

Sence Valley

Forest Plan

2019 to 2028

Summary**Certificate of Approval
for
Tree Felling**

This is to certify that tree felling under

Forest Design Plan ref. Central/08 (19)

Sence Valley

*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 11/02/2019

The Sence Valley Forest Plan (FP) summarises proposals by the Forestry Commission for the management of Sence Valley (109.9ha), Kelham Bridge (26ha), Mill Hill Wood (7ha), David Taylor Wood (3.5ha) and Heather Wood (10.9ha). The FP lies within Leicestershire and South Derbyshire Coalfield landscape character area (LCA) which comprises of gently undulating sequence of mudstones and sandstones with seatearths and coal seams, which strongly influences both the physical and cultural patterns of the landscape. This is a landscape in continuing transformation, in part assisted by the regeneration initiative of The National Forest that covers most of the LCA.

Each of the woodlands in the FP have all been planting in the last 20 years as part of the restoration of former open cast sites and all provide good access for local communities. Sence Valley is the key site and provides formal facilities for the public including car parks, toilets and picnic areas. As part of the Forestry Commission Centenary celebrations that take place in 2019 an additional 48ha of arable land has now been purchased on the northside of Sence Valley increasing the Sence Valley site from 61.9ha to 109.9ha . The new woodland will be planted in 2019 with a mixture of conifer and broadleaves to showcase how sustainable forest management can be practiced and helps deliver an economically valuable timber resources while also delivering social and environmental benefits for years to come.

Principle management objectives for the FP will be to; diversify the species and age structure to mitigate against the impacts of climate change, pests and disease; grow sustainable commercial crops; manage and facilitate public access across all sites; conserve the landscape and conservation value of the woodlands and manage the natural resources to maintain soil and water quality.

Central Forest District - North Staffordshire 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.

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 (2019 - 2028) and outline approval for the medium term vision (2028 - 2067). 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 asterisk *.

A Application for Forest Plan Approval

i Plan Area Identification:

Forest District:	Central Forest District	
Beat:	National Forest & North Staffordshire	
Name:	Sence Valley Forest Plan	
Nearest Town:	Ibstock	
OS Grid Reference:	Sence Valley	SK 3998 1124
	Kelham Bridge	SK 4092 1224
	Mill Hill Wood	SK 3981 1060
	David Taylor Wood	SK 3967 1026
	Heather Wood	
Local Planning Authority	Leicestershire	

ii Designations:

Secondary Woodland, National Forest* and lies in the Leicestershire and South Derbyshire Coal—National Character Area Profiles No.71.*

iii Date of Commencement of Plan

As soon as possible once approved.

Area (ha)	Conifers	Broadleaves
Felling	0.5	0.2
Restocking and new planting	29.2	16.5

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

Total clear fell area 0.7ha
Forest Plan maps are attached

In addition to the above felling 74ha 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; provide sufficient light to boost growth of understorey and ground flora, allow adequate space for the development of crowns and stem form for quality timber and accelerate individual tree growth.

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

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

Signed Andrew Powers Approved [Signature]

FDM

District Central England Conservancy East & East Mids

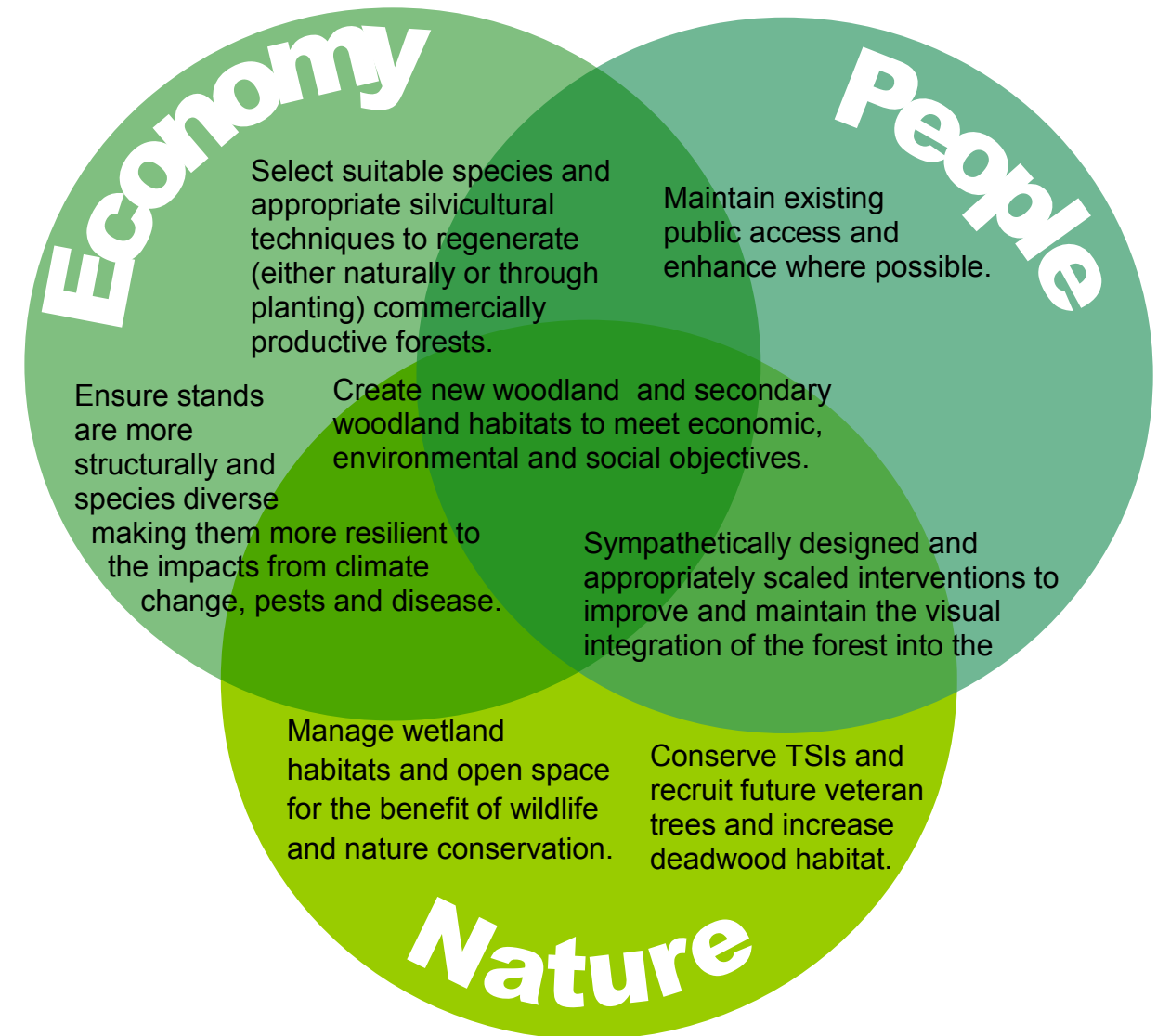
Date 27.11.18 Date 11/02/2019

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.



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 planner.

2.1 Environmental

The design plan area comprises new woodlands planted on former open cast and arable sites that have over the last 20 years become fully established. The original design incorporated a mixture of conifer and broadleaved woodlands, open grassland and wetland habitats. The design of each woodland provides a nice mosaic of habitats, and despite being busy sites attracting many visitors, there are still areas left undisturbed for wildlife. The grassland and wetland habitats have attracted a wide variety of birds and Lepidoptera and the woodlands provide nesting sites and cover. Grassland habitats are being actively managed through a varied cutting programme that has created a variety of grassland swards suitable for the feeding, breeding and nesting habitats for a variety of bird species. In 2008 an artificial sand martin wall was installed on the edge of the Horseshoe lake in Sence Valley and this has been used successfully by breeding pairs each year. Otters have been sighted in the River Sence which runs through Kelham Bridge, Sence Valley and Heather Wood. Future management operations will ensure that the timing and scale of any felling operations stabilises the soils and does not lead to siltation of the lakes or river.



Pic.1 Hobby feeding locally

39.8 ha of new woodland will be planted in 2019 and this will incorporate a wide variety of native and non-native species planted at varying density. This will create a more diverse woodland habitat as the woodland becomes established. The new woodland will also incorporate 8.2ha of open space and 6.8km of woodland edge habitat which will increase the available habitat further still. The size and distribution of planting patterns in the new woodland intersected by open areas will provide a wide variety of habitats which it is hoped will allow associated species to become more widely distributed.



Pic 2. Gatekeeper

Deadwood habitat and Trees of Special Interest (TSI) are limited in these young woodlands and the Forestry Commission will, when operations are carried out, retain trees beyond their economic rotation to increase the available deadwood and TSI where it is safe to do so.

Woody vegetation along the banks of the River Sence and around the lakes will be cut periodically to ensure they remain open with some individual and small groups of trees. Within the new woodland a riparian woodland will be created along the modified ditch that runs parallel to the western boundary. This area will be planted with alder, aspen and oak. Opportunities to renaturalise the stream will be explored in conjunction with Environment Agency which will help slow the flow of water into the River Sence. In the eastern area of the new planting a naturally wet area will be managed to create two seasonal ponds and provide additional wetland habitats between the lakes in Sence Valley and the wetland habitats in Kelham Bridge Natural Reserve.

2.2 Economic

The new woodland area to be planted has been designed and species have been selected to ensure that the woodland can produce quality timber products. Forestry operations across each of the woodland areas have been carefully planned to ensure they can be carried out sustainably and generate a valuable timber resource. The timing and scale of operations will take into account the social and environmental management objectives, diversify the internal landscape and create transitional open space for wildlife. The existing woodlands are now reaching an age where the first thinning operations are due to take place and all areas will be thinned in the next 10 years.



Pic.3 Logs stacked ready for collection

The Corsican pine stands are now being affected by Dothistroma needle bight (DNB)* which has reduced the yields. DNB causing the trees to shed needles each year, gradually weakening the trees and will in some cases may kill the trees. To counter the effect of

the DNB the Corsican pine stands will be thinned and rows of trees removed. This will increase aeration in the crowns of the trees reducing the damp conditions where the fungus spreads rapidly and create space for underplanting. The underplanting will allow the site to be managed productively again while the phased removal of the Corsican pine take place.



Pic 4. Corsican pine stands dominate the upper slopes of Sence Valley

The underplanting will help lessen the impact on the landscape when the final phase of pine removal takes place as the 60% of the area will already have been restocked and the conifers fully established. Corsican pine stands will be removed in 3 phases over the next 15-20 years with the weakest trees being removed first. The four species selected to restock the pine stands have been chosen to make the woodlands more resilient to future impacts from climate change, pests and disease.

The mixed broadleaved stands are being affected by Ash die back which will kill the young ash trees and prevent them from ever reaching a size which would generate revenue. To counter this, group felling will be used to remove the ash and the areas replanted with alternative broadleaved and conifer species.

The Forestry Commission is currently working with a local business who operates a pre school nursery on site and the Forestry Commission will continue to look for opportunities to work with other organisations and user groups to deliver a wider range of public services that may in the future generate income and employment in the local area.

2.3 Social

Each of the woodlands has been designed with a network of paths and trails for the local community to gain easy access across each of the sites which link into the network of public rights of way in the local countryside. Sence Valley is the key site within the design plan area and provides with a wide variety of facilities which include, car parks, toilets, bird hide, viewing platform, art works, picnic areas, view points, seating and waymarked trails. The other woodlands are more informal with well managed trails and occasional seating areas.

As part of the Forestry Commission Centenary celebration that takes place in 2019 a new woodland will be planted that has been designed to enhance the visitor experience on the site. A new path running parallel to the River Sence will be created and lined with an avenue of cherry trees that will be set in an open 30-40m wide open glade. Five species of cherry have been chosen which will be planted along the avenue with flowering seasons from April through till October each year.



Pic.5 Easy access trails



Pic.6 Cycle routes are promoted Within the new woodland 24 species of trees will be planted and these have been chosen for their distinct character, shape, colour and form (see Intended landuse map). Each species will be planted in single species groups so as to emphasis their colour and texture of the bark, leaves and needles. The size, shape and distance between the groups has been scaled so that the public moving through the woodland on foot will experience a diverse woodland which will provide a distinct sensory experience created by the group planting.

A ranger service is provided for the woodlands by the Forestry Commission and they co-ordinate a variety of activities and events each year to help the public get involved. There is also a well established group of volunteers who, working with the rangers, help maintain the site, improve conservation areas and access routes. As part of the Centenary Celebration a number of additional activities and events will take place and these will be promoted locally and on the Forestry Commissions website.



Pic.7 Picnic facilities in Sence Valley

3. Intended Landuse

The current landuse within the established woodland sites will remain largely unchanged with the percentage of areas managed as open space, wetland habitats and woodlands remaining unchanged. The longterm objectives within the woodland areas will be for the production of commercial timber from both the broadleaves and conifer crops and this will be extended to the new woodland being planted in 2019.



Pic. 8 & 9. Douglas fir trees and cones

The most significant habitat changes to be seen will be through the removal of Corsican pine that dominate Sence Valley and its replacement through underplanting with Douglas fir, Lawson cypress, Western hemlock and Grand fir. The introduction of 4 species previously occupied by just one will help diversify the woodland structure and make the woodland more resilient to climate change, pests and disease.



A more subtle change will occur in the broadleaves stands where the ash trees will be removed and replaced with conifers and oak. As the ash is planted in small groups its removal will be less apparent and as the mixed broadleaved stands are thinned and restructured the loss of the ash will not have a significant impact on the internal landscape or woodland microclimate.

Pic 10. Red oak autumn colour

Rabbit, hares and muntjac deer are known to be resident in the area and fences will be used in the new woodland to protect the young trees from damage. Underplanting within the existing woodland will not be fenced off and the Forestry Commissions ranger services will monitor and control mammal damage as necessary. When restocking takes place trees will be planted at a stocking density of between 2,800 to 4,000 stems / ha depending on each species preferred habitat requirements

Table 1 shows how the woodlands contribution to the whole of the Central Districts compliance against UKWAS, PEFC and UK Forest Standard. No natural reserves will be designated in this FP due to the small size of each woodland and their urban setting. As the woodlands develop areas will be retained beyond the economic age as long term retentions that will provide future Trees of Special Interest (TSI), deadwood habitat and a more diverse habitat for wildlife.

Table.1 Sence Valley Forest Plan Contribution towards the Central District and commitments to UWAS and UKFS

	Forest Plan Area	Forest Plan Percentage	Forest District Area	Forest District Percentage
Total Area	157.3	100	28,170	100
Total Wooded Area	106	67.3	23,859	84.6
Open Habitat (>10%)	51.3	32.7	4,311	15.3
Natural Reserves - Plantation (1%)	0	0	171	1.4
Natural Reserves - Semi Natural (5%)	0	0	396	3.3
Longterm Retentions & Low Impact Silvicultural Systems (>1%)	74	69.8	14,474	60.8
Area of Conservation Value (>15%) including designations, PAWS, AW, ASNW, NR, LTR and LISS	63	40	15,152	53.9

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
Peter Williams Leicestershire & Rutland Ornithological Society (LROS)	Public consultation website	28th November 2018	Pleased with the proposals to expand the Sence Valley Forest Park and the management objectives to diversify age, species and structure; manage wetland habitats for birds and conservation; requested that Red List of Birds be included in the plan; offered support and assistance with the future management of wetland habitats.	FEE would include to Sand Martin, Willow Tit and Common Tern will also be included within the plan. Site meetings will be arranged between FEE and LROS to explore how LROS may be able to assist in the development of the woodland and wetland habitats in the future.
Mrs Jan Shepherd, clerk to Heather Parish Council	Public consultation website	Via public consultation website	Overall support for plan and confirmed the importance of Biodiversity and woodland ecology, climate change, employment and recreation.	FEE— acknowledged their response—no actions needed
Sue Bull	Public consultation website	Via public consultation website	Overall support for plan with emphasis on the importance of Woodland ecology, communities and people, plant health and soils, recreation and access	FEE— acknowledged their response—no actions needed
Charles Robinson—National Forest Company	Public consultation website	Via public consultation website	Overall support—Questioned the suitability of Douglas fir; wanted to see more recognition of how this site fits within the National Forest and links to adjacent woodlands; limited recognition to ecological monitoring; outline objectives for visitor infrastructure,; more detail within the wording of the plan; great detail on the broad strategy for management of pest and diseases	FEE confirmed that Douglas fir was seen as a suitable species following soil sampling and ESC models being run. The forest plan is in essence a felling and restock plan and does not show in detail how management operations will be undertaken or the detail of on-site facilities. This information will be kept in ecological reports and recreation management plans associated to each site. The relationship to the adjacent National Forest Woodland is referenced on the survey and recreation map and the districts policies on pest and disease control is available within the district strategic plans.
Ben Devine—Leicestershire and Rutland Wildlife Trust (LRWT)	Public consultation website	Via public consultation website	Supported the management objectives to increase deadwood, create riparian woodland, create new ponds and open space. They were not in favour of extensive conifer woodland and would like to see greater use of native species to increase available habitats for wildlife. They did not support the removal of ash as this would reduce deadwood habitat and there may be some ash trees that are resilient to the disease.	FEE is pleased to have the support of the LRWT management objectives and has clarified that the use of conifers on 65% of the new woodland area is to ensure that this new woodland can be managed to produce sustainable timber and remain financially viable into the future. 65% of the new woodland will be coniferous (planted with 9 different species) and the remaining 35% of the woodland will be deciduous (planted with 15 broadleaf species) which will be scattered amongst the conifers. This design it is hoped will maximise the available habitats for wildlife, balancing the economic with conservation value of the woodland. FEE is working with Forest Research to identify potentially resistant ash trees across all its woodlands. In Sence Valley our surveys have shown all the young ash trees to be affected and the diameter of these young trees would provide limited deadwood habitat.

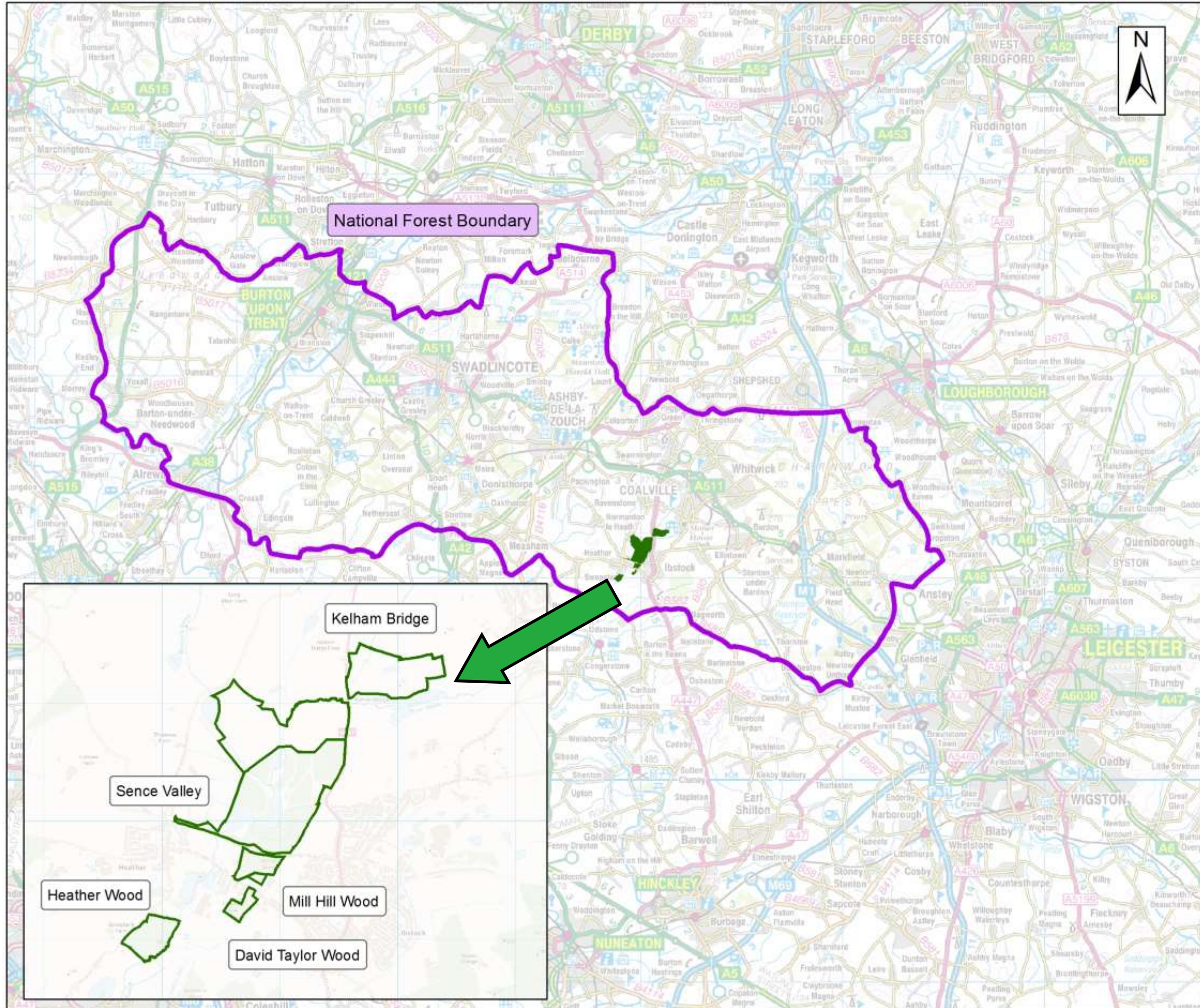
As part of the local consultation a public drop in day was held at Sence Valley on the 23rd October 2018, 10 stakeholders were contacted, notices placed on site, copies of the plan placed in Ashby de la Zouch reference libraries and on the FC website. Comments received and the Forestry Commission's responses recorded above.

6. Meeting and Monitoring Management Objectives

National Strategy	District Strategy	Forest Plan Objective	Monitoring
<p>Economic:</p> <ul style="list-style-type: none"> Maintain the land within our stewardship under UKWAS certification, Improve the economic resilience of our woods and forests, Encourage and support business activity on and around the Estate. 	<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 annually and any changes recorded in the sub compartment data base.</p> <p>Planting stock will be recorded in the sub compartment data base including the providence and origin of the seed stock. Underplanting growth rates will be monitored annually.</p> <p>Reviewed every 10 years as part of the design plan renewal.</p>
<p>Nature:</p> <ul style="list-style-type: none"> Improve the resilience of the natural environment of the Estate under our Stewardship, Realise the potential of the Public Forest Estate for nature and wildlife, Maintain and improve the cultural and heritage value of the Estate. 	<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>Identify existing locations of TSIs and demonstrate appropriate management to recruit future veteran trees and increase the volume and distribution of deadwood.</p> <p>Recognise the significance of FC land holding and management in relation to the water catchment area.</p> <p>Management operations will be planned to take into account the habitat requirements of European protected species associated with Forestry Commission land.</p>	<p>Reviewed every 10 years as part of the design plan renewal.</p> <p>Recorded on the conservation data base and reviewed every 10 years as part of the design plan renewal.</p> <p>Monitored by the beat team and ecologists when operational plans are written for works on or adjacent to water.</p> <p>Monitored by the ecologists and wildlife rangers annually and when operational plans are written.</p>

6. Meeting and Monitoring Management Objectives (continued)

National Strategy	District Strategy	Forest Plan Objective	Monitoring
People: <ul style="list-style-type: none"> • Encourage communities to become involved in the Estate, its management and direction, • Provide high quality woodland-based recreational opportunities for people and business, • Enable everyone, everywhere to connect with the nations' trees and forests so that they understand their importance and act positively to safeguard forests for the future. 	<p>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>Expand the areas of open woodland and network of access routes for the public and links into the surrounding countryside.</p> <p>Continue to work with local businesses to provide a wider range of services and facilities on site.</p> <p>Continue to develop and run a programme of events and activities for the Sence Valley volunteer group and members of the public</p>	<p>No monitoring required.</p> <p>No monitoring required.</p> <p>Monitored by the beat team annually when they write their events programme.</p>



Central Forest District

Location Map

Sence Valley Forest Plan lies in a post industrial landscape which is now being transformed as part of The National Forest after decades of coal mining, clay and gravel extraction into a green woodland landscape.

Sence Valley Forest Plan comprises of 5 new woodlands which were all planted in the last 20 years and are popular with local residents for walks, picnics and bird watching.

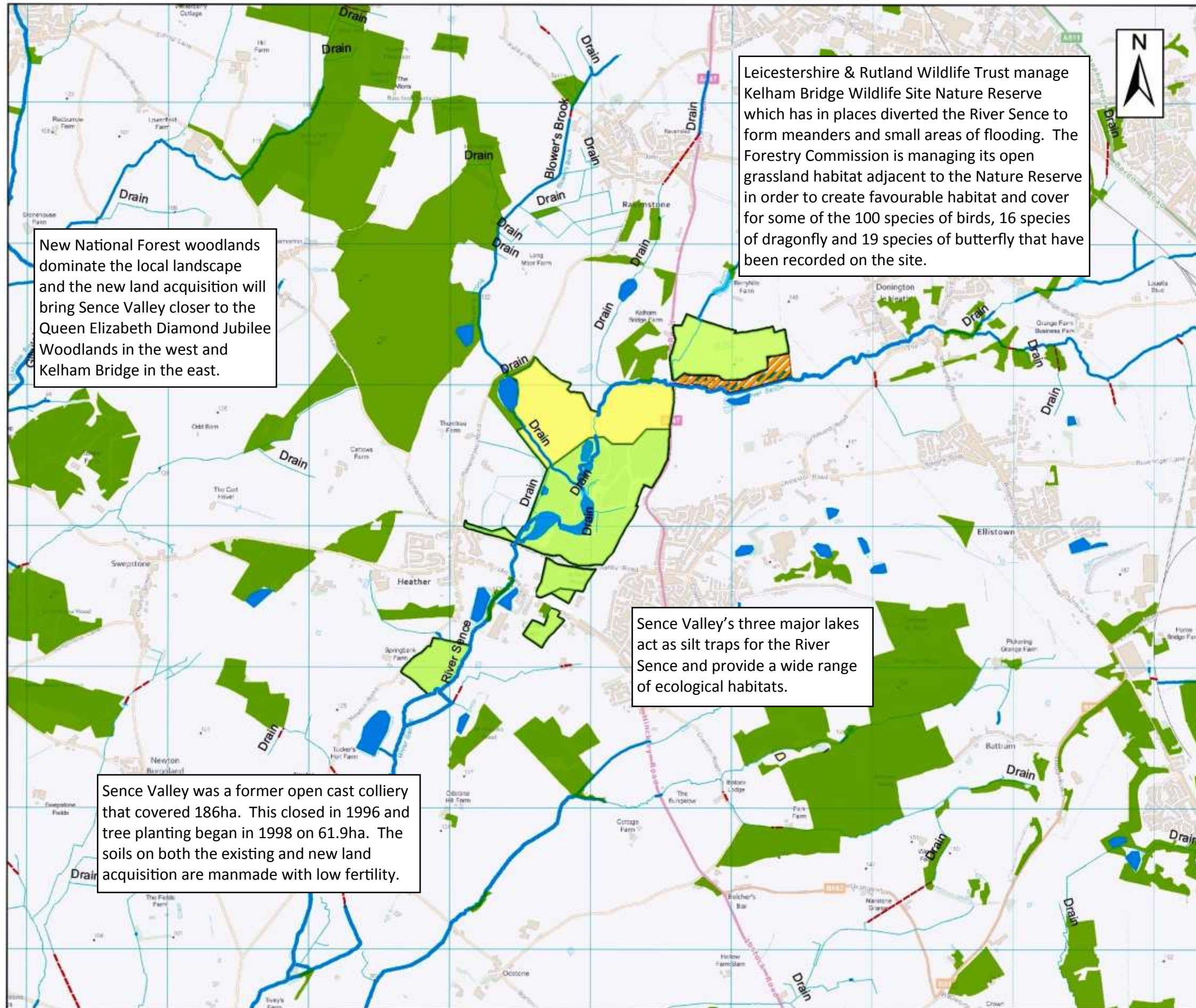
An additional 48ha of land has now been purchased adjacent to Sence Valley to further expand the woodland habitat and increase public access. The new woodland area will include an avenue of cherry trees planted to commemorate the Forestry Commission Centenary in 2019.



1:175,000
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 EUTR (No 995216)



New National Forest woodlands dominate the local landscape and the new land acquisition will bring Sence Valley closer to the Queen Elizabeth Diamond Jubilee Woodlands in the west and Kelham Bridge in the east.

Leicestershire & Rutland Wildlife Trust manage Kelham Bridge Wildlife Site Nature Reserve which has in places diverted the River Sence to form meanders and small areas of flooding. The Forestry Commission is managing its open grassland habitat adjacent to the Nature Reserve in order to create favourable habitat and cover for some of the 100 species of birds, 16 species of dragonfly and 19 species of butterfly that have been recorded on the site.

Sence Valley's three major lakes act as silt traps for the River Sence and provide a wide range of ecological habitats.

Sence Valley was a former open cast colliery that covered 186ha. This closed in 1996 and tree planting began in 1998 on 61.9ha. The soils on both the existing and new land acquisition are manmade with low fertility.

Central Forest District

Survey Map

- Forestry Commission Woodlands
- New land acquisition
- Woodland cover
- Open water
- Water courses
- Kelham Bridge Wildlife Site

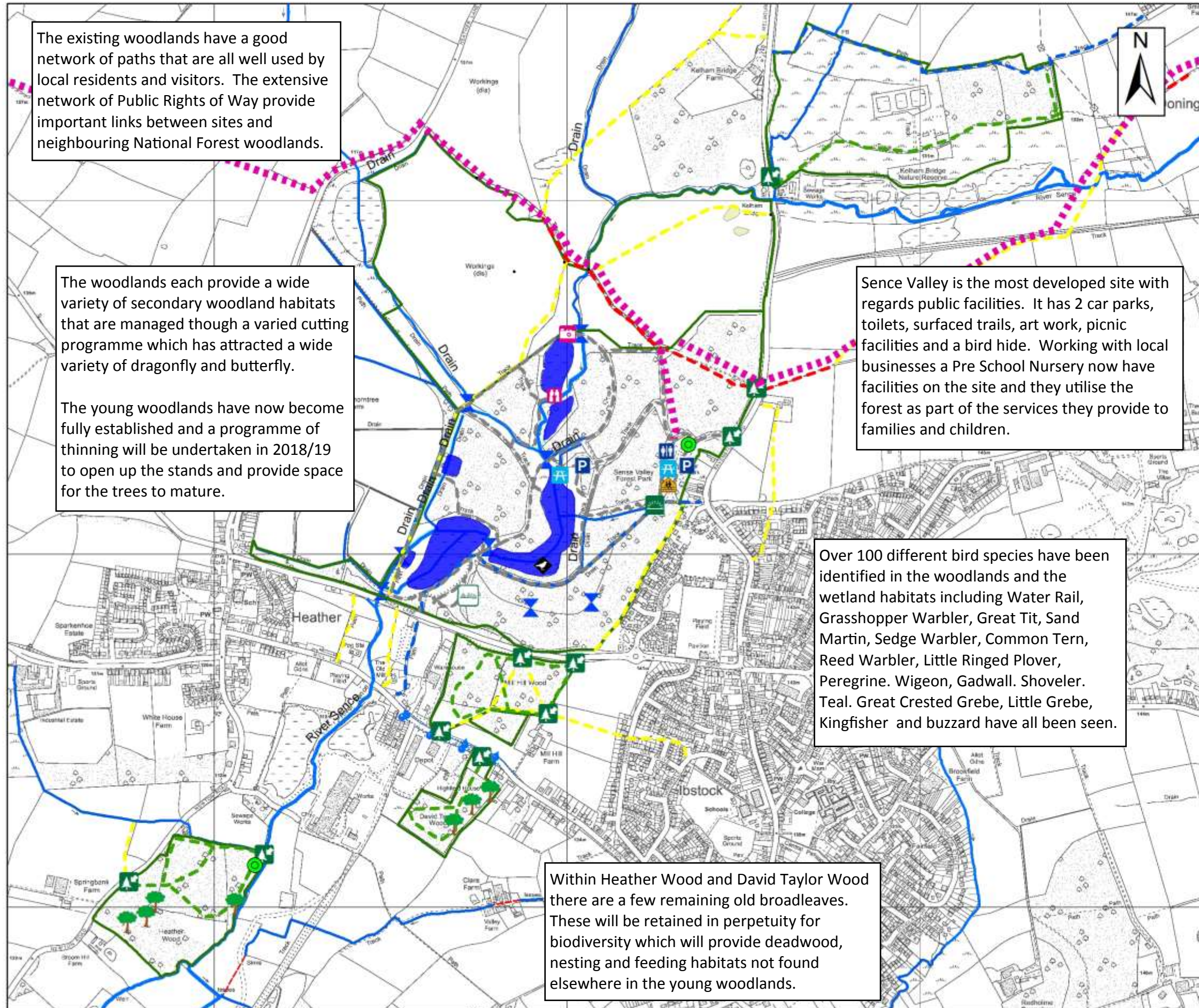


Forestry Commission
England

1:25,000
Scale at A3




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The existing woodlands have a good network of paths that are all well used by local residents and visitors. The extensive network of Public Rights of Way provide important links between sites and neighbouring National Forest woodlands.

The woodlands each provide a wide variety of secondary woodland habitats that are managed through a varied cutting programme which has attracted a wide variety of dragonfly and butterfly.

The young woodlands have now become fully established and a programme of thinning will be undertaken in 2018/19 to open up the stands and provide space for the trees to mature.

Sence Valley is the most developed site with regards public facilities. It has 2 car parks, toilets, surfaced trails, art work, picnic facilities and a bird hide. Working with local businesses a Pre School Nursery now have facilities on the site and they utilise the forest as part of the services they provide to families and children.

Over 100 different bird species have been identified in the woodlands and the wetland habitats including Water Rail, Grasshopper Warbler, Great Tit, Sand Martin, Sedge Warbler, Common Tern, Reed Warbler, Little Ringed Plover, Peregrine, Wigeon, Gadwall, Shoveler, Teal, Great Crested Grebe, Little Grebe, Kingfisher and buzzard have all been seen.

Within Heather Wood and David Taylor Wood there are a few remaining old broadleaves. These will be retained in perpetuity for biodiversity which will provide deadwood, nesting and feeding habitats not found elsewhere in the young woodlands.

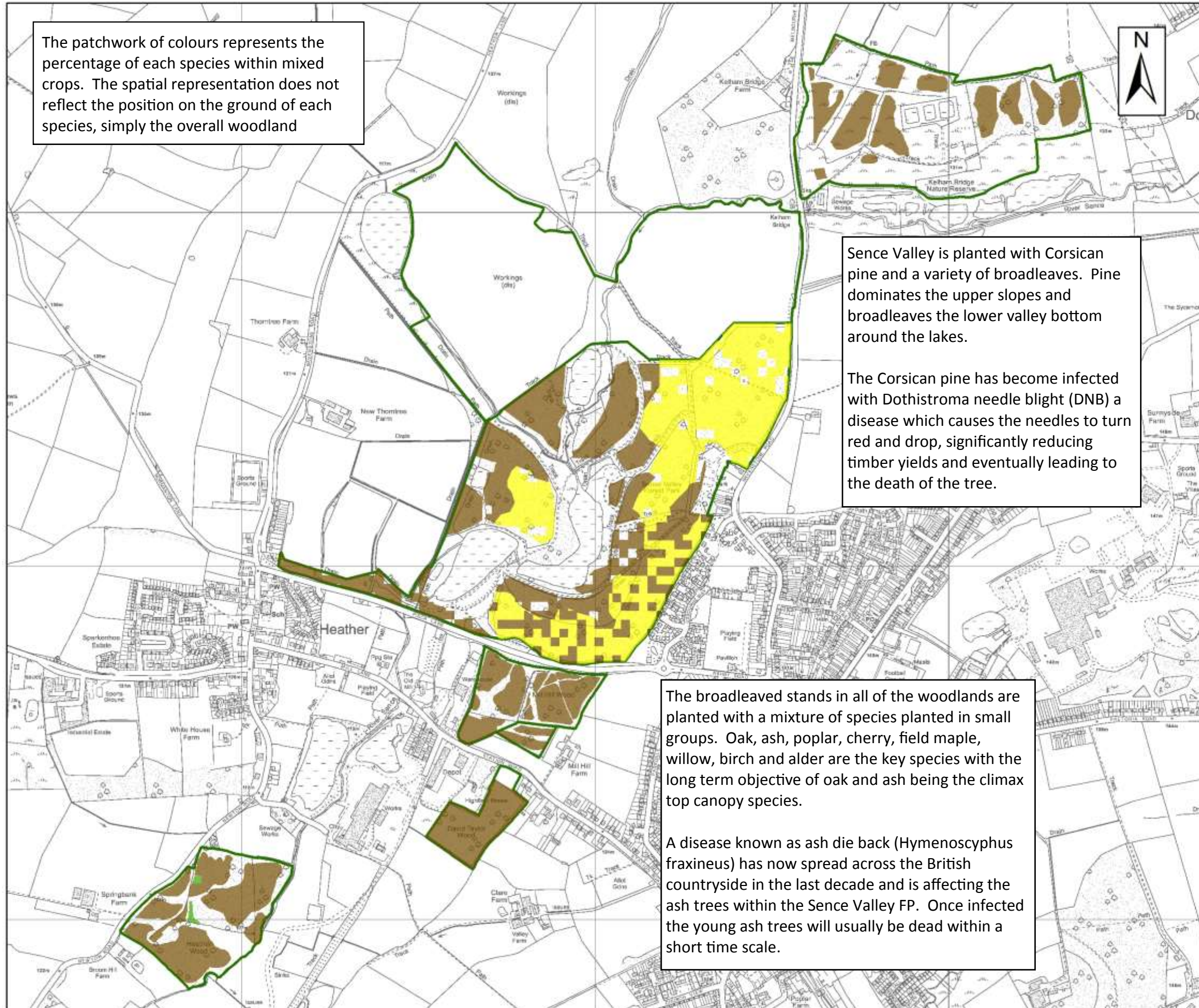
Central Forest District

Recreation & Conservation

- Access
- Car Park
- Surfaced Paths
- Unsurfaced Paths
- Pre School Education Centre
- Art
- Viewing Platform
- Picnic area
- Toilets
- Viewpoint
- Sand martin wall
- Bird Hide
- Bridleway
- Byway
- Footpath
- Water Course
- Open Water
- Meadow management
- Trees of Special Interest
- National Forest Way
- Management Area

1:10,000
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 EUTR (No 995218)



The patchwork of colours represents the percentage of each species within mixed crops. The spatial representation does not reflect the position on the ground of each species, simply the overall woodland

Sence Valley is planted with Corsican pine and a variety of broadleaves. Pine dominates the upper slopes and broadleaves the lower valley bottom around the lakes.

The Corsican pine has become infected with Dothistroma needle blight (DNB) a disease which causes the needles to turn red and drop, significantly reducing timber yields and eventually leading to the death of the tree.

The broadleaved stands in all of the woodlands are planted with a mixture of species planted in small groups. Oak, ash, poplar, cherry, field maple, willow, birch and alder are the key species with the long term objective of oak and ash being the climax top canopy species.

A disease known as ash die back (*Hymenoscyphus fraxineus*) has now spread across the British countryside in the last decade and is affecting the ash trees within the Sence Valley FP. Once infected the young ash trees will usually be dead within a short time scale.

Central Forest District

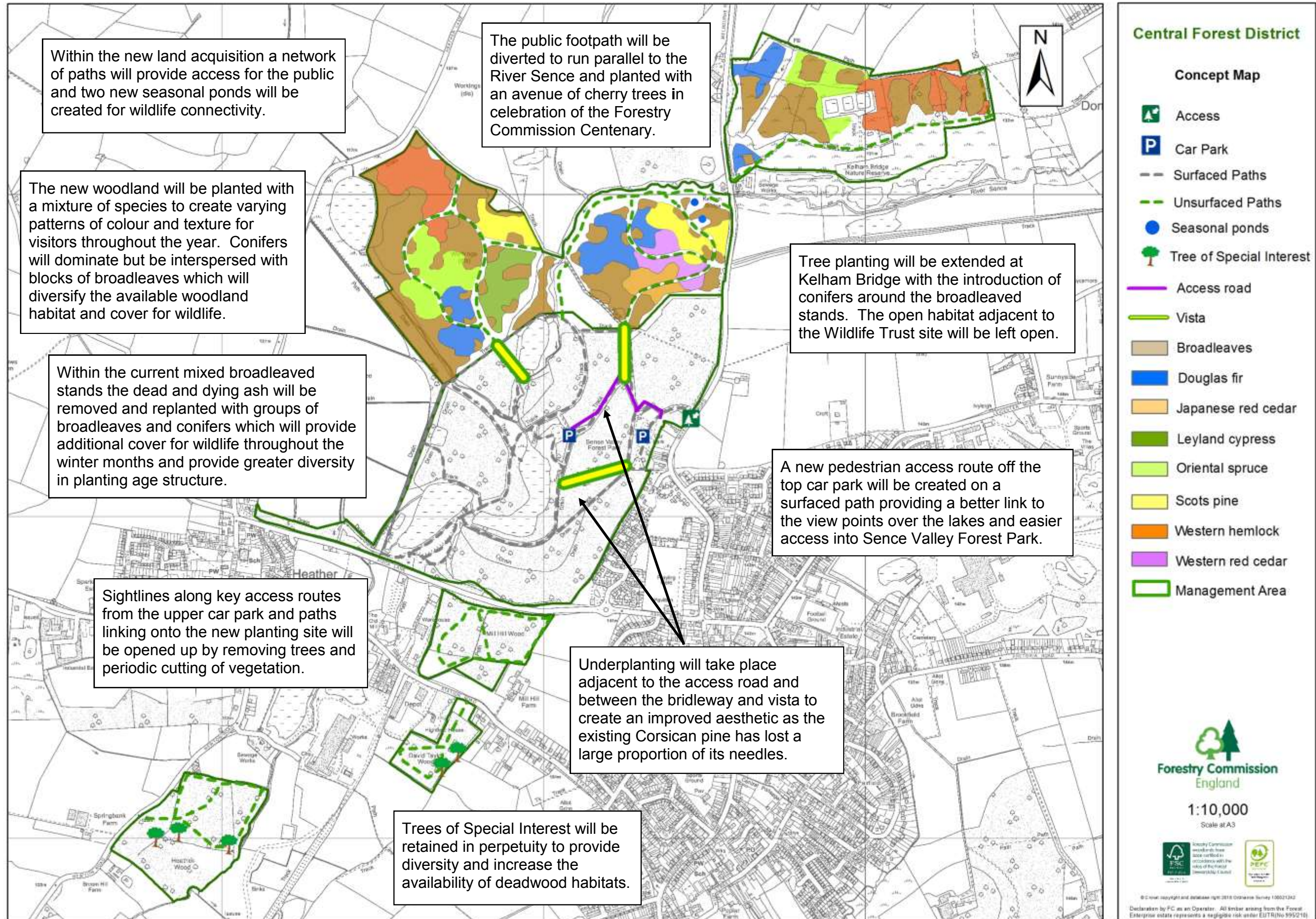
Current Species

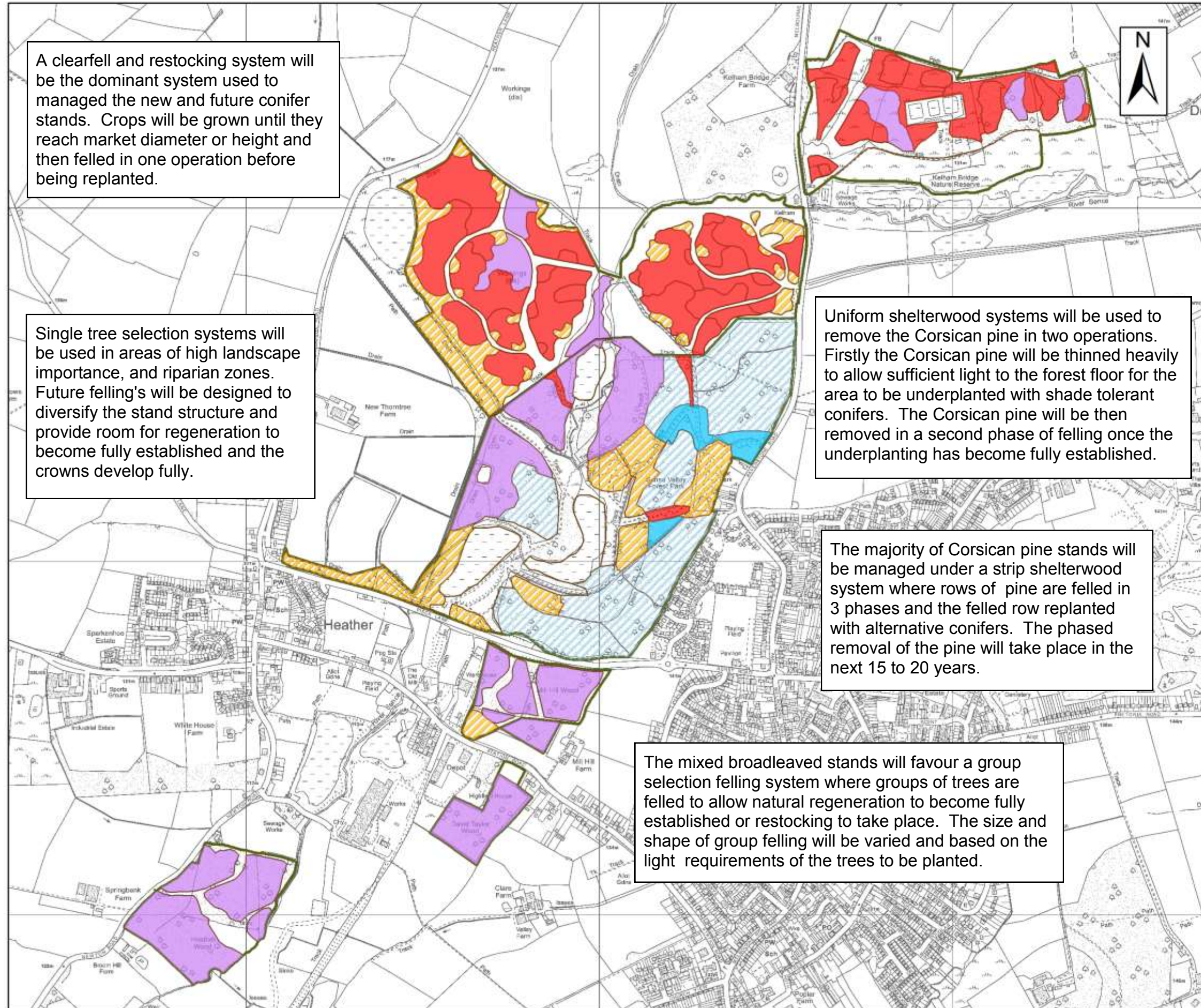
- Corsican pine
- Other Conifer
- Broadleaves
- Management Area



1:10,000
Scale at A3







Central Forest District

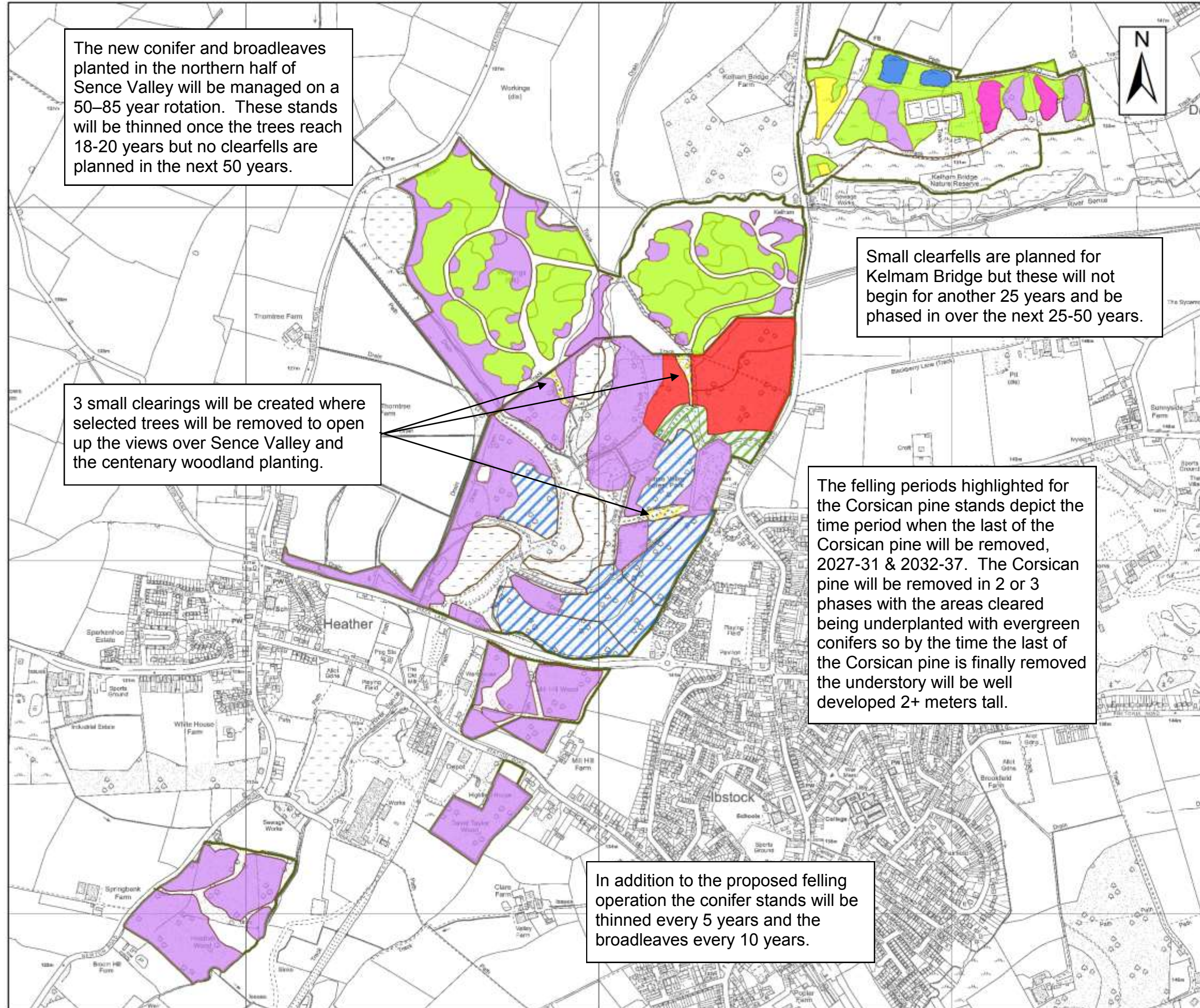
Silvicultural Systems

- Clear fell
- Open Ground
- Strip Shelterwood
- Uniform Shelterwood
- Group Selection
- Single Tree Selection



1:10,000
Scale at A3





The new conifer and broadleaves planted in the northern half of Sence Valley will be managed on a 50–85 year rotation. These stands will be thinned once the trees reach 18-20 years but no clearfells are planned in the next 50 years.

3 small clearings will be created where selected trees will be removed to open up the views over Sence Valley and the centenary woodland planting.

Small clearfells are planned for Kelmam Bridge but these will not begin for another 25 years and be phased in over the next 25-50 years.

The felling periods highlighted for the Corsican pine stands depict the time period when the last of the Corsican pine will be removed, 2027-31 & 2032-37. The Corsican pine will be removed in 2 or 3 phases with the areas cleared being underplanted with evergreen conifers so by the time the last of the Corsican pine is finally removed the understory will be well developed 2+ meters tall.

In addition to the proposed felling operation the conifer stands will be thinned every 5 years and the broadleaves every 10 years.

Central Forest District

Felling Periods

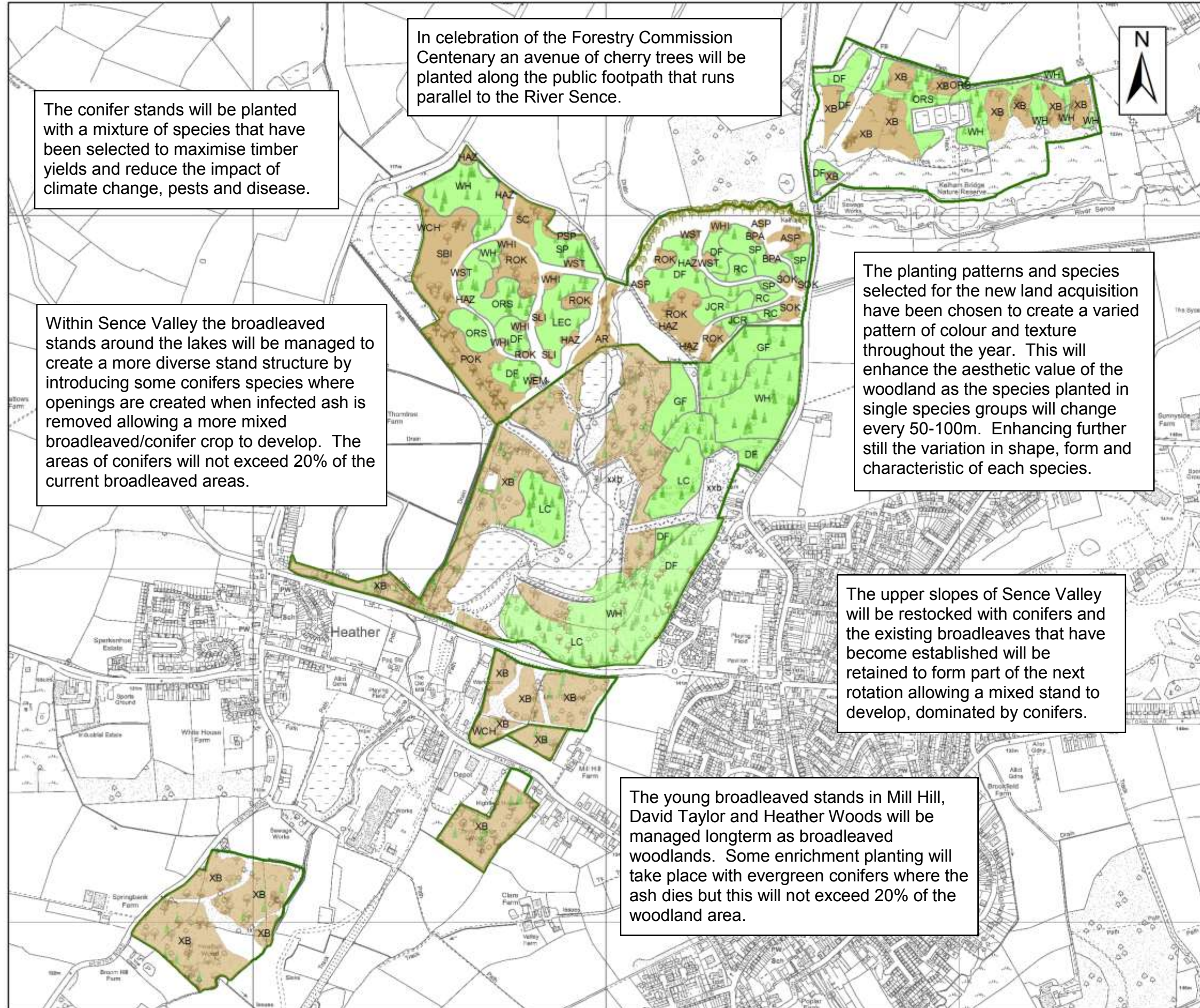
- Open Space
- 2018 - 2021
- 2022 - 2026
- 2027 - 2031
- 2032 - 2036
- 2037 - 2041
- 2042 - 2046
- 2047 - 2051
- 2052 - 2056
- 2057 - 2061
- 2062 - 2099
- Low Impact Silvicultural Systems (LISS)

Forestry Commission
England

1:10,000
Scale at A3

FSC and PEFC logos.

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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 995216)



Central Forest District

- Intended Landuse**
- Open Ground
 - Broadleaved mixed stands
 - Conifer mixed stands
 - Broadleaved stands
 - Conifer stands

- Conifers**
- DF = Douglas fir
 - GF = Grand fir
 - JCR = Japanese red cedar
 - RC = Wester red cedar
 - LC = Lawsons cypress
 - LEC = Leyland cypress
 - ORS = Oriental spruce
 - SP = Scots pine
 - WH = Western hemlock

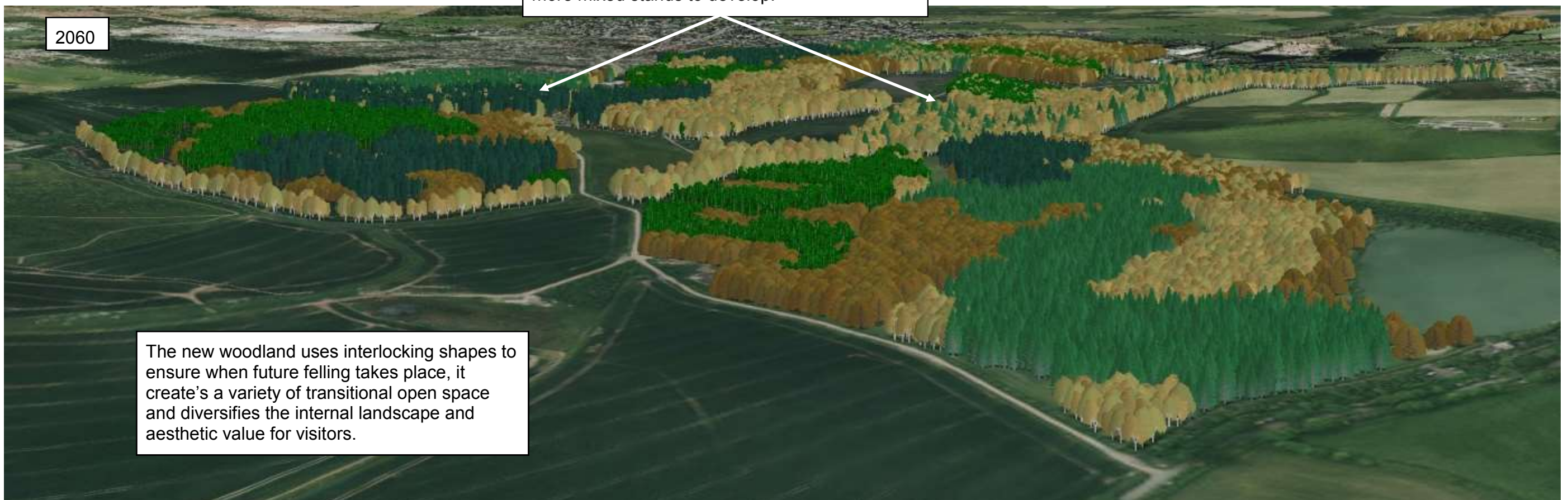
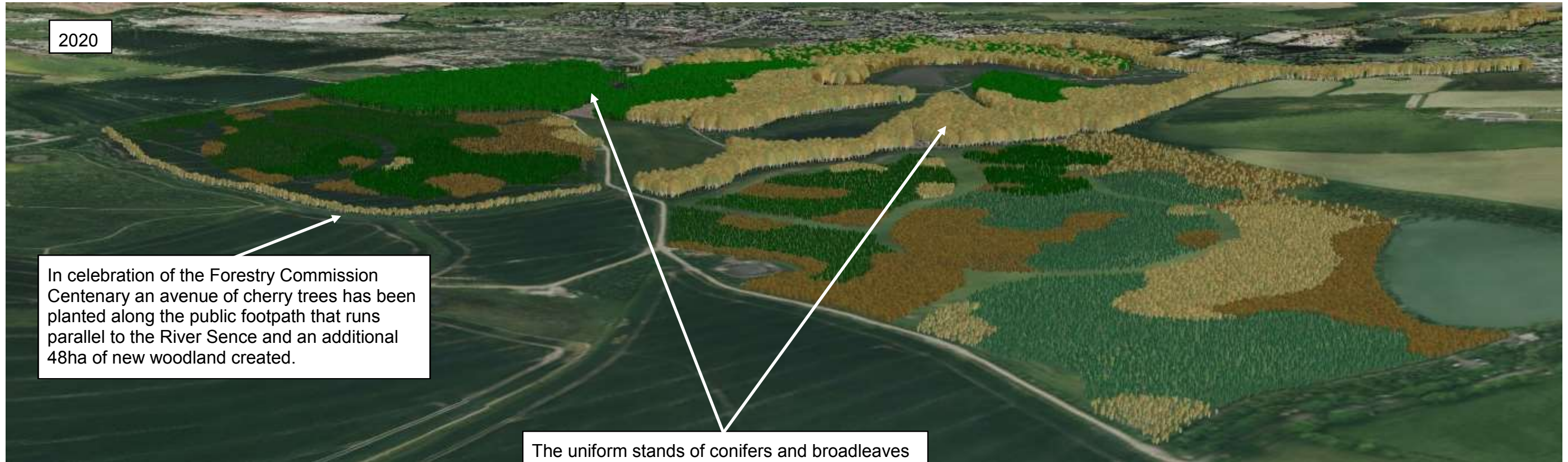
- Broadleaves**
- ASP = Aspen
 - AR = Alder
 - HAZ = Hazel
 - POK = Pedunculate oak
 - PSP = Blackthorn
 - ROK = Red oak
 - SBI = Birch
 - SC = Sweet chestnut
 - SLI = Small-leaved lime
 - SOK = Sessile oak
 - WCH = Wild cherry
 - WHI = Whitebeam
 - WST = Wild service tree
 - WEM = Which elm
 - XB = Mixed broadleaves

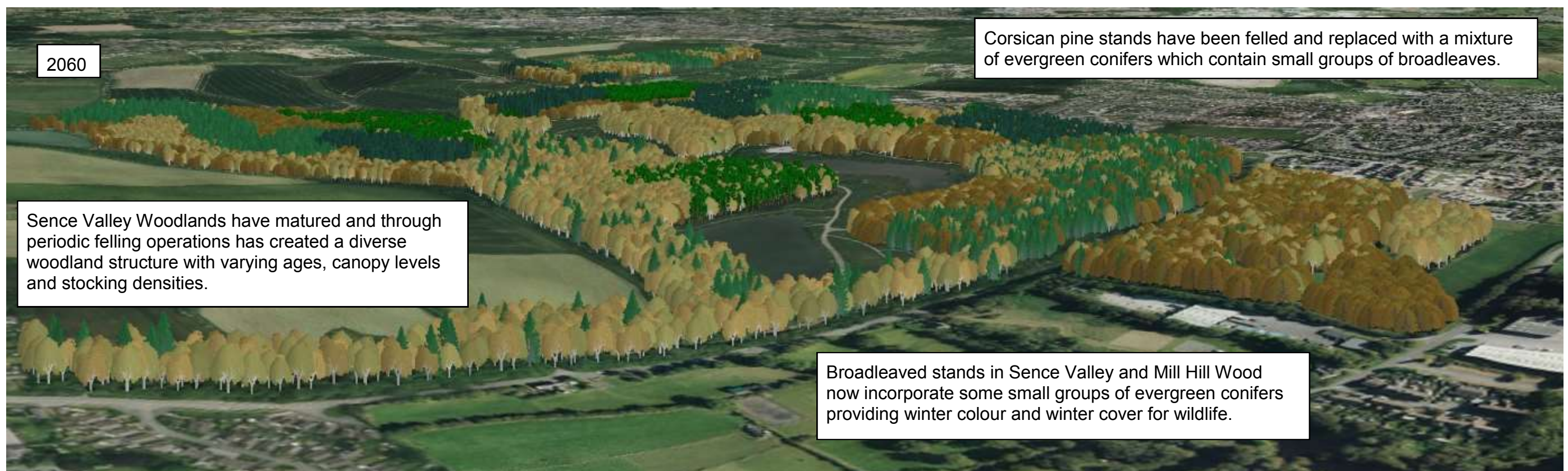


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Terms of Reference for Sence Valley Forest Plan

National Strategy	District Strategy	Forest Plan Objective	Monitoring
<p>Economic:</p> <p>Maintain the land within our stewardship under UKWAS certification, Improve the economic resilience of our woods and forests, Encourage and support business activity on and around the Estate.</p>	<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 sustainable 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 10 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 as part of the Forest plan review.</p>
<p>Environment, Nature and History:</p> <p>Improve the resilience of the natural environment of the Estate under our Stewardship, Realise the potential of the Public Forest Estate for nature and wildlife, Maintain and improve the cultural and heritage value of the Estate.</p>	<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>Identify existing locations of TSIs and demonstrate appropriate management to recruit future veteran trees and increase the volume and distribution of deadwood.</p> <p>Recognise the significance of FC land holding and management in relation to the water catchment area.</p> <p>Management operations will be planned to take into account the habitat requirements of European protected species associated with Forestry Commission land.</p>	<p>Silvicultural systems shown in the forest plan and will be reviewed prior to any operations taking place and operations will be planned to help maintain soil stability.</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>All operation will be carried out in accordance with the Forestry and Water Guidelines.</p> <p>Conservation measures will be reviewed when Operational plans are written and monitored by the Forestry Commission ecologists.</p>

Terms of Reference for Sence Valley Forest Plan—continued

<p>People: Encourage communities to become involved on the Estate, its management and direction, Provide high quality woodland-based recreational opportunities for people and business, Enable everyone, everywhere to connect with the nations' trees and forests so that they understand their importance and act positively to safeguard forests for the future.</p>	<p>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>Expand the areas of open woodland and network of access routes for the public and links into the surrounding countryside.</p> <p>Continue to work with local businesses to provide a wider range of services and facilities on site.</p> <p>Continue to develop and run a programme of events and activities for the Sence Valley volunteer group and members of the public.</p>	<p>Public access and facilities will be monitored and maintained by the beat team on a regular basis throughout the year.</p> <p>The beat team and estates department will monitor existing and future contracts with private businesses annually.</p> <p>The beat team will monitor and review activities throughout the year.</p>
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Appendix II**Glossary****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.

Ecological Site Classification (ESC)

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

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 5th 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.

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.

National Forest

The National Forest is right in heart of the country, embracing 200 square miles of the Midlands with the aim of greening the landscape formally used for heavy industry and coal mining.

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.

Glossary**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.

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.

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).

Glossary**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 m³ per hectare has a yield class of 14.