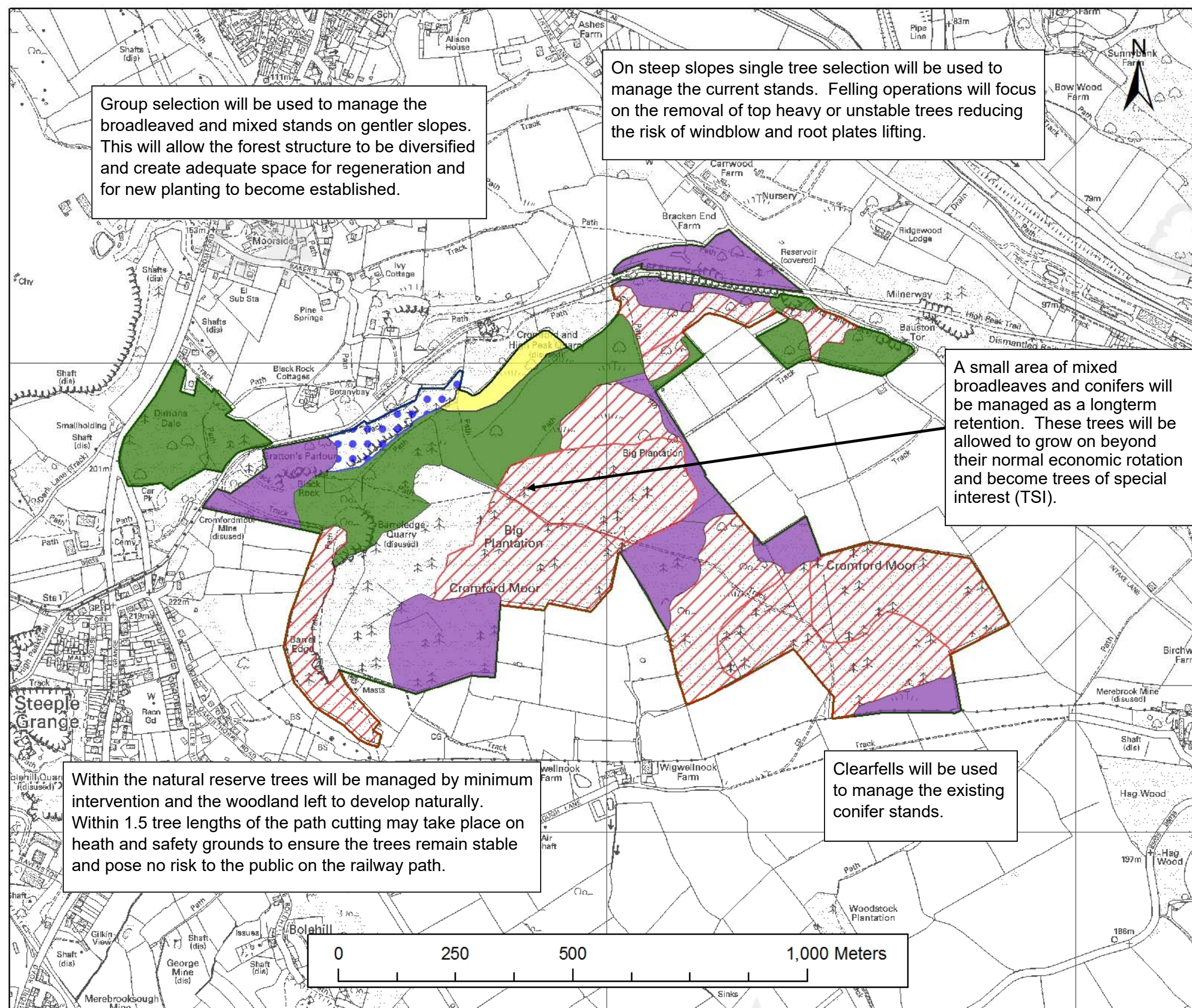


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Declaration by FC as an Operator: All timber arising from the Forest  
Enterprise estate represents a negligible risk under EUT R (No 995/210).



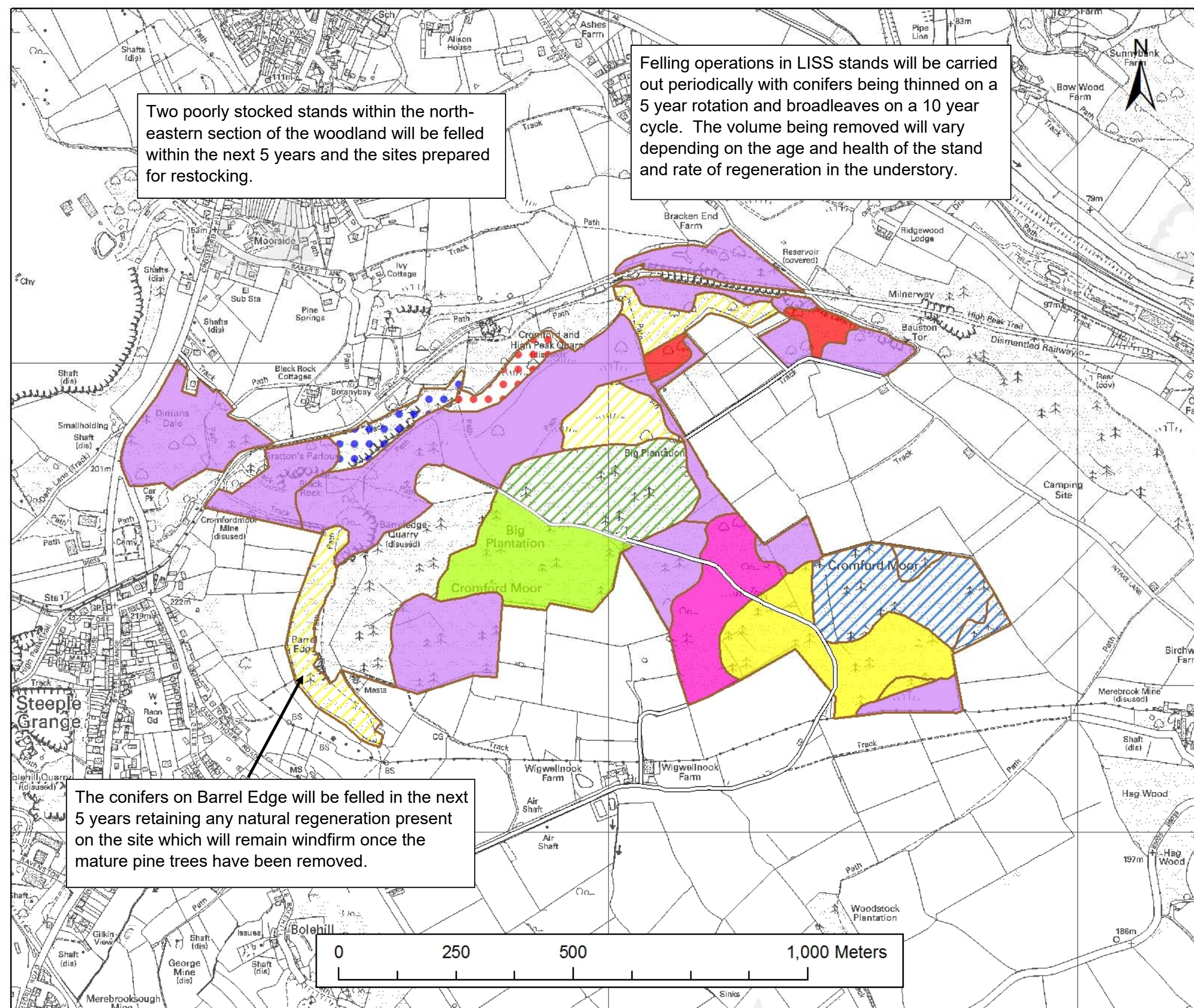


## Central Forest District

### Silvicultural Systems














-  Clearfell
-  Shelterwood Systems
-  Selection Systems
-  Natural Reserve
-  Long Term Retention
-  Management Area



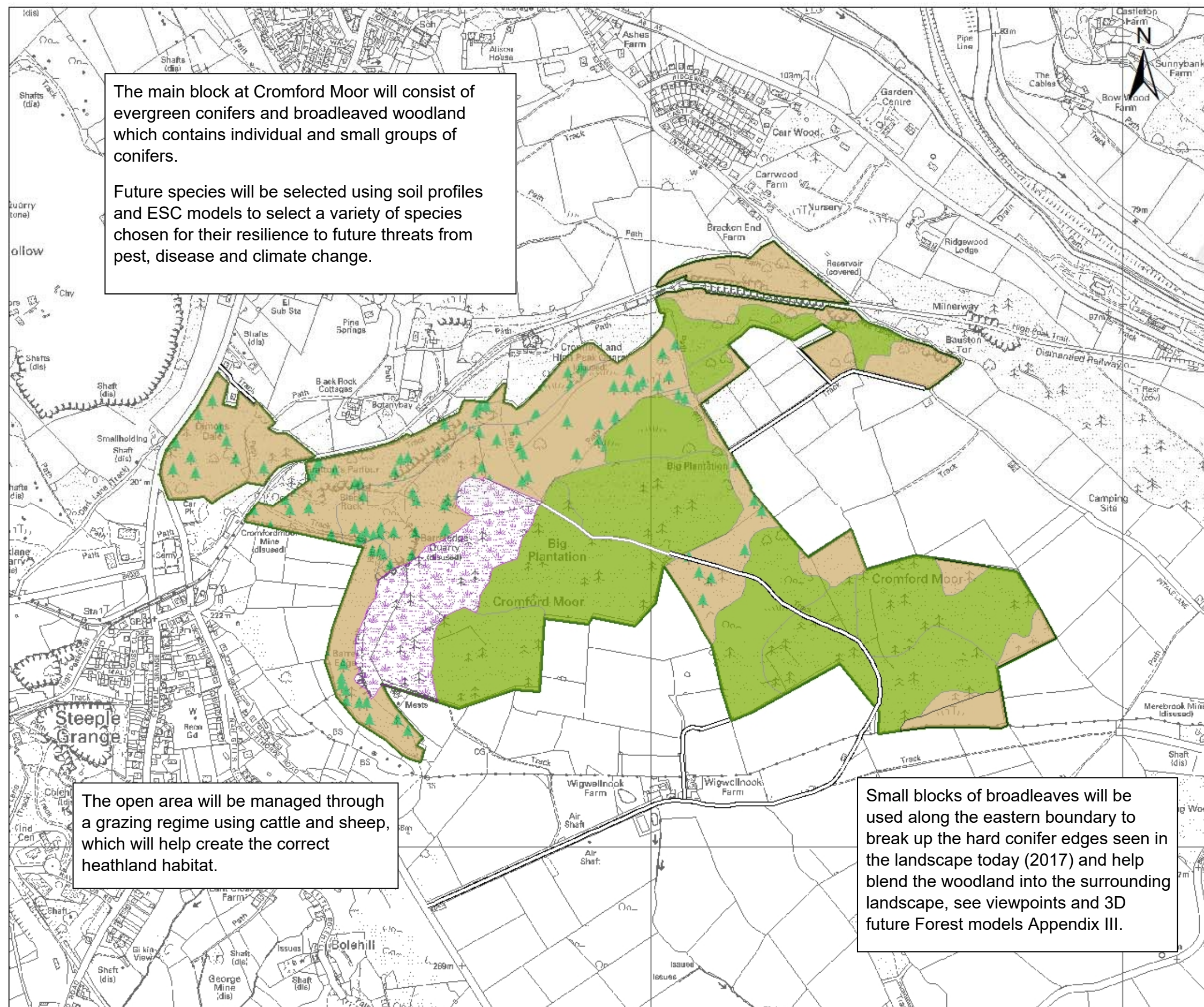


## Central Forest District

### Felling Periods

-  Forest Roads
-  Open Ground
-  2018 - 2021
-  2022 - 2026
-  2027 - 2031
-  2032 - 2036
-  2037 - 2041
-  2042 - 2046
-  2047 - 2051
-  2052 - 2056
-  2057 - 2061
-  2062 - 2099
-  Natural Reserves
-  Longterm Retention
-  Low Impact Silvicultural System (LISS)
-  Water Course
-  Management Area





## Central Forest District

### Intended Landuse

-  Broadleaves
-  Broadleaves with conifers
-  Evergreen conifers
-  Heathland
-  Management Area

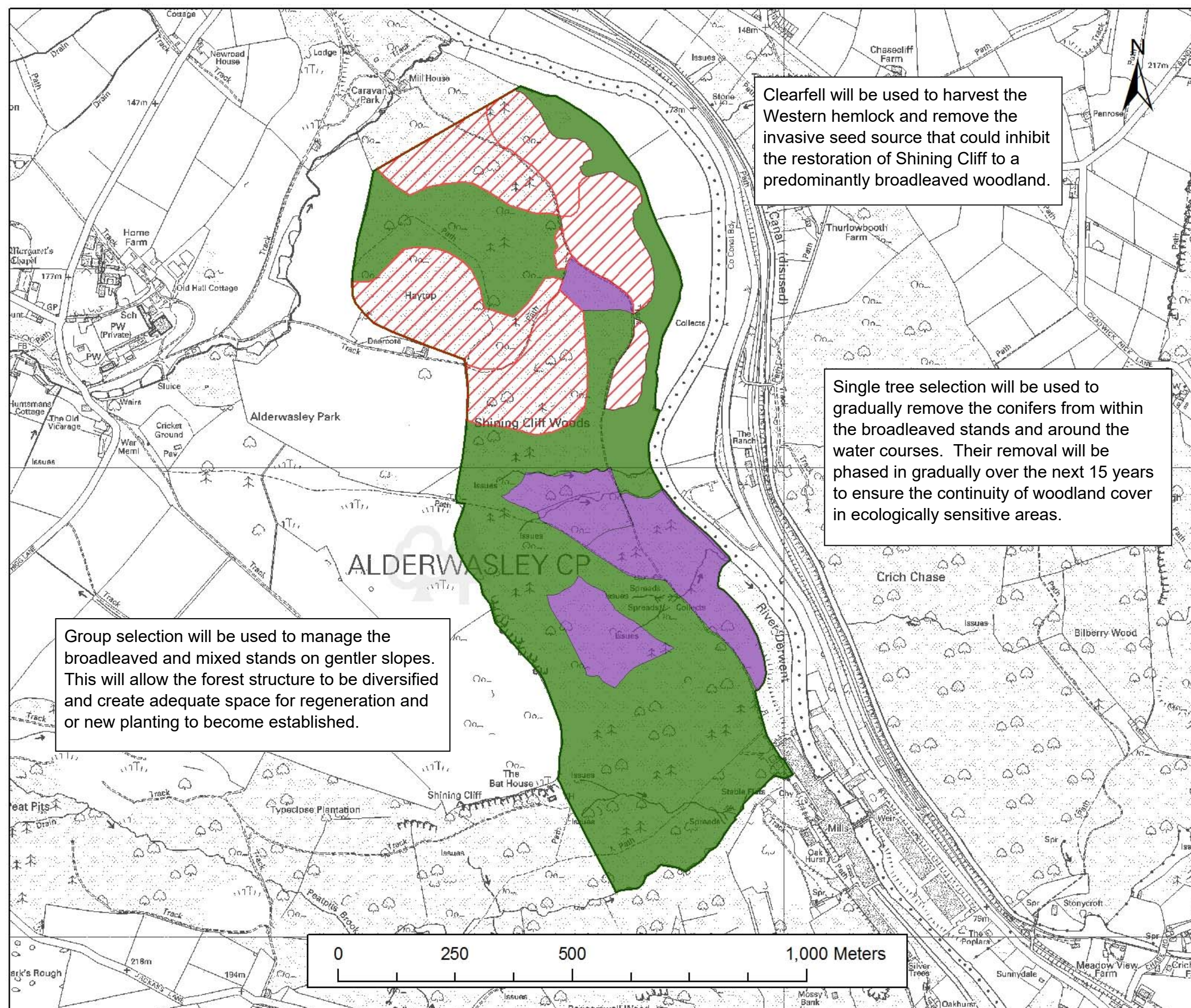


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


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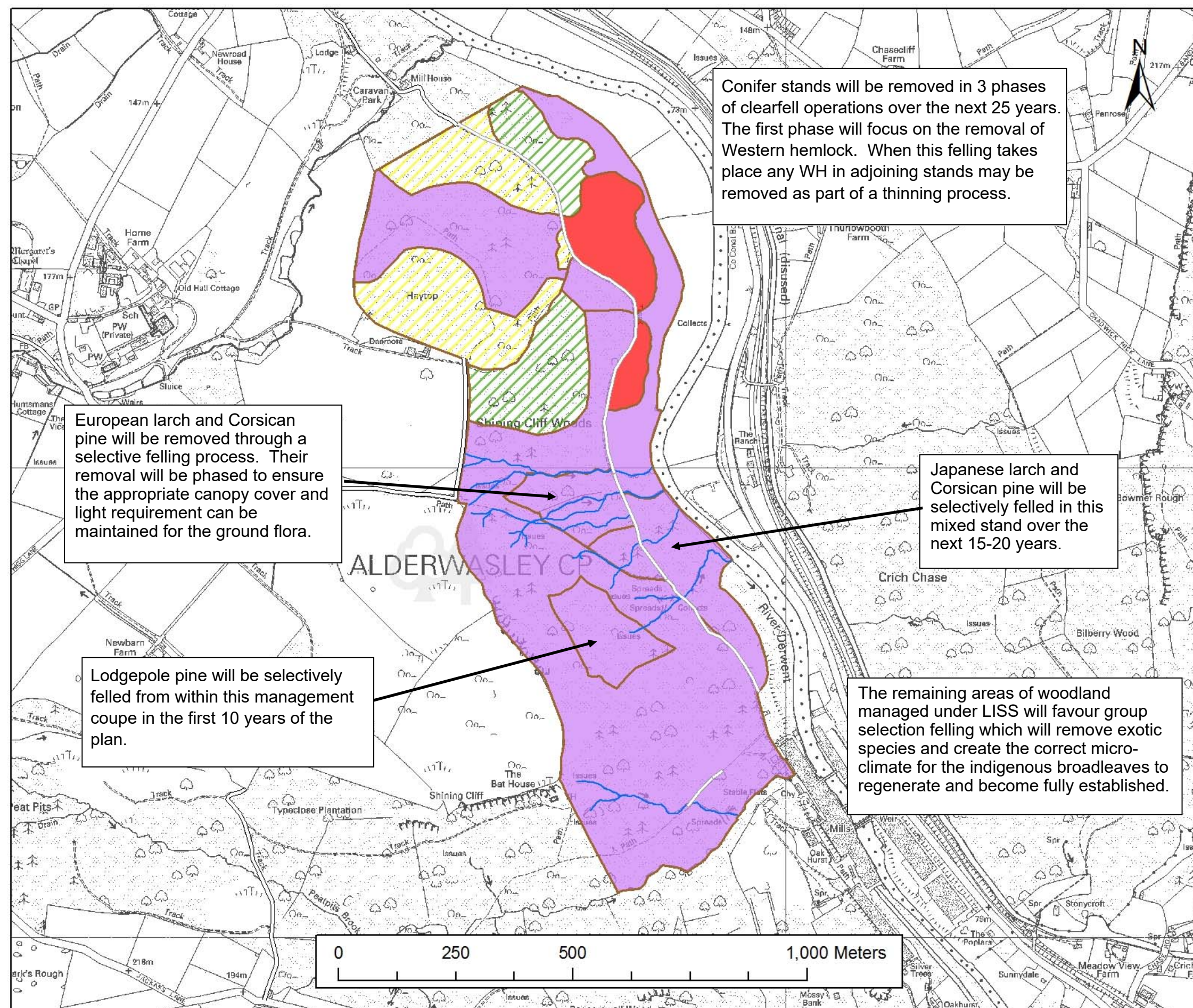


## Central Forest District

### Silvicultural Systems




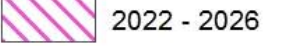
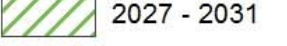
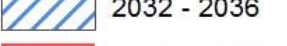
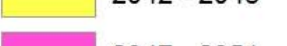
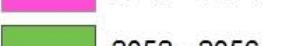






-  Clearfell
-  Shelterwood Systems
-  Selection Systems
-  Natural Reserve
-  Long Term Retention
-  Management Area



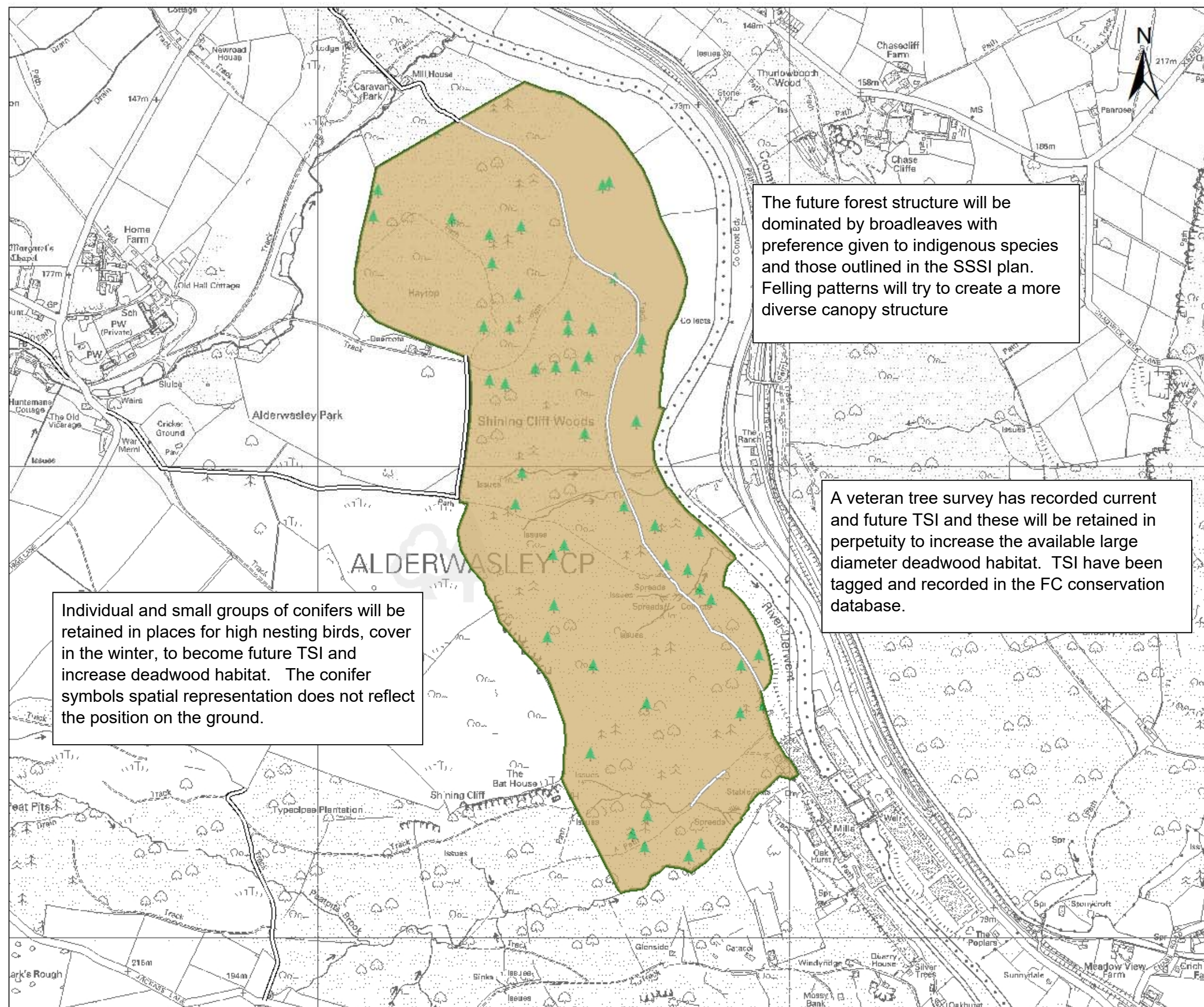


## Central Forest District

### Felling Periods

-  Forest Roads
-  Open Ground
-  2018 - 2021
-  2022 - 2026
-  2027 - 2031
-  2032 - 2036
-  2037 - 2041
-  2042 - 2046
-  2047 - 2051
-  2052 - 2056
-  2057 - 2061
-  2062 - 2099
-  Natural Reserves
-  Low Impact Silvicultural System (LISS)
-  Water Course
-  Management Area





## Central Forest District

### Intended Landuse

-  Broadleaves with veteran conifers
-  Management Area



1:7,500  
Scale at A3



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Declaration by FC as an Operator: All timber arising from the Forest Enterprise estate represents a negligible risk under EU TR (10 225/2010).



**Appendix I**
**Terms of Reference for Cromford and Shining Cliff Forest Plan**

<b>FEE Strategic Goal</b>	<b>District Strategy</b>	<b>Forest Plan Objective</b>	<b>Monitoring</b>
<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>ESC* will be used to help select suitable species for each restock site and production forecasts run annually to inform the Central Districts business plan of predicted yields.</p> <p>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>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 the SSSI (AWS) by the gradual removal of exotic species over the next 20years, 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.</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.</p>
<b>People:</b>	<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 and appropriately scaled interventions to improve and maintain the visual integration of the forest boundaries into the wider landscape.</p> <p>Continue to work with Derbyshire CC ranger service in the provision and maintenance of car parks, trails and interpretation.</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.

### Glossary

#### **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.

#### **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.

#### **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.

## Glossary

### 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 Monuments

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.

## Glossary

### 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.



**No.1 Black Rocks and Barrel Edge—view from the west on the B5035 2017**







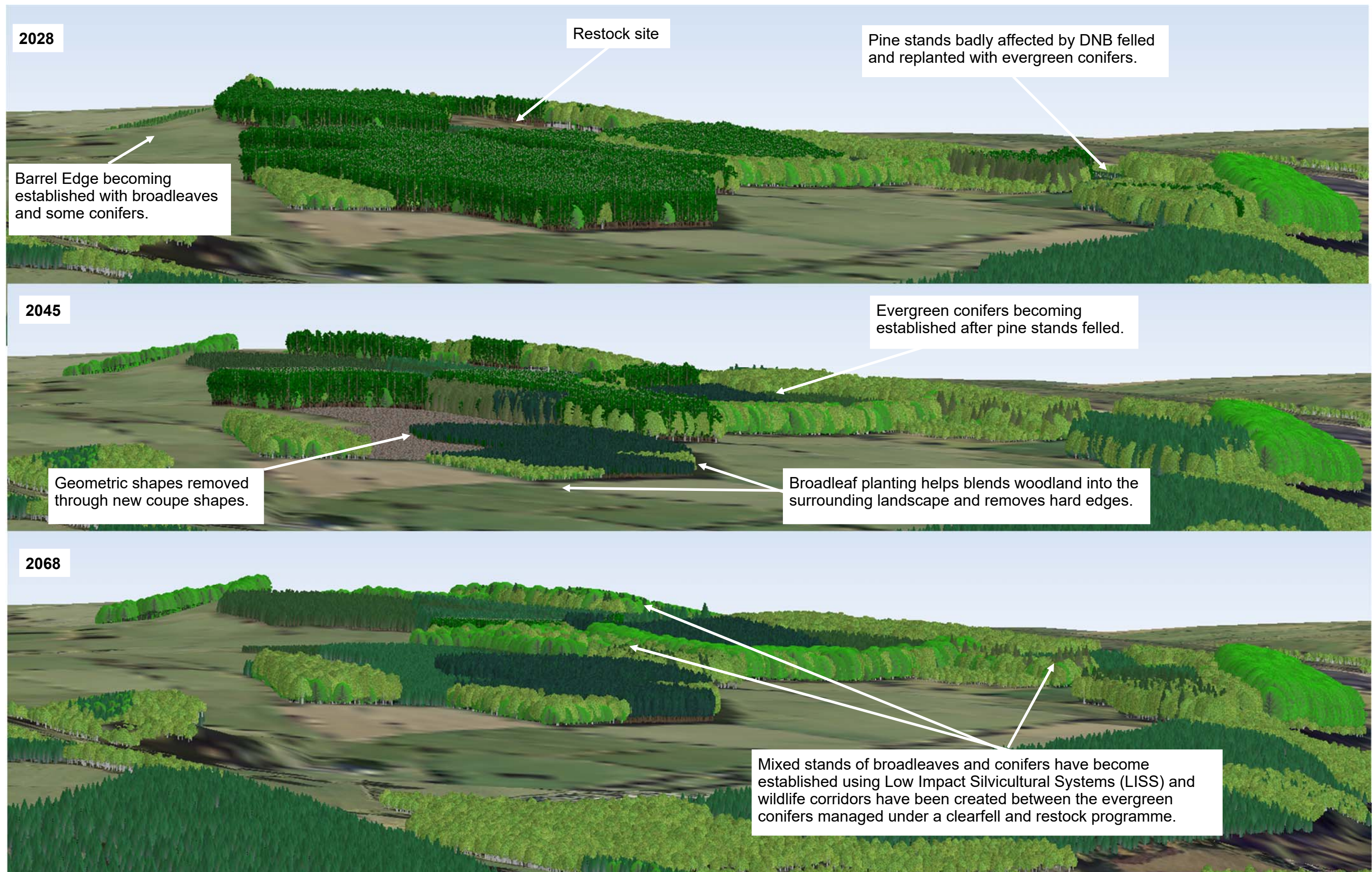


**Viewpoint No.2 Cromford wood viewed from Holloway village 2017**



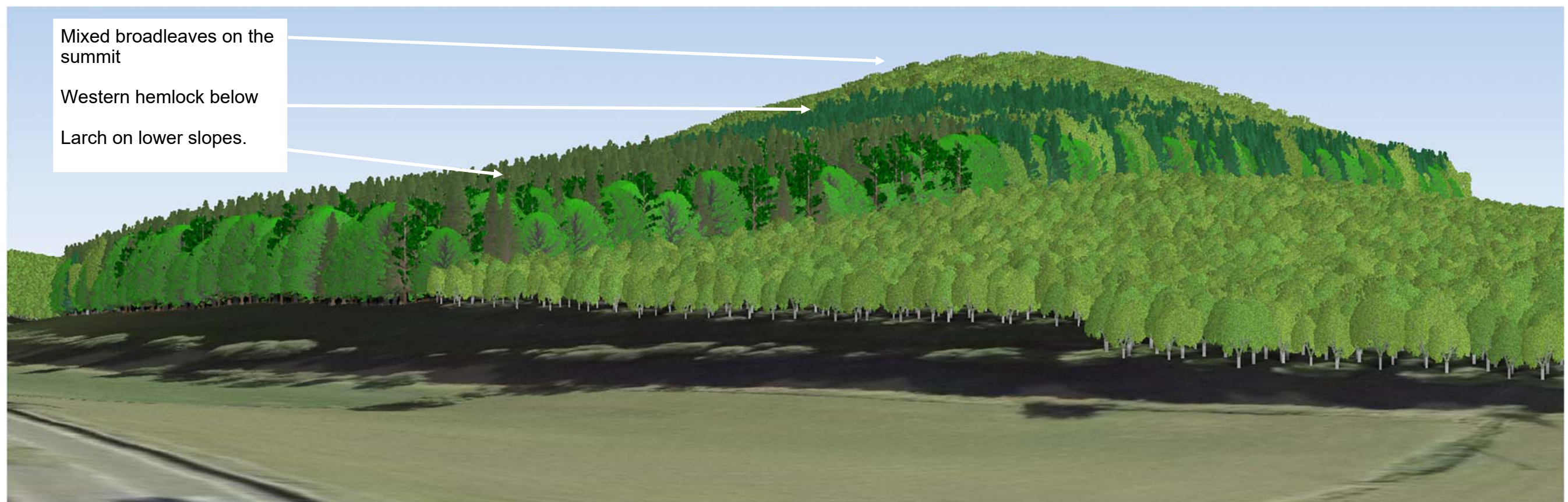


## Viewpoint No.2 Cromford Moor viewed from Holloway Village 2027-2068



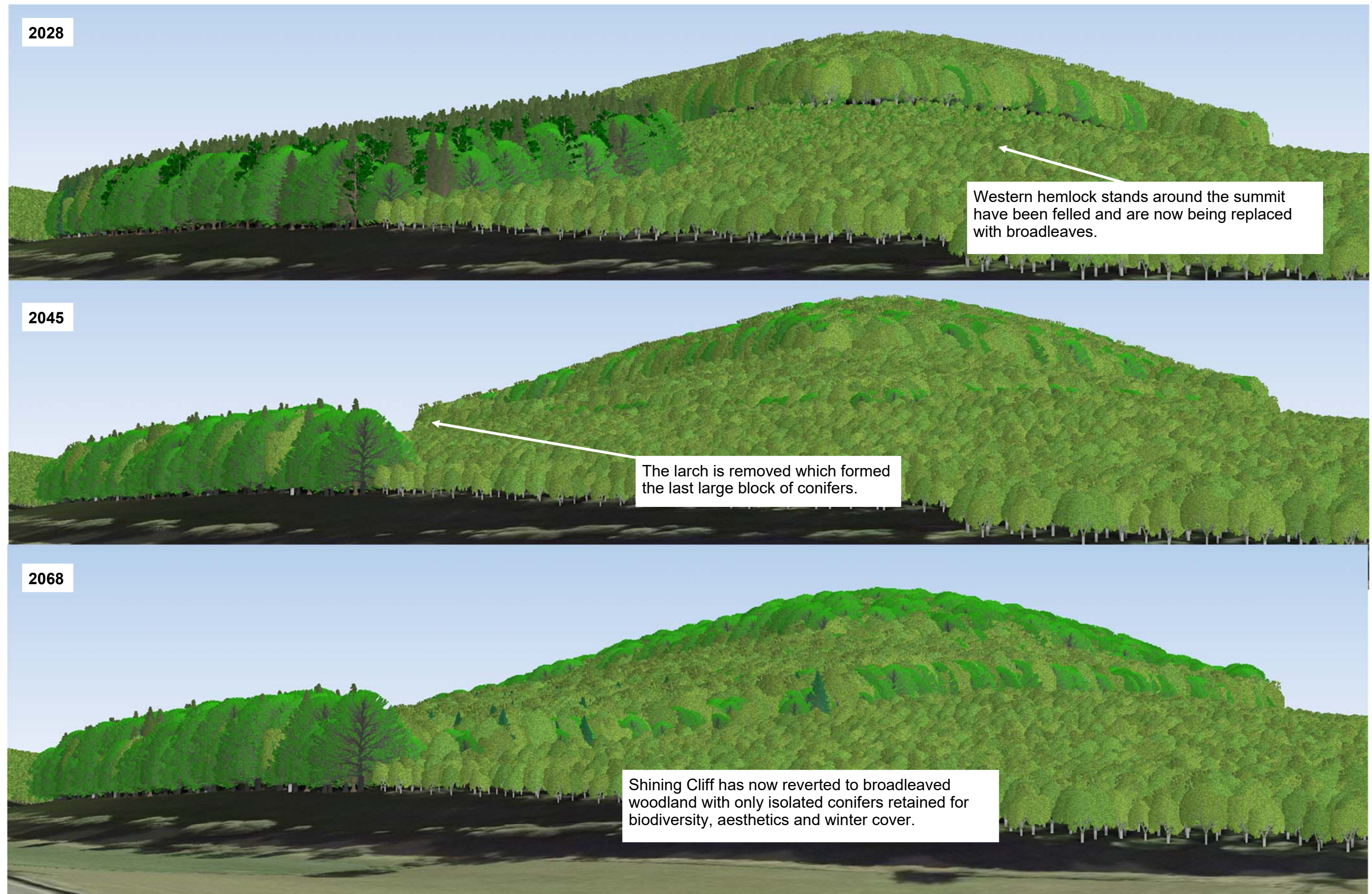


**Viewpoint No.3 of Shining Cliff from Whatstandwell railway station on the A6**



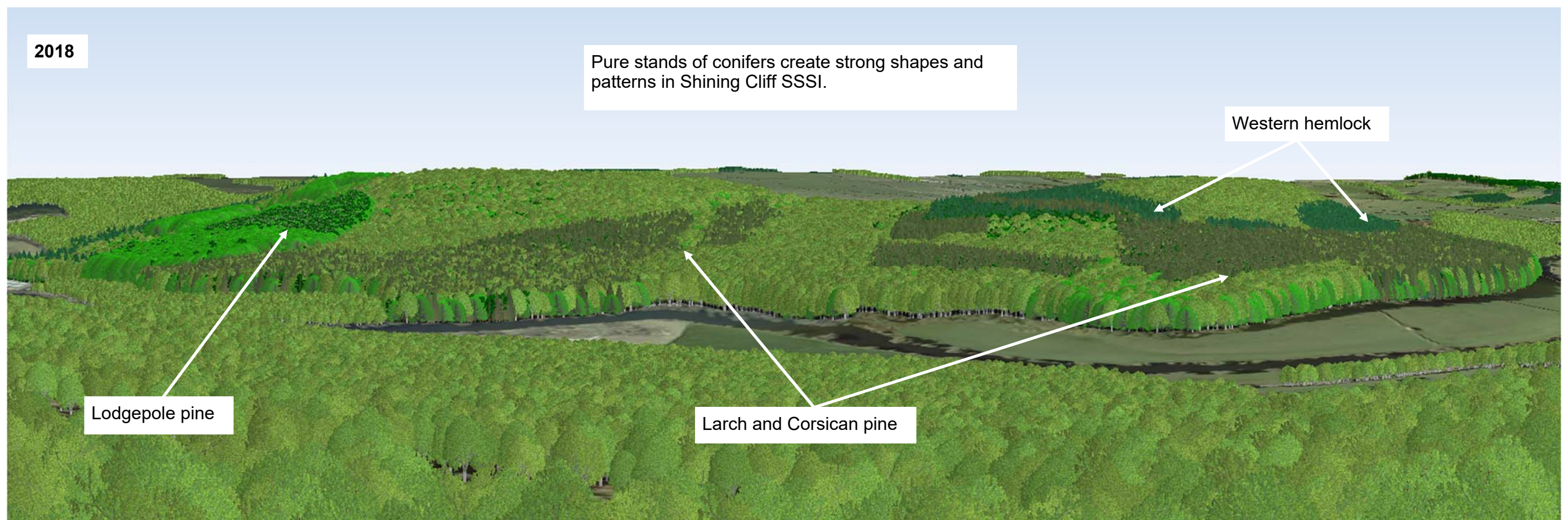


## Viewpoint No.3 of Shining Cliff from Whatstandwell railway station on the A6 2027 - 2068





**Viewpoint No.5 Shining Cliff from Chadwick Nick Lane, Fritchley**





## Viewpoint No.5 Shining Cliff from Chadwick Nick Lane, Fritchley

