Forestry Commission England

Haldon Forest and SSSI Plan

2018 - 2028

West England Forest District

Ben Robinson
FCE File Ref: OP10/81
(Old PE 62, 65 & 67)

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

FSC www.fsc.org FSC® C123214
The mark of responsible forestry

PEFC PEFC/16-40-1001 Promoting Sustainable Forest Management www.pefc.org

Declaration by FC as an Operator.

All timber arising from the Forest Enterprise estate represents a negligible risk under EUTR (No 995/210)

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PART 1 – Description and summary

Summary

About

The Haldon Forest Plan area is made up of the one large forest block along the Haldon ridge with a number of outliers surrounding it including Great Plantation, Powderham, Whaddon Brake and Ideford. The Plan area contains three SSSIs, the greatest of which is the Haldon Forest SSSI and is the equivalent to 53% of the Plan area. The SSSI is designated for its dwarf heathland, raptor and lepidotera assemblages and nightjar. As a prominent feature along a ridge within the distinctive lowland setting within easy distance of Exeter, the Plan Area has a very high natural, recreation and landscape diversity and value.

The forests managed as part of the Public Forest Estate stretch from North Wood in the north, 2 miles west of Exeter, through the main block close to the village of Chudleigh to Great Plantation in the south which is 1 mile from Bovey Tracy.

The public forest here is predominantly conifer having been planted after the First World War to address the national timber shortage. Now large areas of restored lowland heathland, rotational forestry and the creation of felled sites support a nationally significant population of nightjar and rare butterflies.

The forests also provide a unique outdoor experience for visitors from the nearby urban settlements as well as the numerous tourists who visit Devon every year. Haldon Forest Park is a key tourist site for Exeter and Devon with thousands of visitors every year.

The majority of the Plan area is Open Access, confirmed by the Countryside Rights of Way Act. The exception is Whiteway, Spicers, Powderham and Whaddon which are all de facto Open Access due to it being leased from another landowner.

Objectives

The core aim of the Plan is to deliver the 50 Year Vision by producing woodlands with increased conservation, recreation and landscape benefits whilst maintaining a viable timber output. The long term aim of management is to continue to sustainably produce timber whilst providing a forest rich in wildlife, attractive to people and increasingly resilient to climate, pests and diseases.

The social, economic and environmental objectives of management are:

- The continued production of sustainable and marketable woodland products
- The protection and enhancement of woodland and open habitats and their associated species.

  - The creation and maintenance of permanent and transient open habitats.
  - The restoration and management of the Site of Special Scientific Interest.
- The provision and maintenance of recreation facilities.

  - Support the development of increased and sensitively managed recreation provision.
  - Improve stand resilience around recreation infrastructure.
- The delivery of well-designed proposals that comply with landscape design principles in keeping with the local landscape character.
- The conservation, maintenance and enhancement of cultural and heritage assets .

What we'll do

The current Plan outlines management proposals including felling and restocking over several decades, with felling licence approval for operations up until 2028.

Crops in more exposed positions where soils are thin will continue to be managed primarily for conifer timber production under a clearfell and restock scheme. Crops in less exposed positions will be managed to continuous cover forestry prescriptions so as to create a diverse and resilient forest structure.

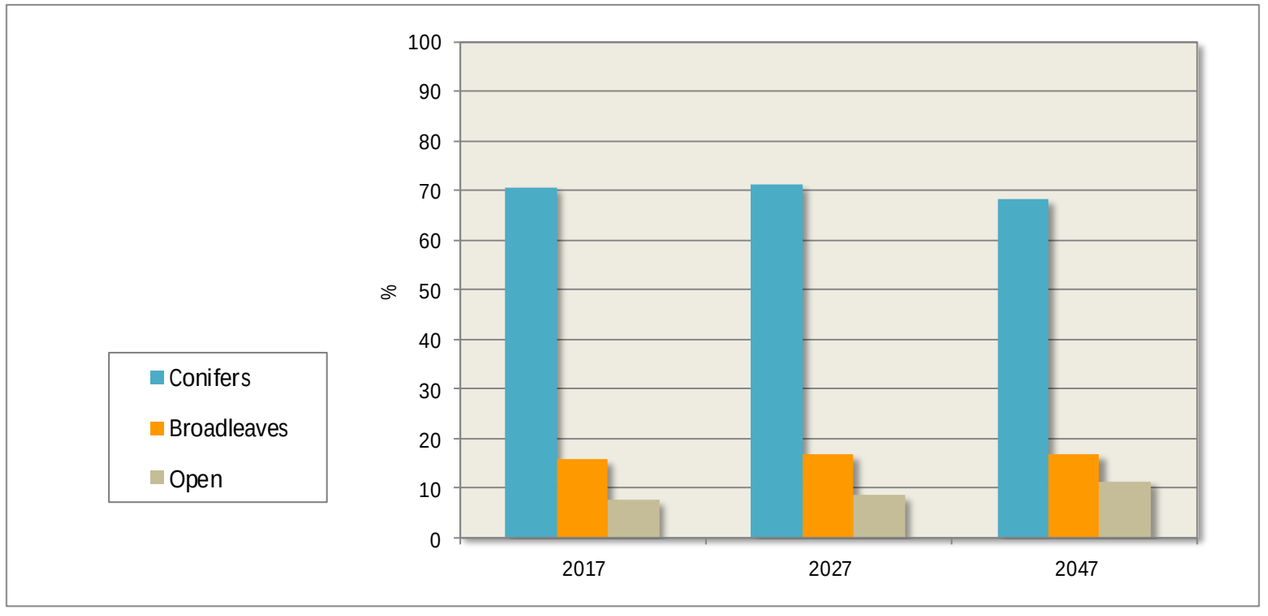
A comprehensive review of forest and heathland against the 50 Year Vision has meant that considerable areas will be restored in the future. The implementation and maintenance of an environmental corridor system and further 137 hectares of proposed heathland restoration, including 14 hectares in the next Plan period will continue to increase diversity of habitat and internal landscaping. Restocking design in specific places will look to enhance the heathland connectivity and butterfly habitat.

The planned areas of clearfelling, restocking and permanent open habitat creation during the ten years to 2028 are summarised in the chart below.

HECTARES	Conifers	Broadleaves	Open habitat
Clearfelling	77	5	-
Restocking/Regeneration	53	15	14

In addition to these defined operations, ongoing thinning and selective felling of both conifers and broadleaves will be carried out in the plan area at five to ten year intervals.

The proportions of conifer and broadleaved woodland and open habitat at the beginning of the plan period are shown in the bar chart. The increase in native broadleaves and permanent open habitat expected within the Plan period and over time is indicated in the middle and right hand columns of the chart.



2015 - 2025

Location

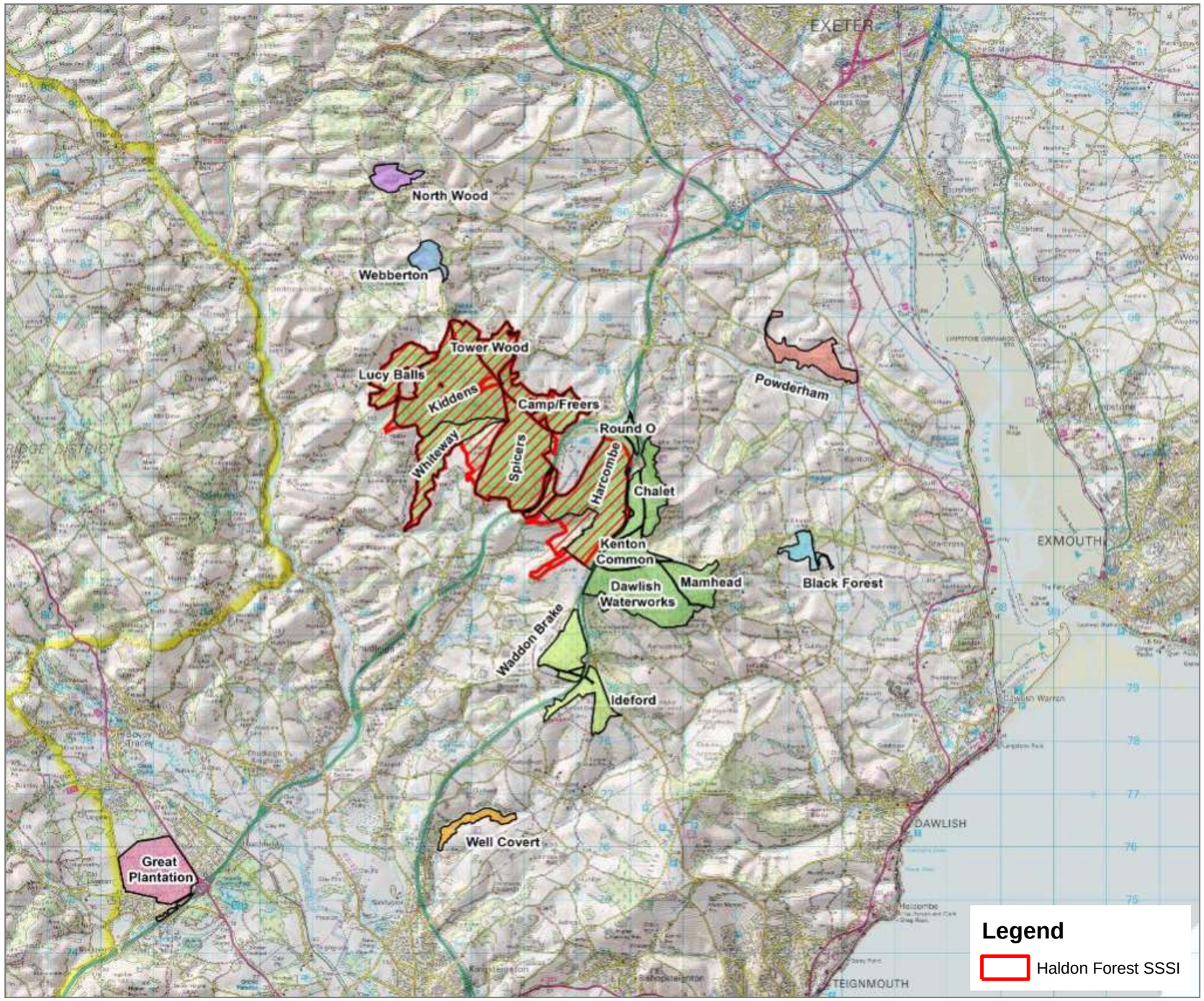
The Haldon Forest Plan area totals 1728ha within the Teignbridge District of Devon. The Plan area is made up of one large contiguous forest block with a number of separate outlying woodlands in a lowland wooded landscape.

The Plan area consists of 916ha of the Haldon Forest SSSI which is within the Plan area and is equivalent to 53% of the Plan area. A core aim of this Plan is to maintain the designated units in their current condition and carry out any necessary management practices as required by Natural England to move or maintain the SSSI units into/in favourable condition.

Forest	Area (ha)	% of Plan Area
North Wood	**31**	**1.8**
Webberton	**29**	**1.7**
Main Block	**1297**	**75.0**
Powderham	**63**	**3.6**
Black Forest	**27**	**1.6**
Whaddon Brake & Ideford	**116**	**6.7**
Well Covert	**27**	**1.6**
Great Plantation	**138**	**8.0**

The majority of the Plan area sits within the Devon Redlands National Character Area and the main block is a prominent feature along a ridge within easy distance of Exeter. The Plan area offers exceptional biodiversity-value which is confirmed by the extent of ecological designation both within and surrounding the Plan area.

The climate is warm and fairly moist with an average annual rainfall of 830 – 1130mm. The Plan area sits between 30m and 250m above sea level with the slopes predominantly south facing with a steep northerly escarpment along the main block. Soils vary significantly from ball-clay at Great Plantation to rich brown earth brown earth at Powderham and Black Wood. The majority of the elevated areas, including the main block are shallow podzolic soils with gleying occurring in places, these often are nutrient poor with a flint cap or a high stone component.



0 0.375 0.75 1.5 2.25 3 Miles

Tenure & Management Agreements

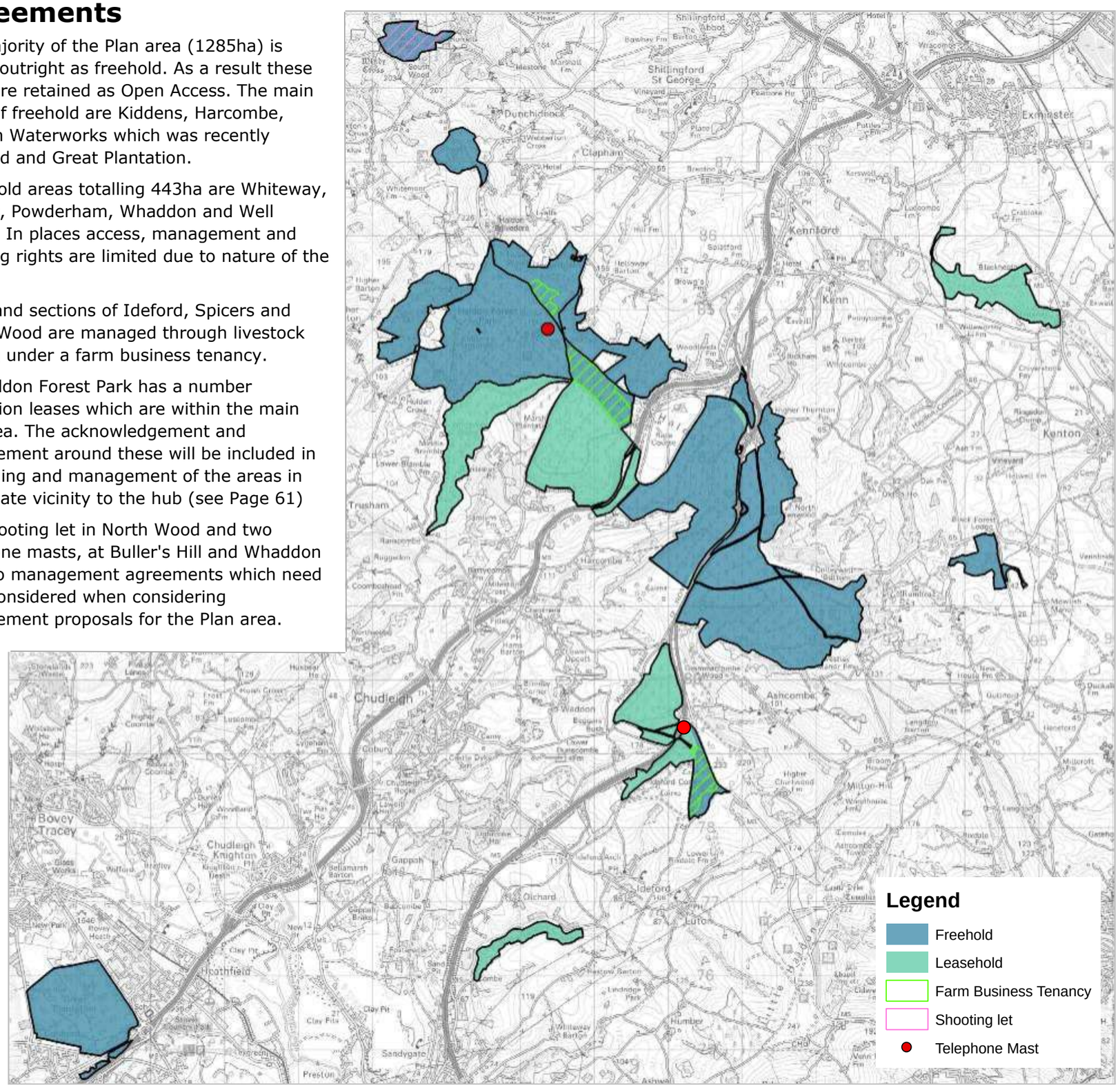
The majority of the Plan area (1285ha) is owned outright as freehold. As a result these areas are retained as Open Access. The main areas of freehold are Kiddens, Harcombe, Dawlish Waterworks which was recently acquired and Great Plantation.

Leasehold areas totalling 443ha are Whiteway, Spicers, Powderham, Whaddon and Well Covert. In places access, management and shooting rights are limited due to nature of the tenure.

Heathland sections of Ideford, Spicers and Tower Wood are managed through livestock grazing under a farm business tenancy.

The Haldon Forest Park has a number recreation leases which are within the main hub area. The acknowledgement and management around these will be included in the zoning and management of the areas in immediate vicinity to the hub (see Page 61)

One shooting let in North Wood and two telephone masts, at Buller's Hill and Whaddon are also management agreements which need to be considered when considering management proposals for the Plan area.



History

The Forestry Commission acquired its first 350ha at Haldon in 1920. Lease or purchase acquisitions continued into the 1960s by which time Haldon was the nucleus of the Forestry Commission's 'Exeter Forest', totalling 1925 ha of woodland within a 12 mile radius of Exeter. Today, land managed by the Forestry Commission at Haldon totals 1590 hectares (excluding Great Plantation).

Pioneering forestry on the plateau was not easy, and there were many challenges, most significantly the poor soils characteristic of heathland. Fires lit both accidentally and deliberately gradually destroyed the shallow peat layer, leaving a thin stony soil that was heavily compacted and dried out quickly.

In the early days, planting involved hard labour, breaking up the ground with a pick and boring a hole with an iron 'dibble'. Finding the right conifer species for these conditions involved extensive trial and error, and records show heavy losses from severe drought and entire areas scrapped due to poor growth.

Before the conifer plantations, the Haldon plateau was covered by heathland and the lower slopes had long grown oak coppice, other broadleaves, and some conifers. This was exploited, unsustainably, during the First World War. It was in the aftermath of the war that the Forestry Commission was set up to provide homegrown timber and reduce the over-reliance on foreign imports.

Efficiency increased as knowledge grew and machinery became more advanced. From 1920 until 1950, around 60 staff managed forest operations at Haldon (dropping during the Second World War), but by 1985 only 15 operational staff were required. Today, the Forestry Commission has just five operational staff for the Exeter area, a direct result of advances in technology and greater reliance on contractors.

Although Haldon is still very much a working forest, in recent years recreation and conservation have become increasingly important. Haldon is now coming full circle, as some areas of plantation are now being restored to heathland. The significant storms of winter 2014 and subsequent windblow clearance of 2014/15, totalling 74ha, has led to a significant change in forest structure and character across the main Haldon block. This has left a legacy which influence restocking, and future felling plans.

Designations

2015 - 2025

Ecological Designations

South Hams SAC - includes Chudleigh Caves and Woods and Haytor and Smallacombe Iron Mines which both fall within 4 kilometres of the Plan area. South Hams in south-west England is thought to hold the largest population of greater horseshoe bat and are a primary reason for selection of this site.

Haldon Forest SSSI - 916ha of this designation is within the Plan area. It is notified for its heathland which supports nationally rare species such as nightjar. It is also notified for its assemblages of raptor species which use the high forest for nesting. The rare species of Lepidotera which are found here, notably on rides and recently felled areas are the third reason for designation.

Quarry SSSIs - Tower Wood Quarry (north) Buller's Hill Quarry (south) are two now disused quarries designated for displaying the residual facies of the different Palaeogene 'Haldon Gravels'.

Great Haldon Heaths SSSI - lies outside the Plan area but heathland restoration within the Plan area in recent years now complements this designated site.

Ancient Woodland - 112 ha of the Plan area is designated as ancient woodland. The majority of which is Plantation on ancient woodland (PAWS) - See Pages 35-36 for more detail.

Heritage Designations

Windy Cross Scheduled Monument - is a small designated heritage monument which sits on the edge of North Wood. It is in a stable condition. See Appendix 5 for further details.

Mamhead Registered Park and Garden - is a designated parkland partly attributed to Lancelot Brown, with landscape structures, around an early C19 mansion. It is noted for its mixed woodland structure and Obelisk.

Powderham Registered Park and Garden - is part of the Powder Castle and Estate which abuts Powderham forest on the eastern edge. Proposals will complement the designation.

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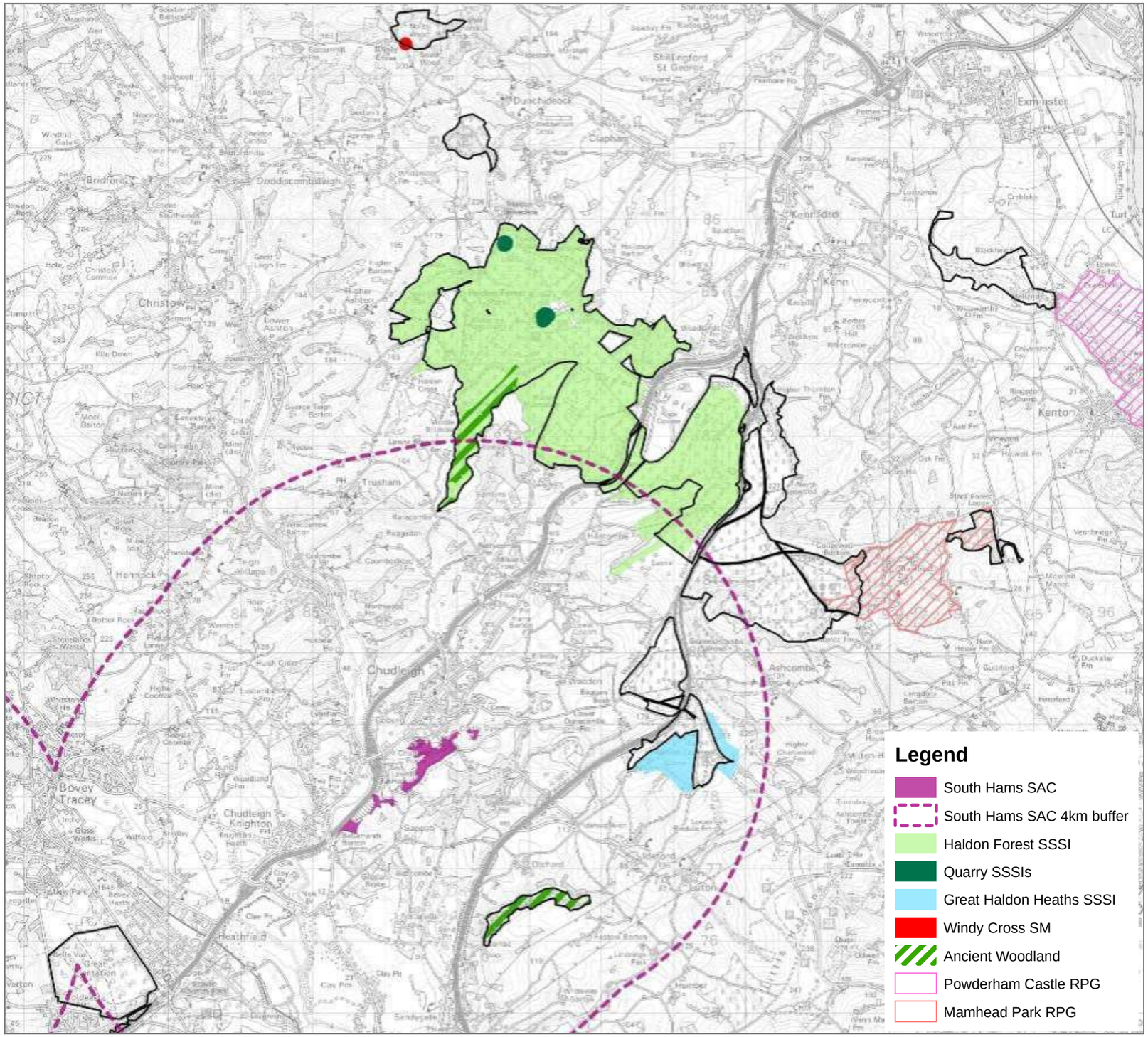


PART 2 – Vision and objectives

A 50 Year Vision

The Vision for the future of the Plan area is bold but in keeping with the Forestry Commission's key strategic goals and the local and national value which is placed on the area. Set against the backdrop of the Landscape Character whereby *the Haldon ridge, a coniferous plantation with remnant heath, forms a landscape setting for Exeter and the settlements around the Exe,* this Vision looks to achieve an area which is a haven for wildlife, fun and commerce. A 'Key Opportunity' of the National Character Area (Natural England, 2013) is *the restructuring existing conifer plantations as they reach maturity, to allow for reversion to lowland heath and associated mire habitats, and enhancement of the setting of historic assets, while maintaining the wildlife interest of Haldon Forest and balancing recreational demand*. In 50 years time this Plan will look to have delivered a rich mosaic of robust habitats which supports a multitude of rare and common flora and fauna species as well as contributing to a low-carbon economy.

Conifer dominated forest predominantly managed through clearfelling and restocking and contributing to a vibrant woodland economy will remain the main habitat type. Rare and protected species, such a goshawk, hobby and nightjar will continue to call the forest home. The conifer forest will also be a popular and safe place to come exercise, learn and relax in a robust natural environment. The trees will be valued not only for their ecological and social value but also as a timber product, water regulation and for carbon sequestration which as climate change takes effect will be of increasing importance. A diverse structure of young, thicket and maturing crops across the area will be provide suitable continuous habitat over time. Areas of retained Scots pine and Douglas fir will allow the development of old growth and regressing specimens which become valuable to senescent loving species. Some forested sites not appropriate for forestry practice because of poor site condition or exceptional ecological value will not be restocked at the time of maturity to better integrate and balance open habitat with high forest.

Broadleaf woodland will grow in size and improve in condition as restoration to native cover takes affect in certain areas. Managed more sensitively but still with productivity in mind through thinning or coppicing, these more secluded areas will become a haven for a multitude of micro habitats, species and ecosystem functioning. Mature and future significant trees will be retained and allowed to breakdown providing deadwood habitat and nutrient cycling. Everything from rare dormice and butterflies to lichens and wet willow will enhance the contribution to ecology, cultural heritage and social value and to the wider landscape. Riparian areas will be enhanced through broadleaf intrusion and openrf up to dappled shade to become invaluable to the quality and storage of water that passes through.

Heathland, a key part of the Landscape Character, will feature more significantly in the area's makeup. Lowland heathland areas will be consolidated and managed as dwarf shrub to support the rare and protected flora and fauna species which inhabit these areas. Scattered pine trees and occasional stable broadleaf trees may be retained to create habitat diversity and landscape impact. In addition to these, wooded heath managed on a rotational basis may become a home for numerous heath and scrub loving species such as nightjar, dormice and butterflies. As a minimum, these areas will be managed as a transient heathland, which will mean they may become up to 100% wooded at times with broadleaf scrub before being cleared on a rotation. This will create a dynamic and diverse mosaic of heathland habitat providing for large variety of species.

The small areas of grassland on rides and roadsides will be wider than currently and support common and protected butterflies and other rotational scrub loving species. These areas will also be invaluable to the enjoyment of the area for people, creating windows into the wider forest and out into the landscape.

The 50 Year Vision outlined in this Plan will be delivered in part over the next 10 years through the Objectives outlined on Pages 12 and 13 with the proposal and prescriptions following.

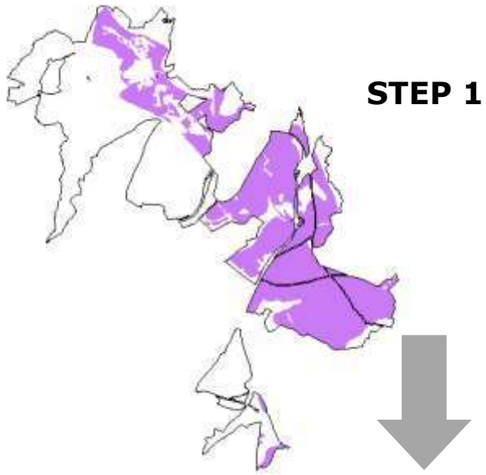
Justification

Part of the Haldon ridge was designated by Natural England in 1992 as the first man made forest cited as Site of Special Scientific Interest in its own right, rather than because of the value the site had before it was planted. The ridge is also recognised by the Forestry Commission as a 'Nationally Important Open Habitat' (Forestry Commission, 2013c).

The value of the Plan area to local and national landscape character is recognised whereby *wooded hills provide the characteristic western skyline to Exeter and a backdrop to much of the surrounding area. Whilst restructuring existing conifer plantations as they reach maturity, to allow for reversion to lowland heath and associated mire habitats, and enhancement of the setting of historic assets, while maintaining the wildlife interest of Haldon Forest and balancing recreational demand* (Natural England).

The following steps outline how the balance between forest and heathland will be achieved over the following rotation across the Haldon ridge, with expectation that the vast majority of creation will be delivered within the next 50 years.

HALDON RIDGE		
SSSI	**Non-SSSI**	**Total**
919ha	494ha	1413ha



STEP 1

STEP 1

Attributes which determine areas that could be heathland
It is observed that remnant and potential heathland assemblages are found primarily on the gravel and greensand formations and not on the calcareous breccia and Crackington formation. Areas of existing restored or remnant heathland and built areas are not restorable either because of their current ecological value or irreparable condition. Some land not owned by the Forestry Commission has obligations associated with it and are therefore currently not appropriate for restoration.

AREA OF POTENTIAL HEATHLAND		
SSSI	**Non-SSSI**	**Total**
290ha	322ha	612ha

STEP 2

Attributes which justify areas as forest

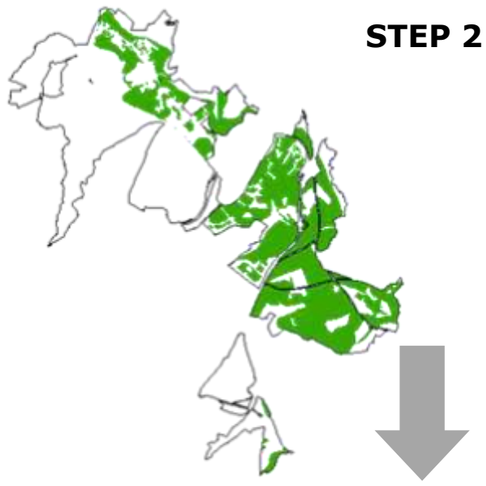
Broadleaf areas - It is generally accepted and defined in Policy that there should be no loss in contiguous broadleaf woodland habitat. Therefore areas (>0.25ha) of contiguous native and naturalised broadleaf cover of an average dbh>30cm will not be considered as potential heathland areas.

Conifer areas - The yield of stock is recognised as an indicator of productivity. Areas of lower yield class can indicate poor soil fertility, moisture provision and rooting depth. Crops achieving Yield Class 12 or more are considered consistently productive for timber and/or carbon sequestration. These sites will not be considered suitable as potential heathland areas, except if identified again in Step 3.

Haldon Forest SSSI is known to host an array of raptor species, and is designated accordingly. Species such as goshawk, buzzard and kestrel are known to nest and hunt within and around the forest. Areas of contiguous conifer (>5ha) which are either known to hold raptor or experience considerable low disturbance will not be considered as potential heathland areas.

The trees are intrinsic to the visitor experience at Haldon Forest Park. People value visiting a forest where they can experience nature and exercise close to an urban centre. The trees also create a robust environment which can absorb a large number of people. Therefore there will be no further loss of forest cover within 300m of Hub facilities.

AREA OF SUITABLE FOREST		
SSSI	**Non-SSSI**	**Total**
262ha	281ha	543ha

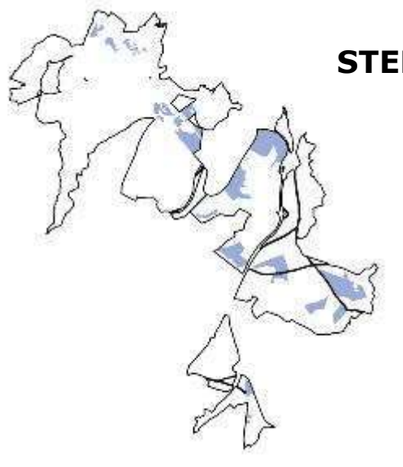


STEP 2

STEP 3

Reasons for additional heathland areas suitable as forest
In addition to potential heathland areas remaining from Steps 1 and 2 (69ha) there is an assumption that it is better to connect existing or potential areas of heathland to facilitate more efficient management and better ecological value. Therefore a minimal viable patch heathland size of 15ha within 20ha is proposed in line with Policy. Small fragmented areas of potential heathland, will not be restored to heathland and where non-native tree cover divides two significant of potential heathland, additional creation is proposed to create efficient and robust areas of management. This adds another 67ha to the area of potential heathland which is also suitable as forest.

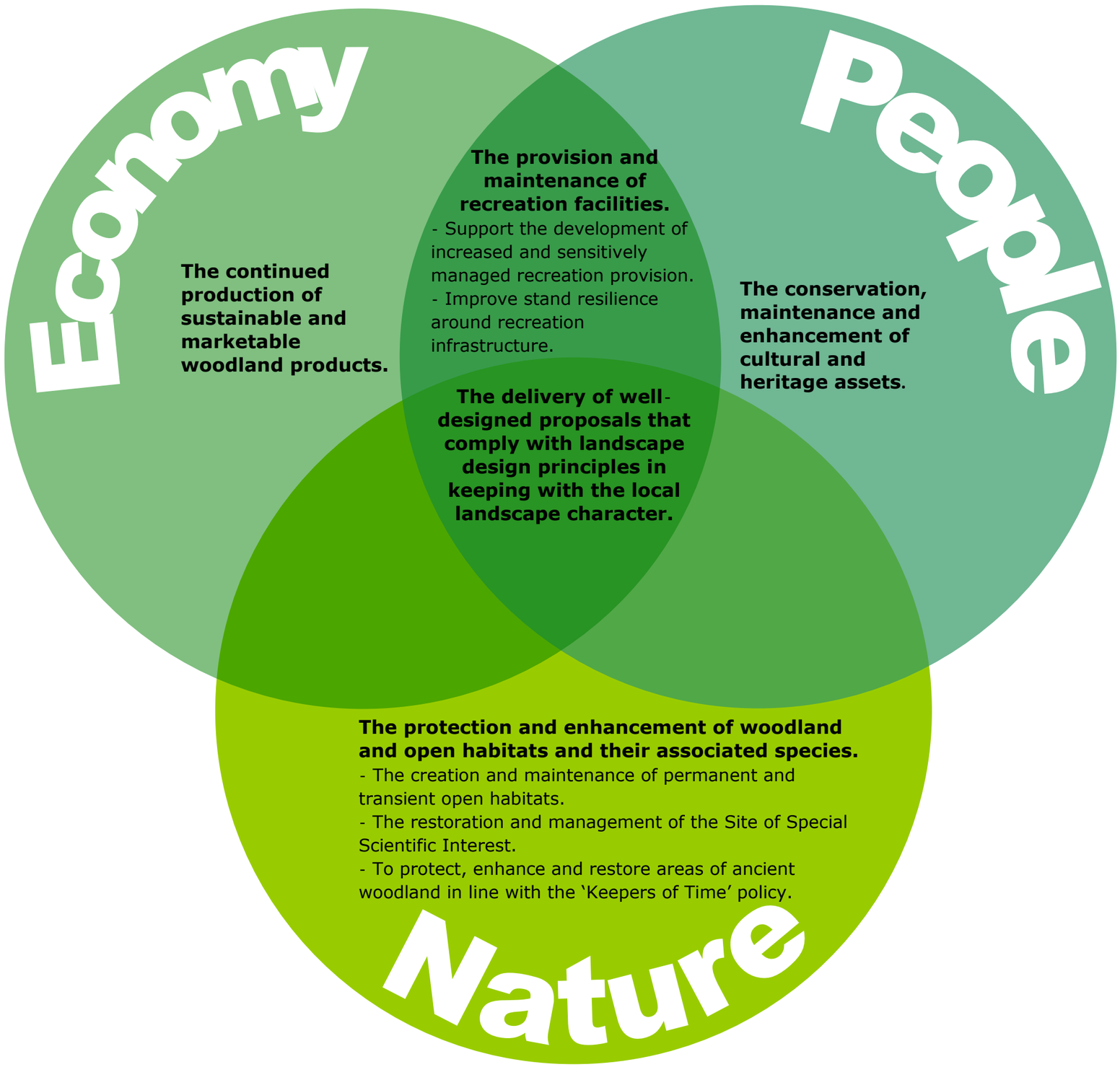
PROPOSED FUTURE HEATHLAND		
SSSI	**Non-SSSI**	**Total**
76ha	61ha	137ha



STEP 3

2015 - 2025

Management Objectives



WEST ENGLAND FOREST DISTRICT

PROTECTING AND EXPANDING ENGLANDS FORESTS AND WOODLANDS AND INCREASING THEIR VALUE TO SOCIETY AND THE ENVIRONMENT.

The objectives of this Plan will, in part, deliver the *West England Forest District Strategic Plan* (2013a) and the national *Strategic Plan for the Public Forest Estate in England* (2013b).

Sustainable management of the woodland will be to the standards required to maintain FSC and PEFC accreditation and therefore must deliver economic, environmental and social objectives.

The meeting and monitoring of these objectives is outlined on the following page.

FSC www.fsc.org FSC® C123214 The mark of responsible forestry

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

PEFC PEFC/16-40-1001 Promoting Sustainable Forest Management www.pefc.org

Forestry Commission England

National Vision and Overall Goal:

To secure and grow the economic, social and natural capital value of the Public Forest Estate for the people of England.

2015 - 2025

Meeting Objectives

District Strategy

Economy

Maintain the land within our stewardship under FSC/PEFC certification.

Improve the economic resilience of our woods and forests.

Encourage and support business activity on the Estate

Nature

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.

People

Maintain existing established consultation panels and engage with other consultative bodies such as National Park Authorities and AONBs.

Provide high quality woodland based recreational opportunities for people and business focusing on the 3 principle Forest Centres.

•• Enable everyone, everywhere to

Forest Plan Objective	Meeting Objective	Monitoring
The continued production of sustainable and marketable woodland products.	The majority of the Plan area will remain productive through thinning yield. Some clearfell timber production of mature crops will occur, majority from the conifers.	Comparison of average annual production forecast yield (10,000m³ (2021) and 9,500m³ (by 2028)) with actual production at the Forest Plan (FP) five and ten-year review.
The protection and enhancement of woodland and open habitats and their associated species. - The creation and maintenance of permanent and transient open habitats. - The restoration and management of the Site of Special Scientific Interest. - To protect, enhance and restore areas of ancient woodland in line with the 'Keepers of Time' policy.	Appropriate reinstatement works will be carried out once operations have been concluded. Protection and enhancement of water supplies and soil quality through sensitive implementation of operations and improved restocking practices. Overall creation of 14ha of additional open space (lowland heathland and wooded heath) in Plan period 2018-27 and continued maintenance of 124ha. Continued delivery of transient open habitats through clearfell and restock programme — 68 ha in Plan period. Restoration of ancient woodland through a gradual thinning process Management of SSSI's in line with specific management plans towards and maintained 'favourable condition'. Raptor, nightjar and lepidoptera numbers will be maintained.	Operational site planning of harvesting and restocking operations will help monitor the effect of management. Ongoing monitoring of soil and water quality pre and post harvesting with input from outside stakeholders. Analysis and comparison of SCDB and site visit to open habitat through the Forest Plan review process. Analysis of clearfell completion at Review Analysis of naturalness scores at Review stage Through correspondence with Natural England at regular interval — SSSI condition is monitored by NE Measured at Review stage through analysis of ongoing surveys and records.
The provision and maintenance of recreation facilities. - Support the development of increased and sensitively managed recreation provision. - Improve stand resilience around recreation infrastructure.	Visitor numbers will be maintained. Road and ride corridor and car park aesthetics enhanced and maintained in line with Zoning prescriptions. Felling together with a delayed restock program will continue to diversify stand and age structure. Operational zoned working will deliver minimal impact whilst demonstrating sustainable forest management	Current figures (300,000 visitors to Haldon per year) compared at FP review. Visitor feedback comments, to be included in Review where appropriate.
The delivery of well-designed proposals that comply with landscape design principles in keeping with the local landscape character.	Implementation of proposals will soften and better integrate the woodland with the surrounding landscape The use of Scots pine and Douglas fir as retention crops to ensure the stand diversity is maintained in a period of significant replanting	Fixed point photography analysis at Forest Plan review stage
The conservation, maintenance and enhancement of cultural and heritage assets .	Manage to relevant SM management plan during the planning of operations. Protect and enhance unscheduled sites at the time of intervention.	Successful review of SM Plan and feature condition Operational site planning of harvesting and restocking operations will help monitor the effect of management.

PART 3 – Character, analysis & concept

National Character Assessment – 148 Devon Redlands

The Devon Redlands National Character Area (NCA) has a very strong, unified character. The underlying red sandstone and consequent red soil dominate the landscape through ploughed fields, cliffs and exposures, and are visually evident in the traditional stone and cob farmsteads, hamlets and villages that are scattered across the area. To the south-west of Exeter, the Haldon Hills, a ridge of heathland and woodland, dominate the skyline. Long fingers of coniferous plantation and broadleaved woodland follow ridge lines, enclosing steep pasture on both sides of the dramatically rising ridge. Conifer plantations are softened by wide margins of bracken, birch and heath and there are far-reaching views eastwards over the Exe Estuary and beyond to the Blackdowns and westwards to Dartmoor.

Opportunities
Plan the future management of the commercial areas of woodland, particularly the visual impact of felling and balance the need for replanting against the regeneration of semi-natural habitats and mass recreation. Increase sequestration of CO2 through increased woodland area, and encouraging sustainable management of woodlands; the management and restoration of heathland and associated mire habitats and the expansion of wetland habitats in the river valleys. Avoid clear felling areas of woodland on steep slopes, and encourage new woodland planting to impede overland flows. Provide wide grass buffer strips and reed beds adjacent to river banks to act as silt traps, preventing livestock access to the water's edge. Plant areas of wet woodland and expand/interlink existing valley woodlands to further minimise soil erosion. Restructuring existing conifer plantations as they reach maturity, to allow for reversion to lowland heath and associated mire habitats, and enhancement of the setting of historic assets, while maintaining the wildlife interest of Haldon Forest and balancing recreational demand

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National Character Assessment – 151 South Devon (Great Plantation)

In the east the Bovey valley widens to a basin ringed by wooded hills. It is characterised by the lakes, ponds, and spoil heaps of the ball clay industry, and some pockets of heathland. Provision of timber is currently low. Timber exists in the form of just over 2,223 ha of coniferous plantation across the area, although the majority of woodland is broadleaved at approximately 8,894 ha with nearly 3,500 ha recognised as ancient semi-natural woodland.

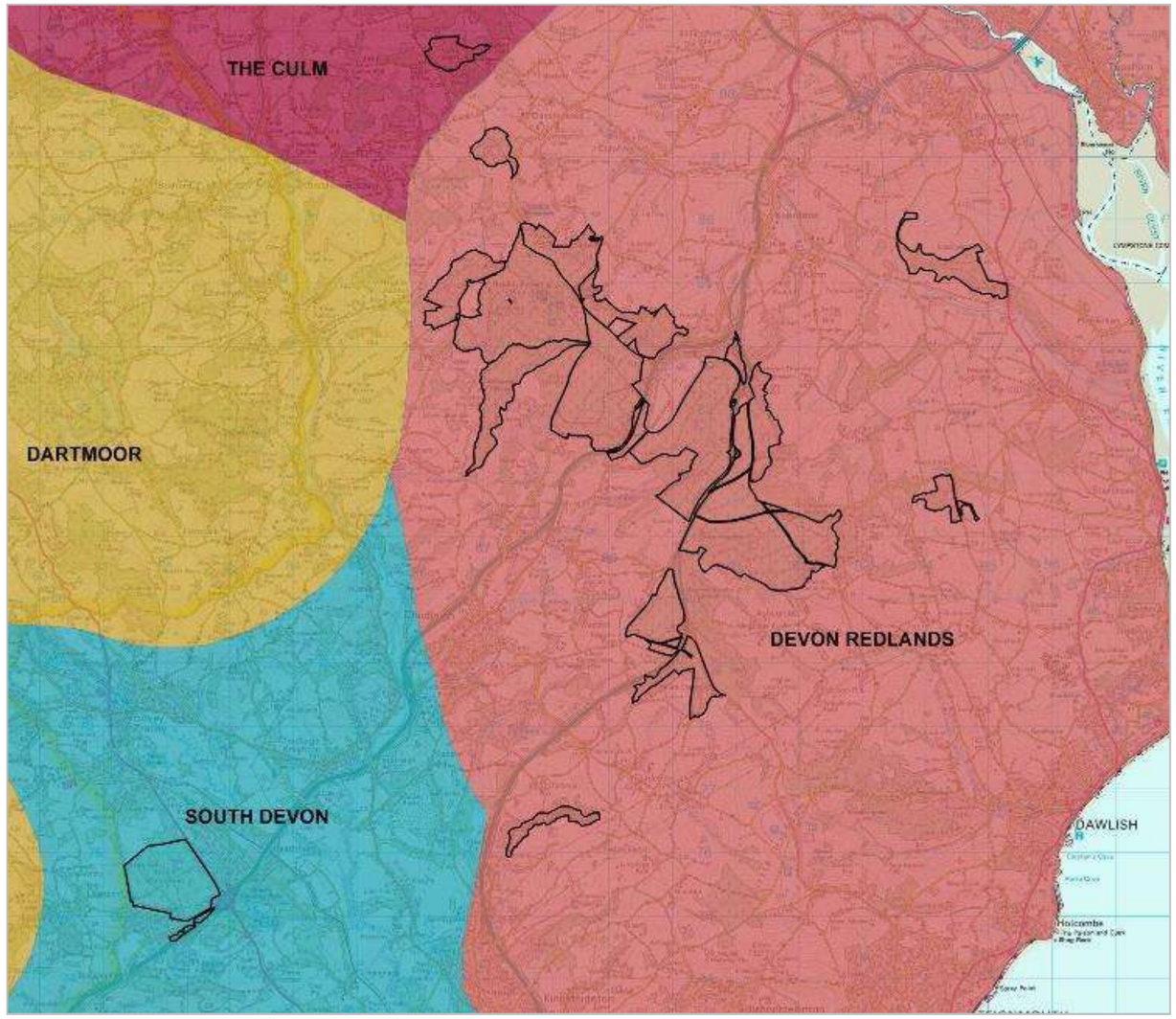
National Character Assessment – 149 The Culm (North Wood)

Woodland and parkland often indicates the presence of estate land with sporting interests and continuity of ownership and management for hardwood timber production. In general, the character of the landscape is unchanging and somewhat timeless. In places, the woodland and timbered nature of the landscape has increased and been enhanced. The relatively high proportion (13 per cent) of woodland in this area is not reflected in the availability of timber. Much of the woodland is located in the very difficult to access coastal combes and steep-sided valleys.

National Character

The National Character Area (NCA) profiles guide and inform planning decision-making. The information they contain will support the planning of conservation initiatives at a landscape scale to ensure proposals are in keeping with the character of the region and continue in their contribution to the nation.

The vast majority of the Plan Area sits in the Devon Redlands National Character Area (NCA). North Wood is with The Culm NCA and Great Plantation within South Devon NCA.



0 0.5 1 2 3 4 Miles

2015 - 2025

Landscape Character

Devon's landscape character assessment describes the variations in character between different areas and types of landscape in the county. It provides an evidence base for local development frameworks and plans, articulating what people perceive as distinctive and special about all landscapes in Devon. It also set out strategies and guidelines for the protection, management and planning of the landscape.

The Plan Area sits in four Devon Character areas (as show) which is then split into 7 Landscape Character Types. The Haldon ridge is the key landscape component of the Plan Area dominating both the area and skyline. Proposals will ensure that the key features and aspirations for these areas are accounted for.

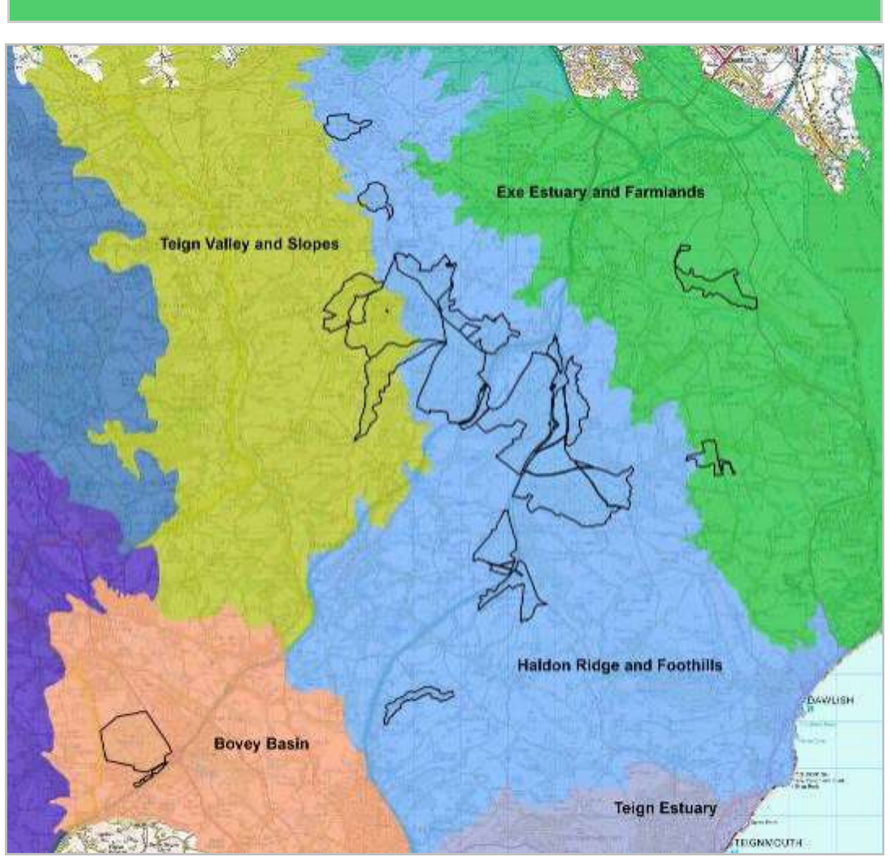
Haldon Ridge and Foothills
The Haldon Ridge and Foothills has a strong sense of place and is one of the most prominent landscape features in eastern Devon, affording a textured, rising backdrop to much of the surrounding landscape, including the towns of Teignmouth and Dawlish and parts of Exeter. The area encompasses a narrow, forested plateau with adjoining steep scarp slopes broadening to more open farmed ridges and valleys to the south. From this landscape there are spectacular panoramic views east to the coast and west to Dartmoor. In places, the sides of the main wooded ridge are deeply incised with combes and small river valleys lending topographic interest. This landscape supports a diverse range of habitats including heathland, conifer plantations, mixed and broadleaved woodland, with a higher concentration of pasture and arable fields to the south. Collectively these land uses give rise to high scenic quality and provide varied texture and seasonal changes. This landscape also includes notable areas of parkland.

Strategy—To protect the panoramic views to and from the wooded ridge as well as to key features and landmarks such as Haldon Belvedere; manage the network of valued semi-natural habitats including broadleaved woodland and heathland and varied historic features. Opportunities are sought to restore broadleaved woodland particularly along valley sides and steep slopes and to restore and connect areas of heathland. The landscape's time-depth continues to have a strong influence, whilst opportunities for sustainable recreation and limited low-carbon development are sensitively accommodated. Field patterns are reinforced through the restoration and management of Devon hedgebanks using traditional management techniques. New development is sympathetic to the existing field pattern, woodland and lanes and reflects existing patterns and local vernacular

Protect	Manage	Plan
• Protect dramatic panoramic views to and from the ridge by sensitive siting of development, particularly tall structures, and the avoidance development on prominent ridges and valley sides. • Protect the overall strong sense of tranquillity and dark night skies. • Protect views to historic landmarks, such as Haldon Belvedere (Lawrence Castle). • Protect and appropriately manage the rich cultural heritage of the area including Bronze Age barrows, hillforts and historic parklands through appropriate management agreements and conservation management plans.	• Manage existing field enclosures and enhance the network of hedgerows and hedgebanks through reinstatement of enclosure where it has been previously lost. • Manage the network of broadleaved woodland, banks and lines of mature trees; and remove laurel and rhododendron where they have colonised. • Manage the mosaic of heathland habitats for landscape and wildlife benefits • Manage the areas of historic parkland and associated features including veteran trees through the development of conservation management plans.	• Plan to screen visually intrusive sections of the A38 and A380 corridors to limit the impact of noise and movement on the surrounding landscape. • Plan for gradual heathland restoration through reduction in conifer plantations and replacement with a balanced mix of broadleaved woodland and heathland; • Plan for the planting of deciduous edges to coniferous plantations to reduce impact of harsh edges and clear fells. • Plan for the progressive restoration of quarries and associated landfill sites, including woodland, grassland and wetland enhancements. • Plan for the interpretation of features of ecological, geological and historic interest

Bovey Basin
The Bovey Basin is a relatively small area, characterised by predominantly flat, broad alluvial floodplain enclosed by encircling hills and, importantly, by the influence of ball clay extraction activities. The quarrying activity has resulted in large areas of despoiled land including open cast quarries, spoil heaps (creating regular-shaped hills), settling lakes, and large modern industrial buildings. These features, along with road infrastructure and development, have altered the river basin character, giving rise to a fragmented and disturbed ambience in places. Nevertheless, there are remnant areas of irregular, mainly pastoral fields with hedgerows, woodlands and some important areas of acid heath, e.g. Bovey Heath and Chudleigh Knighton Heath, reflecting the presence of underlying sand and gravel. The tree-lined Rivers Bovey and Teign also provide a more naturalistic character amongst an otherwise complex, settled landscape; and the designed parkland of Stover Estate lends a sense of continuity within an area which has undergone considerable change. This is generally an inward-looking landscape due to the basin landform and the presence of notable areas of mixed and coniferous woodland, which provide a sense of enclosure.

Exe Estuary & Farmlands
The estuary is the visual focus of this area; and although Devon has a number of estuaries few are as extensive as the Exe. This is a landscape of open skies characterised by the sound of seabirds, the masts of boats, and mud and dunes at Dawlish Warren. Views over the river are distinctive and the detail of the scene changes according to tide and season. The open expanse of intertidal mudflat when covered with water reflects the colour of the huge skies above. The whole scene is framed by rising landform on either side, which provides low level enclosure. The land rises gradually to the high ground of Woodbury Common to the east and Haldon to the west.



0 0.5 1 2 3 4 Miles

Teign Valley & Slopes
The Teign valley is perhaps the most dramatically steep and consistently wooded valley in Devon. Its steep, deep, narrow valley, twisting course, woodlands and nearby moor on Dartmoor are inspiring. It provides a wooded and often rocky flank to the eastern boundary of Dartmoor National Park. The steepness of the valley sides is accentuated by the height of the land either side, giving it a distinctive appearance in the wider landscape. The valley floor is relatively narrow (even in the south) and is flat-bottomed, open and marked by the tree-lined course of the river with occasional historic stone bridges, which add interest. Frequent broadleaved woodland along the valley sides (some ancient), gives a heavily wooded appearance, although many areas are in fact pastoral. These are marked by small, irregular fields with mature hedges and broken by a series of interlocking tributary valleys – particularly to the north where the valleys become narrower and more intimate. This is a landscape with high levels of tranquillity and dark night skies. Within the valley are scattered settlements and farmsteads and there has been a history of mining, reflected in the now dismantled railway.

Analysis & Concept
Powderham

Analysis: Area of recently felled ground has remained unstocked with the intention having been to plant with broadleaves.

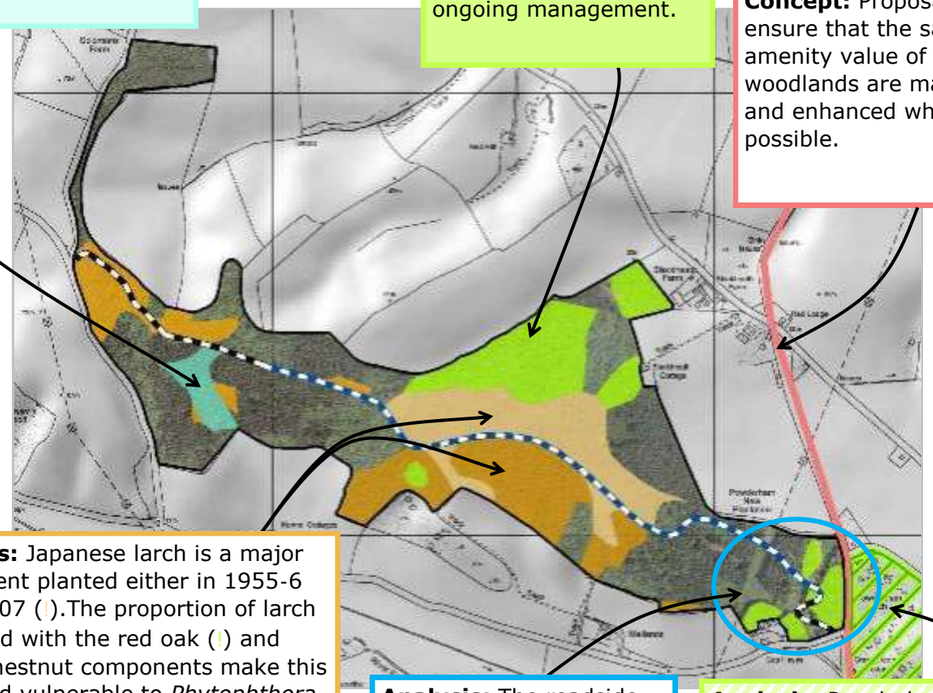
Concept: Prescriptions need to outline a plan, considering both conifer and broadleaves as restock possibilities.

Analysis: The mature Red oak stand here is of good form with laurel intruding underneath.

Concept: Thinning will continue with laurel control as part of the ongoing management.

Analysis: The A379— to Dawlish and Teignmouth road, popular with tourists, passes adjacent to the forest.

Concept: Proposals will ensure that the safety and amenity value of the woodlands are maintained and enhanced where possible.



Analysis: Japanese larch is a major component planted either in 1955-6 (!) or 2007 ( ).The proportion of larch combined with the red oak (!) and sweet chestnut components make this woodland vulnerable to *Phytophthora ramorum.*

Concept: The reliance on these disease susceptible species needs to be addressed to ensure resilience is not compromised.

Analysis: The roadside and two overhead powerlines (11kV & 132Kv) mean that this is complex and fragmented area of woodland to manage

Concept: Where possible proposals will look to simplify the management of the crops and constraints in this area.

Analysis: Powderham Park part of the Powder Castle and Estate is a Registered Park and Garden which abuts the woodland on the eastern edge.

Concept: Whilst the designation does not cover the woodland, proposals will look to complement the Park Garden where possible.

Legend

- Powderham Castle RPG
- p.54 Red Oak
- p.55/56 Japanese larch
- p.2007 Japanese larch
- Felled/Unstocked
- A379
- Class A/B Roads
- Class C Roads

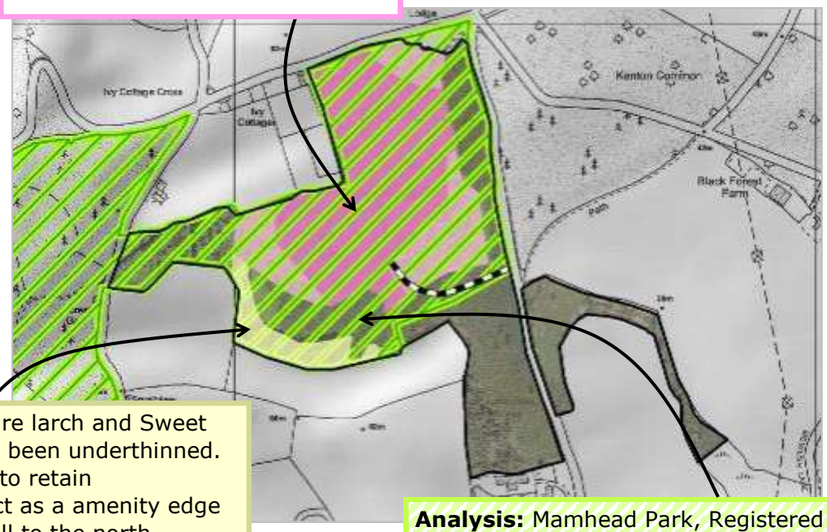
0 0.125 0.25 0.5 0.75 1 Miles

Analysis & Concept
Black Forest

2015 - 2025

Analysis: Significant areas of quality mature and mid-rotation sweet chestnut are key components. These areas are now due for intervention to release crops and stimulate structural diversity.

Concept: Options of patch felling and different thinning regimes will be considered to best achieve this.

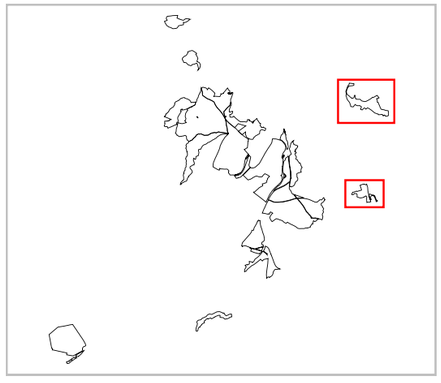


Analysis: The mature larch and Sweet chestnut crops have been underthinned. This has been done to retain windfirmness and act as a amenity edge to the recent clearfell to the north.

Concept: These crops will retained until the crop behind has reached a sufficient height so as not to create a significant change on the landscape. Thinning will need to be minimal.

Analysis: Mamhead Park, Registered Park and Garden is a designated parkland partly attributed to Lancelot Brown, with landscape structures, around an early C19 mansion.

Concept: Black Forest, adjoins the north-east drive from the House, and was described by Loudon in 1842. It is noted for its mixed woodland structure which will be retained.



Legend

- Mamhead Park RPG
- p. 16 Sweet chestnut
- p.71 Sweet chestnut
- Unthinned edge
- Class A/B Roads
- Class C Roads

Analysis & Concept
North Wood

2015 - 2025

Analysis: A large Statutory Plant Health Notice felling due to *Phytophthora ramorum* occurred in 2010 means a considerable area in the heart the forest restocked recently.

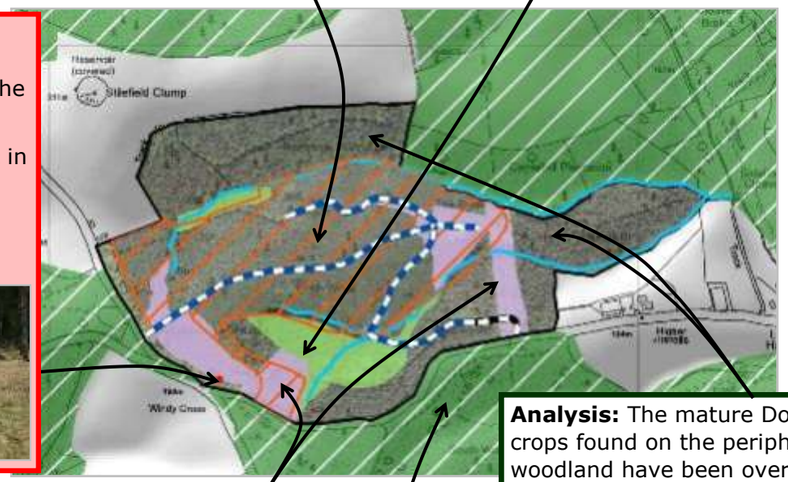
Concept: The site is now well established. However given the significant intervention, retaining structural diversity through surrounding mature crops for the next 20 years is important.

Analysis: Seeding western hemlock is continuing to colonise riparian zones.

Concept: Proposals will address the need for riparian zones to be of dappled shade, provided predominantly broadleaf in mixture with discreet conifers.

Analysis: Windy Cross Scheduled Monument is found on the boundary of the woodland.

Concept: Proposals will be in consultation with Historic England to ensure this cultural feature and its setting is maintained.



Analysis: Areas managed for pearl-bordered fritillary are a mixture of maintained open habitat and young conifer crops.

Concept: Dialogue and partnership work with Butterfly Conservation will remain ongoing to ensure these and other sites are maintained and continue to deliver exceptional biodiversity value.

Analysis: The mature Douglas fir crops found on the periphery of the woodland have been overthinned. Excessive opening up (to light) has led to bramble explosion, fir regeneration is evident in places.

Concept: Thinning and clearfelling will be delayed to allow the crops to close canopy again.

Analysis: Much of the forest block sits in an intimate wooded landscape and is surrounded by neighbouring broadleaf and conifer woodlands.

Concept: Proposals will be in consultation with neighbours to ensure management complements adjacent crops and habitats.

Legend
- Windy Cross SM
- SPHN
- Pearl bordered Fritillary
- Neighbouring Woodlands
- W. hemlock
- Watercourses
- Class A/B Roads
- Class C Roads

0 0.125 0.25 0.5 0.75 1 Miles

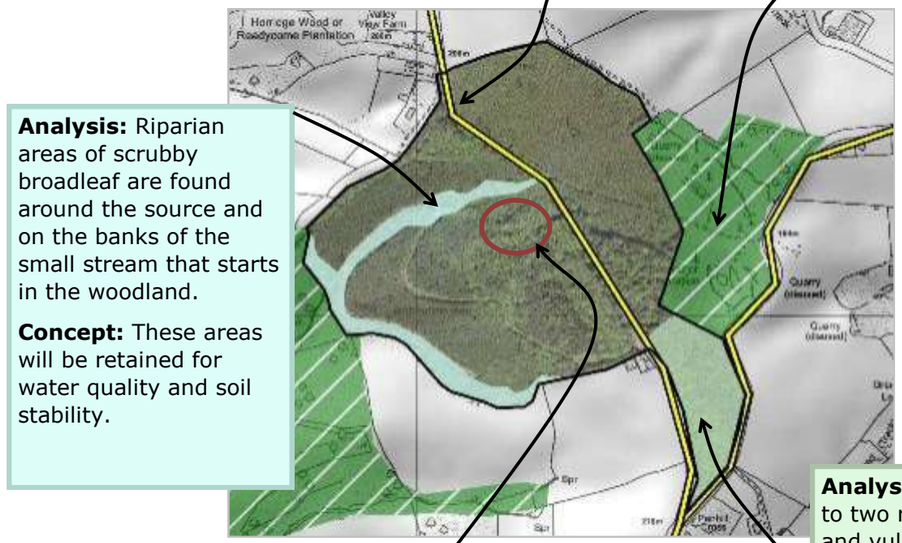
Analysis & Concept
Webberton

Analysis: A minor road dissects north to south, and boundaries the woodland on the eastern edge.

Concept: Proposals will ensure the integrity of crops are maintained and driver experience enhanced where possible through scalloping.

Analysis: Much of the forest block sits in an intimate wooded landscape and is surrounded by neighbouring broadleaf and conifer woodlands.

Concept: Proposals will be in consultation with neighbours to ensure management complements adjacent crops and habitats.



Legend
- Vulnerable Crop
- Riparian Area
- Neighbouring Woodlands
- Minor Roads
- Class A/B Roads
- Class C Roads

Analysis: Riparian areas of scrubby broadleaf are found around the source and on the banks of the small stream that starts in the woodland.

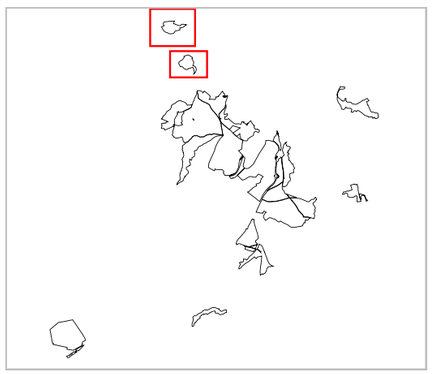
Concept: These areas will be retained for water quality and soil stability.

Analysis: Here there is evidence of old industrial working with used limekilns found in the area.

Concept: These areas will be retained and protected at the time of operation.

Analysis: The crop here is adjacent to two roads, and is underthinned and vulnerable to the wind.

Concept: This area will remain unthinned and will require one single removal intervention in the near future, to ensure road and public safety.



Analysis & Concept

Main Block (North)

Analysis: The 'Raptor Viewpoint' has not received the treatment intended for it and is now in need of intervention to improve the visibility and management of the point.

Concept: Opportunities to open up the viewpoint and include external partners in the management and interpretation of this site will be explored.

Analysis: The Tower Wood and Bullers Hill Quarry SSSIs are notified for displaying the residual facies of the different Palaeogene 'Haldon Gravels'. Both are in 'favourable condition'.

Concept: Proposals will ensure there is no loss in condition.

Analysis: The Douglas fir and spruce dominated ridgeline, some of which is original 1920s planting creates, a large visible mass on the landscape.

Concept: Proposals will look to diversify and lighten the ridge where possible, using a mixture of well-designed clearfells and continuous cover systems.

Analysis: The Forest Park Gateway is the focus of formal recreation provision, with paid car parking, a café, play and picnic sites, Segway and Go Ape and the start of numerous marked trails.

Concept: Proposals will enhance visitor experience though improving amenity and stability of crops around areas of high recreation pressure.

Analysis: A Go Ape high ropes course uses the Corsican and Scot pine crops here as a framework to work from.

Concept: Proposals will ensure that these crops are protected and made resilient for the future, so as to protect their current recreation value.

Analysis: Catastrophic windblow has occurred in numerous sites across the forest, most of which has been tidied up. This area in Freers remains blown and unstable.

Concept: Proposals will address the instability and visual impact of this site, ensuring the SSSI features are accounted for and enhanced.

Analysis: The wooded areas of the heathlands, predominantly the spruce and Corsican pine, need considering given their poor stability and health and their high landscape impact.

Concept: Proposals will address failing tree crops to produce a valuable ecological assemblage and high amenity landscape.

Analysis: A large proportion of Gatepark has windblown following one recent catastrophic event. The remaining crops continue to suffer from exposure.

Concept: Proposals will address the significant structural change and stability of the site as well as the restock and SSSI implications.

Analysis: Remnant and restored lowland heathland is found in a number of places. The SSSI units are in 'unfavourable recovering' condition ( ). Most open areas are recovering adequately through constant management, however some discreet areas require significant resource to be recovered.

Concept: Proposals will be in consultation with Natural England and be effective in delivering a resilient and productive heathland habitat and landscape. Consideration will be made for where to target and significantly extend open habitat.

Analysis: Whiteway wood runs north to south along the west flank of a spur from the ridge. This is Ancient Woodland and most likely managed as oak coppice in the past. The majority of this areas is now Douglas fir and larch dominated and therefore PAWS.

Concept: Proposals will outline a plan of restoration to native species cover in line with Keepers of Time policy. This will be achieved through a process of thinning out the conifer to favour ancient woodland features and native regeneration.

Analysis: Here the Corsican pine is now failing significantly from Dothistroma. Recently planted Sitka spruce complicates the option to simply remove.

Concept: Options for underplanting, selective or delayed felling will be explored to resolve the complex forest structure.

Analysis: The busy A38—Plymouth to Exeter road passes adjacent to the forest.

Concept: Proposals will ensure that the safety and amenity value of the woodlands are maintained and enhanced where possible.

0 0.125 0.25 0.5 0.75 1 Miles

- Heathland SSSI Units
- Quarry SSSIs
- Priority Lowland Heathland
- Whiteway Ancient Woodland
- Visible Ridge Crops
- Wooded Heathland Features
- Forest Park Facilities
- GoApe
- Gatepark
- Freers
- Neighbouring Woodlands
- A38
- Class A/B Roads
- Class C Roads

Analysis & Concept

Main Block (South)

0 0.125 0.25 0.5 0.75 1 Miles

Analysis: The busy A38 and A380 roads are the main routes south of Exeter and dissect and abut the forest.

Concept: Proposals will ensure that the safety and amenity value of the woodlands are maintained and enhanced where possible.

Analysis: Pine species, namely Scots, Corsican, Weymouth and Radiata dominate the cover in this area of the forest.

Concept: Proposals will address Dothistroma infection where possible, using heavy thinning, species choice and underplanting where appropriate.

Analysis: Remnant and restored lowland heathland is found in a number of places. The SSSI units are in 'unfavourable recovering' condition ( ). Most open areas are recovering adequately through constant management, however some discreet areas require significant resource to be recovered.

Concept: Proposals will be in consultation with Natural England and be effective in delivering a resilient and productive heathland habitat and landscape. Consideration will be made for where to target and significantly extend open habitat.

Analysis: Dawlish Water is a watercourse prone to flooding which rises in Haldon and run through the centre of Dawlish town. Riparian areas of mature broadleaf are found at and around the source.

Concept: These areas will be retained and enhanced for water quality and soil stability. This will ensure that the value of the forest to flood management is maintained

Analysis: The fir and spruce dominated ridgeline, creates a large dominant mass on the landscape.

Concept: Proposals will look to diversify and lighten the ridge where possible, using a mixture of well-designed clearfells and continuous cover systems.

Analysis: Much of the forest block is surrounded by neighbouring broadleaf and conifer woodlands, some of which are within the SSSI.

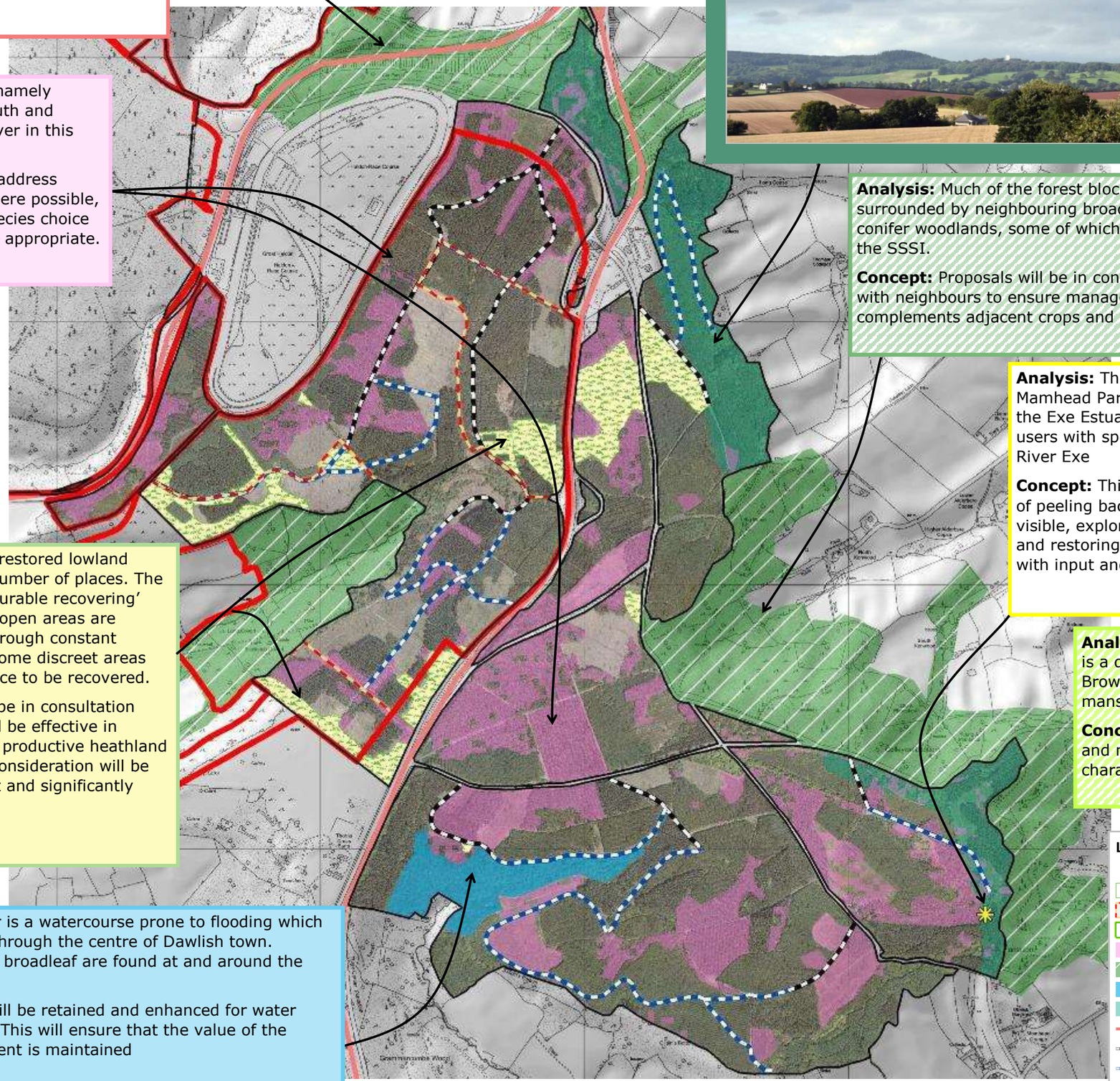
Concept: Proposals will be in consultation with neighbours to ensure management complements adjacent crops and habitats.

Analysis: The Mamhead Obelisk is a historic feature of Mamhead Park, having been installed to guide ships into the Exe Estuary. It is now a focal point for recreational users with spectacular views out towards the mouth of the River Exe

Concept: This feature will be protected, with the feasibility of peeling back crops from the Obelisk to make it more visible, explored. This will be for the purpose of enhancing and restoring its cultural value and will only be undertaken with input and agreement with other parties.

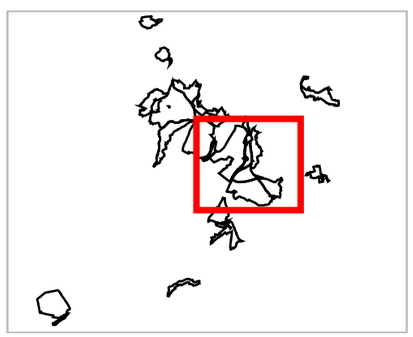
Analysis: Mamhead Park, Registered Park and Garden is a designated parkland partly attributed to Lancelot Brown, with landscape structures, around an early C19 mansion.

Concept: Obelisk Plantation is part of the designation and noted for its mixed woodland structure. This character will be retained.



Legend

- Mamhead Obelisk
- Priority Lowland Heathland
- 'Unfavourable - recovering' SSSI Units
- Mamhead Park RPG
- Pines
- Neighbouring Woodlands
- Old Riparian Broadleaf
- Visible Ridge Crops
- A Roads
- Class A/B Roads
- Class C Roads
- Dawlish Water



Analysis & Concept
Ideford & Waddon Brake

Analysis: The A380 to Torquay road passes adjacent to the forest.

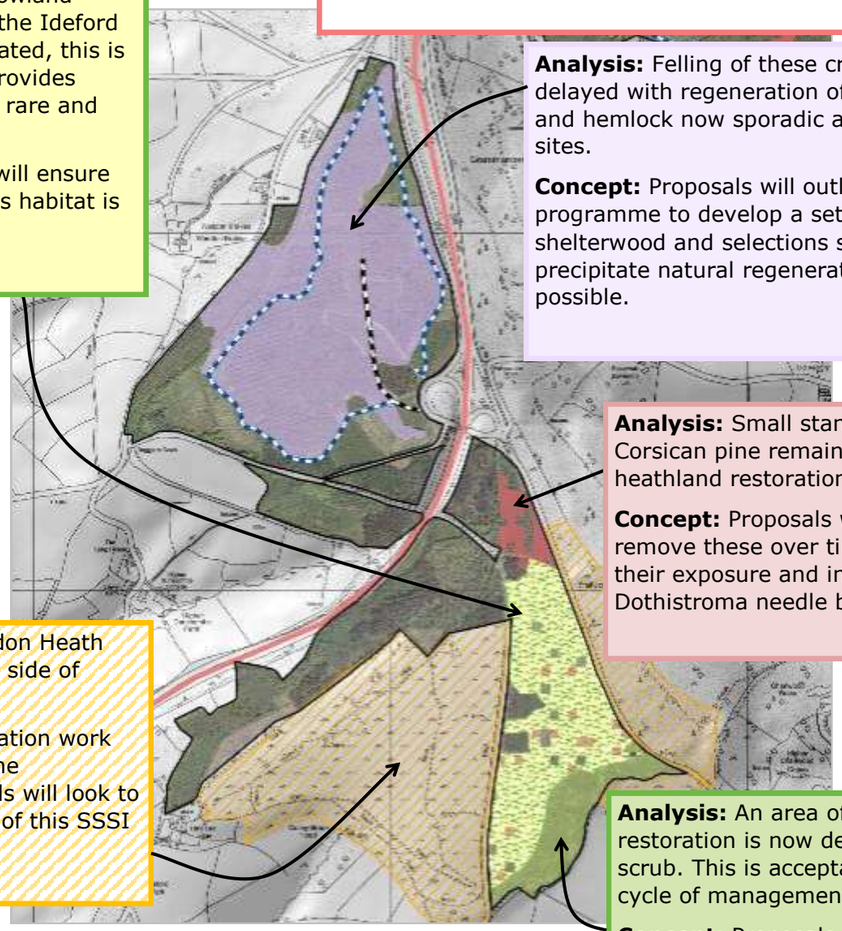
Concept: Proposals will ensure that the safety and amenity value of the woodlands are maintained and enhanced.

Analysis: Restored lowland heathland makes up the Ideford Common. Not designated, this is good condition and provides habitat for numerous rare and protected species.

Concept: Proposals will ensure that the quality of this habitat is maintained.

Analysis: Felling of these crops has been delayed with regeneration of spruce, fir and hemlock now sporadic across the sites.

Concept: Proposals will outline a programme to develop a set of shelterwood and selections systems to precipitate natural regeneration where possible.



Analysis: Small stands/singles of Corsican pine remain, following heathland restoration.

Concept: Proposals will look to remove these over time, given their exposure and infection of Dothistroma needle blight.

Analysis: Great Haldon Heath SSSI is located ether side of Ideford Common.

Concept: The restoration work has complemented the designation. Proposals will look to ensure the condition of this SSSI is maintained.

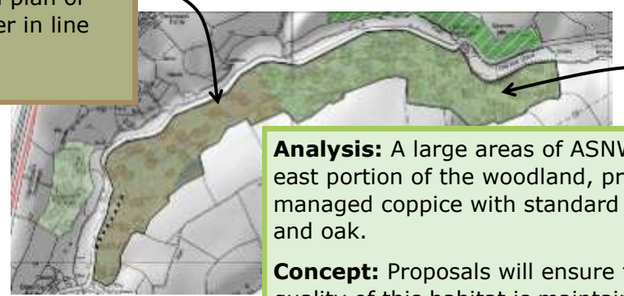
Analysis: An area of heathland restoration is now developing scrub. This is acceptable in the cycle of management.

Concept: Proposals will ensure this area remains as open habitat for the long term**.**

Analysis & Concept
Well Covert

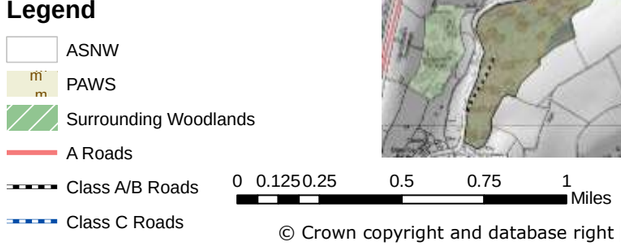
Analysis: A large areas of PAWS is on the west portion of the woodland, predominantly pole stage Douglas fir.

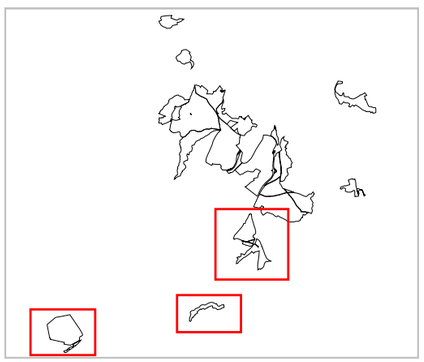
Concept: Proposals will outline a plan of restoration to native species cover in line with Keepers of Time policy.



Analysis: A large areas of ASNW is on the east portion of the woodland, predominantly managed coppice with standard beech, ash and oak.

Concept: Proposals will ensure that the quality of this habitat is maintained.





Analysis & Concept
Great Plantation

Analysis: Industrial estates residential areas are with close distance of the block, with Bovey Tracy town within 2km.

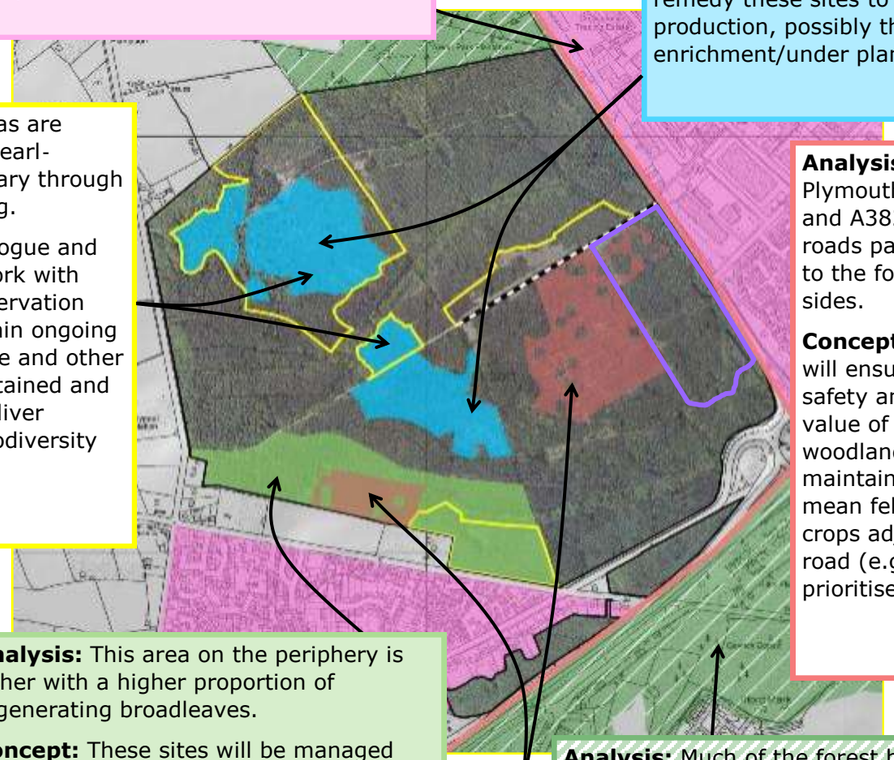
Concept: Proposals will be in consultation with neighbours to ensure management complements adjacent crops and habitats.

Analysis: Sites felled in 1998 and restocked through SP seed trees are not fully stocked and under producing.

Concept: Proposals will look to remedy these sites to full production, possibly through enrichment/under planting.

Analysis: Areas are managed for Pearl-bordered fritillary through periodic cutting.

Concept: Dialogue and partnership work with Butterfly Conservation Trust will remain ongoing to ensure these and other sites are maintained and continue to deliver exceptional biodiversity value.



Analysis: The A38—Plymouth to Exeter and A382 Bovey roads pass adjacent to the forest on two sides.

Concept: Proposals will ensure that the safety and amenity value of the woodlands are maintained. This may mean felling mature crops adjacent to the road (e.g.) are prioritised.

Analysis: This area on the periphery is richer with a higher proportion of regenerating broadleaves.

Concept: These sites will be managed sensitively and consideration will be given to increase the broadleaf components where appropriate.

Analysis: Much of the forest block is surrounded by neighbouring broadleaf and conifer woodlands.

Concept: Proposals will be in consultation with neighbours to ensure management complements adjacent crops and habitats.

Analysis: Whilst the vast majority of the Block is made up of pine, only a relatively small proportion is Corsican pine which is suffering from Dothistroma needle blight.

Concept: Given the extent and age of these crops, underplanting would not be appropriate here. Proposals will prioritise the addressing of these crops.

2015 - 2025

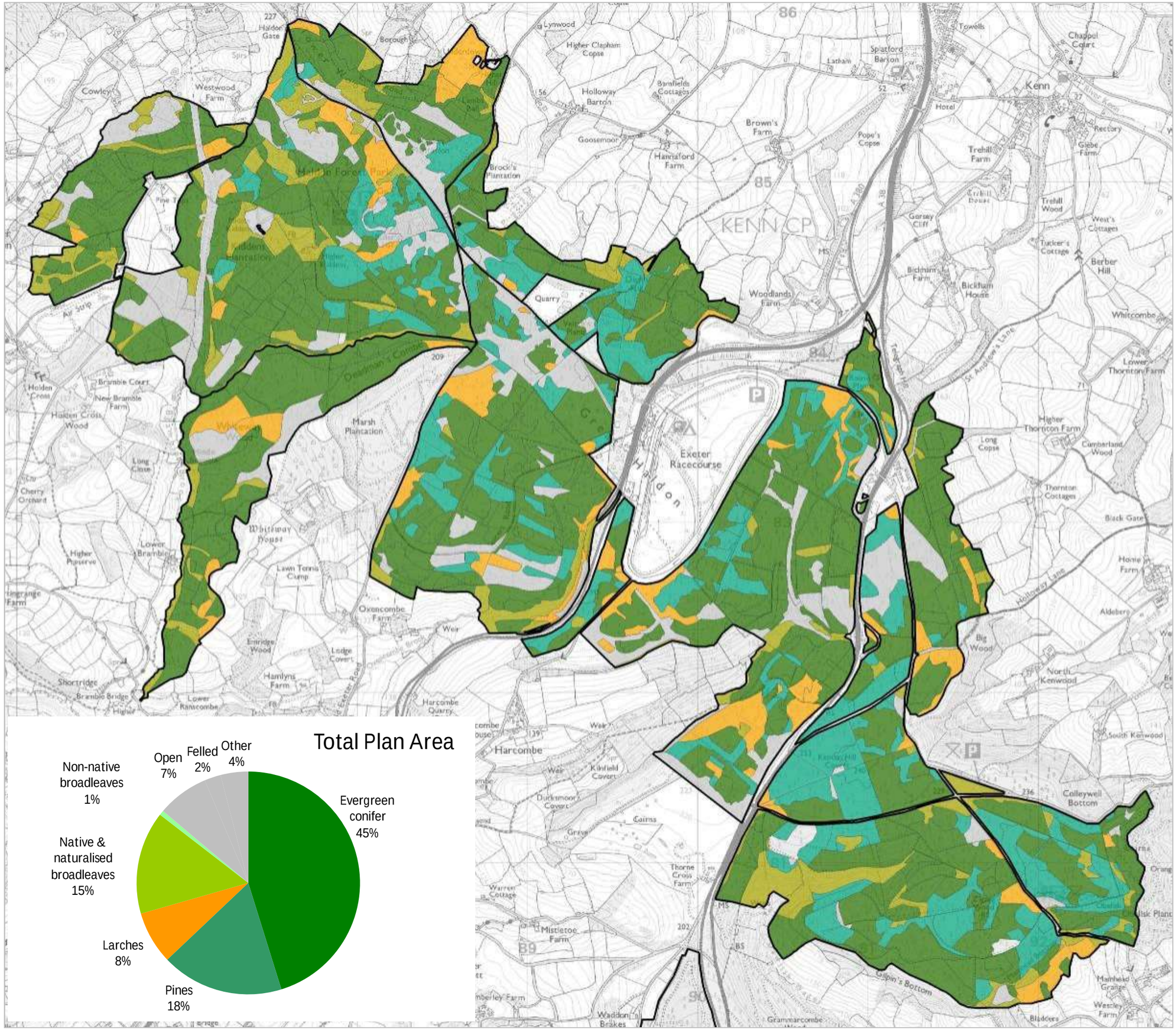
PART 4 – Composition and future management

Current Species

The current major conifer components are Douglas fir (389ha) and Sitka spruce (285ha). The Plan area has a considerable amount of pine species growing on site (Scots pine – 195ha and Corsican pine – 105ha).

Birch (54ha) and beech (40ha) make up a significant part of the broadleaf element.

245ha (14%) of the Plan area is made up of open habitat (including permanent open habitat, agricultural, unplanted, felled, mineral workings as well as buildings).



Legend

- Evergreen Conifer
- Pines
- Larches
- Native & naturalized broadleaves
- Non-native broadleaves
- Open/other

Note: Beech, sycamore and sweet chestnut are considered to be not within their native range but are considered to be 'naturalised'

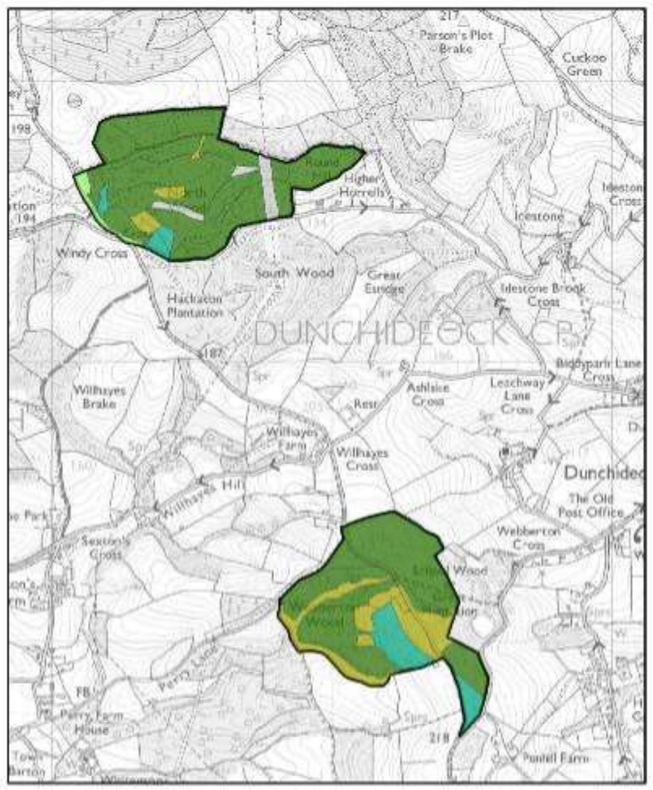
0 0.125 0.25 0.5 0.75 1 Miles

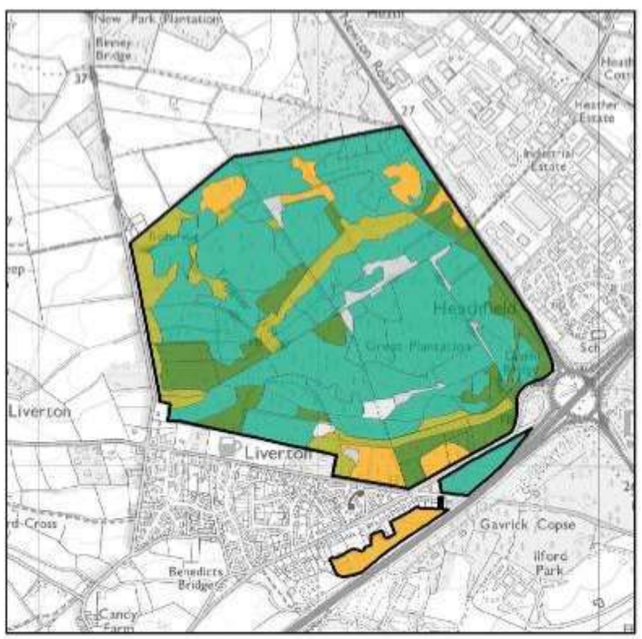
0 0.125 0.25 0.5 0.75 1 Miles

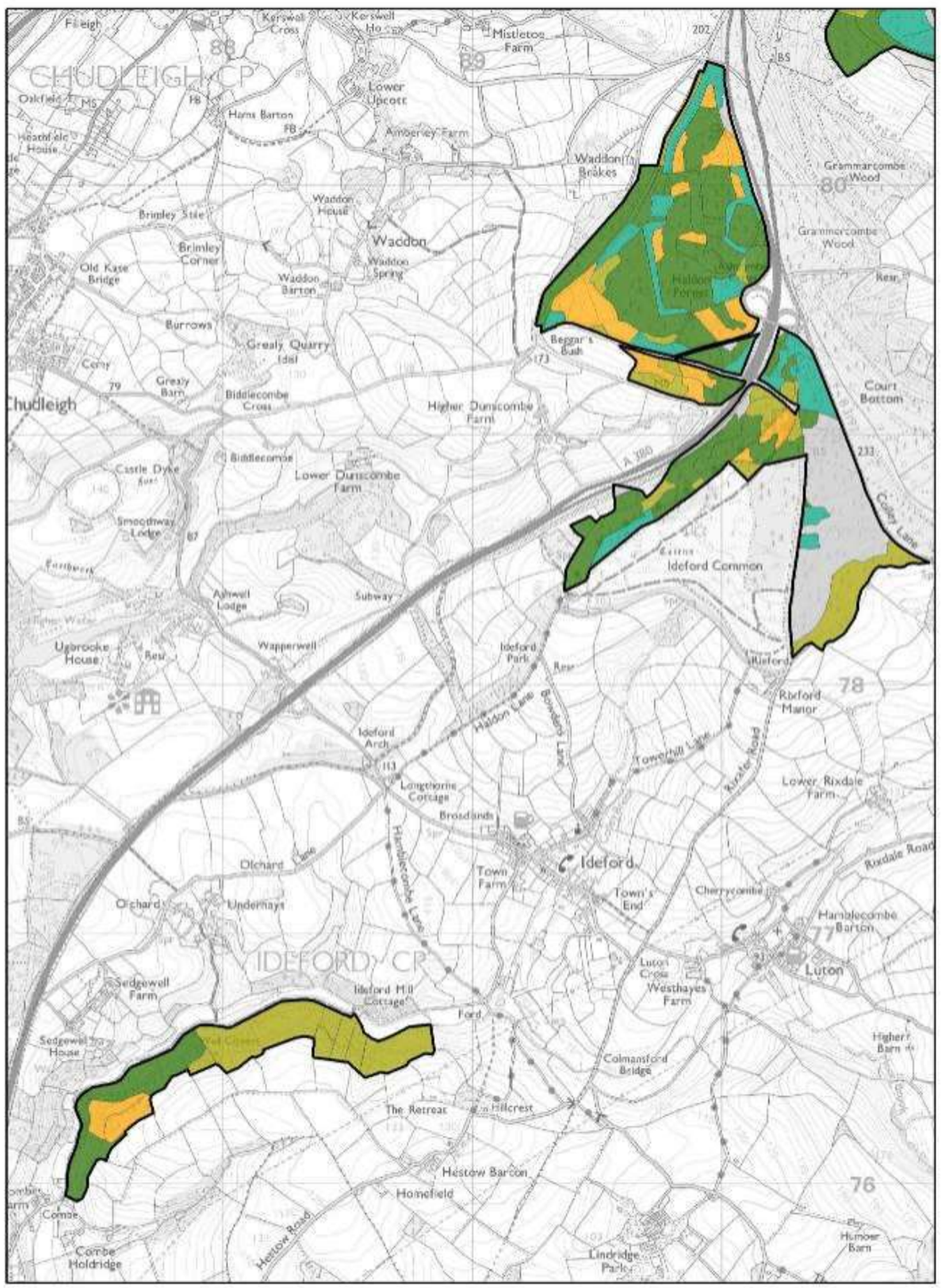
Legend

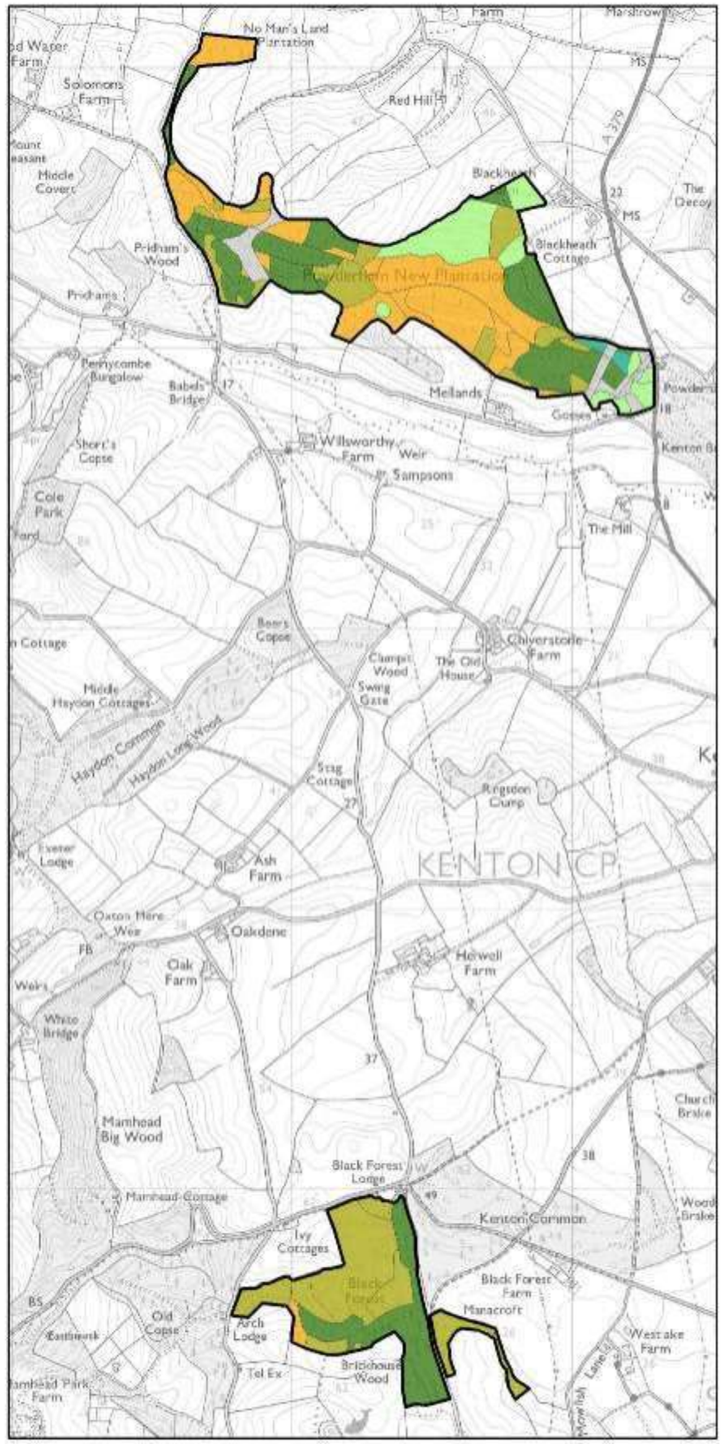
Evergreen Conifer | Pines | Larches | Native & naturalized broadleaves | Non-native broadleaves | Open/other

Note: Beech, sycamore and sweet chestnut are considered to be not within their native range but are considered to be 'naturalised'









2015 - 2025

Current Structure

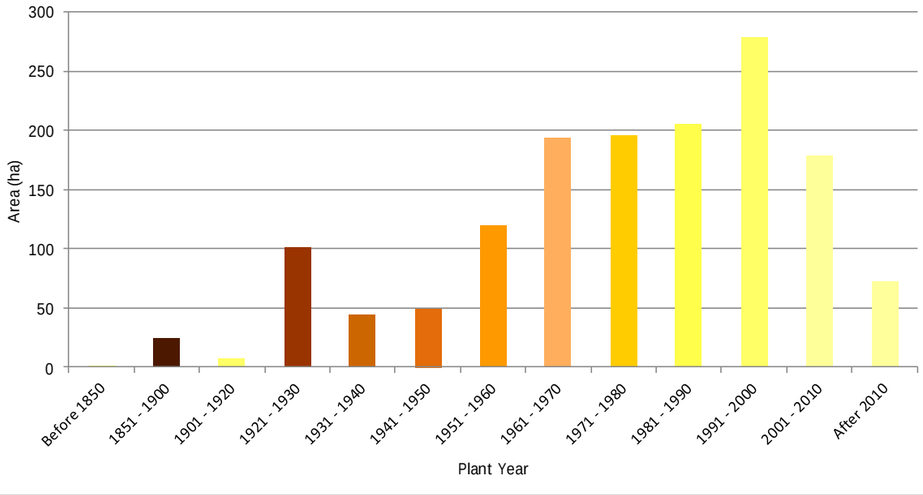
With the original planting commencing in the 1920s but with consistent planting occurring through the century, most crops are either coming to the end of their first rotation or beginning their second.

Legend

- pre 1851
- 1851 - 1900
- 1901 - 1920
- 1921 - 1930
- 1931 - 1940
- 1941 - 1950
- 1951 - 1960
- 1961 - 1970
- 1971 - 1980
- 1981 - 1990
- 1991 - 2000
- 2001 - 2010
- post 2010

0 0.125 0.25 0.5 0.75 1 Miles

Total Plan Area

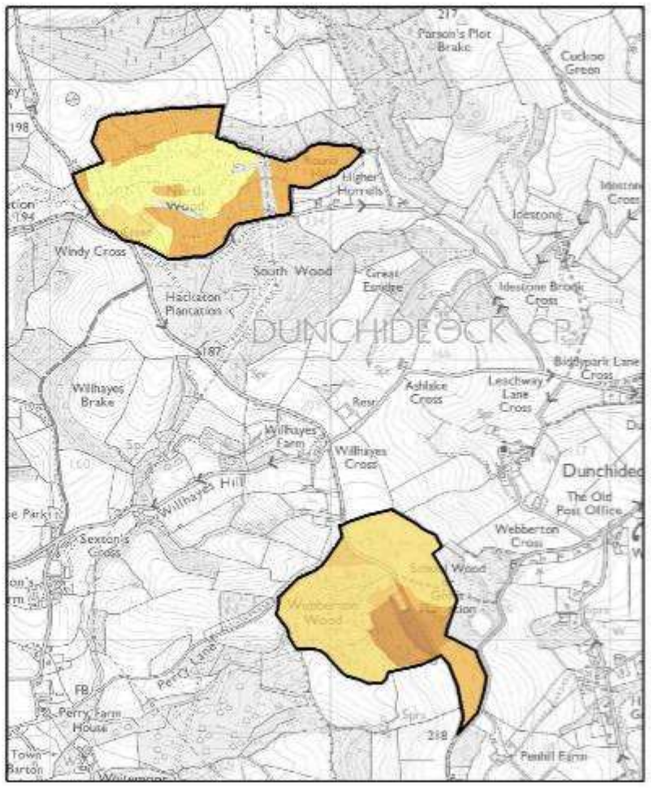


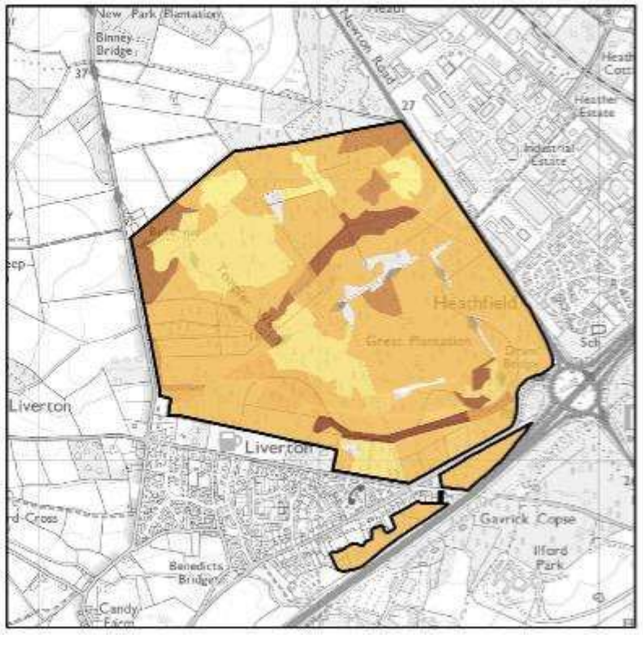
0 0.125 0.25 0.5 0.75 1 Miles

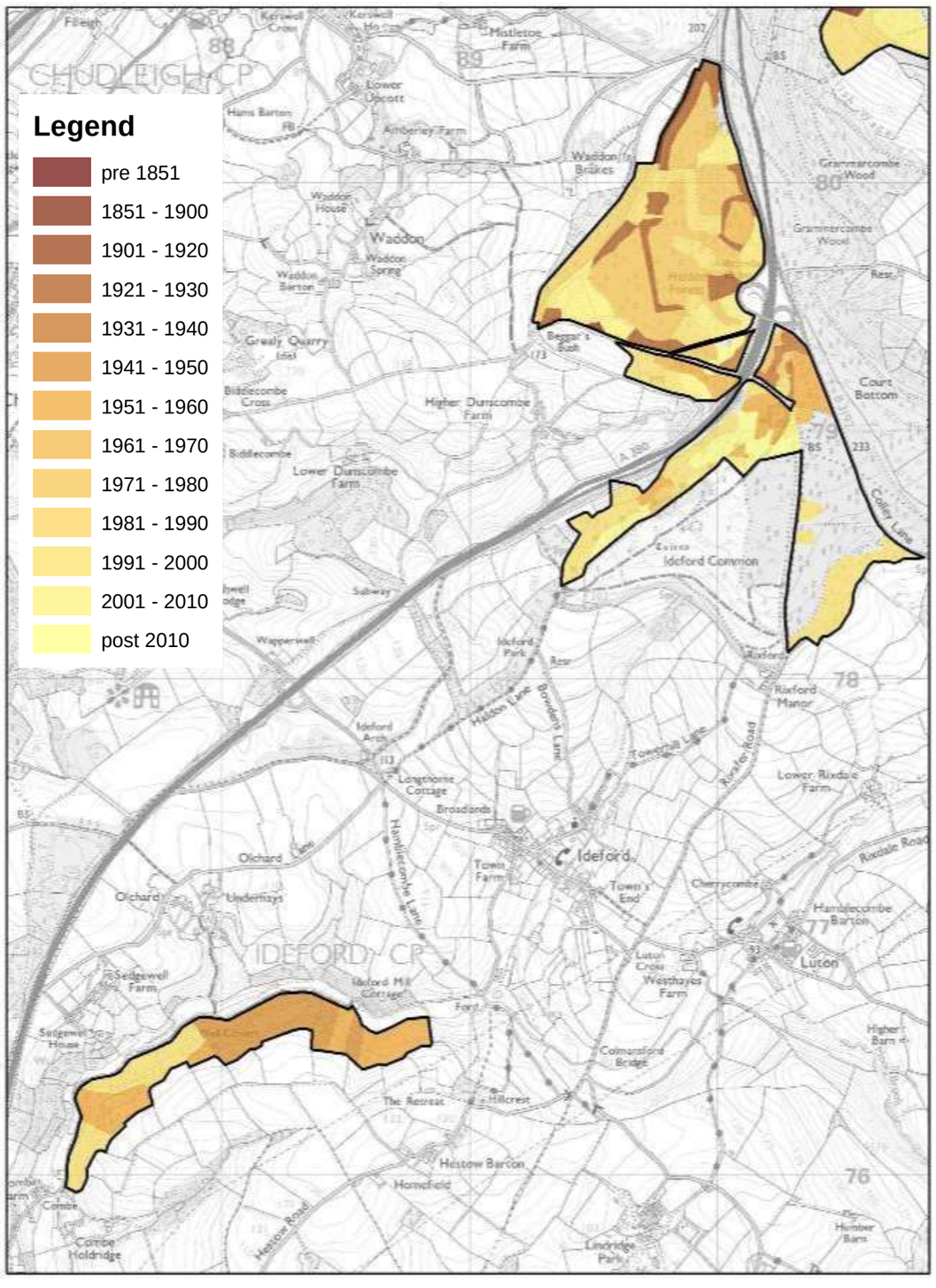
2015 - 2025

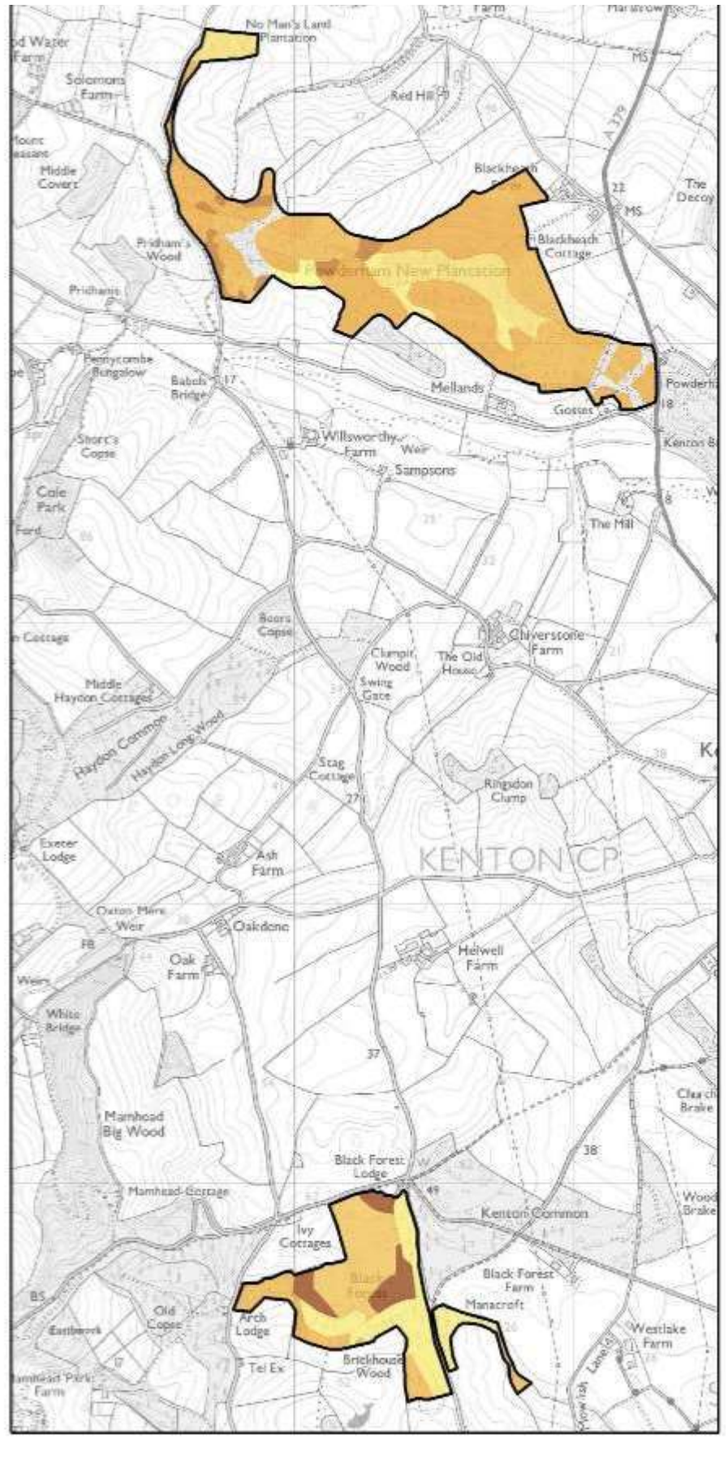
Legend

pre 1851 | 1851 - 1900 | 1901 - 1920 | 1921 - 1930 | 1931 - 1940 | 1941 - 1950 | 1951 - 1960 | 1961 - 1970 | 1971 - 1980 | 1981 - 1990 | 1991 - 2000 | 2001 - 2010 | post 2010









Haldon Forest SSSI

Biological Information

Haldon Forest SSSI is an extensive area of protected land totalling 1007 hectares straddling the ridge from Lawrence Tower in the west to Telegraph Hill in the east with the A380 forming the eastern most boundary of the SSSI.

The Forestry Commission manages 916 ha of the SSSI which is designated for its mosaic of lowland dry heathland and mixed coniferous and broadleaf forest and associated assemblages of birds and butterflies that depend on networks of well-connected and favourably managed habitat.

Before the Haldon ridge was coniferised in the 1920's, the free-draining, relatively acidic soils supported large areas of lowland heath. Upon coniferisation, much of the open heathland was lost and when the Haldon Forest SSSI was designated in 1992, only a few small remnants of lowland heathland remained in isolated pockets along the Haldon ridge.

However, by the time of designation, the conifer forests supported an interesting breeding assemblage of raptors including honey buzzard and goshawk and 80 pairs of nightjar were breeding not only within the open lowland heathland but also within the early rotation forestry plantations.

Open grassland habitat and rides provided habitat for butterfly species such as the high-brown fritillary (*Fabriciana adippe*), marsh fritillary (*Euphydryas aurinia*) and wood white (*Leptidea sinapis*).

24 years later, 77 hectares of previously afforested land is now managed as permanent open habitat, much of which is grazed through Higher Level Stewardship. Heathland has been created not only along the Haldon ridge but in pockets throughout the wider coniferous and mixed woodland providing a structurally and spatially diverse habitat mosaic throughout the Haldon Forest SSSI and favourable habitat for breeding raptors and nightjar.

Pearl-bordered fritillary (*Boloria euphrosyne*) and small pearl-bordered fritillary (*Boloria selene)* butterflies still thrive along the Kidden's powerline where regular and specific habitat management takes place.

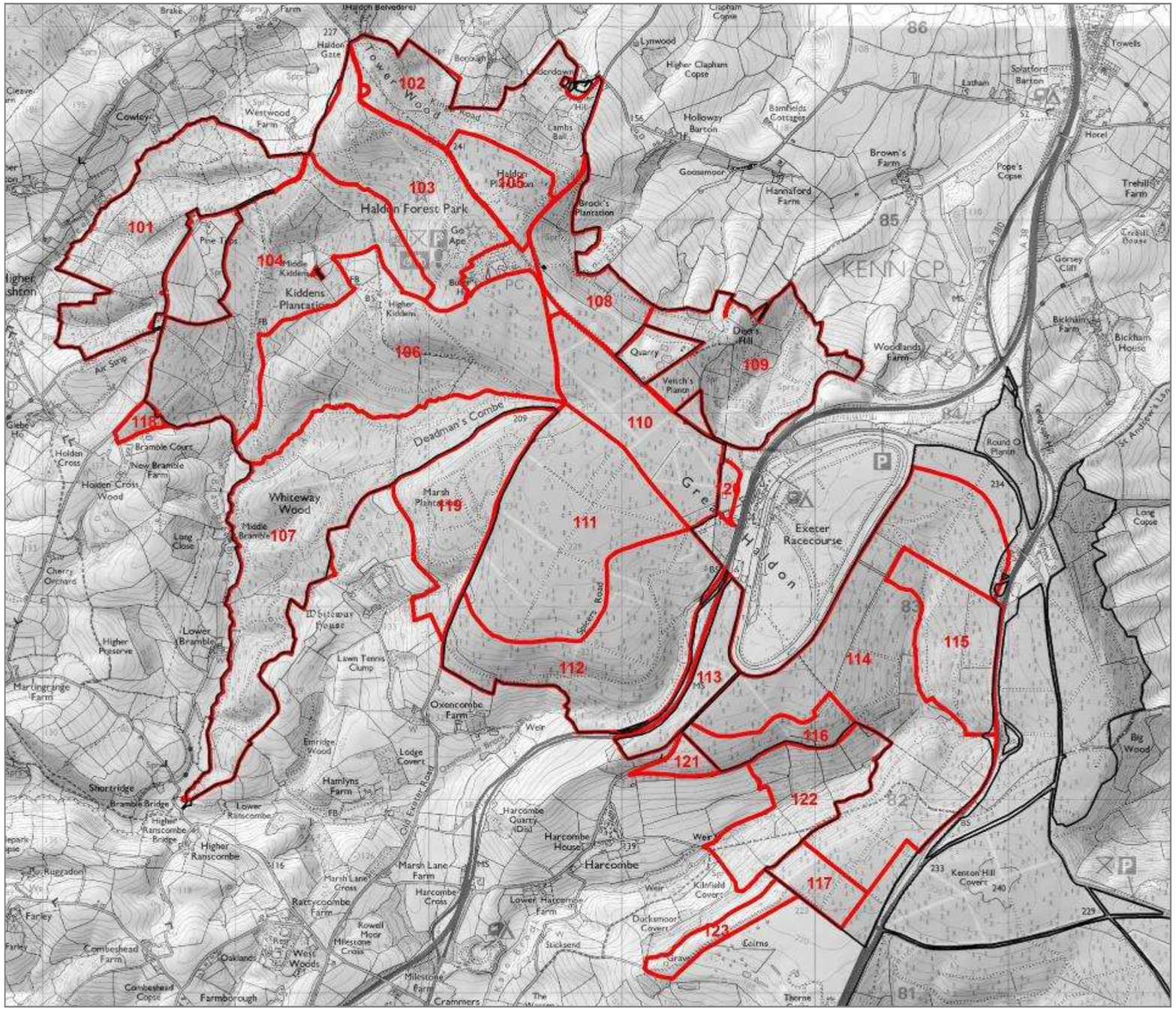
However in general, long-term monitoring has demonstrated a decline in species diversity, abundance and distribution of butterfly species throughout the Haldon Forest SSSI since it was designated in 1992 with the last wood white recorded in 2004. A decline which is in line with national trends.

A key aim of this management plan is to ensure that butterfly species present in isolated pockets of suitable habitat can once again thrive throughout the wider woodland network of rides and suitable open habitat.

Interesting pockets of habitat including old quarries, ponds and riparian habitats provide important habitat for a range of species including grizzled and dingy skippers (*Pyrgus malvae* and *Erynnis tages*), amphibians and reptiles.

Legend

Haldon Forest SSSI Units



SSSI - Conservation Objectives and Management Aims

Conservation Objective

Maintain the designated favourable units in their current condition and carry out any necessary management practices as required by Natural England to move the unfavourable SSSI units into favourable condition.

Management Aims

1. Maintain the extent of lowland heathland/grassland (77ha) with an understanding that fluctuations in levels of scrub up to 20% cover are acceptable.

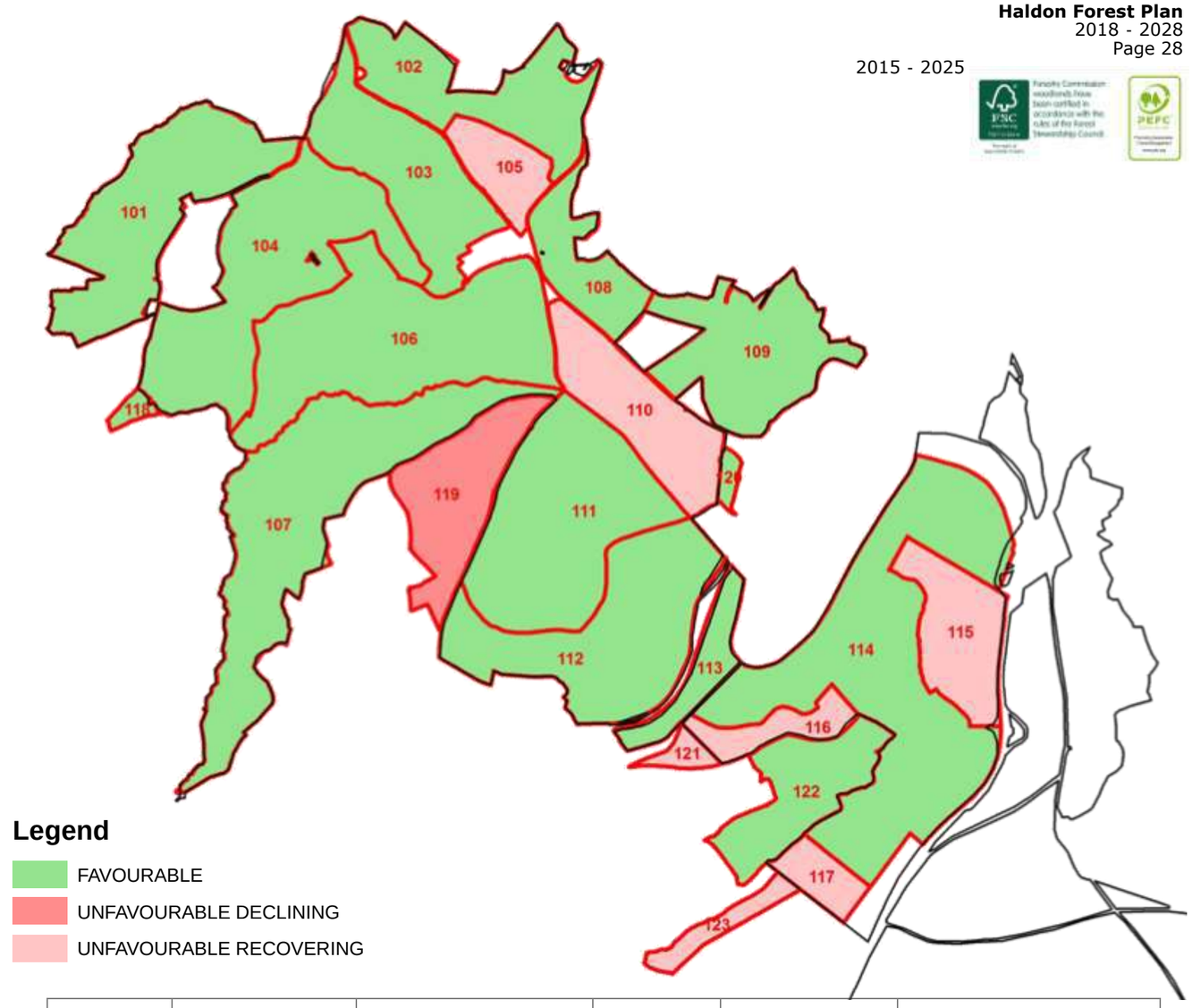
2. Enhance the condition of the lowland heathland by putting the appropriate management in place to provide:
   - diverse and patchy mosaic of dwarf shrubs and areas of bare ground,
   - native scrub (maintained within acceptable limits as agreed by Natural England)
   - minimal cover %, preferably absence, of non-native scrub cover including regenerating conifers, rhododendron and laurel
   - low % cover of bracken (within acceptable limits as agreed by Natural England)
   - features of interest such as ponds, edge habitat and perching posts

3. Maintain the extent of mixed coniferous and broadleaved woodland ensuring a continuous supply of clearfell, early rotational and long-term retention conifer habitat is available for notified species[1].
4. Maintain and enhance the condition of mixed coniferous and broadleaved woodland for the notified species[1] regardless of their presence by providing:
   - significant areas of mature well-spaced crops maintained through regular thinning
   - structurally and spatially diverse forest with an abundance of well-connected and distributed clearfells /open habitat.
   - characterful trees with nesting potential including forks and holes

5. Maintain and increase the abundance and presence of the current notified species[1] within the SSSI as well as the designated raptor assemblage[2].
6. Monitor the abundance and presence of notified species[1]

[1] The designated species are raptor assemblage, goshawk, honey buzzard (no longer present), nightjar, pearl-bordered fritillary, small pearl-bordered fritillary and wood white (no longer present).

[2] Raptor assemblage comprises goshawk, hobby, kestrel, sparrowhawk and buzzard



Unit	Managed by FC	Condition	Unit	Managed by FC	Condition
101	✓	Favourable	113	✓	Favourable
102	✓	Favourable	114	✓	Favourable
103	✓	Favourable	115	✓	Unfavourable Recovering
104	✓	Favourable	116	✓	Unfavourable Recovering
105	✓	Unfavourable Recovering	117	✓	Unfavourable Recovering
106	✓	Favourable	118	✓	Favourable
107	✓	Favourable	119	×	Unfavourable Declining
108	✓	Favourable	120	×	Favourable
109	✓	Favourable	121	×	Unfavourable Recovering
110	✓	Favourable	122	×	Favourable
111	✓	Favourable	123	×	Unfavourable Recovering
112	✓	Favourable			

SSSI — Analysis and Concept

Unit 105 Total Area = 17ha

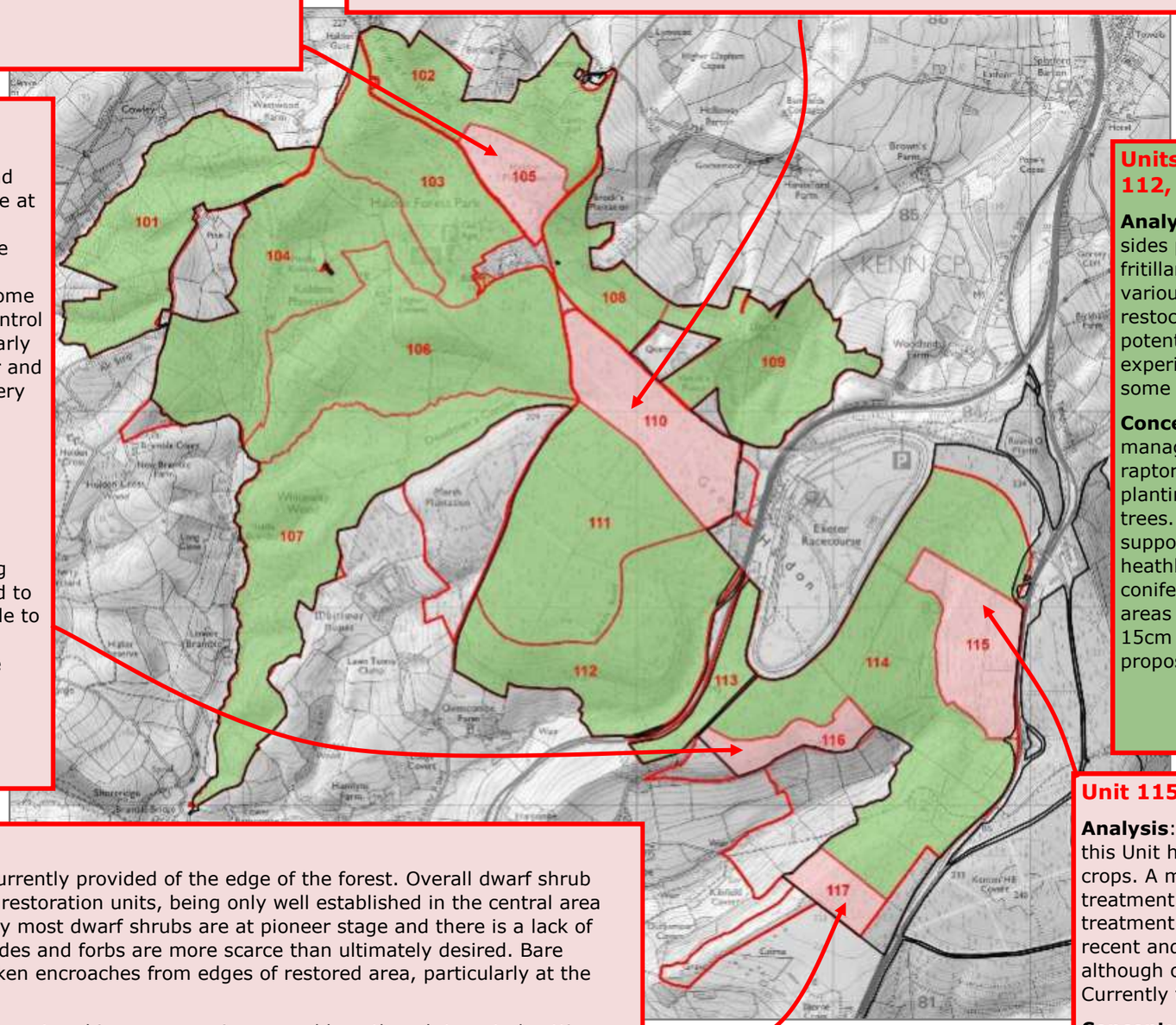
Analysis: 12ha of open habitat already provided with an additional 2ha being implemented imminently. This Unit is grazed and has a good assemblage of heathland species. Currently most dwarf shrubs are at pioneer stage and there is a lack of building/mature growth, and graminoides and forbs are more scarce than ultimately desired. Soils are noticeably thin with timber yield and wind stability an issue.

Concept: Look to consolidate management and improve species assemblage though targeted cutting. scraping and grazing. Mature stable pine and fir crops will be retained for perpetuity to create heathland ecotones and potential raptor habitat. No further heathland restoration is planned

Unit 110 Total Area = 39ha

Analysis: 16ha of heathland created since 2004. This is grazed and has a good assemblage of heathland species. Currently most dwarf shrubs are at pioneer stage and there is a lack of building/mature growth, and there are fewer graminoides and forbs than ultimately desired. Further Bracken control is required as is dominant in one area. Soft rush is also very common in several areas and is close to unacceptable levels. Soils are noticeably thin with timber yield and wind stability an issue, underthinned and seeding conifer crops are in need of treatment.

Concept: Windprone and seeding spruce and western hemlock, totalling 4.1ha will be restored to lowland heathland over the next decade. Proposals are for mature stable pine and fir crops totalling an additional 16.8ha will be retained to create heathland ecotones and potential raptor habitat before being felled and restored lowland heathland. Scraping, grazing and cutting will remain the main tool for managing the rest of the heathland, controlled burning may also be considered.



Units 101, 102, 103, 104, 106, 107, 108, 109, 110, 111, 112, 113, 114 Total Area = 804ha

Analysis: A mixture of woodland, open habitat and road and ride sides providing habitat for raptors, nightjar and a number of fritillaries. The woodland is predominantly high conifer forest in various stages of growth most of which is managed on a clearfell/ restock rotation. Some areas have thin soils will low productivity potential or wind throw concern, with some considerable wind throw experienced recently. Remnant heathland assemblages are found is some of these areas despite being under high forest.

Concept: The majority of the areas within these Units will be managed to perpetuate further conifer forest, suitable to support raptors, nightjar and lepidotera. This will be achieved through planting, thinning and in some places extended retention of mature trees. Clearfelling will remain a key component of management to support the nightjar population. Where soils are particularly thin or heathland assemblages evident, plans may be to remove some of the conifer at rotation end to improve condition and not restocked. These areas will be allowed to regenerate with mixed broadleaves upto 15cm dbh before removing again to create heathland. These areas proposed total 38ha

Unit 116 Total Area = 13ha

Analysis: 7ha of priority lowland heathland already in place. Created and scraped in the early 200s and therefore at early stage but making good progress although small seedlings of undesirable species are very common (mainly Rhododendron but also bracken and some emergent pine and birch trees) and control of these will be required. Due to the early stage of restoration bare ground cover and pioneer growth dwarf shrub cover is very high. Currently there are fewer graminoides and forbs than ultimately desired.

Concept: Look to consolidate management and improve species assemblage though targeted cutting. scraping and possibly burning. Seeding western hemlock (1ha) will be restored to lowland heathland over the next decade to with an additional 1.2ha of lowland heathland restoration proposed for the future.

Unit 115 Total Area = 32ha

Analysis: 8ha of open habitat currently provided and the remainder of this Unit has a high proportion of mid rotation (i.e. 20-30 year old) crops. A mix of dwarf shrub growth stages present and control and treatment of rhododendron largely successful although some follow up treatment will be needed. At the southern end of unit scraping is more recent and is currently mainly bare with dwarf shrubs germinating although otherwise this section of the unit is bracken dominated. Currently there are fewer graminoides and forbs than ultimately desired.

Concept: Look to consolidate management and improve species assemblage though targeted cutting, scraping and possibly burning. Stable firs, spruces and pine will be thinned to be retained for perpetuity to create heathland ecotones and potential raptor habitat. No further heathland restoration is planned.

Unit 117 Total Area = 10ha

Analysis: 7ha of lowland heathland currently provided of the edge of the forest. Overall dwarf shrub establishment not as good as in other restoration units, being only well established in the central area resulting in low cover overall. Currently most dwarf shrubs are at pioneer stage and there is a lack of building/mature growth, and graminoides and forbs are more scarce than ultimately desired. Bare ground cover currently still high. Bracken encroaches from edges of restored area, particularly at the western edge.

Concept: Look to consolidate management and improve species assemblage though targeted cutting, scraping and possibly burning. Mature stable pine crops will be retained for perpetuity to create heathland ecotones and potential raptor habitat. Seeding western hemlock and mature Japanese larch (2.4ha), will be restored to lowland heathland over the next decade to improve condition and aid with management. An additional 6.2ha of lowland heathland restoration is proposed for the future.

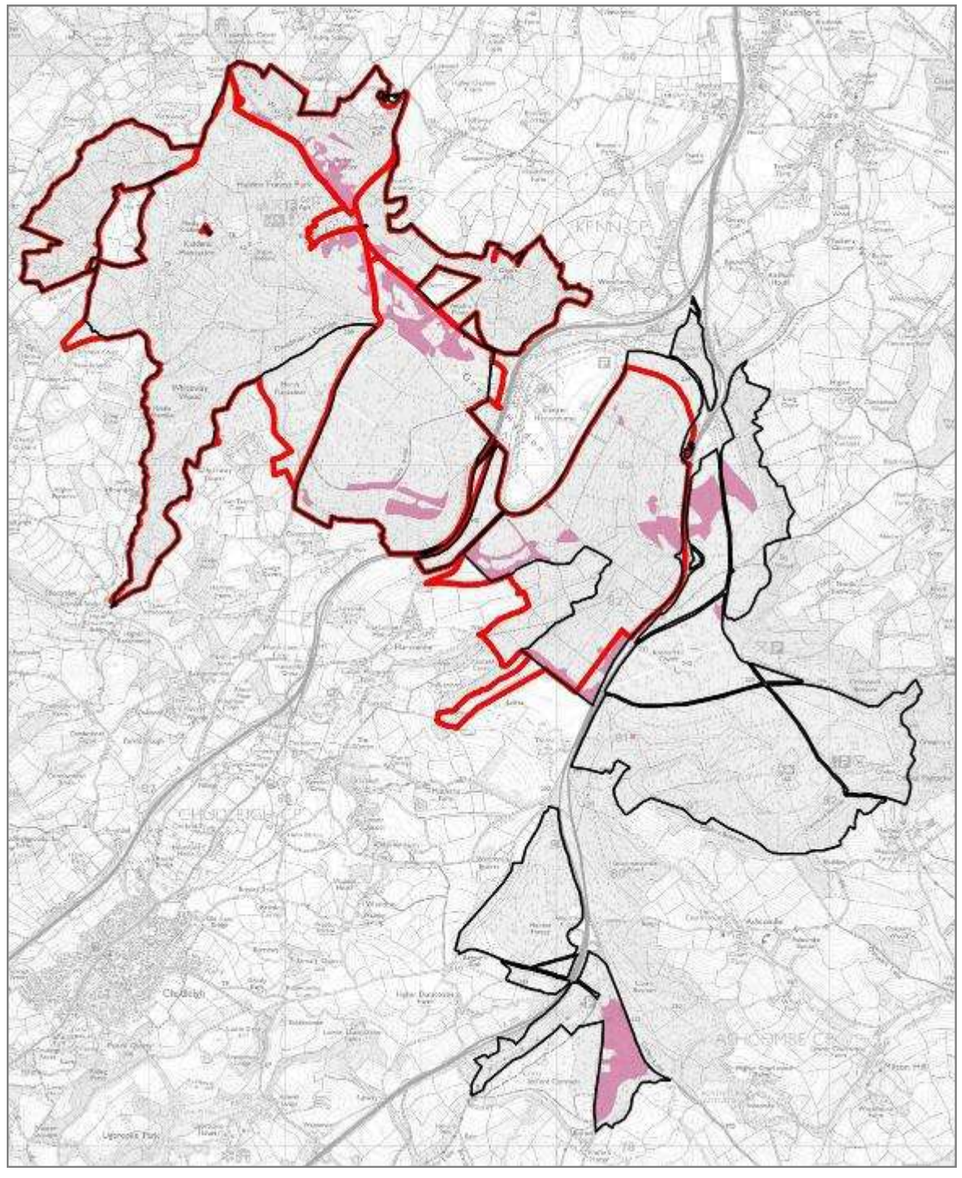
SSSI - Lowland Heathland

Haldon Forests SSSI is designated for it's dwarf shrub heath. Within Haldon Forest two variations of dry heath occur. National vegetation Classification (NVC) H8 *Calluna vulgaris-Ulex gallii* heath typically occurs at low to moderate altitudes in warm oceanic parts of southern Britain. This heathland type is characterised by abundant ling (*Calluna vulgaris*), western gorse (*Ulex galliii*) and bell heather (*Erica cinerea).*

NVC H4 *Ulex gallii – Agrostis curtisii* heath occurs on slightly damp soils in the mild, oceanic climate of south-west England and south Wales. It is characterised by the frequency of bristle bent (*Agrostis curtisii)* and western gorse (*Ulex gallii)*, alongside ling (*Calluna vulgaris)*, bell heather (*Erica cinerea*) and cross-leaved heath (*Erica tetralix*). Rarer than H8, H4 exists in isolated pockets along the Haldon ridge.

In addition to these heathland communities, European gorse (*Ulex europaeus*), broom (*Cytisus scoparius*), bilberry (*Vaccinium myrtillus*) purple moor grass (*Molinia caerulea*) and tormentil (*Potentilla erecta*) can be found in mosaic with the dwarf shrubs.

Species such as bracken (*Pteridium aquilinum*), rhododendron (*Rhododendron ponticum*) and naturally regenerating conifer species can readily become invasive on heathlands quickly out-competing dwarf shrub communities and reducing the availability of valuable bare ground habitat for a range of species including nightjar, woodlark and invertebrates. In addition birch spp. (*Betula pubescens* and *Betula pendula*) readily seed into heathlands. A valuable component of lowland heaths, providing shelter, diversity and nesting habitat, birch can quickly form dense stands if left unmanaged.



Legend

Haldon Forest SSSI

Lowland heathland

0 0.125 0.25 0.5 0.75 1 Miles

Current Condition and Management (Area — 77ha)

The Forestry Commission currently manages 77ha of lowland heathland as permanent open habitat within the SSSI alongside significant areas of transitional open habitat resulting from the clearfelling of forestry plantations. During this plan period efforts will be focused on working with Natural England, local graziers and contractors to achieve favourable condition status across the current lowland heathland resource.

Hardy cattle currently graze 59 hectares of heathland through a Higher Level Stewardship scheme and as such are responsible for controlling bracken and diversity the dwarf shrub age structure. Although useful for managing young and palatable scrub species and purple-moor grass, conservation grazing cannot be relied upon for achieving favourable conservation status across the lowland heathland units. The Forestry Commission are reliant on mechanical vegetation management (cutting, spraying and burning) to keep species such as rhododendron, bracken and conifer at levels acceptable with Natural England across both the grazed and ungrazed units.

2015 - 2025

SSSI — Coniferous and Broadleaf Forest

Haldon Forests SSSI although not designated for its coniferous and broadleaf habitat is designated for the range of species (raptors and nightjar) that depend on it. Coniferous and mixed woodland makes up the largest component of the SSSI (869ha) and supports an important assemblage of breeding raptors and nightjar.

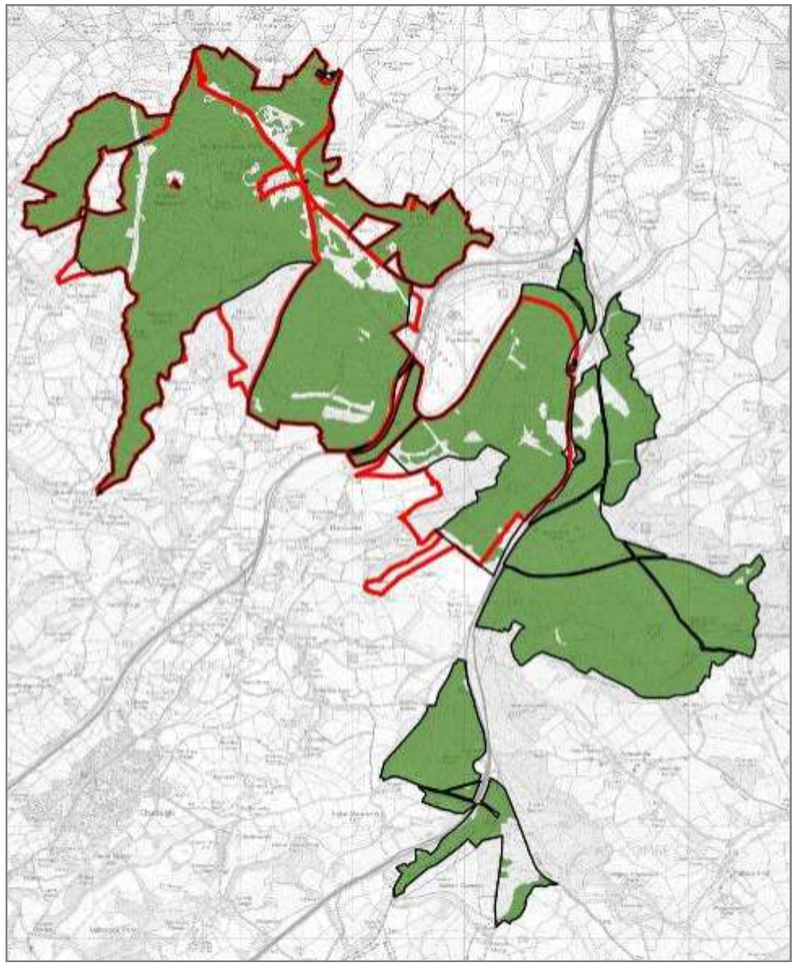
The importance of the mixed coniferous and broadleaf forest cover in terms of the SSSI designation is its provision of habitat for a unique raptor assemblage. Goshawk (*Accipiter gentialis*), sparrowhawk (*Accipiter nisus*), hobby (*Falco subbuteo*), buzzard (*Buteo buteo*) and kestrel (*Falco tinnunculus*) all nest within or in close proximity to the SSSI primarily within the conifer stands. Therefore productive forests will continue as the core habitat within appropriate sites in the SSSI as defined on Page 11 and outlined below.

Planted in the 1920s and silviculturally managed through a programme of planting, clearfell, restock and more recently continuous cover forestry, Haldon Forest SSSI has a varied age and structural diversity ranging from 100 year old conifers to early rotational plantation and significant areas of clearfell some of which has been bought about through recent large-scale windblow and *Phytophthora ramorum* infection of larch.

Large-scale forestry creates structurally and spatially diverse semi-natural habitat that creates such favourable conditions for the breeding and foraging of a range of species for which the SSSI is notified. Such extensive areas of semi-natural habitat are rare in the wider South Devon landscape.

Priority butterfly species although reduced in diversity and abundance from when the SSSI was first designated in 1992 still provide a stronghold for the small-pearl bordered (*Boloria selene*) and pearl-bordered fritillary (*Boloria euphrosyne*) which thrive along the Kidden's powerline. A key objective is to utilise forest management to create suitable habitats for lepidoptera primarily through, broadleaf coppicing and leaving ridesides unstocked.

Identification of current and future suitable habitat has been completed with the retention of 71ha areas of well thinned mature Douglas fir and Scots pine and the delayed felling of other coupes to make up the shortfall identified. This will create more habitat in the future as shown in the chart.



Legend

- Haldon Forest SSSI
- Coniferous & Broadleaf Forest

0 0.125 0.25 0.5 0.75 1 Miles

SSSI — Raptor Assemblage

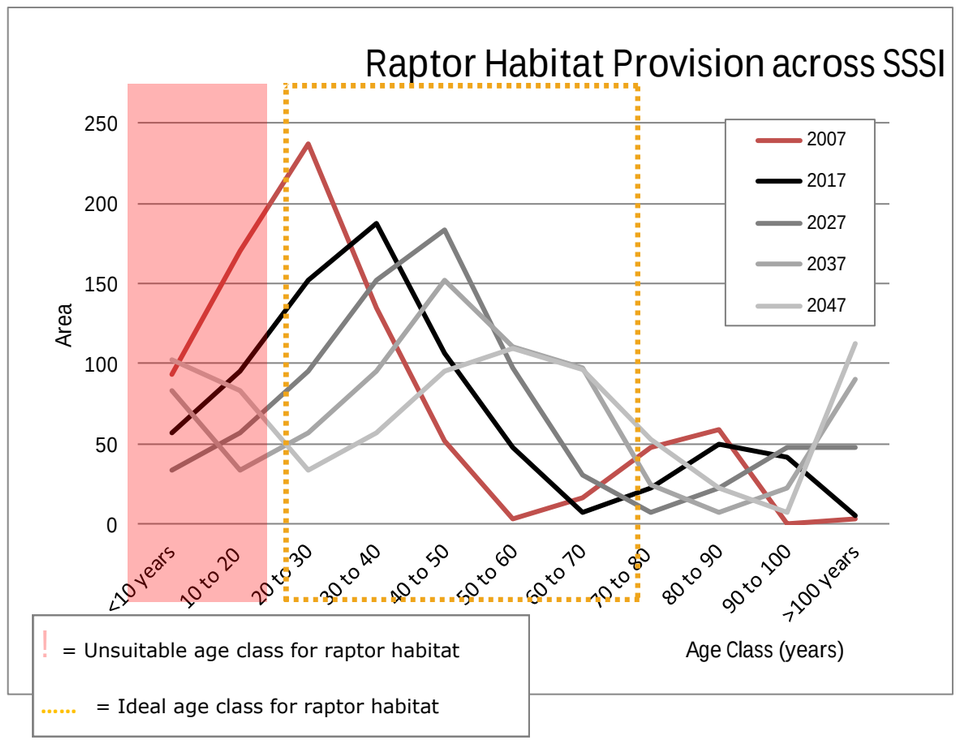
Haldon Forests SSSI is designated for it's exceptional assemblage of breeding raptor species: goshawk (*Accipiter gentialis*), sparrowhawk (*Accipiter nisus*), hobby (*Falco subbuteo*), buzzard (*Buteo buteo*) and kestrel (*Falco tinnunculus*). Forestry management will take the requirements of these species into account through the retention of extensive stands of tall, well thinned conifer and broadleaf and the provision of trees with features such as forks and holes for nesting.

Clearfells are carefully planned throughout the duration of the plan to provide a continuous network of transitional open habitat which together with the lowland heathland and network of associated rides and glades provides abundant open and edge habitat for a range of prey items including bank and field voles, rabbits and woodland birds.

To minimise disturbance to raptors through forestry operations, there will be a trial presumption against harvesting in the bird breeding season (February to mid August) within the SSSI and any other woodland management operations will be carefully planned to ensure disturbance will be minimised as far as possible. Also the SSSI has been divided into six operational blocks worked these on rotation to reduce overall disturbance

All new official walking and cycling trails will be planned in liaison with wildlife rangers to ensure important raptor areas are avoided. Recreational events will be assessed on a case by case basis to ensure they do not cause disturbance to breeding raptors by maintaining disturbance zones around known nest sites.

Raptors will be regularly monitored by Forestry Commission wildlife rangers as part of the Operational Site Assessments process which take place before any operations commence. Research and practice shows that the majority of raptors and nightjar prefer inhabiting quiet, undisturbed areas.



SSSI - Nightjar

The European nightjar (Caprimulgus europaeus) is a nationally rare bird that from the 1950s until the 1980s showed a steep decline in breeding range and population throughout the UK. This was due to the loss, fragmentation and degradation of suitable nesting habitat combined with a decline in invertebrate prey. However, by the early 1990's the species was showing a partial recovery in response to more suitable areas within forestry plantations and a step change in re-creation and restoration of lowland heathland. According to Birds of Conservation Concern 4 the nightjar has moved from the red list to amber listed status despite a 45% breeding range decline over 25 years.

Across Haldon Forest SSSI nightjars are breeding in a variety of suitable habitat including permanent lowland heathland with scattered birch and pine, woodland edges and clearings, newly clearfelled conifer plantations and glades and openings in young conifer crops (<10 years old).

The availability of dry bare ground with some plant debris for nesting and perches including trees and shrubs for territorial activity is important. In addition plentiful semi-natural habitats to forage for a range of invertebrate prey is crucial.

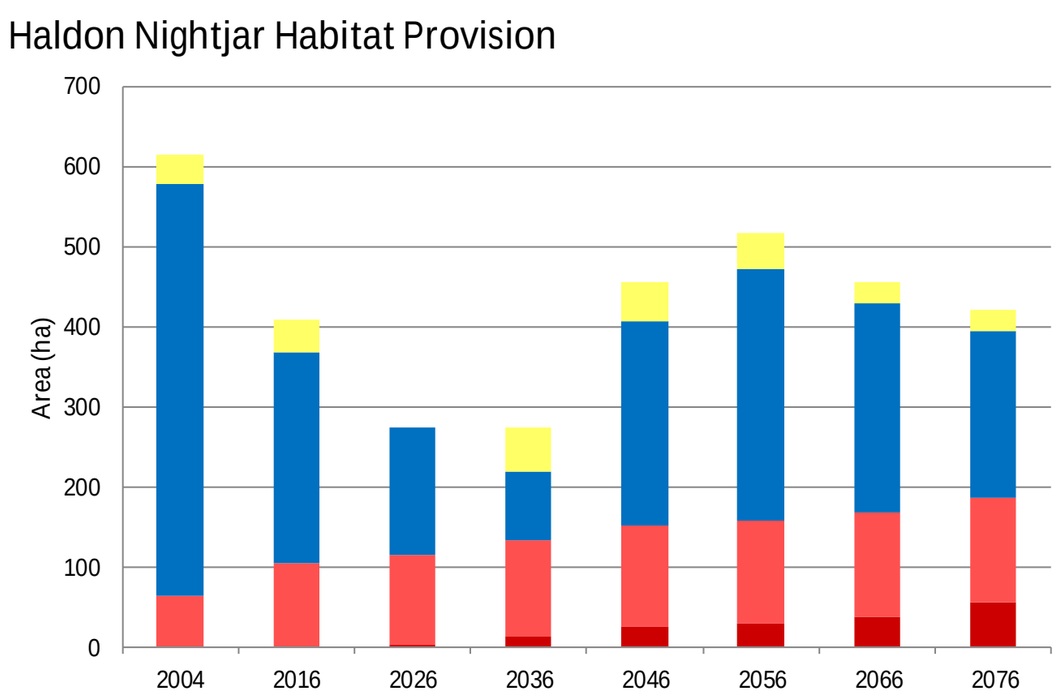
From surveys conducted in 2016, the Haldon Forest Plan area supports at least 69 territories making the area of national importance. This survey shows an increase in numbers since 2004 and the Haldon Forest SSSI exceeds the Special Protection Area (SPA) qualifying threshold of >1% of the UK breeding population. The recent surveys confirmed that the bird nests in freshly cleared areas, most notably clearfell sites as well as permanently open areas, recently restocked areas (planted in the last 21 years) and on the edge of high mature forest.

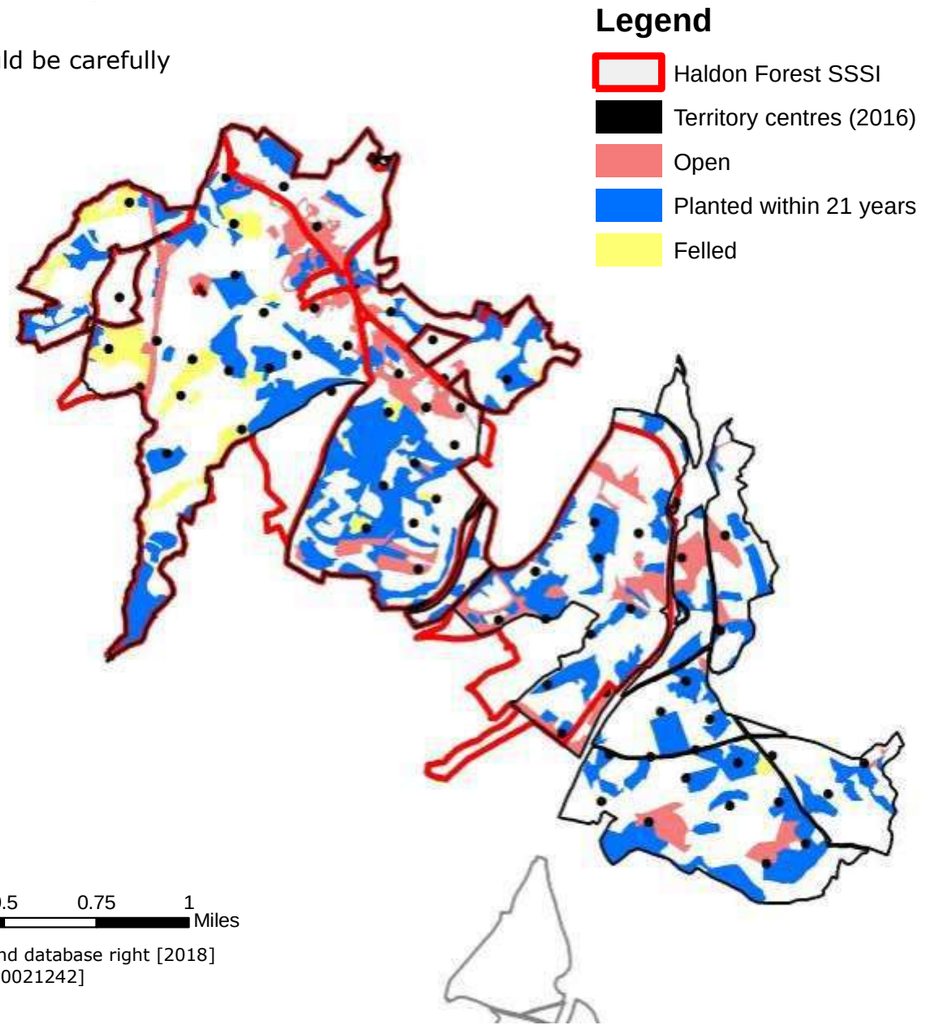
The proposals in this Plan to continue to manage permanent areas of lowland heathland through grazing and vegetation management and the provision of carefully planned transient open habitat through clearfelling and restock (68ha in Plan period — 41ha within the SSSI) will continue to support this important species into the future (see chart).

Overtime there will be fluctuations in habitat provision, a result of the nature of rotational clearfell/restock forestry and therefore nightjar numbers may also fluctuate. This is most evident in 2026-36 where there is an anticipated substantial drop in habitat provision due to a reduction in clearfelling caused by the considerable felling due to windthrow in recent years. To offset this, the new Forest Plan proposes the creation of greater amount of open habitat in the next ten years and there is a commitment to maintain a minimum of 494ha within rotational forest management and no net increase in continuous cover forest management within the Haldon Forest SSSI.

As a ground nesting bird nightjar are vulnerable to disturbance and all operations potentially impacting on breeding habitat should be carefully planned to ensure disturbance is not caused.

Nightjar populations across Haldon Forest will continue to be monitored regularly using standard methodologies.





SSSI — Pearl-bordered fritillary and Small-pearl bordered fritillary

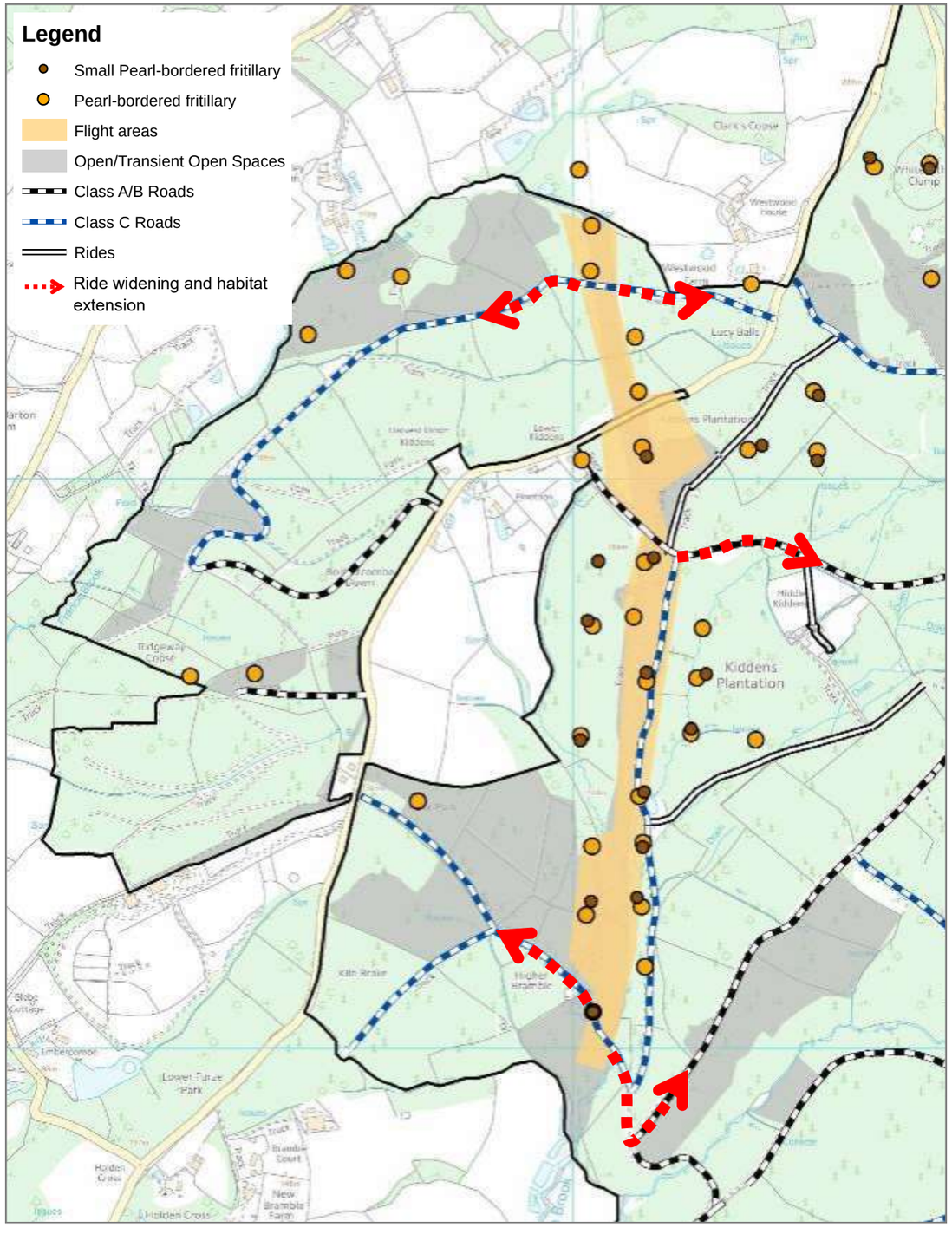
Both the pearl-bordered fritillary (*Boloria euphrosyne*) and small pearl-bordered fritillary (*Boloria selene*) have undergone rapid declines throughout England over the past few decades.

Both species form discrete colonies around suitable breeding areas. Due to the transient nature of suitable habitat, provision needs to be made for the dispersal of adults to allow the formation of multiple new breeding populations by way of linked, suitable habitat.

A key objective of this plan is to ensure that the Kidden's powerline continues to be managed for these species but that movement from the core area out into the wider forest can take place (see on map and Page 63 for more details) over the coming Plan period. Reliance on one intensively managed area of habitat is not sustainable potentially making the species vulnerable to extinction events such as bad weather or disease.

The butterfly has exacting habitat requirements requiring common dog violet (*Viola riviniana*) and marsh violet (*Viola palustris*) for larval feeding and abundant patchily distributed bracken for over-wintering and pupation. The adult feed on a variety of nectar sources including bugle (*Ajuga reptans*), bird's-foot trefoil (*Lotus corniculatus*), selfheal (*Prunella vulgaris*) and hawkweeds (Hieracium spp).

Haldon Forest SSSI will be managed according to the Natural England assented management prescriptions outlined in Appendix 5 and the Environmental Corridors Policy in conjunction with close liaison with Butterfly Conservation to ensure a flexible and well planned habitat management continues over the duration of the Forest Plan period.



Tower Wood Quarry SSSI and Buller's Hill Quarry SSSI

Geological Information

The Haldon Hills are capped by gravels of predominantly Palaeogene age. Two small disused quarries, Tower Wood Quarry SSSI and Buller's Hill Quarry are two of the few localities where the Haldon Gravels can be seen and as such have been of considerable interest to geologists and geographers over the last century.

Tower Wood Quarry

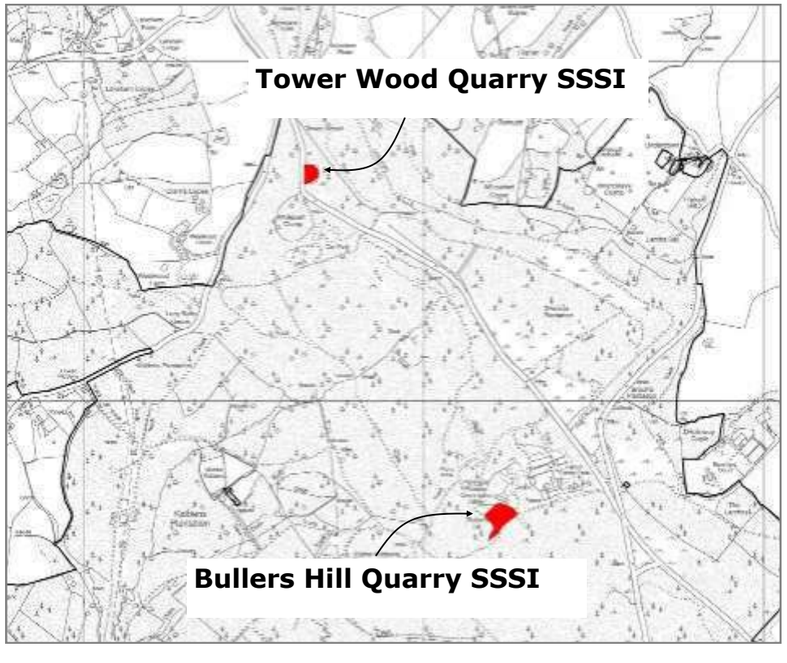
Tower Wood Hill quarry is a small disused quarry and one of the very few localities where the Tower Wood Gravels formation is exposed. Here a 6m thickness of predominantly flint gravel is exposed. The flint clasts are <30cm in diameter and are unbraided. They have however been peripherally shattered by Pleistocene frost action. Most now comprise horizontally aligned cores surrounded by small flint chips.

The deposit represents the in-situ weathering residue of the chalk which formerly extended further west than it does now. The Kaolinitic intraclastic matrix of the gravel appears to have been derived from the west from altered granite. The section at Tower Wood represents the denudation of a land mass which lay to the west of the shallow tropical seas that covered the Hampshire and London basins. Climatically, it has been interpreted as representing savannah conditions in the region during early Palaeogene times.

Buller's Hill Quarry

Buller's Hill Quarry SSSI is the best exposure of the Haldon gravels in the area—mainly flint-bearing gravels of early Palaeogene age. Reference has been made to large unbraided flints standing vertically in the Bullers Hill Grave which had migrated upwards from the underlying Tower Wood Gravel which in turn lies unconformably on the Upper Greensand. As at Tower Wood Quarry the pebbles have been shattered by frost.

The quarries will continue to be managed with the aim of maintaining the exposures clear of all trees and shrubs likely to damage the structure of the face and ensuring the exposures can be easily observed by visiting interest groups.



Conservation Objectives and Management Aims

Conservation Objective

To maintain the Palaeogene interest in favourable condition with particular reference to the geological interest features.

Management Aims

1. Ensure that vegetation is not obscuring or damaging the features of interest and that they can be re-exposed by 1 or 2 people using hand tools in less than 3 hours approximately
2. Ensure that build up of scree or sediment from weathering and collapse of faces is not obscuring the features of interest
3. Ensure there is no unconsented tree planting obscuring or damaging the features of interest
4. Ensure no planting of trees within 10m of the faces is permitted and that a 8-10m tree-free buffer zone is retained above and behind the face.
5. Ensure no unconsented engineering works, including inappropriate restoration works, obscuring or damaging the features of interest takes place.
6. Ensure there is no tipping of waste and /or storage of materials within the SSSI.
7. Monitor the condition of the quarries at the 5 year Forest/SSSI Plan review.

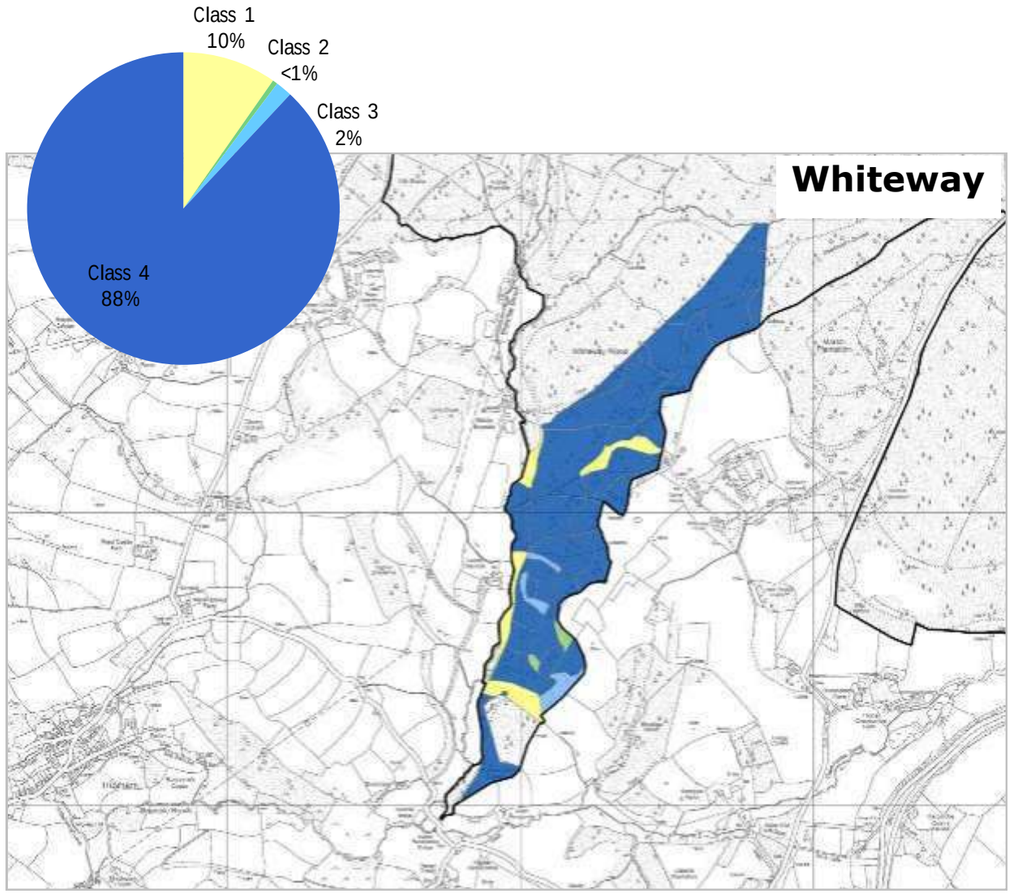
Tower Wood Quarry SSSI, 2016

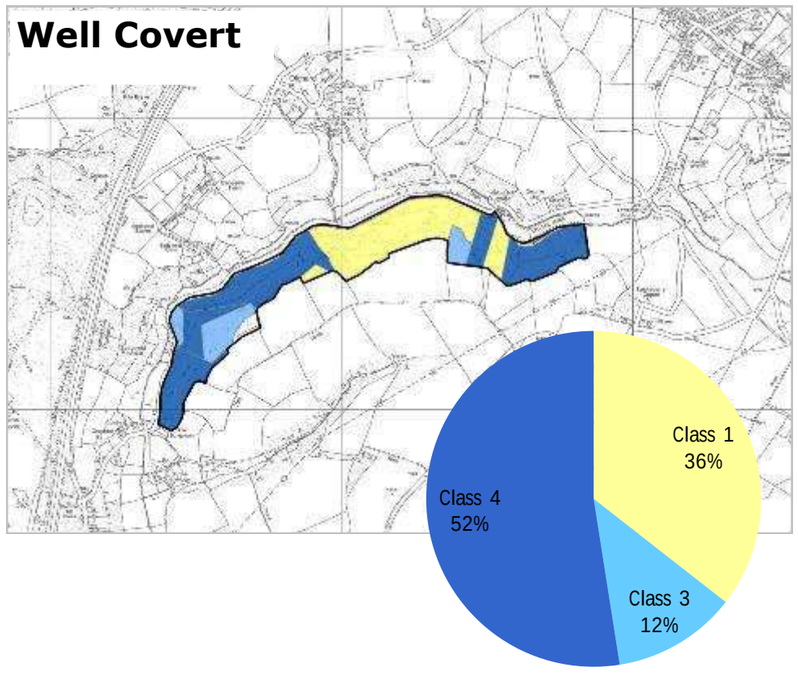
Class 4 – Plantation Woodland
(< 20% site native species)

Class 3 – Plantation Woodland
(20 - 50% site native species)

Class 2 – Plantation Woodland
(50 - 80% site native species)

Class 1 – Semi-Natural Woodland
(> 80% site native species)





Ancient Woodland

The Plan area contains two areas of designated ancient woodland. Whiteway (87ha designated) is part of the main block and is predominantly second rotation Douglas fir. As a result this area is a Plantation on Ancient Woodland Sites (PAWS).

Well Covert is a discreet woodland which is entirely designated as ancient woodland (25 ha). A large proportion of this area (14ha) is remnant oak, ash and beech ancient semi-natural woodland. The remainder is dominated by first and second rotation conifer crops, namely Douglas fir and Japanese larch and is therefore PAWS.

Naturalness on Ancient Woodland

Naturalness is the measure to show the percentage of site native tree species in a given area. This measure is used to record and monitor the condition and restoration of Ancient Woodland Sites previously planted with non-native species. For note, beech, sycamore, sweet chestnut and felled areas contribute to a higher non-native score.

Classes 2, 3 and 4 are classified as Plantations on Ancient Woodland Sites (PAWS). Areas of Semi-Natural Woodland (Class 1 - > 80% site native species) are mostly found towards the bottom of valleys, in wetter riparian areas where the soils are richer.

The transformation of Classes 2, 3 and 4 AWS towards Class 1 is a key objective of this Plan and is in line with the Forestry Commission England, *Keepers of Time* Policy (Forestry Commission, 2005).

Legend

- Class 1 - > 80% Site Native Species
- Class 2 - 50-80% Site Native Species
- Class 3 - 20-50% Site Native Species
- Class 4 - <20% Site Native Species

0 0.125 0.25 0.5 0.75 1 Miles

Transition Zone

The indicative proportion of native tree species is 50% or more of the crop. Removal of remaining conifer will be achieved through repeated thinning operations.

The establishment period to predominantly native woodland within this category is anticipated to be 20 – 30 years but is dependant on successful regeneration and establishment although maybe sooner depending on the level of conifer needing to be removed. Scattered individual conifers or small groups may remain.

Preparation Zone

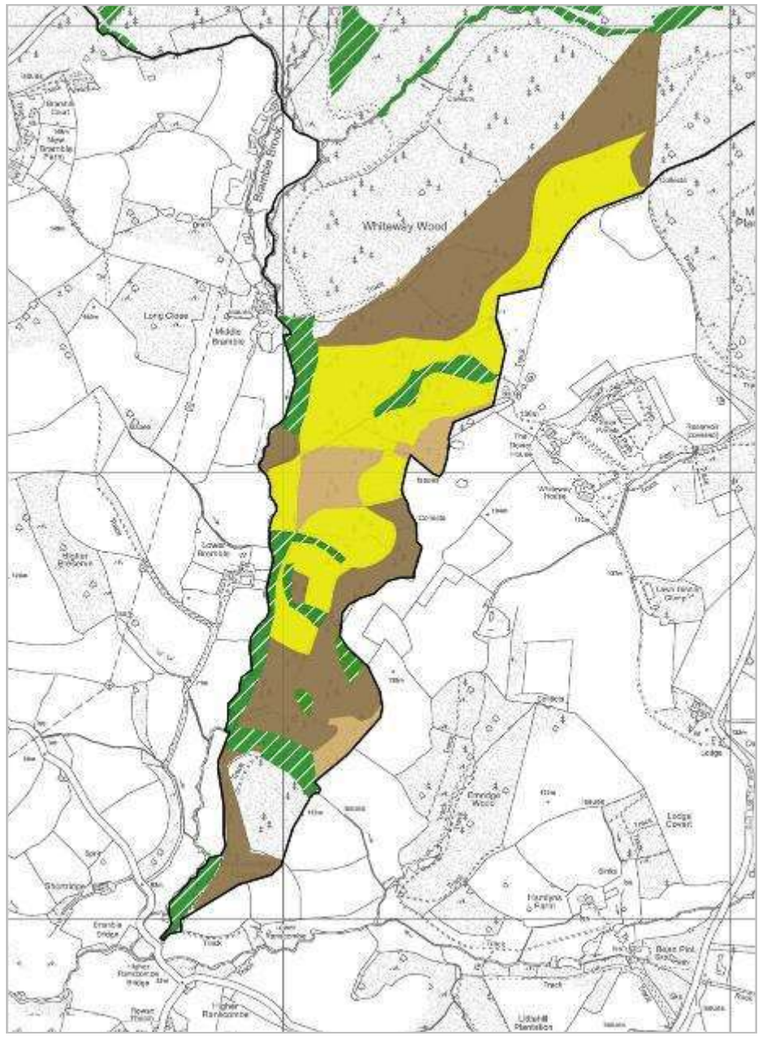
Areas within this category contain less than 50% of native tree species but have a proportion greater than 20% of the crop and the area neighbours an area of significant native species cover which can be utilised as a seed source. Enhancement of native content will continue through thinning of the conifer content.

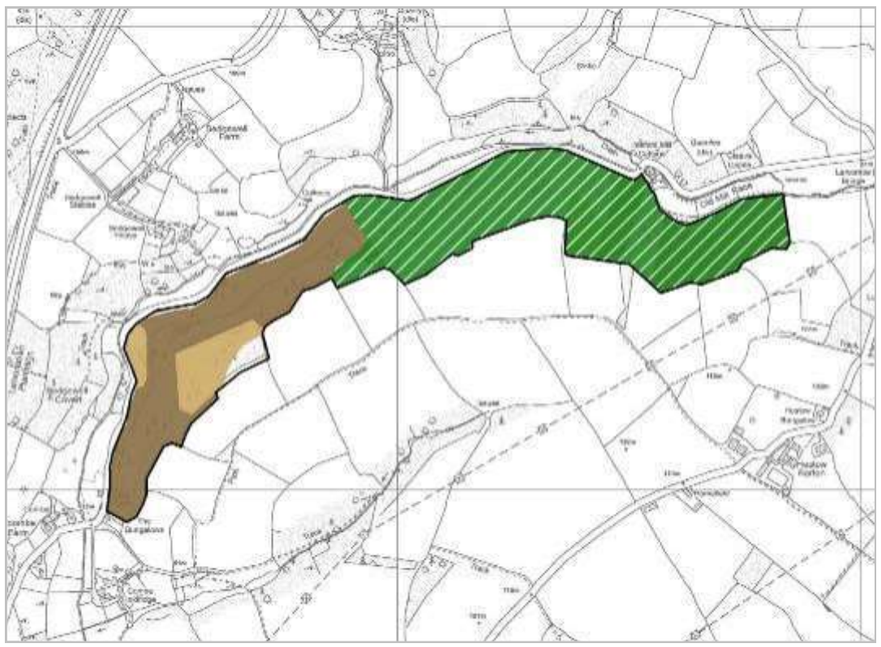
These areas will be thinned heavily to release ancient woodland remnants and features and to encourage natural regeneration and intrusion in to the non-native crop.

The anticipated time scale for establishment of predominantly native species is expected be around 50 – 60 years or so, but could be as long as 70 - 80 depending on success of establishing the future crop.

Non-native Zone

The proportion of native tree species within a management area is less than 20% of the crop. Thinning in both these sub-categories should encourage crown development of broadleaf components. Progress will be monitored and crops moved into either depending on development of stand structure and the response of natural regeneration.





PAWS Management

Restoration of Plantations on Ancient Woodland Sites (PAWS) has already begun and this continued restoration is going to take a considerable amount of time and resource because of the limited native remnants from which sites can regenerate.

Therefore a proactive yet realistic approach will be used to transform these sites over a period of time.

The aim of the transitional period to woodland containing 80% or more of native species should be to achieve:

- a varied age structure with varying ratios of high canopy, secondary canopy and understory through out.
- transition that ensures a minimum future content of 3 native species, with 4 to 5 species being the preferable target.
- a minimal reliance on monocultures especially of birch, ash, hazel or oak. In practice this may involve either underplanting or group felling and planting within existing mid rotation broadleaf crops.
- restoration of beech and sweet chestnut stands will not be prioritised as these species are to be naturalised and offer greater broadleaf diversity and therefore resilience.
- If adequate regeneration is not evident in the 'Transition' and 'Preparation' zones after 10 years a reappraisal of the prescription will be needed.

Legend

- Building Block (native seed source)
- Transition Zone
- Prepartion Zone
- Non-native Zone
- Clearfell

0 0.05 0.1 0.2 0.3 0.4 Miles

Future Open Habitat Management

The Plan makes provision for the heathland restoration of 136ha of the Plan area at the time of economic maturity, as defined on Page 11. This is mainly located on the thin, unproductive soils of the Haldon ridge with 76ha within the Haldon SSSI, as shown on the adjacent map.

A number of factors determine the viability, condition and the prioritisation of the future heathland proposed. Some of these are 'critical' to the commencement of work, and need to be satisfied before proceeding, others determine when or how they are completed.

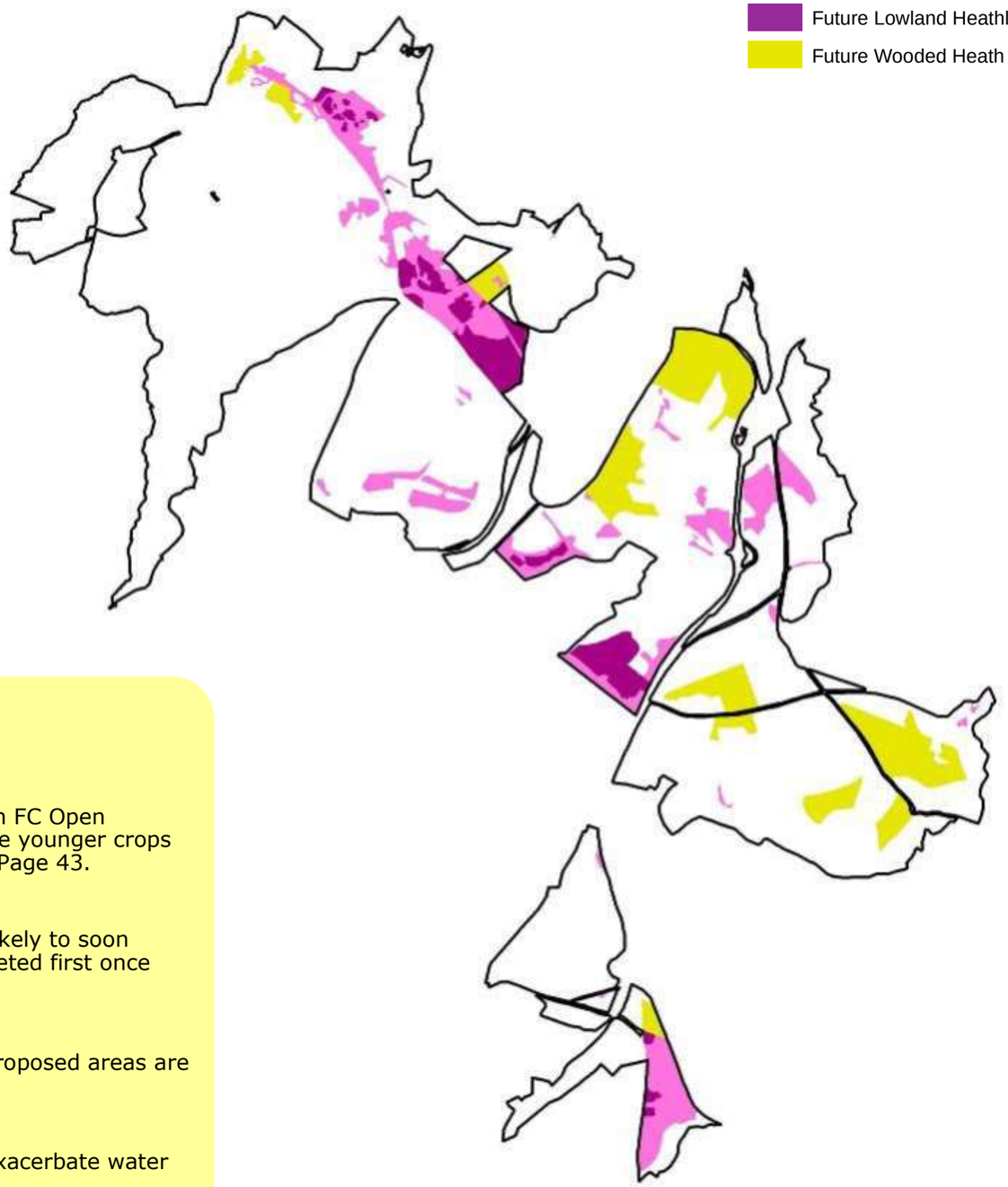
This Plan makes a commitment to deliver that which is proposed in the next 10 years, a review will be completed in 2028 to measure success and consider suitability going forward.

It is an aspiration that all of the heathland restoration of 136ha will be lowland heathland standards. However given the protracted time and extent of full delivery, changing objectives and climates may make this aspiration unachievable. Therefore as a minimum the following will be restored with a commitment to deliver that which is proposed in the next 10 years. A review will be completed in 2028 to measure success and consider suitability going forward.

Lowland Heathland (>40ha) will be created in units which are designated solely for the dwarf shrub heath assemblages, and will be managed to Priority Lowland Heathland parameters as defined by Natural England, through grazing where possible. This will ensure that the Condition status of the Unit is not threatened.

Wooded Heath (<96ha) may be created in all other areas where restocking is not proposed including units within SSSI which are designated because of the raptor assemblages they support. As a minimum these areas will be managed as a transient heathland, creating dynamic habitats of patchy open space and regenerating scrub. This will deliver ecosystem functioning for a wide array of species. This will mean that once felled they will be maintained at the time of programmed operations and then first economic opportunity. This approach will not apply to or affect the areas of existing open habitat.

**If an external party or funding opportunity takes on the responsibility of these sites then more intensive open habitat maintenance can be implemented.



Key Prioritising Factors

The factors outlined below determine when the implementation of the Vision will occur.

1. Crop maturity

Removal of forest cover will not occur on crops which have not reach economic maturity, this is in line with FC Open Habitats Policy. This means that whilst the majority of restoration will occur within the next 50 years, some younger crops will be allowed to reach maturity before felling. These crops will thinned according to SSSI — Thinning on Page 43.

2. Threats

Profusely seeding species or heavy forest cover which still has heathland assemblages underneath but is likely to soon shade it out threaten the efficiency and effectiveness of the restoration. Therefore these crops will be targeted first once they reach economic maturity.

3. Adjacency to existing heathland habitat

Effective creation may be best focussed, at first, on building on existing areas of heathland. Especially if proposed areas are under viable patch size thresholds.

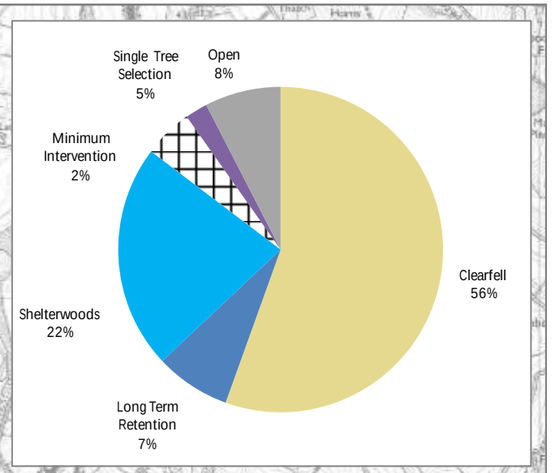
4. Water regulation

Overtime, if it is deemed by a statutory authority that the proposed creation of open space will cause or exacerbate water regulation issues, i.e. storage and or quality then the prescription will be reconsidered.

PART 5 – Thinning, felling and future composition

2015 - 2025

Silviculture



Clearfell coupes will simply be managed through clearcutting (of over 0.25ha) and restocked either through natural regeneration, replanting or a combination of the two.

Long term retentions are in place where the their ecological value for raptor habitat or landscape value are key.

Open habitat is managed to ensure forest cover does not exceed 2m in height, a tolerance of 20% forest cover will be accepted on some lower priority sites.

Minimum Interventions are predominantly inaccessible or ecological valuable areas where intervention will only occur to protect and ensure the future succession of key habitats and species—notably riparian areas.

<u>Continuous Cover Forestry</u> See more on Pages 41-42

Uniform shelterwoods are predominately sites which will be managed using seeding fellings with possible with under planting of site suitable species to control light levels and develop good timber quality.

Strip shelterwoods are often used on wind vulnerable sites which will be restocked through natural regeneration.

Group shelterwoods will look to develop a complex CCF structure through the proactive diversification of the woodland structure and composition through group felling, possibly through the use of enrichment replanting.

Single-tree selections are used on existing complex structured stands or sensitive sites often important for amenity value.

SSSI — Silviculture

Standard silviculture will be practiced across the SSSI, as defined above and in line with Page 31, with the exceptions outlined below:

Long term retentions within most SSSI units will be managed with the objective of providing favourable raptor habitat into the future. Retentions in SSSI units where the intention is to restore to heathland will be managed to ensure edges create sheltered areas of suitable heathland habitat and pockets within crop heath are expanded before the over storey removal.

Legend

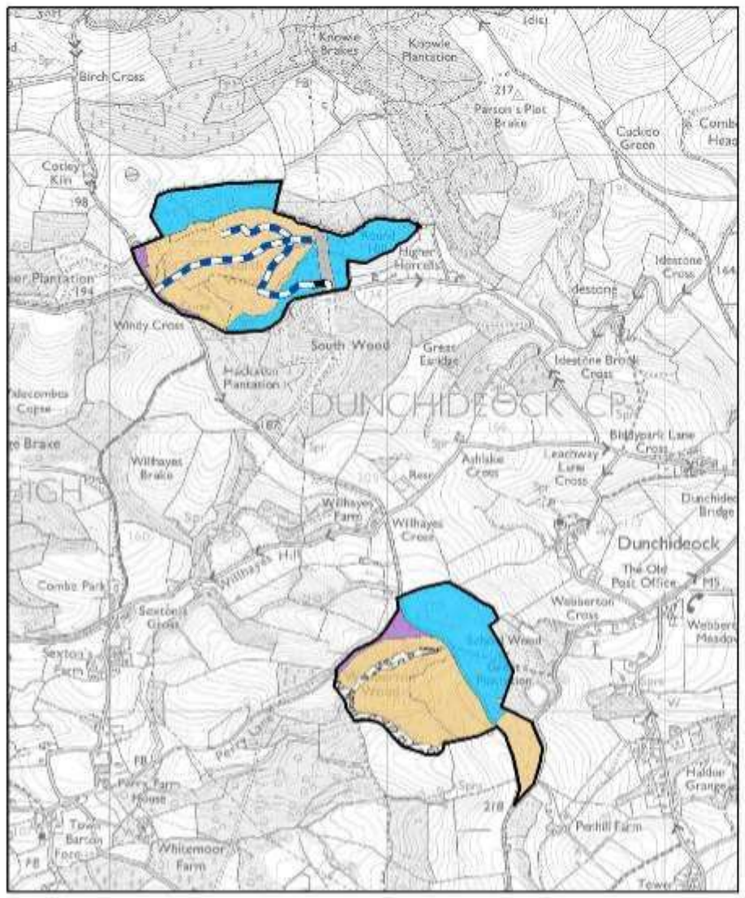
- Clearfell
- Long Term Retention
- Shelterwoods
- Selections
- Open
- Minimum Intervention
- Class A/B Roads
- Class C Roads

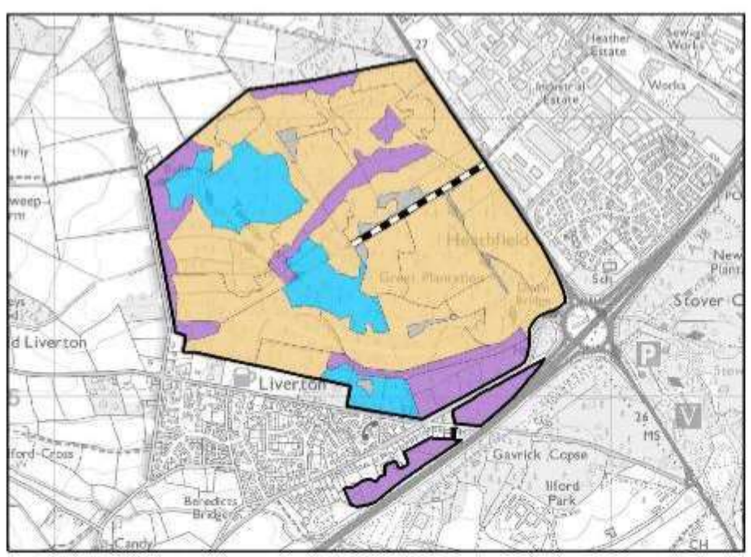
0 0.125 0.25 0.5 0.75 1 Miles

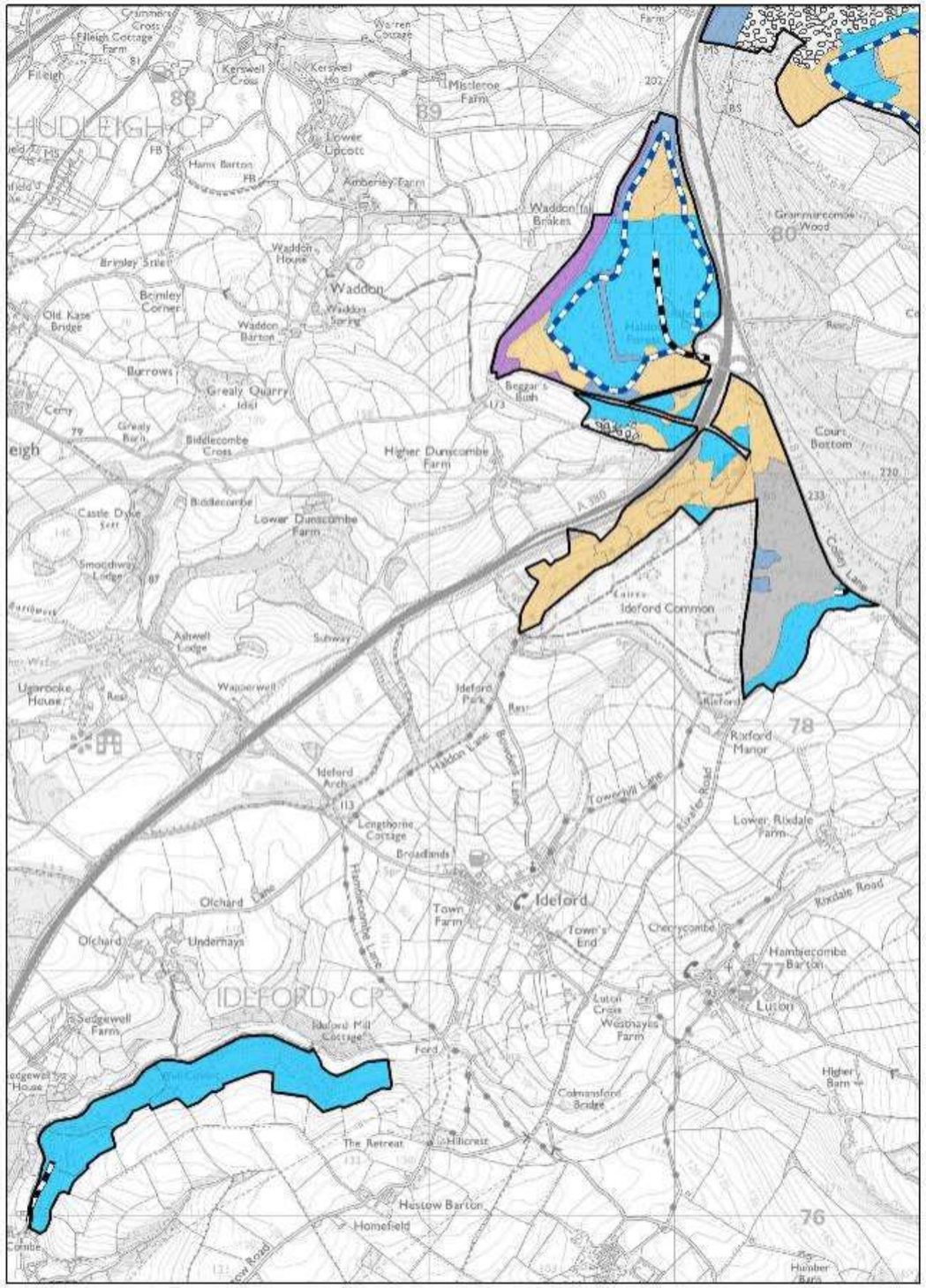
Silviculture 2015 - 2025

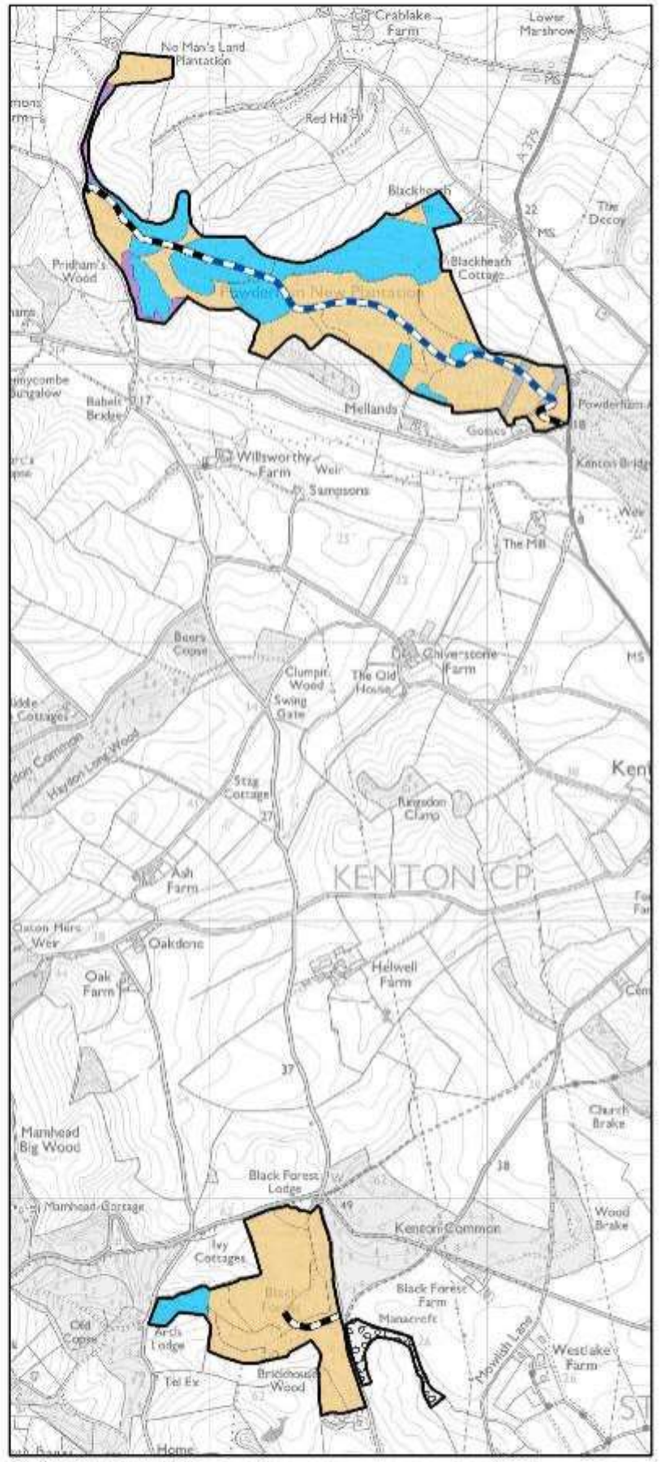
Legend

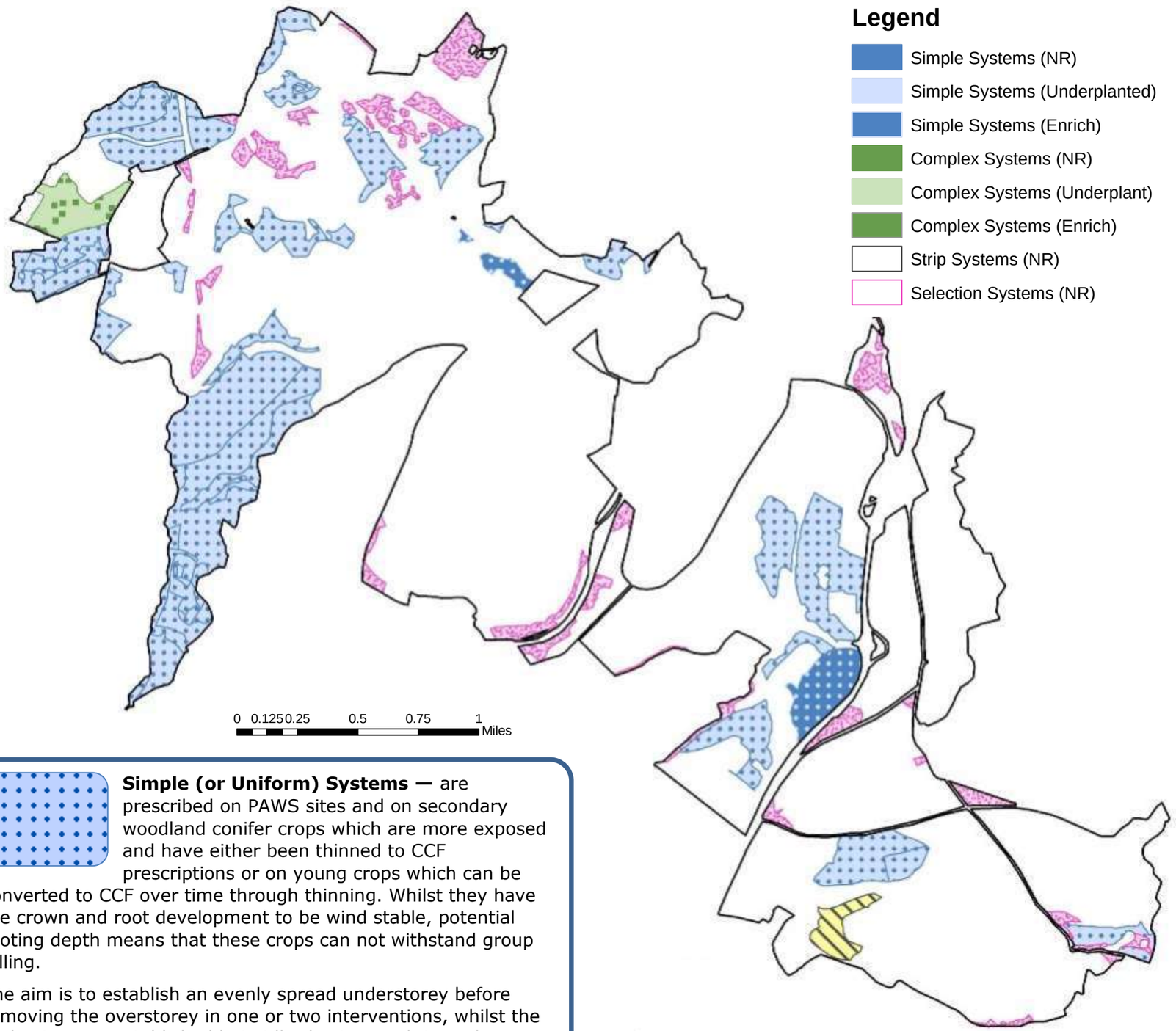
Clearfell | Long Term Retention | Shelterwoods | Selections | Open | Minimum Intervention | Class A/B Roads | Class C Roads











Continuous Cover Forestry

The Haldon Plan area has some limited sites suitable for CCF management. The poor soils, high wind speeds and exposure mean that site conditions limit the potential for CCF management.

The fact that a national significant population of nightjar is found in many parts of the Plan area, means that a strong clearfell / restock programme is still required to maintain and support this population through transient open habitat creation. There is no net increase in areas managed through CCF proposed in this Plan.

The use of CCF as a management prescription will continue to be utilised, and enhanced where feasible, so as to develop a more economically and ecologically resilient set of forests.

Simple (or Uniform) Systems — are prescribed on PAWS sites and on secondary woodland conifer crops which are more exposed and have either been thinned to CCF prescriptions or on young crops which can be converted to CCF over time through thinning. Whilst they have the crown and root development to be wind stable, potential rooting depth means that these crops can not withstand group felling.

The aim is to establish an evenly spread understorey before removing the overstorey in one or two interventions, whilst the understorey is established but still robust enough to endure operations. If the understorey is not >2m felling approval is required.

Restocking will predominantly be through natural regeneration (NR) unless where specified. Underplanting will occur on sites unlikely to achieve any suitable natural regeneration establishment and enrichment planting will be used to aid and diversify the understorey using shade tolerant species.
Indications?

Selection Systems — are used on windfirm, crops to proactively maintain the woodland structure and composition Single tree selections are used on established edge crops with an established understorey where the overstorey is intended to be retained.

Complex (or Group) Systems — are mainly used occasionally as a alternative to the simple system application. The complex system requires stands to be more windfirm given the exposure group fellings will inflict. Soils must be deep and established crops thinned to CCF regimes whereby crown and root development is established. Through the felling of small groups and clusters of trees at multiple interventions the complex structure is initiated.

The phased felling of groups, and resultant regeneration over a prolonged period will ensure that a complex system of storeys is established over time. Groups may be distributed randomly or evenly across the coupe and multiple interventions can look to extend the size of the gap.

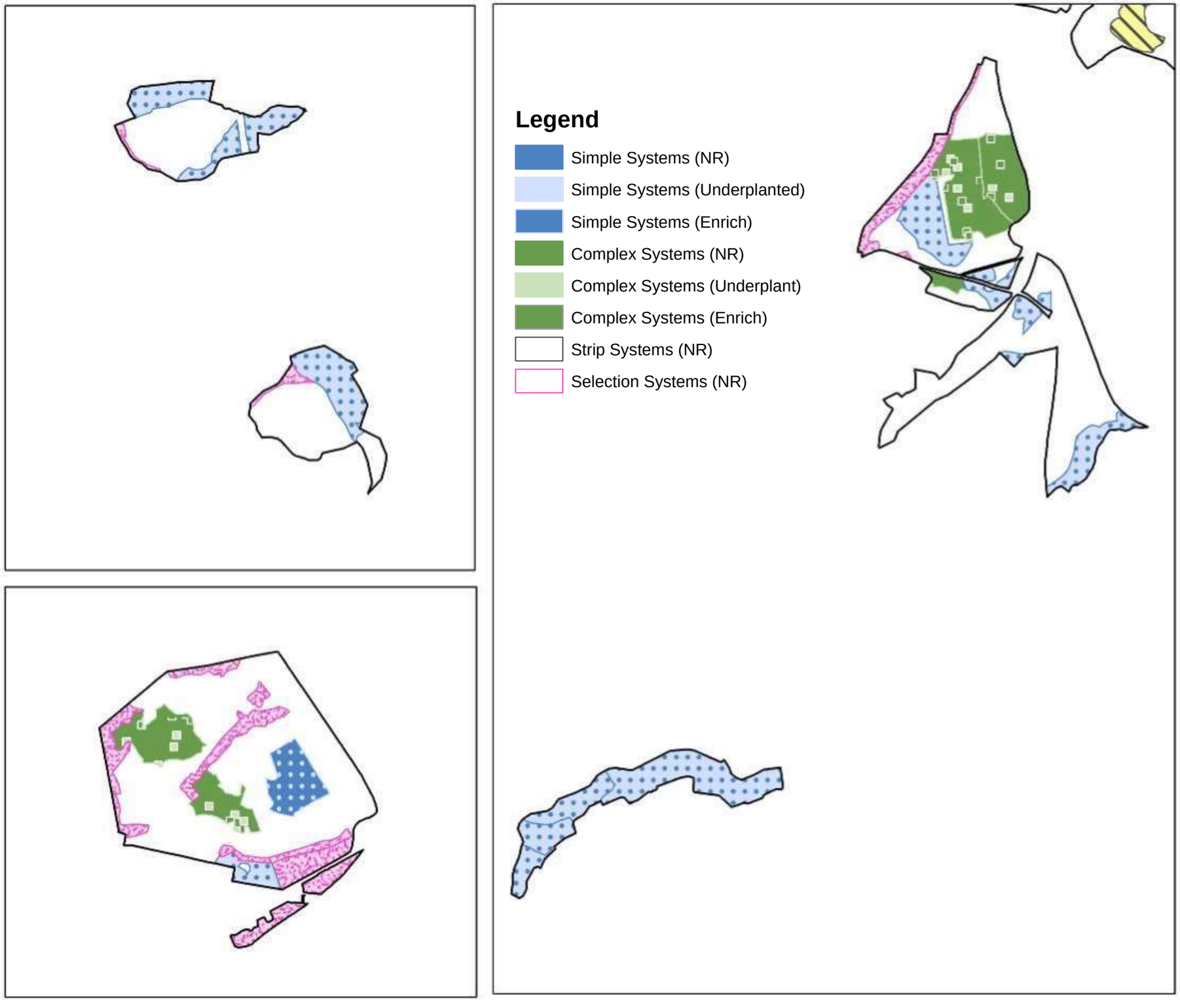
Restocking will predominantly be through natural regeneration (NR) unless where specified. Underplanting will occur on sites unlikely to achieve any suitable natural regeneration establishment and enrichment planting will be used to aid and diversify the understorey.

Strip Systems - are employed sparingly on Scots pine crops. They will be worked north to south and east to west to ensure that felling occurs on the leeward edge. These fellings will be restocked through natural regeneration of surrounding seeding pine crops. Where more than the recognised seed broadcasting distance is felled wind stable blocks will be retained as a seed source.

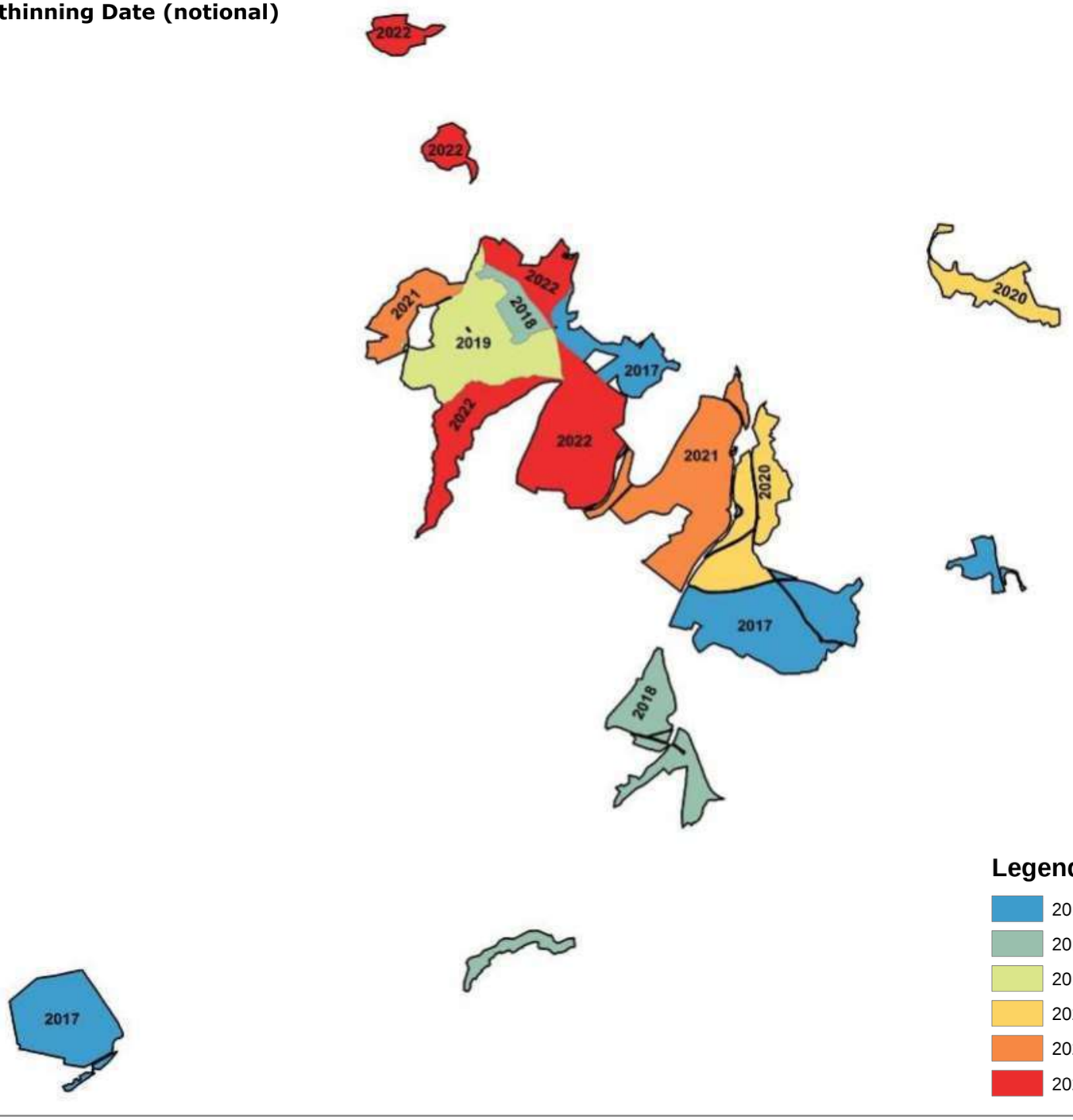
2015 - 2025

Continuous Cover Forestry

0 0.125 0.25 0.5 0.75 1 Miles



Next thinning Date (notional)



0 0.125 0.25 0.5 0.75 1
Miles

Thinning

There is a presumption towards thinning in all stands and that these stands will be thinned as early as possible (circa 16-18 years). Areas are assessed for thinning every 5 years with the removal of larch species a key objective, due to its susceptibility to *Phytophthora ramorum*. Other factors such as the quantity, condition, age and distribution of any broadleaf content, will also help decide if an area of conifer is to be thinned or not, with light levels, existing ground vegetation and any evidence of natural regeneration also impacting on how many trees are marked for removal.

Broadleaf high forest will be assessed for thinning every 10 years with a visual inspection of the stand. Thinning will allow sub-dominant broadleaves sufficient light and space to mature or will release existing advanced regeneration.

SSSI — Thinning

The intensity and nature of thinning within the SSSI will be determined by the remnant flora condition and management objective.

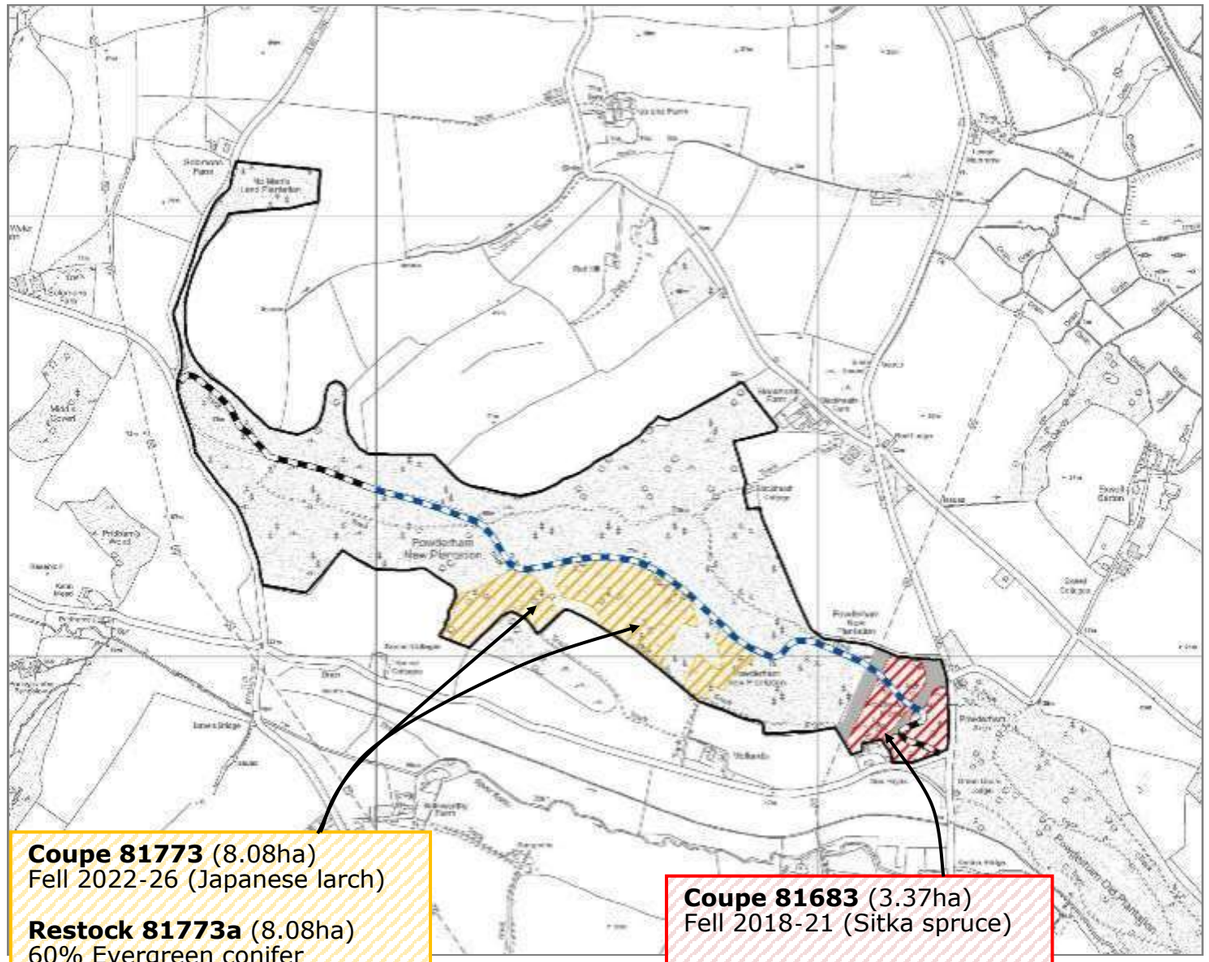
Areas for heathland restoration

Whilst production will remain key in these areas, the creation of heathland ecotones is the main thinning objective. These will be thinned more heavily, where stability allows, with focus on creating a more patchy open structure before overstorey removal. Rides and roads will be opened up with crop edges experiencing the most thinning to create a graded edge. Pine crops will be thinned with the intention of creating stable retentions which can form habitat and the necessary microclimate for a number heathland associated species. This prescription is in line with FC Open Habitats Policy, 2010.

Areas for continued forest production

These areas are recognised for their value to raptors which use the coniferous woodland habitat. These areas will be thinned more conventionally, with the intention of ensuring a substantial the lifecycle and provision of well thinned crops which provide ample raptor nesting sites. Areas closer to watercourses may be thinned more intensively to create wider spaced large conifers to provide habitat for hobby. Areas prescribed as retentions will be crown thinned more heavily in early stages of growth to develop stable mature trees for the future.

Felling and Restocking 2018 - 2028
Powderham



Coupe 81773 (8.08ha)
Fell 2022-26 (Japanese larch)

Restock 81773a (8.08ha)
60% Evergreen conifer
40% Broadleaf

Proposed species
50% Douglas fir (planted)
25% Coast redwood (planted)
15% Black walnut (planted)

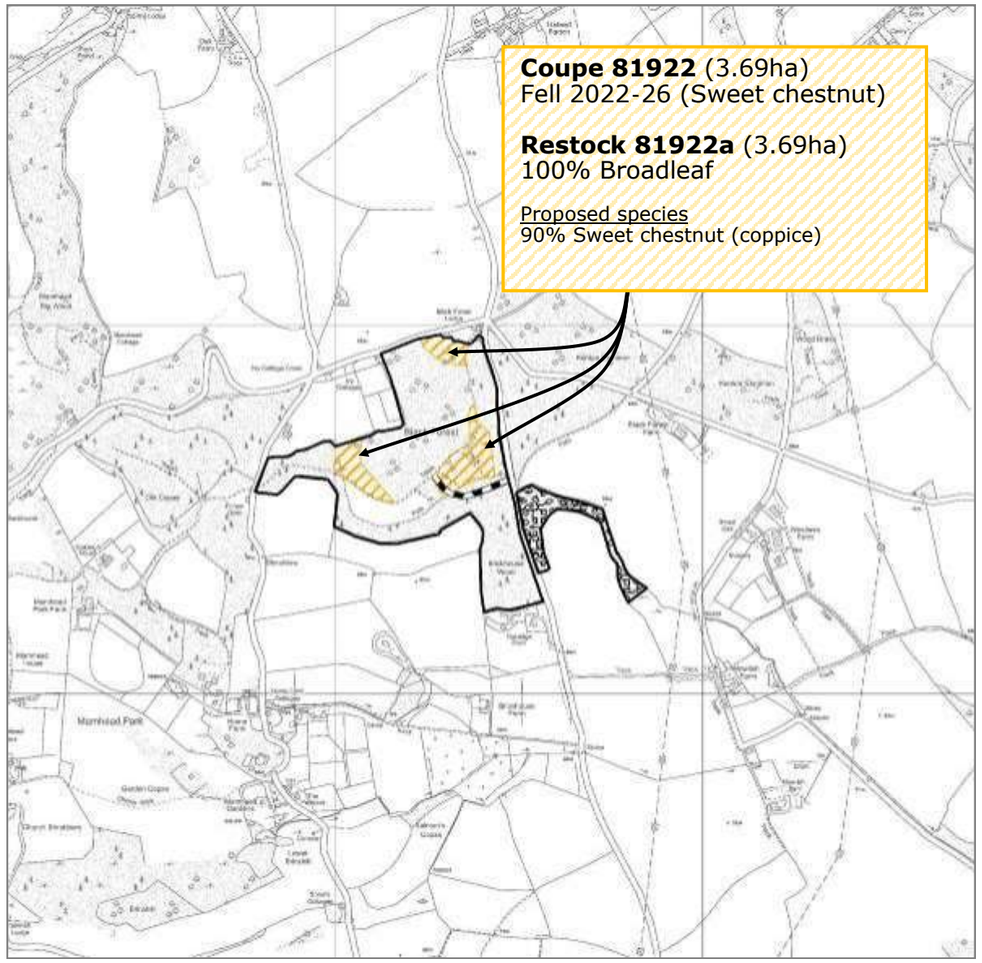
Coupe 81683 (3.37ha)
Fell 2018-21 (Sitka spruce)

Restock 81683a (3.37ha)
100% Evergreen conifer

Proposed species
90% Douglas fir
10% Red oak NR

0 0.050.1 0.2 0.3 0.4 Miles

Felling and Restocking 2018 - 2028
Black Forest



Coupe 81922 (3.69ha)
Fell 2022-26 (Sweet chestnut)

Restock 81922a (3.69ha)
100% Broadleaf

Proposed species
90% Sweet chestnut (coppice)

- Fell 2018 - 2021
- Fell 2022 - 2026
- Fell 2027 - 2028
- Retentions
- Minimum Intervention
- Natural Reserve
- Open

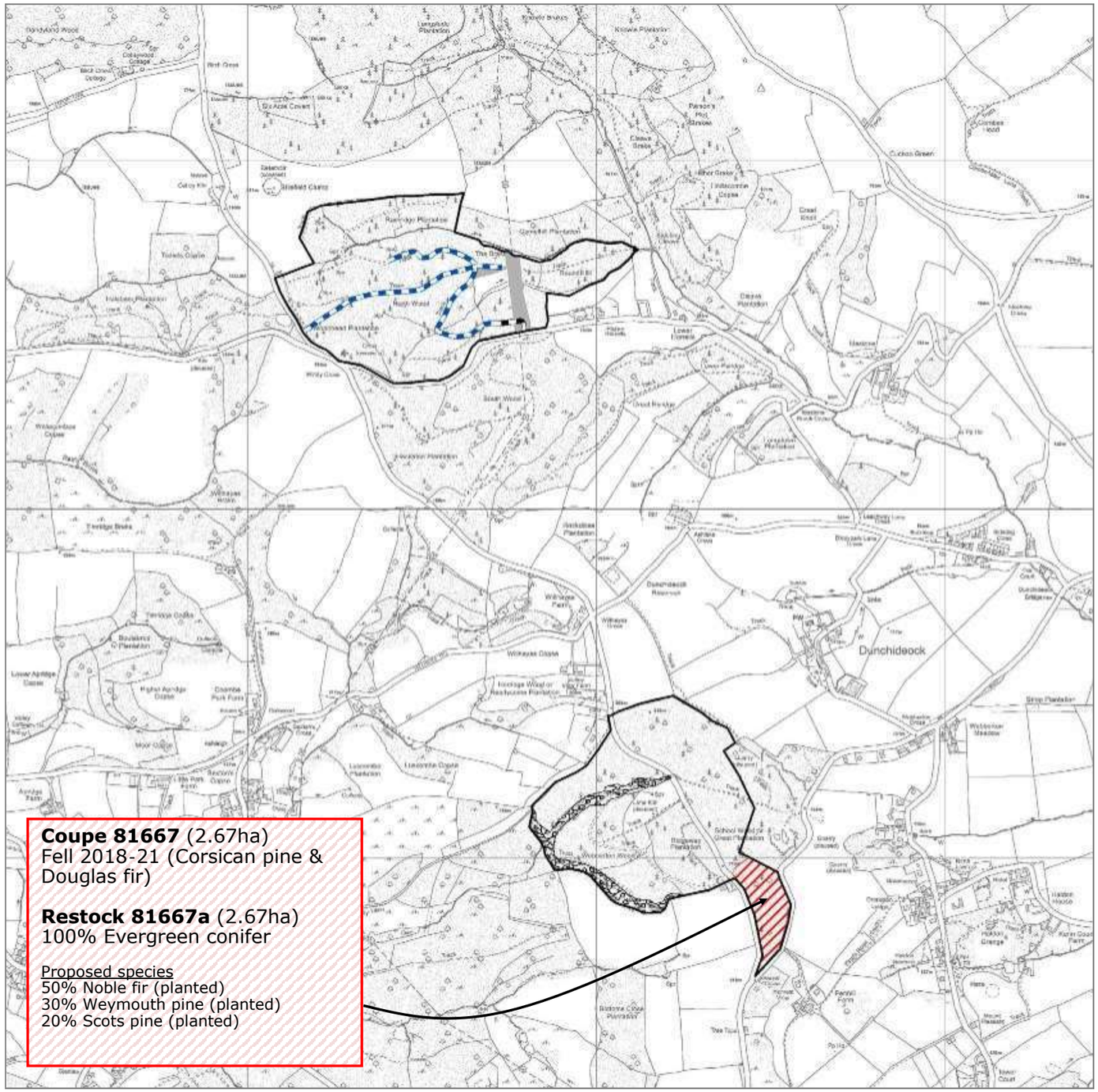
Declaration by FC as an Operator.

All timber arising from the Forest Enterprise estate represents a negligible risk under EUTR (No 995/210)

2015 - 2025

Felling and Restocking 2018 - 2028

North Wood & Webberton



- Fell 2018 - 2021
- Fell 2022 - 2026
- Fell 2027 - 2028
- Retentions
- Minimum Intervention
- Natural Reserve
- Open

0 0.050.1 0.2 0.3 0.4 Miles

Declaration by FC as an Operator.

All timber arising from the Forest Enterprise estate represents a negligible risk under EUTR (No 995/210)

2015 - 2025

Felling and Restocking 2018 - 2028
Main Block — North

Declaration by FC as an Operator.

All timber arising from the Forest Enterprise estate represents a negligible risk under EUTR (No 995/210)

Coupe 81915 (1.99ha)
Fell 2018-21 (Sitka spruce)

Restock 81915a (1.30ha)
100% Evergreen Conifer

Proposed species
100% Scots pine (planted)

Restock 81915b (0.69ha)
100% Lowland Heathland

Coupe 81754 (2.54ha)
Fell 2022-26 (Western hemlock)

Restock 81754a (2.54ha)
100% Wooded heath

Coupe 81659 (5.57ha)
Fell 2018-21 (Grand fir, Douglas fir)

Restock 81659a (5.57ha)
100% Evergreen conifer

Proposed species
50% Coast redwood (planted)
50% Grand fir (planted)

Coupe 81839 (11.35ha)
Fell 2018-21 (Corsican pine, Douglas fir)

Restock 81839a (11.35ha)
100% Evergreen conifer

Proposed species
50% Douglas fir (planted)
50% Sitka spruce (planted)

Coupe 81334 (1.17ha)
Fell 2022-26 (Western hemlock)

Restock 81334a (1.17ha)
100% Lowland heathland

Coupe 81001 (0.67ha)
Fell 2018-21 (Douglas fir)

Restock 81001a (0.67ha)
100% Evergreen conifer

Proposed species
40% Douglas fir (planted)
40% Birch (regeneration)
20% Oak (regeneration)

Coupe 81652 (6.34ha)
Fell 2018-21 (Douglas fir & Sitka spruce)

Restock 81652a (6.34ha)
100% Evergreen conifer

Proposed species
40% Western hemlock
40% Oriental spruce
20% Aspen

Coupe 81924 (0.79ha)
Fell 2018-21 (Sitka spruce)

Restock 81924a (0.79ha)
100% Lowland Heathland

Coupe 81883 (2.14ha)
Fell 2018-21 (Sitka spruce)

Restock 81883a (2.14ha)
100% Lowland Heathland

- Fell 2018 - 2021
- Fell 2022 - 2026
- Fell 2027 - 2028
- Retentions
- Minimum Intervention
- Natural Reserve
- Open

NB. Whilst 'Restock Proportion' is often prescribed at 100% Evergreen (Ev.) Conifer the use of suitable broadleaves to build in resilience and utilise site conditions is anticipated and in places is proposed.

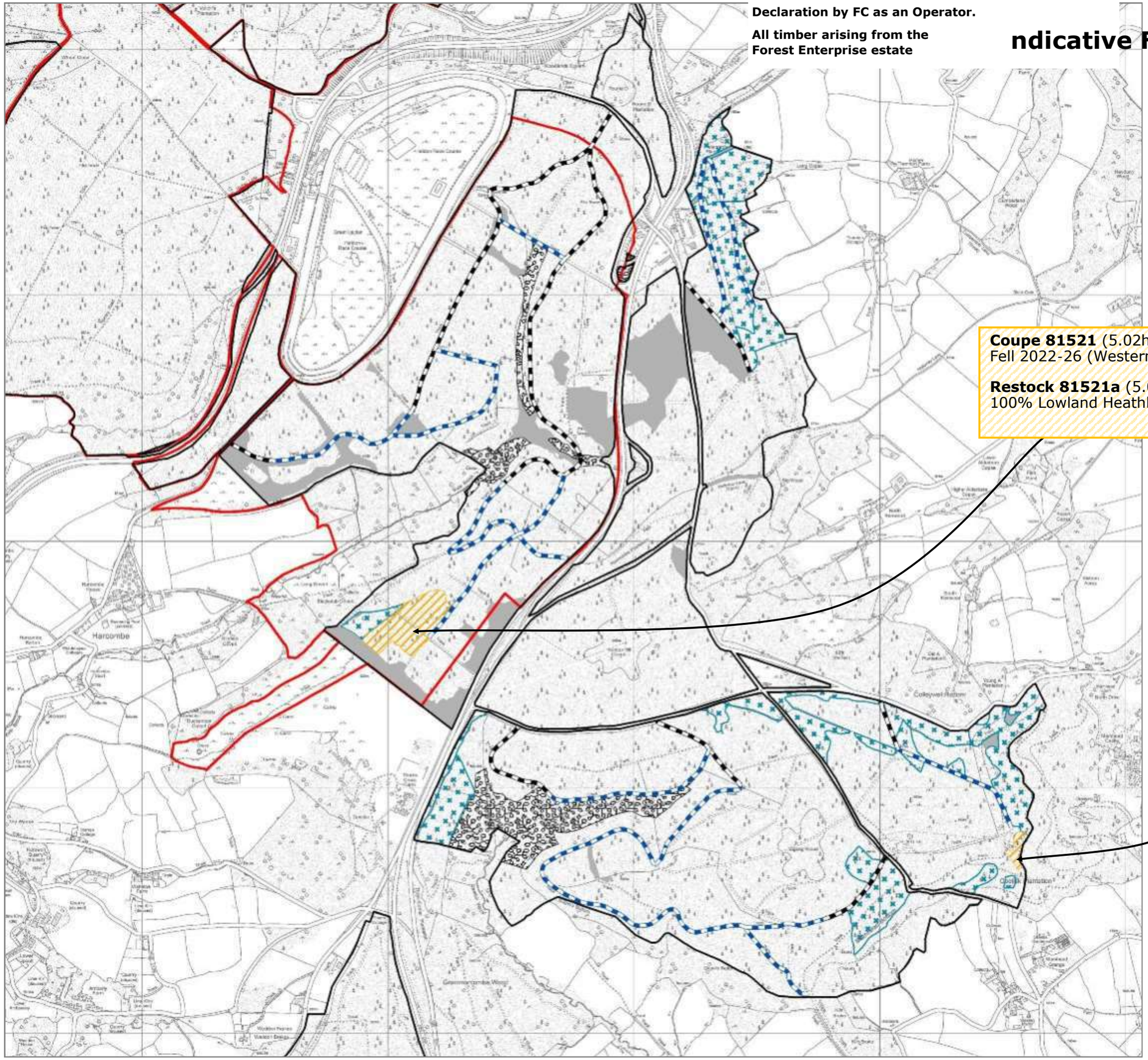
0 0.050.1 0.2 0.3 0.4 Miles

Declaration by FC as an Operator.

All timber arising from the Forest Enterprise estate

ndicative Future Species 2015 - 2025 2028

Felling and Restocking 2018 - 2028
Main Block — South



Coupe 81521 (5.02ha)
Fell 2022-26 (Western hemlock)

Restock 81521a (5.02ha)
100% Lowland Heathland

Coupe 81932 (0.64ha)
Fell 2022-26 (Douglas fir)

Restock 81932a (0.64ha)
100% Open

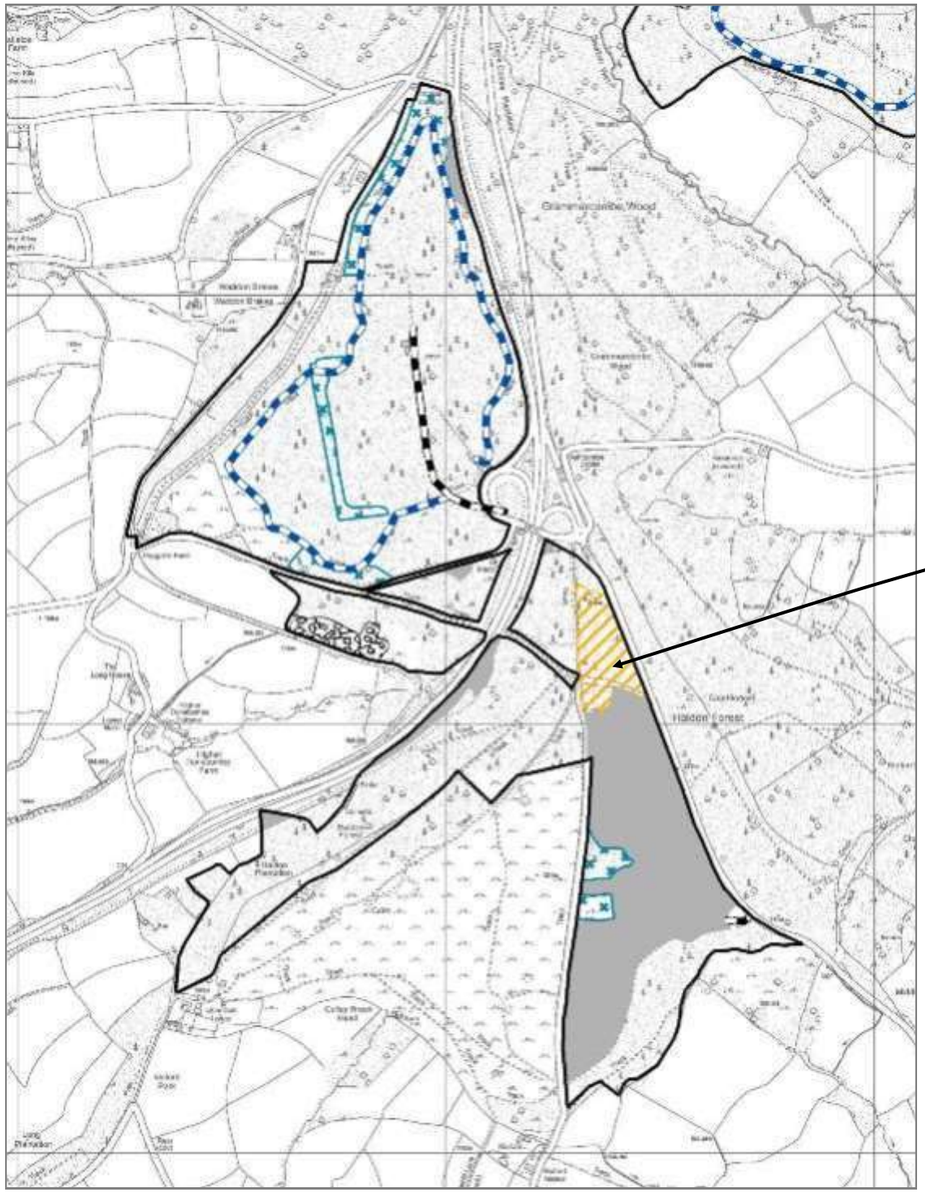
- Fell 2018 - 2021
- Fell 2022 - 2026
- Fell 2027 - 2028
- Retentions
- Minimum Intervention
- Natural Reserve
- Open

NB. Whilst 'Restock Proportion' is often prescribed at 100% Evergreen (Ev.) Conifer the use of suitable broadleaves to build in resilience and utilise site conditions is anticipated and in places is proposed.

0 0.050.1 0.2 0.3 0.4 Miles

Felling and Restocking 2018 - 2028
Ideford & Waddon Brake

2015 - 2025



Coupe 81827 (2.99ha)
Fell 2022-26 (Corsican pine & Western hemlock)

Restock 81827a (2.99ha)
100% Wooded Heath

Declaration by FC as an Operator.

All timber arising from the Forest Enterprise estate represents a negligible risk under EUTR (No 995/210)

- Fell 2018 - 2021
- Fell 2022 - 2026
- Fell 2027 - 2028
- Retentions
- Minimum Intervention
- Natural Reserve
- Open

NB. Whilst 'Restock Proportion' is often prescribed at 100% Evergreen (Ev.) Conifer the use of suitable broadleaves to build in resilience and utilise site conditions is anticipated and in places is proposed.

0 0.050.1 0.2 0.3 0.4
Miles

Felling and Restocking 2018 - 2028
Great Plantation

2015 - 2025

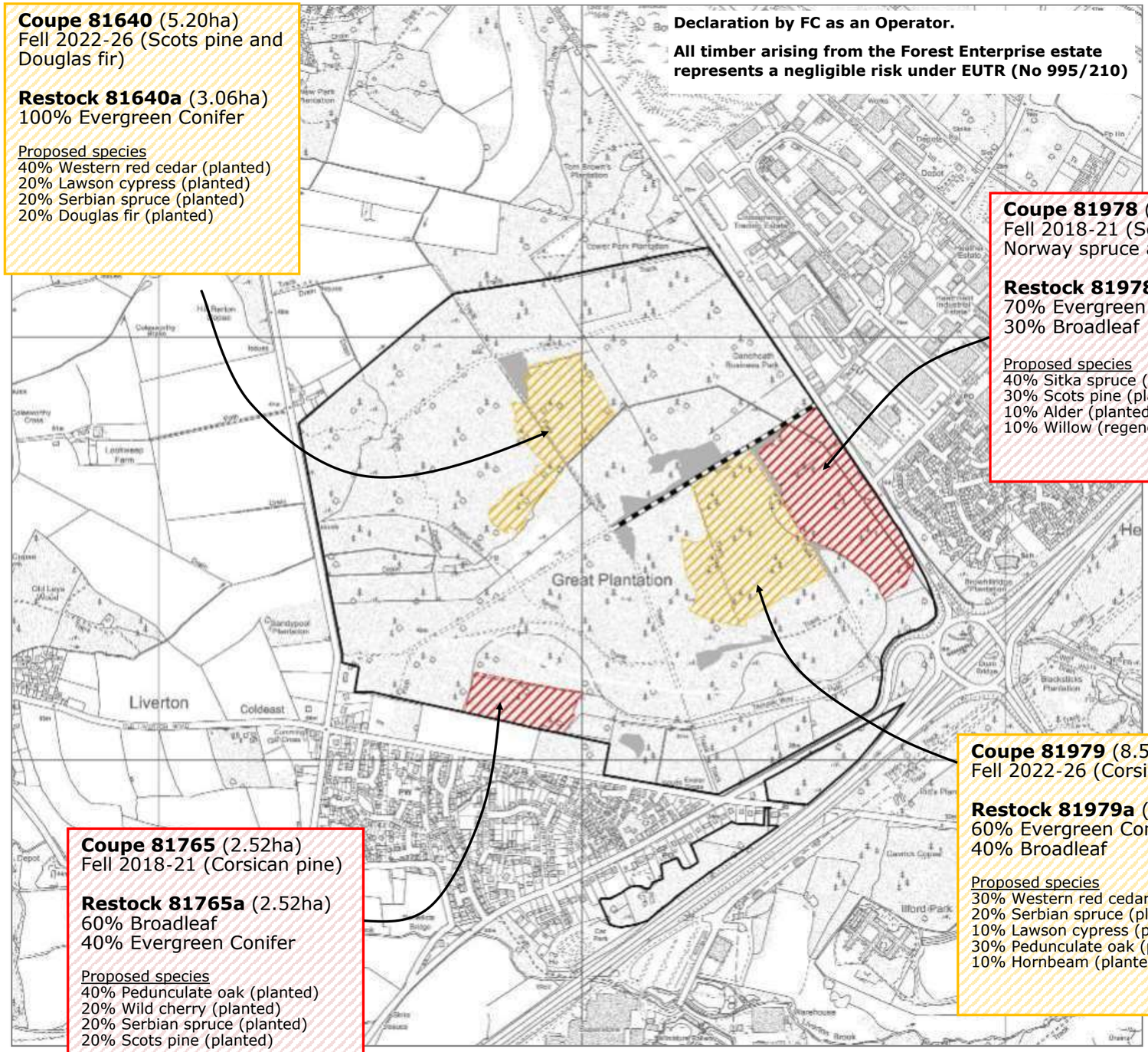
Coupe 81640 (5.20ha)
Fell 2022-26 (Scots pine and Douglas fir)

Restock 81640a (3.06ha)
100% Evergreen Conifer

Proposed species
40% Western red cedar (planted)
20% Lawson cypress (planted)
20% Serbian spruce (planted)
20% Douglas fir (planted)

Declaration by FC as an Operator.

All timber arising from the Forest Enterprise estate represents a negligible risk under EUTR (No 995/210)



Coupe 81978 (7.21ha)
Fell 2018-21 (Scots & Corsican pine, Norway spruce and Japanese larch)

Restock 81978a (7.21ha)
70% Evergreen conifer
30% Broadleaf

Proposed species
40% Sitka spruce (planted)
30% Scots pine (planted)
10% Alder (planted)
10% Willow (regeneration)

Coupe 81979 (8.59ha)
Fell 2022-26 (Corsican pine)

Restock 81979a (3.06ha)
60% Evergreen Conifer
40% Broadleaf

Proposed species
30% Western red cedar (planted)
20% Serbian spruce (planted)
10% Lawson cypress (planted)
30% Pedunculate oak (planted)
10% Hornbeam (planted)

Coupe 81765 (2.52ha)
Fell 2018-21 (Corsican pine)

Restock 81765a (2.52ha)
60% Broadleaf
40% Evergreen Conifer

Proposed species
40% Pedunculate oak (planted)
20% Wild cherry (planted)
20% Serbian spruce (planted)
20% Scots pine (planted)

- Fell 2018 - 2021
- Fell 2022 - 2026
- Fell 2027 - 2028
- Retentions
- Minimum Intervention
- Natural Reserve
- Open

NB. Whilst 'Restock Proportion' is often prescribed at 100% Evergreen (Ev.) Conifer the use of suitable broadleaves to build in resilience and utilise site conditions is anticipated and in places is proposed.

0 0.05 0.1 0.2 0.3 0.4 Miles

2015 - 2025

Management Prescriptions 2018 - 2048

Legend

- Continuous Cover Forestry
- Fell 2017 - 2021
- Fell 2022 - 2026
- Fell 2027 - 2031
- Fell 2032 - 2036
- Fell 2037 - 2041
- Fell 2042 - 2046
- Fell post 2046
- Coppice
- Wood Pasture
- Retentions
- Minimum Intervention
- Natural Reserve
- Open
- Class A/B Roads
- Class C Roads

0 0.125 0.25 0.5 0.75 1 Miles

Declaration by FC as an Operator.

All timber arising from the Forest Enterprise estate represents a negligible risk under EUTR (No 995/210)

Declaration by FC as an Operator.

All timber arising from the Forest Enterprise estate represents a negligible risk under EUTR (No 995/210)

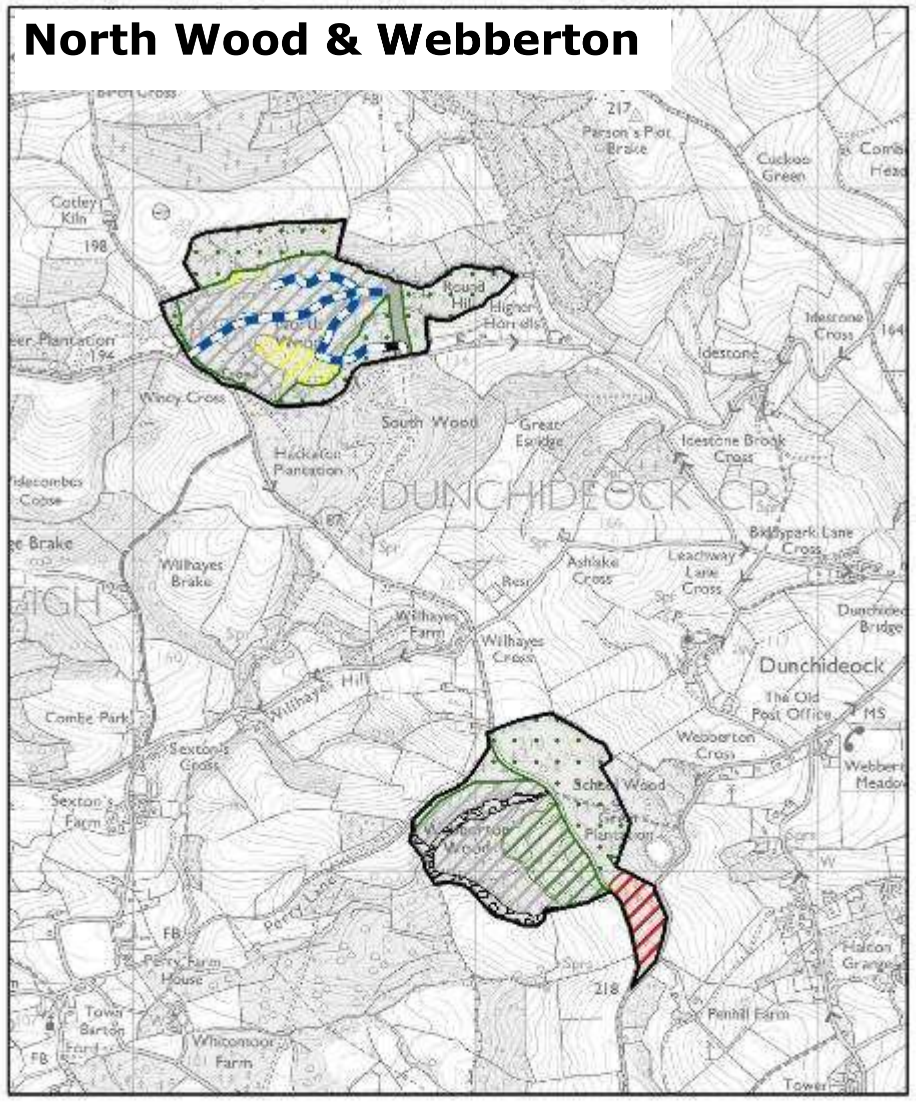
0 0.125 0.25 0.5 0.75 1 Miles

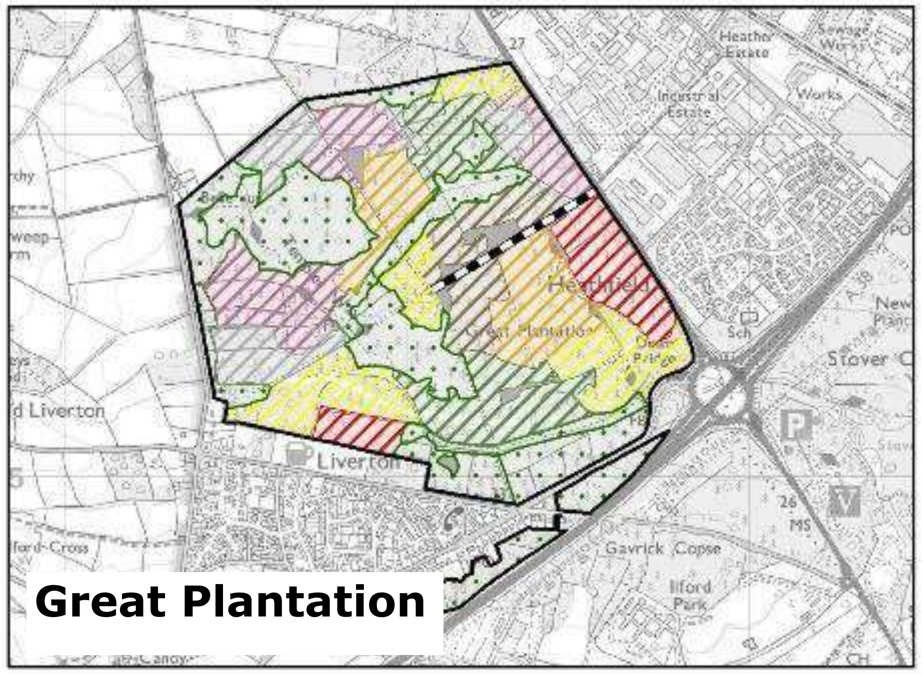
Management Prescriptions 2018 - 2048

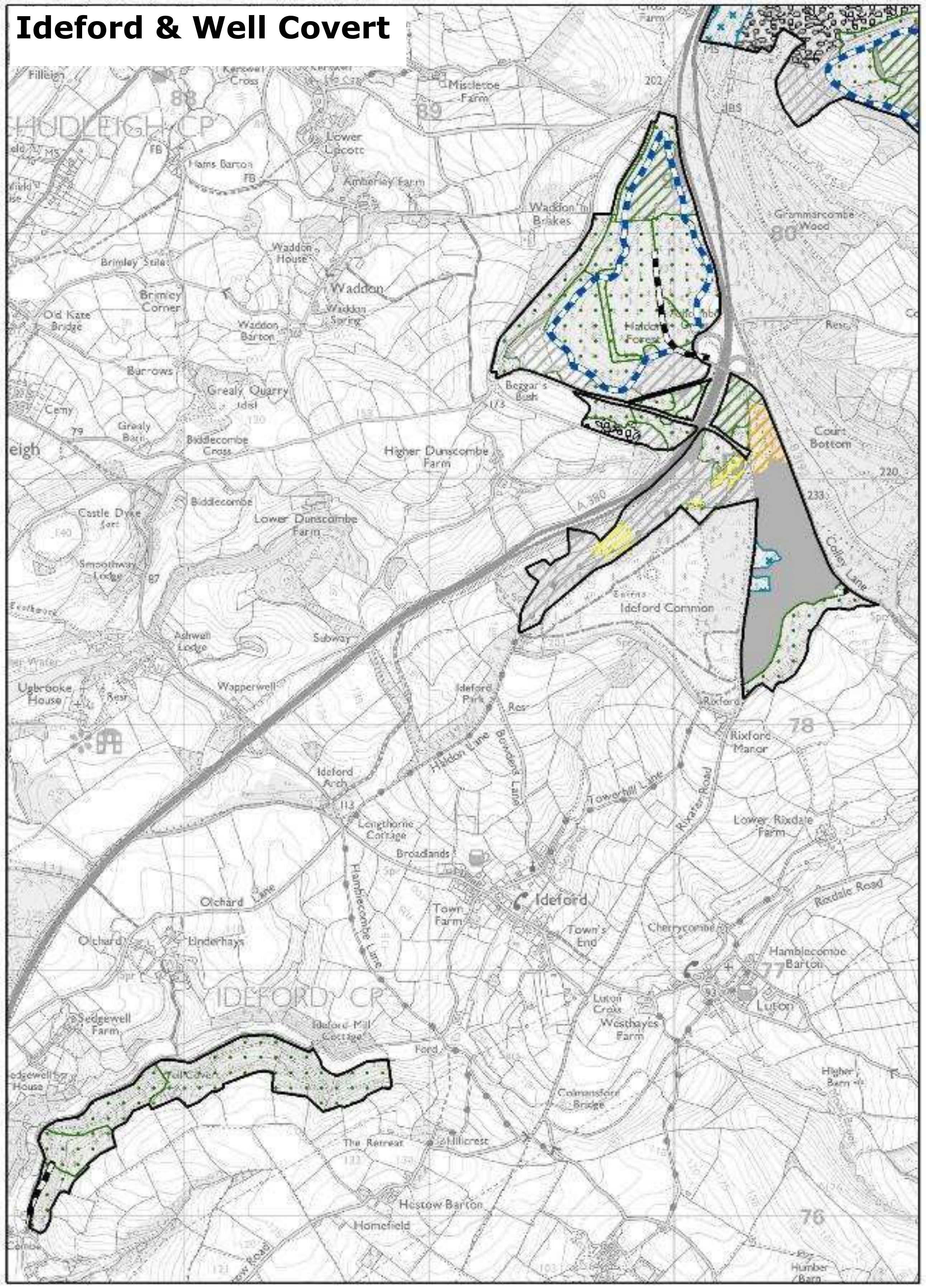
2015 - 2025

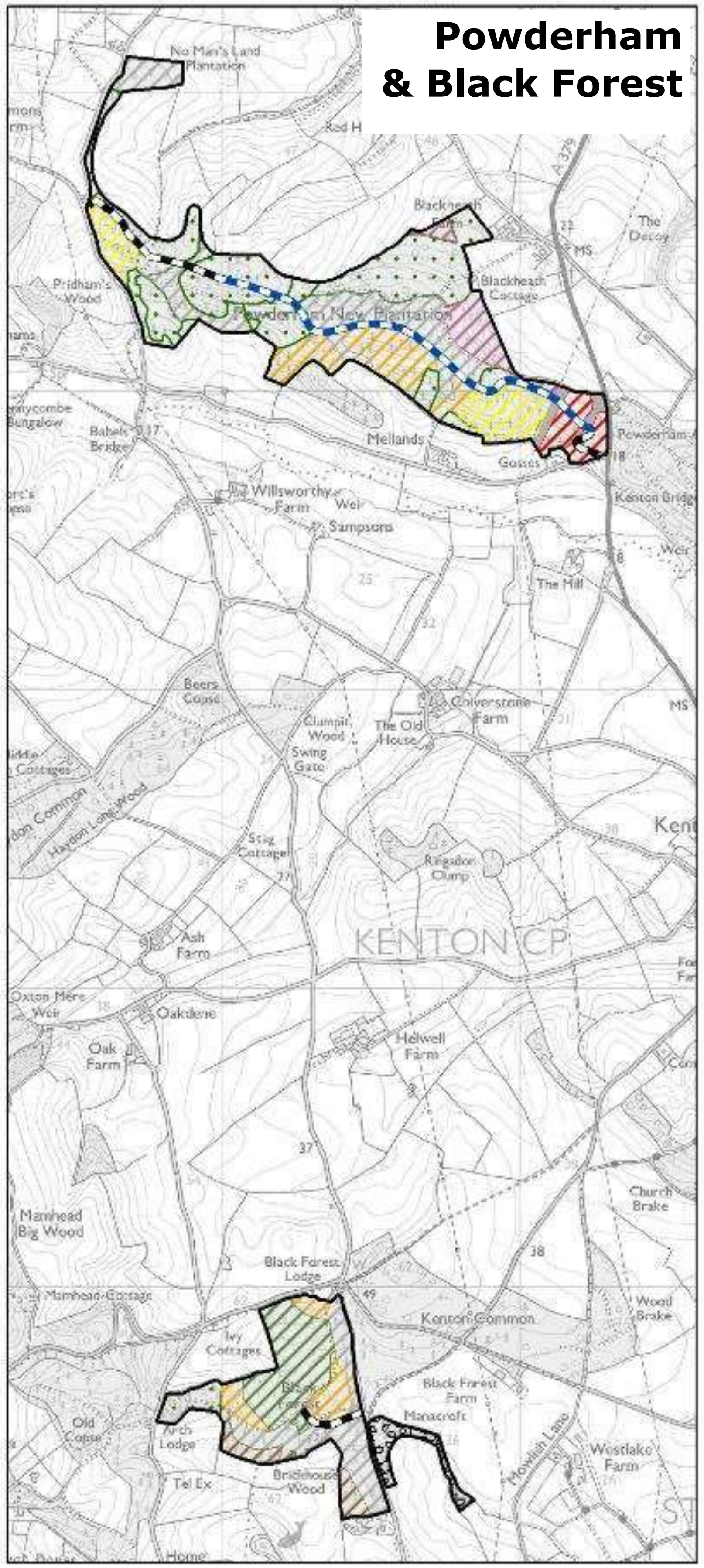
Legend

- Class A/B Roads
- Class C Roads
- Continuous Cover Forestry
- Fell 2017 - 2021
- Fell 2022 - 2026
- Fell 2027 - 2031
- Fell 2032 - 2036
- Fell 2037 - 2041
- Fell 2042 - 2046
- Fell post 2046
- Coppice
- Wood Pasture
- Retentions
- Minimum Intervention
- Natural Reserve
- Open









2015 - 2025

Restock Prescriptions

An outline of the intended restocking prescriptions through planting or natural regeneration for the next rotation, following the removal of the current stock.

Legend

- Evergreen Conifer
- Deciduous Conifer
- Native & naturalized broadleaves
- Non-native broadleaves
- Open/other

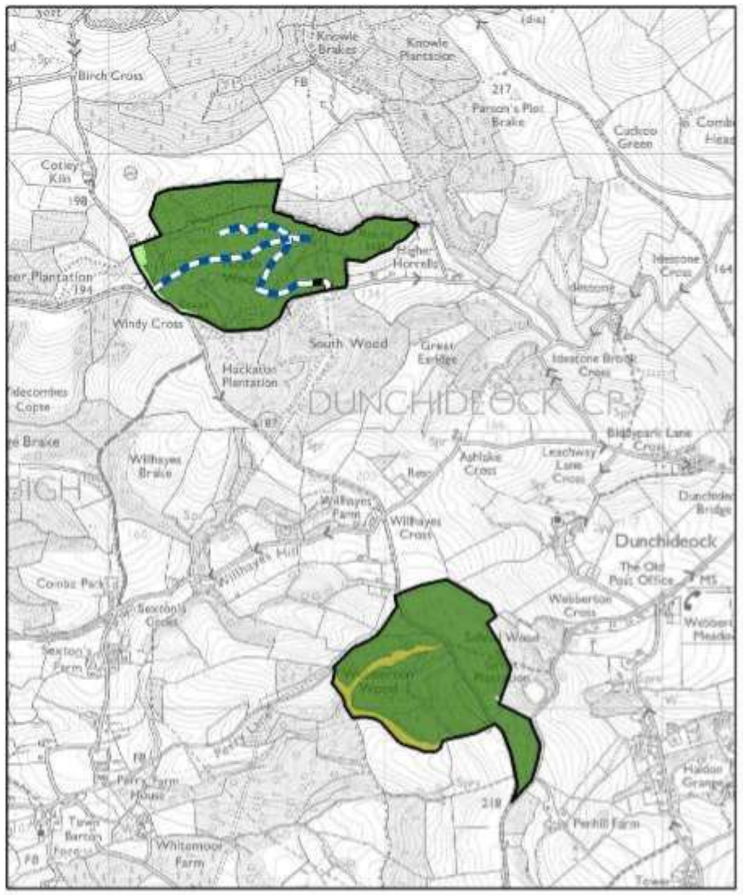
0 0.125 0.25 0.5 0.75 1 Miles

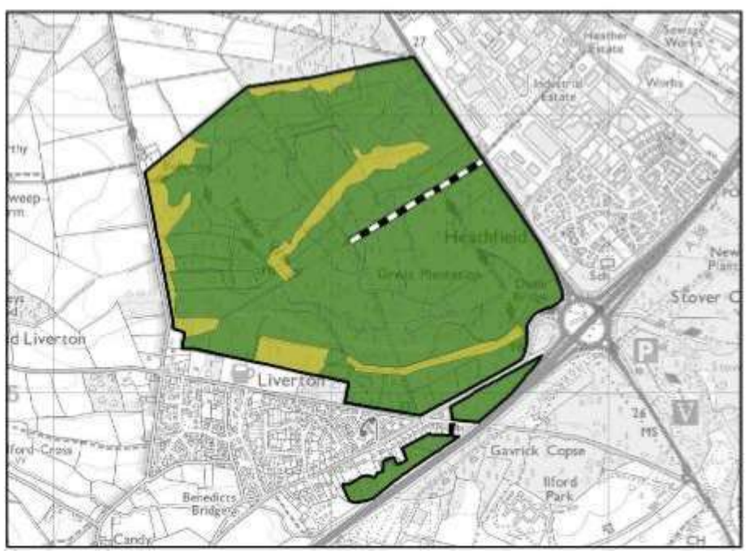
Restock Prescriptions
2015 - 2025

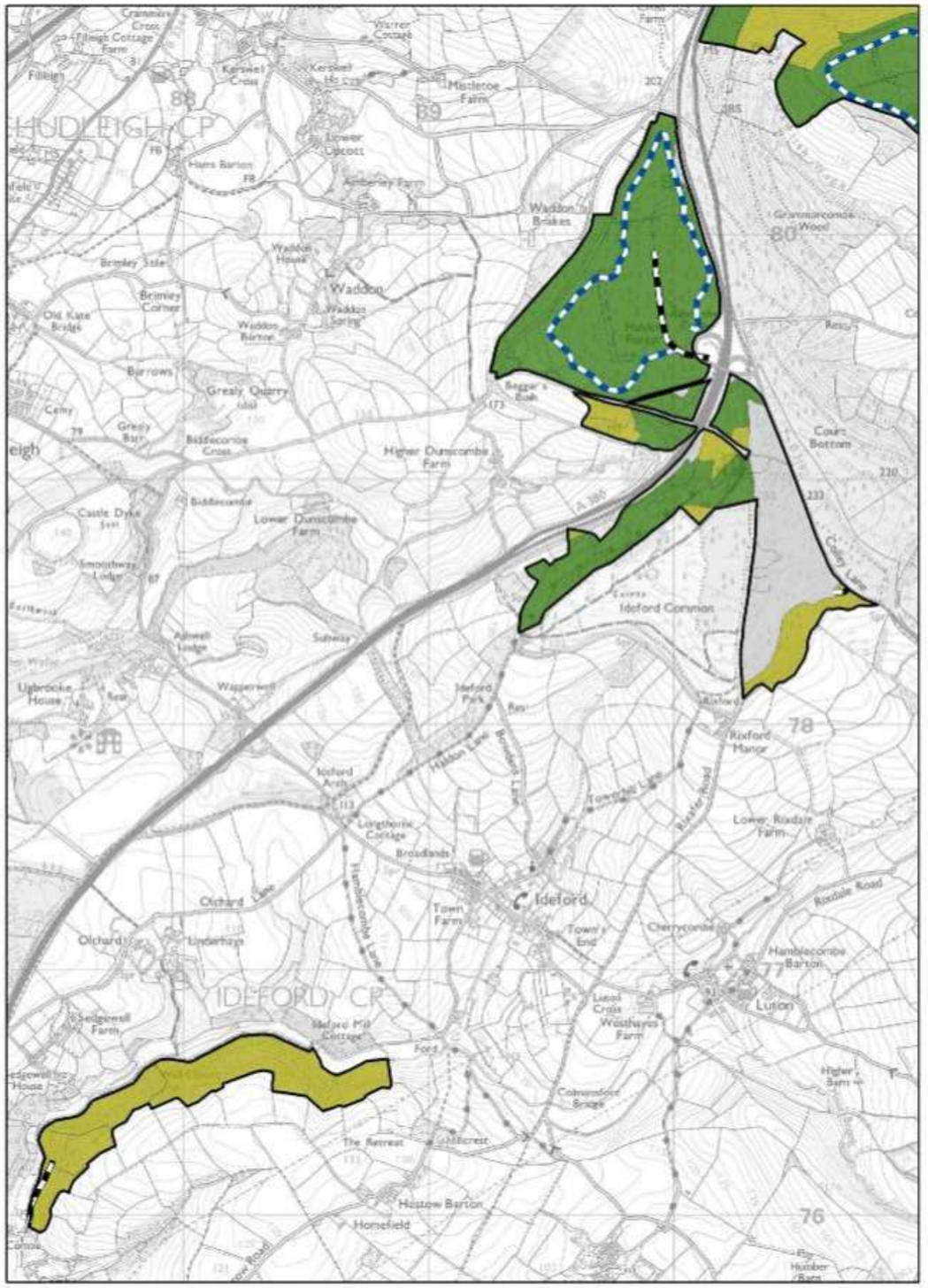
Legend

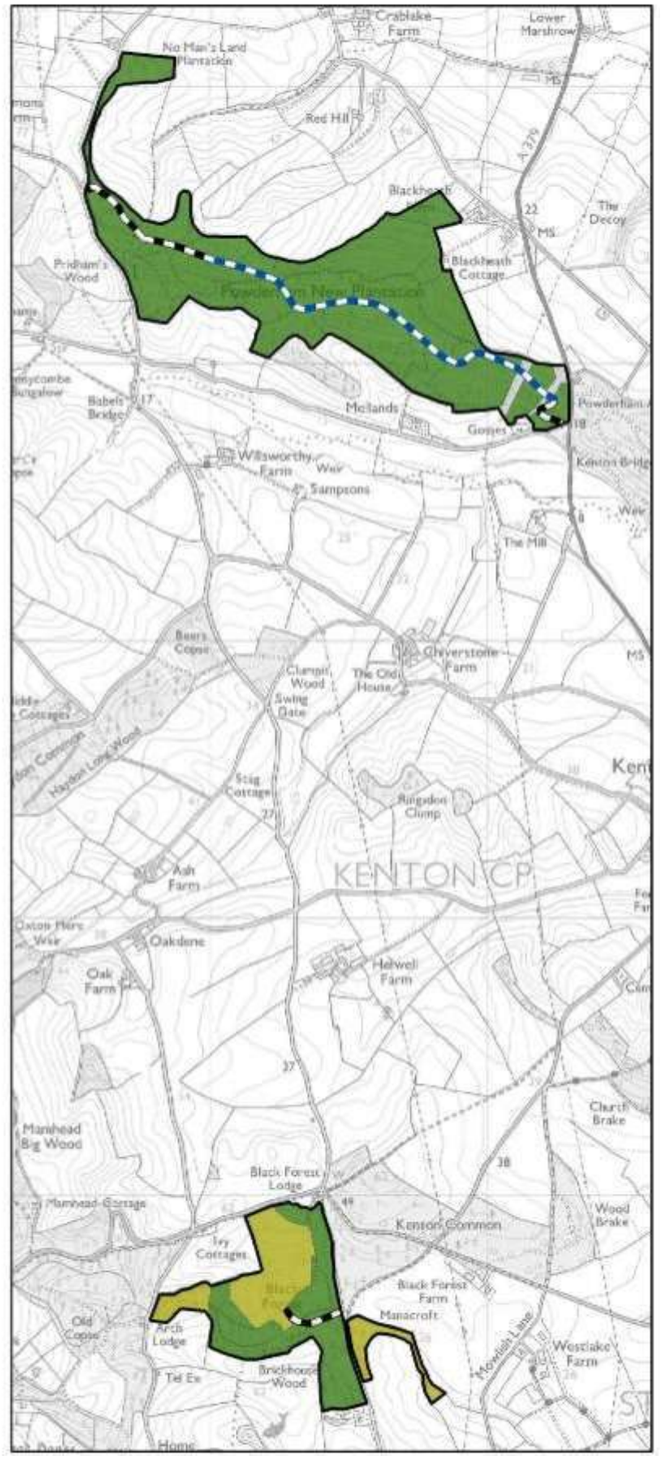
Evergreen Conifer | Deciduous Conifer | Native & naturalized broadleaves | Non-native broadleaves | Open/other

0 0.125 0.25 0.5 0.75 1 Miles







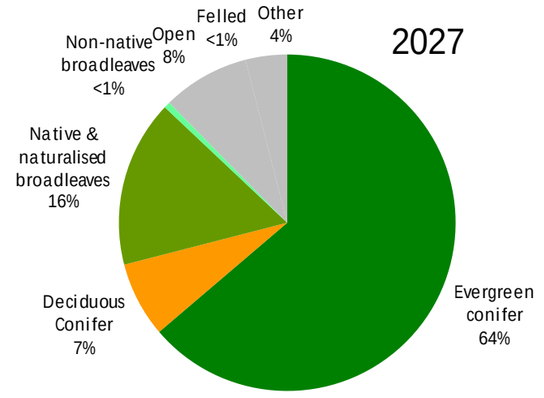


2015 - 2025

Indicative Future Species 2028

The projections made are indicative of species composition in ten years time. They do not constitute a guarantee and merely act as an indicator of how the vision for the Plan area will be delivered over time.

In reality, greater larch removal is anticipated and a greater proportion of open habitat delivered, due to *Phytophthora ramorum* and dynamic internal space fluxes.



Legend

- Evergreen Conifer
- Deciduous Conifer
- Native & naturalized broadleaves
- Non-native broadleaves
- Open/other

0 0.125 0.25 0.5 0.75 1 Miles

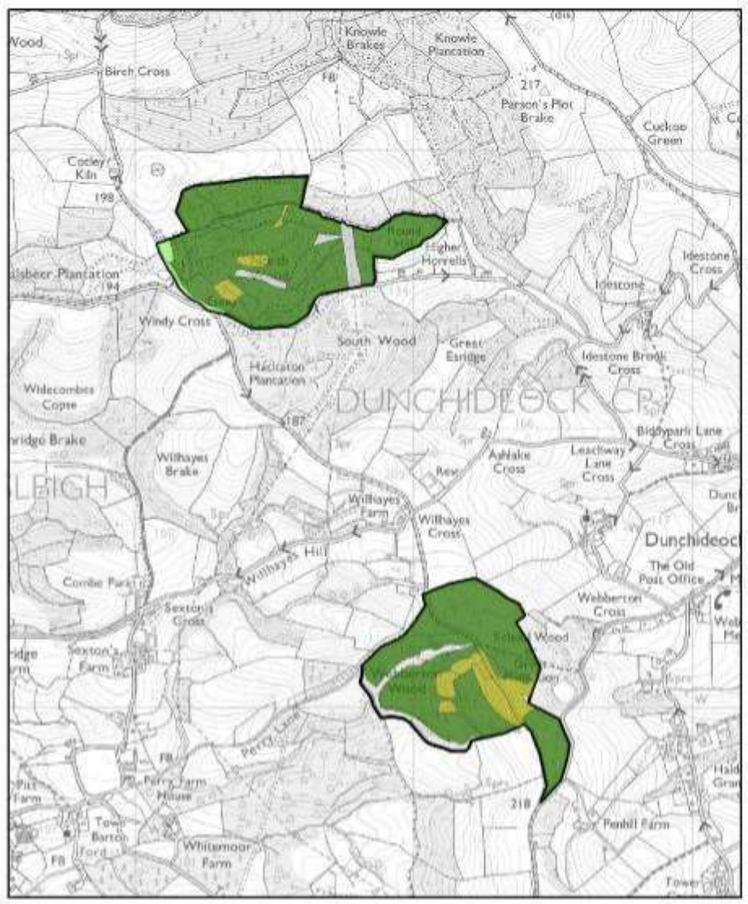
Indicative Future Species 2028

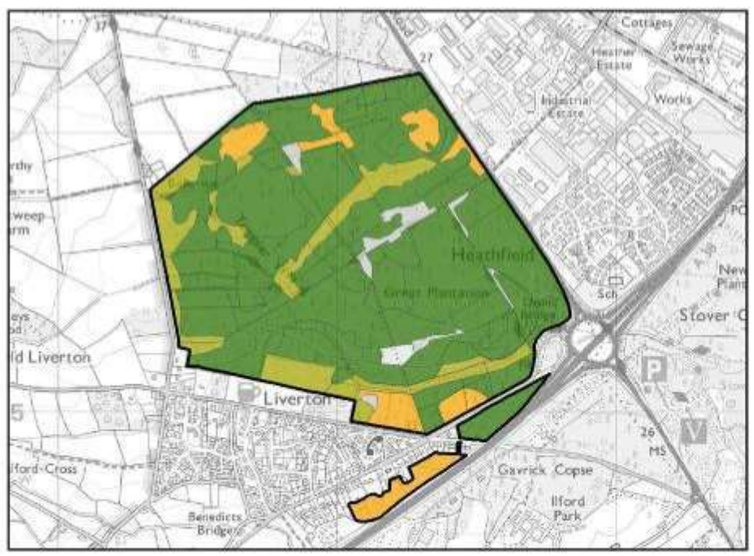
2015 - 2025

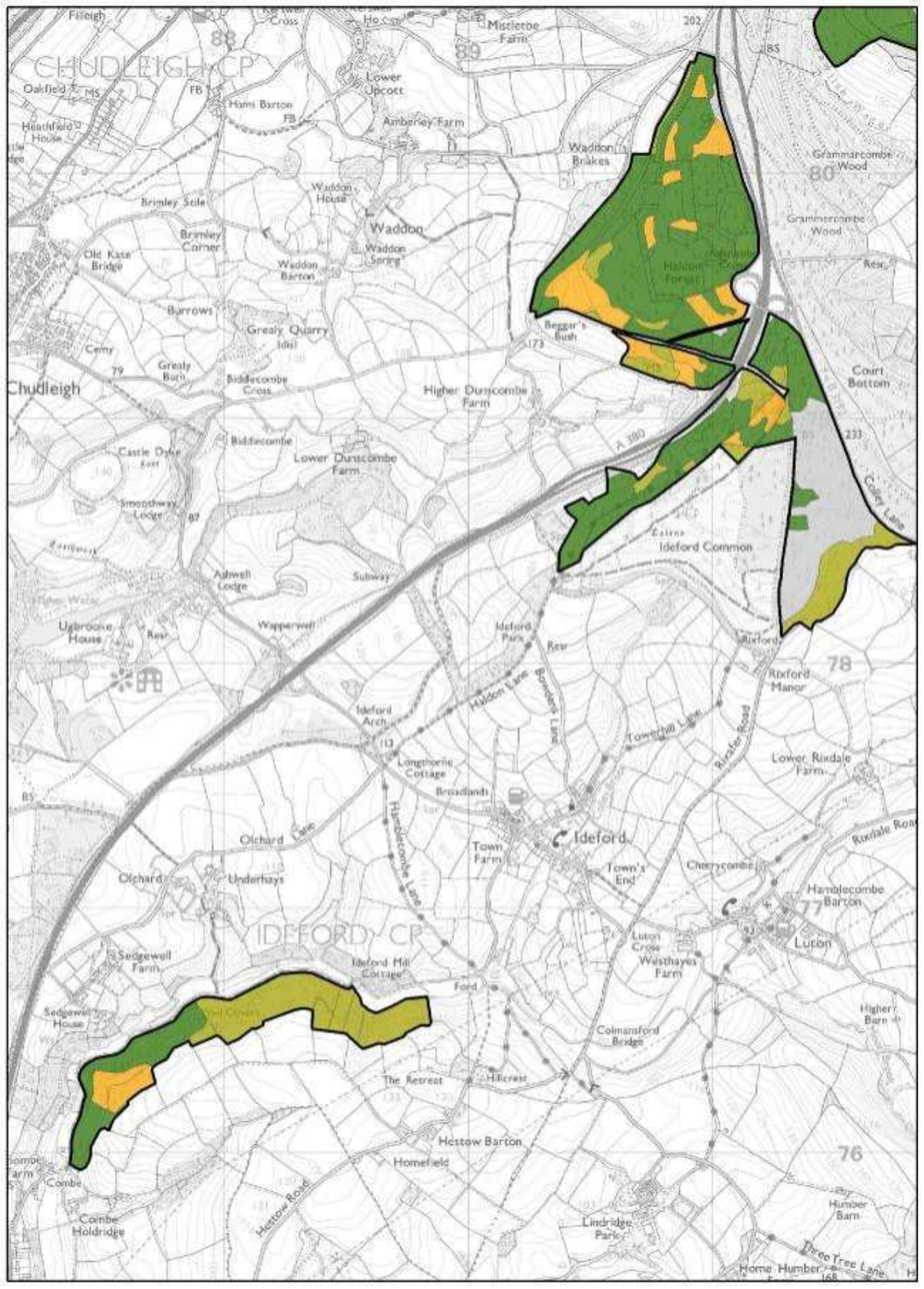
Legend

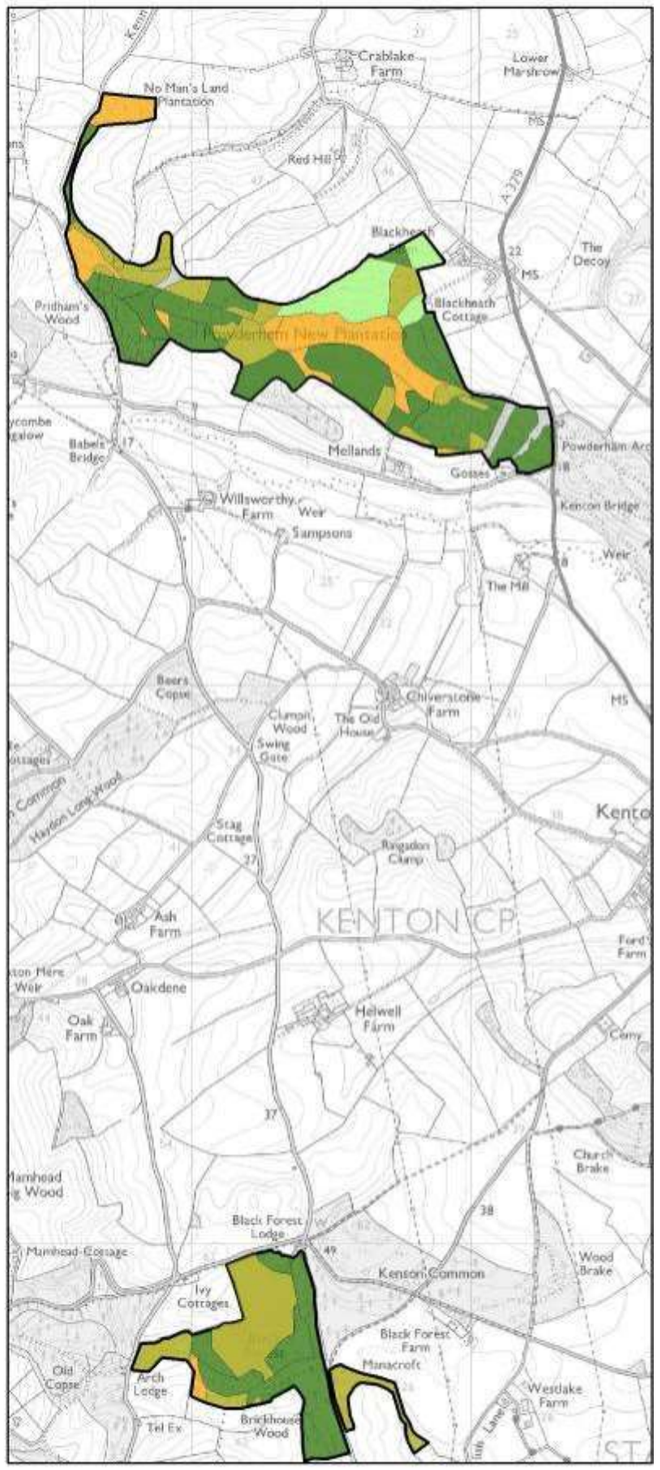
Evergreen Conifer | Deciduous Conifer | Native & naturalized broadleaves | Non-native broadleaves | Open/other

0 0.125 0.25 0.5 0.75 1 Miles







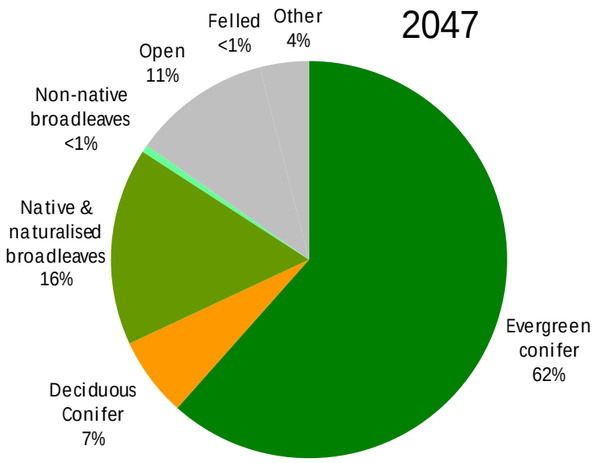


2015 - 2025

Indicative Future Species 2048

The projections made are indicative of species composition in thirty years time. They do not constitute a guarantee and merely act as an indicator of how the vision for the Plan area will be delivered over time.

In reality, greater larch removal is anticipated and a greater proportion of open habitat delivered, due to *Phytophthora ramorum* and dynamic internal space fluxes.



Legend

- Evergreen Conifer
- Deciduous Conifer
- Native & naturalized broadleaves
- Non-native broadleaves
- Open/other

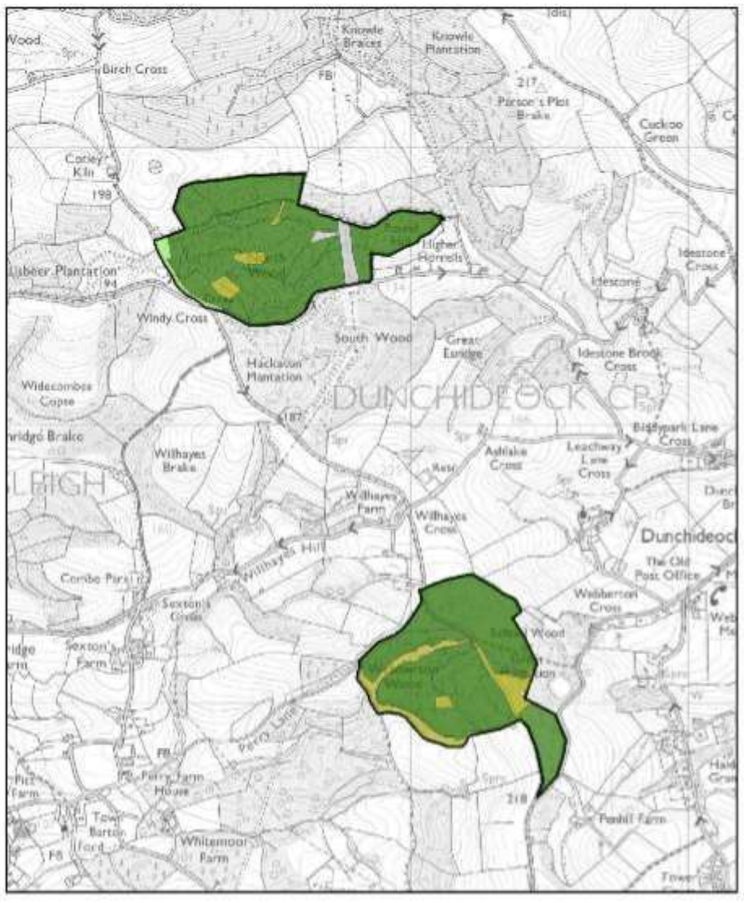
0 0.125 0.25 0.5 0.75 1 Miles

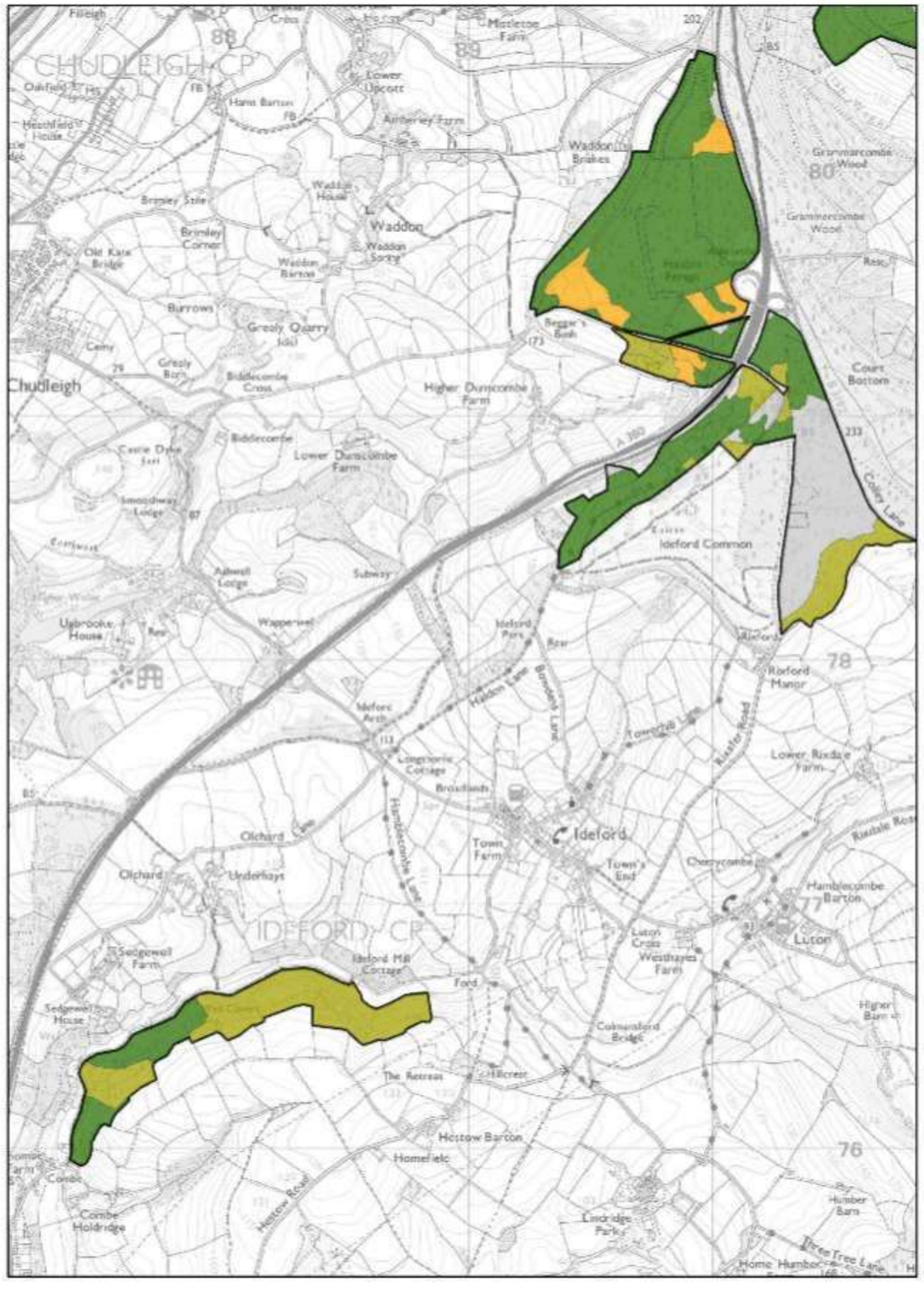
Indicative Future Species 2015 - 2025 2048

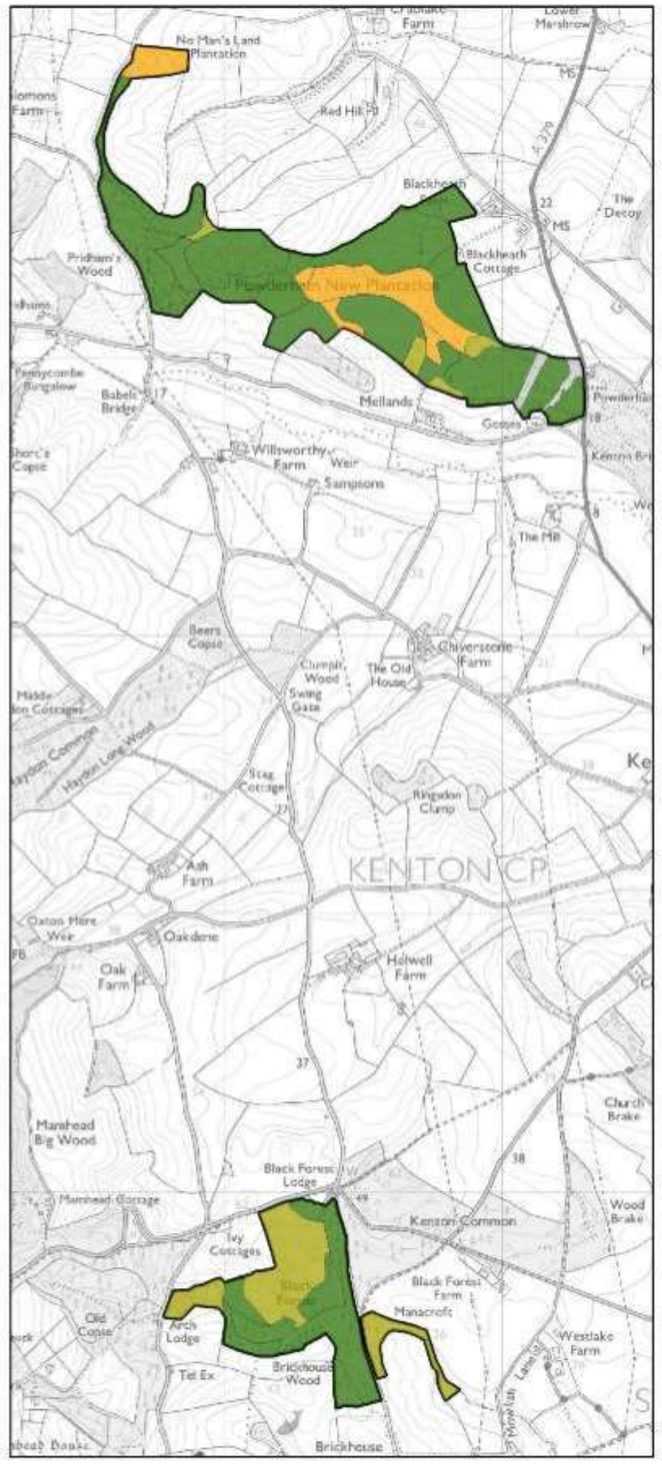
Legend

Evergreen Conifer | Deciduous Conifer | Native & naturalized broadleaves | Non-native broadleaves | Open/other

0 0.125 0.25 0.5 0.75 1 Miles







PART 6 – Conservation, heritage and recreation

2015 - 2025

Recreation and Public Access

The Plan area experiences a high level of formal and informal recreational usage. The majority of the Main Block and outlying forests (excluding Powderham, Whaddon Brake and Well Covert) are held under freehold and are therefore Open Access. Together with the Forest Park Hub at Bullers Hill and paid parking at Mamhead, these areas have a greater focus on recreation provision with a number of waymarked bicycle, walking, orienteering and horse riding trails in place. The leasehold tenured blocks mean access is limited to De Facto along the Public Rights of Way.

The use of the Plan area by local individuals as well as numerous visitors and tourists demonstrates the value of the forests to the local community, these features will be maintained in balance with ecological value.

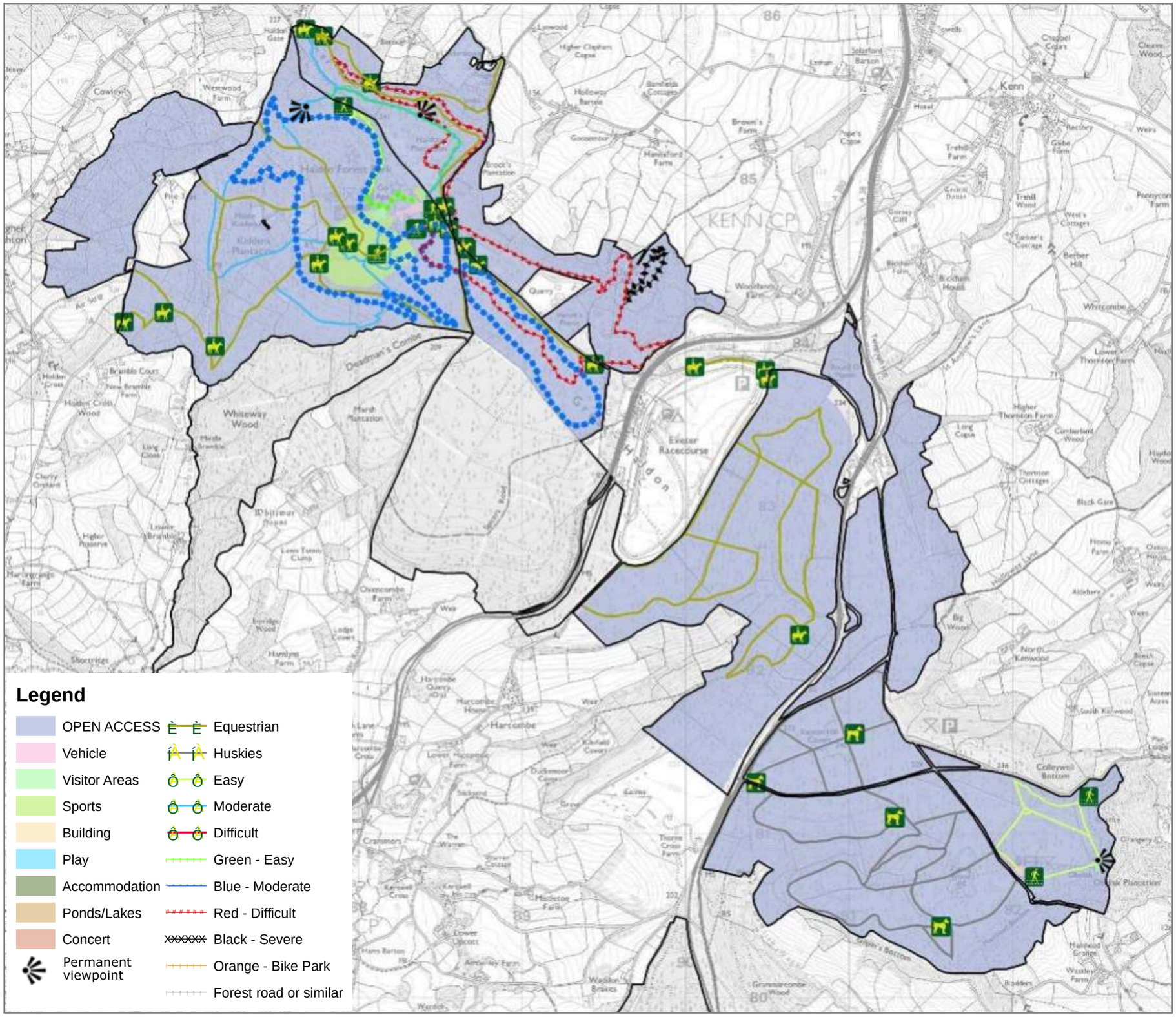
Within the SSSI, any new trails will be subject of discussion between FC and NE at the planning stage.

Any events planned for within the bird breeding season will be assessed for their likelihood of disturbance and re-routed if necessary.

The Plan area also absorbs a lot of the recreational pressure as an alternative to nearby coast and numerous informal car parking facilities are available.

Three permanent viewpoints will be maintained within the main block, the Bird of Prey Viewpoint within Kiddens, the Discovery Trail Viewpoint within Tower Wood and the Obelisk at Mamhead. These will be maintained open as required by the Haldon Forest Park Recreation Team.

Opportunities to use operations to create temporary view points will also be utilised at the time of intervention. This work will primarily be along the high ridge and where existing infrastructure (i.e. paths) are already in place, so as to minimise impact. This will in turn, lead to other viewpoint areas being allowed to scrub up therefore reducing the need to significant open habitat maintenance.



0 0.125 0.25 0.5 0.75 1 Miles

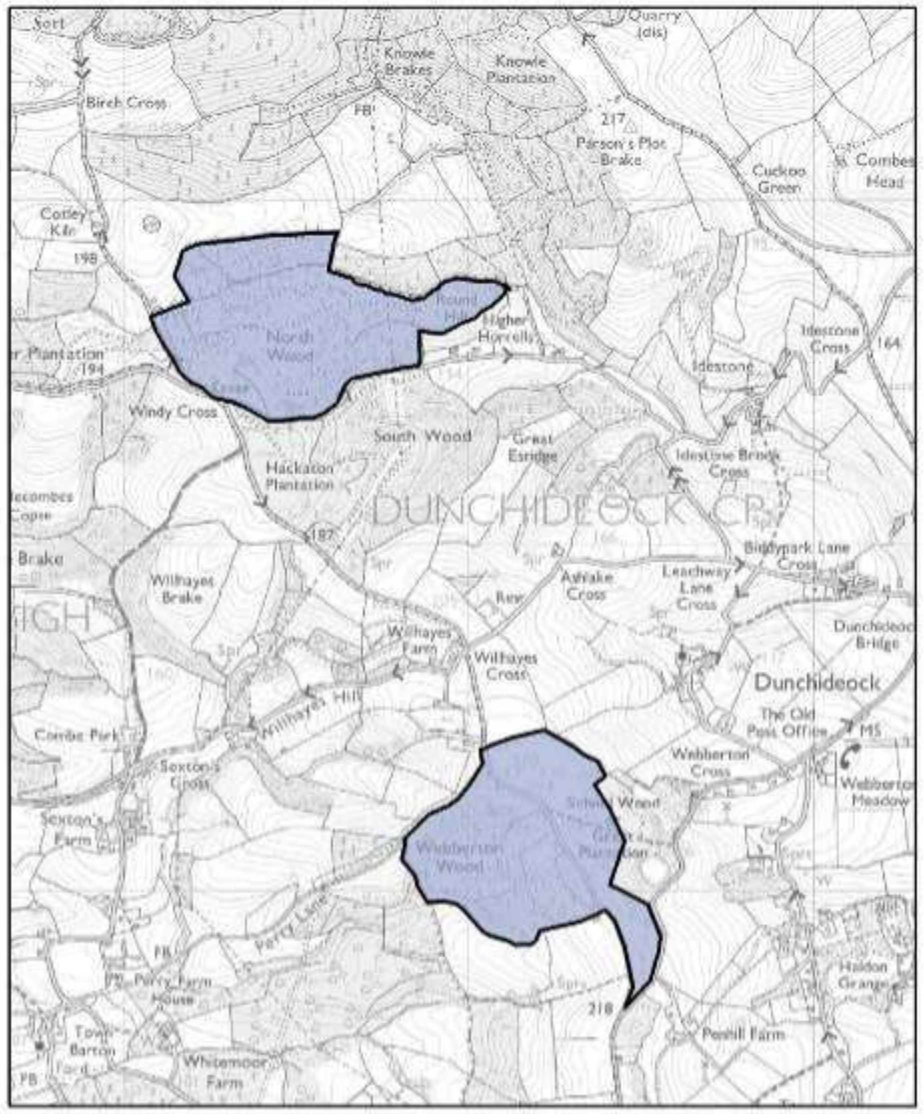
0 0.125 0.25 0.5 0.75 1 Miles

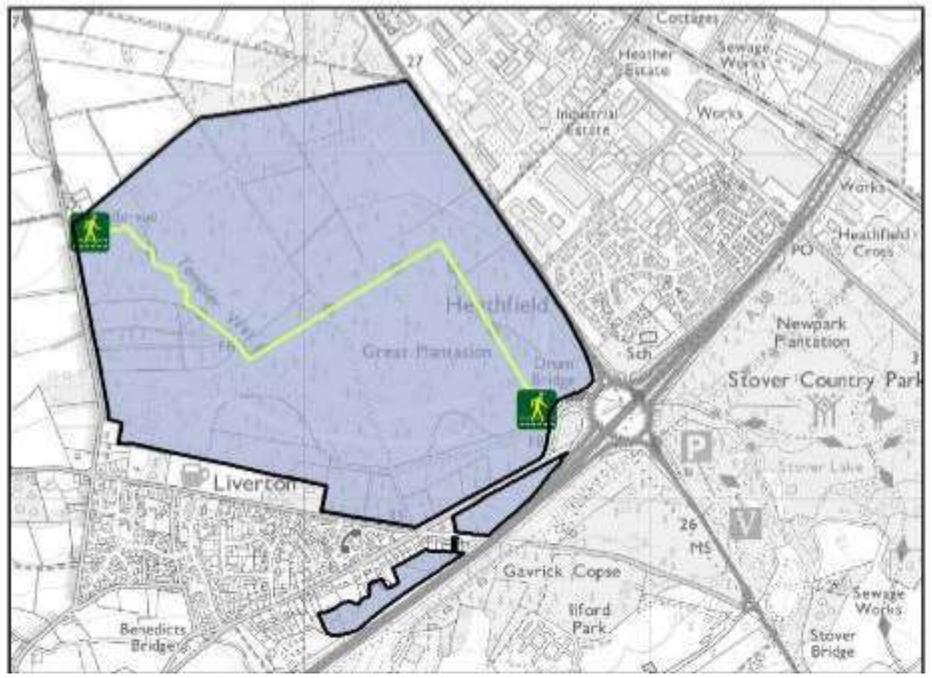
2015 - 2025

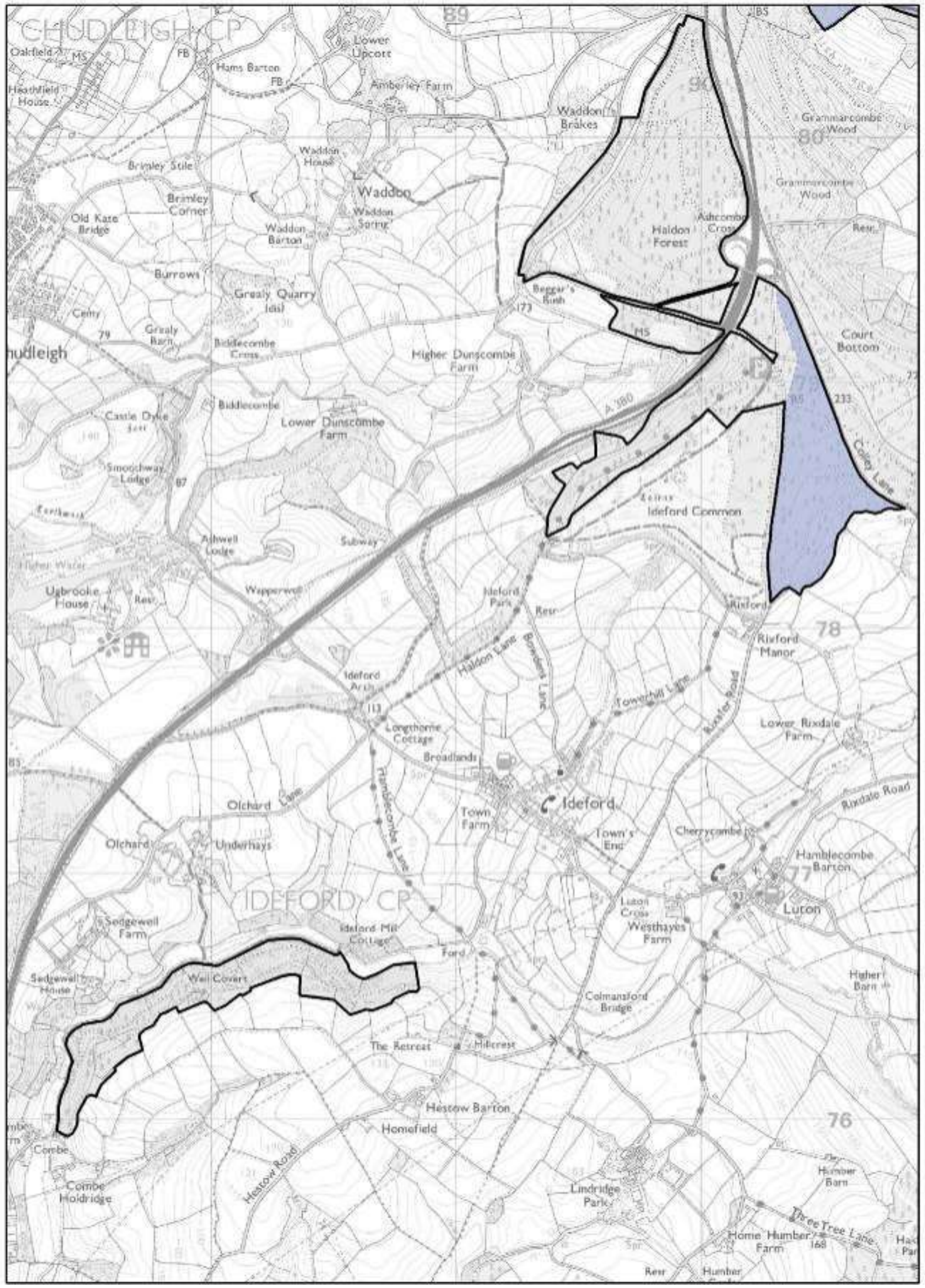
Legend

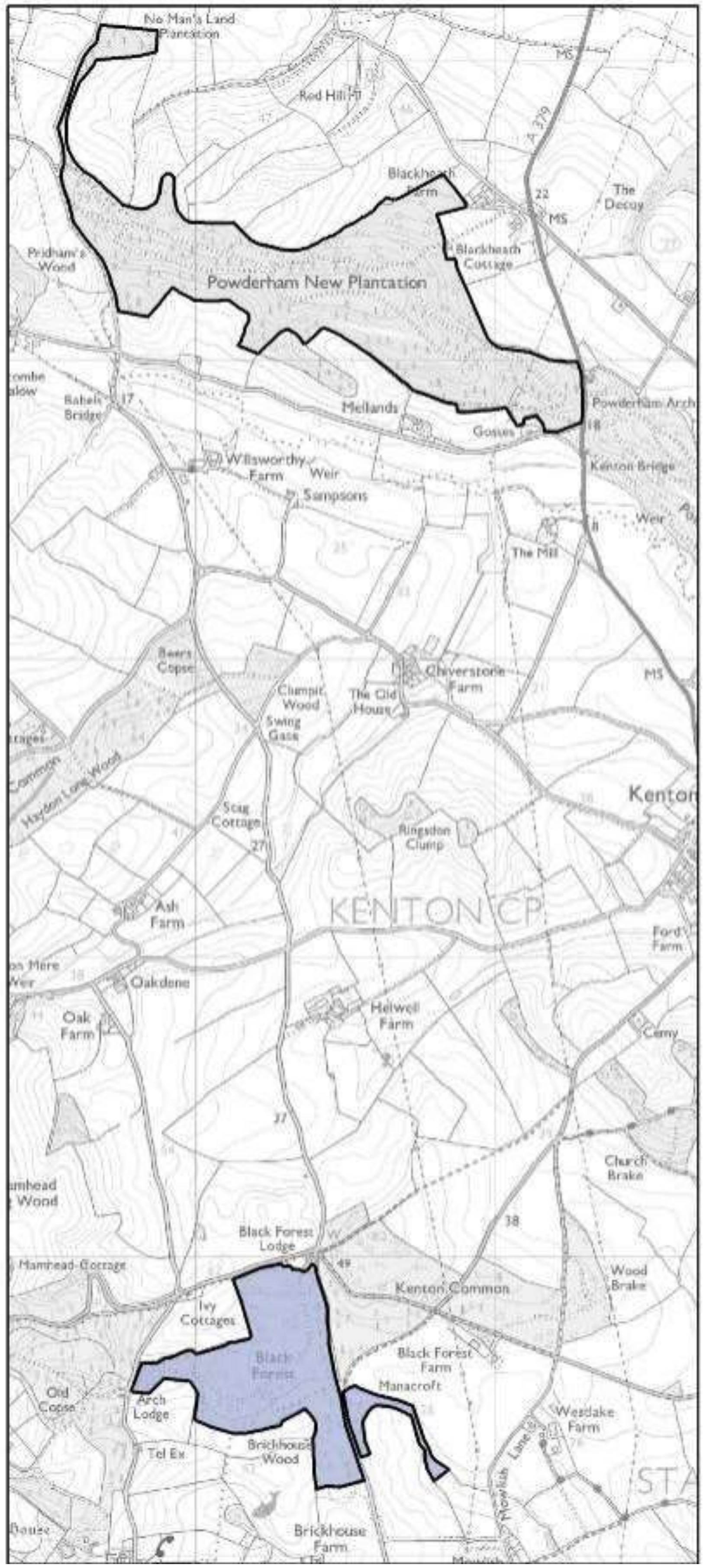
OPEN ACCESS	Vehicle	Sports	Play	Ponds/Lakes	Equestrian	Easy
	Visitor Areas	Building	Accommodation	Concert	Huskies	Moderate

Difficult	Blue - Moderate	Black - Severe	Forest road or similar
Green - Easy	Red - Difficult	Orange - Bike Park	









Zone 1 - experiences exceptionally high visitor interaction and therefore infrastructure and amenity value must be maintained. It includes the Recreation Hub including entrances, car park, main visitor buildings, Forestry Commission offices and maintenance areas, Pump Track & Cycle Skills area.

Trees will be managed to maximise stability to ensure safety, minimise Park closure and to provide a forest experience. This will be achieved by heavy thinning of young crops and then regular light thinning where possible and the utilisation of underplanting to ensure that forest cover is perpetuated into the future. Ecological interest in this area is limited due to low forest cover and high levels of disturbance.

Management is led by the Haldon Forest Park Team.

Zone 2 - has a very high visitor footfall as it includes Discovery Trail, Bullers Hill area, Go Ape and road edge. It also includes proposed short loop trail, habitat trail bird hide and 2 new viewpoints to the Discovery Trail.

The forest will be managed through sensitive thinning and retention of quality areas of pine crops to provide an attractive backdrop to areas of open heath with high landscape value.

Significant areas of lowland heathland falls within this zone simply due to it's proximity to the Buller's Hill visitor centre. Balancing the use of this zone for recreation on dedicated trails and cycle routes through sensitive lowland heathland habitats supporting species such as nightjar and reptiles is of paramount importance. Dogs will be excluded during the most sensitive times of the year.

Management is led by the Haldon Forest Park Team with input from the Beat Team.

Zone 3 - takes in the wider trail network including longer distance and higher grade mountain bike and walking trails. Recreation remains a key influence in this area given the significant visitor numbers and people's desire to explore wider areas of the forest beyond Zones 1 and 2.

The forest will be managed for a range of objectives including the provision of safe, diverse and interesting landscape for a range of informal and formal recreation.

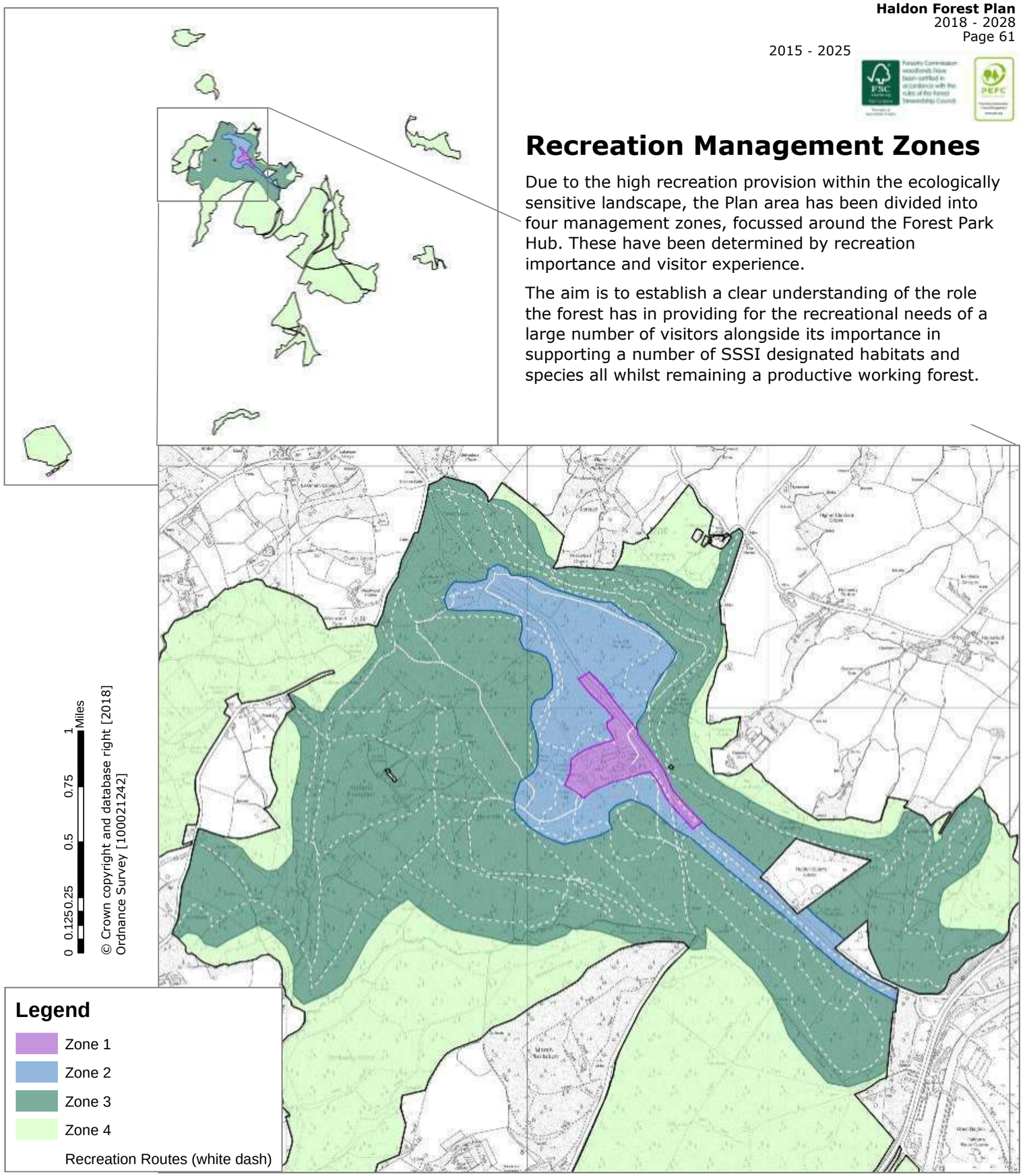
This zone encompasses significant areas of SSSI designated forest and heathland important for a range of species including raptors and nightjar which are especially vulnerable to disturbance. Exclusion zones will be put in place around known nest sites to ensure disturbance from organised events does not occur. The use of waymarked trails through lowland heathland and exclusion of dogs at certain times of the year will reduce damage and disturbance to lowland heathland habitats and species. Creation of new informal mountain biking trails will be monitored.

Management is led by the Beat Team with input from the Haldon Forest Park Team, particularly in close proximity (i.e. 10 metres) to trails.

Zone 4 - includes the rest of the forest outside of Zones 1,2 and 3. No formal trails exist within this area and recreational usage is limited to informal walking and mountain biking.

This zone encompasses significant areas of forest which are valuable for nesting raptors due to lower levels of disturbance. Balancing the ecological requirements of breeding raptor and nightjar is a key objective of this area in line with sustainable timber production.

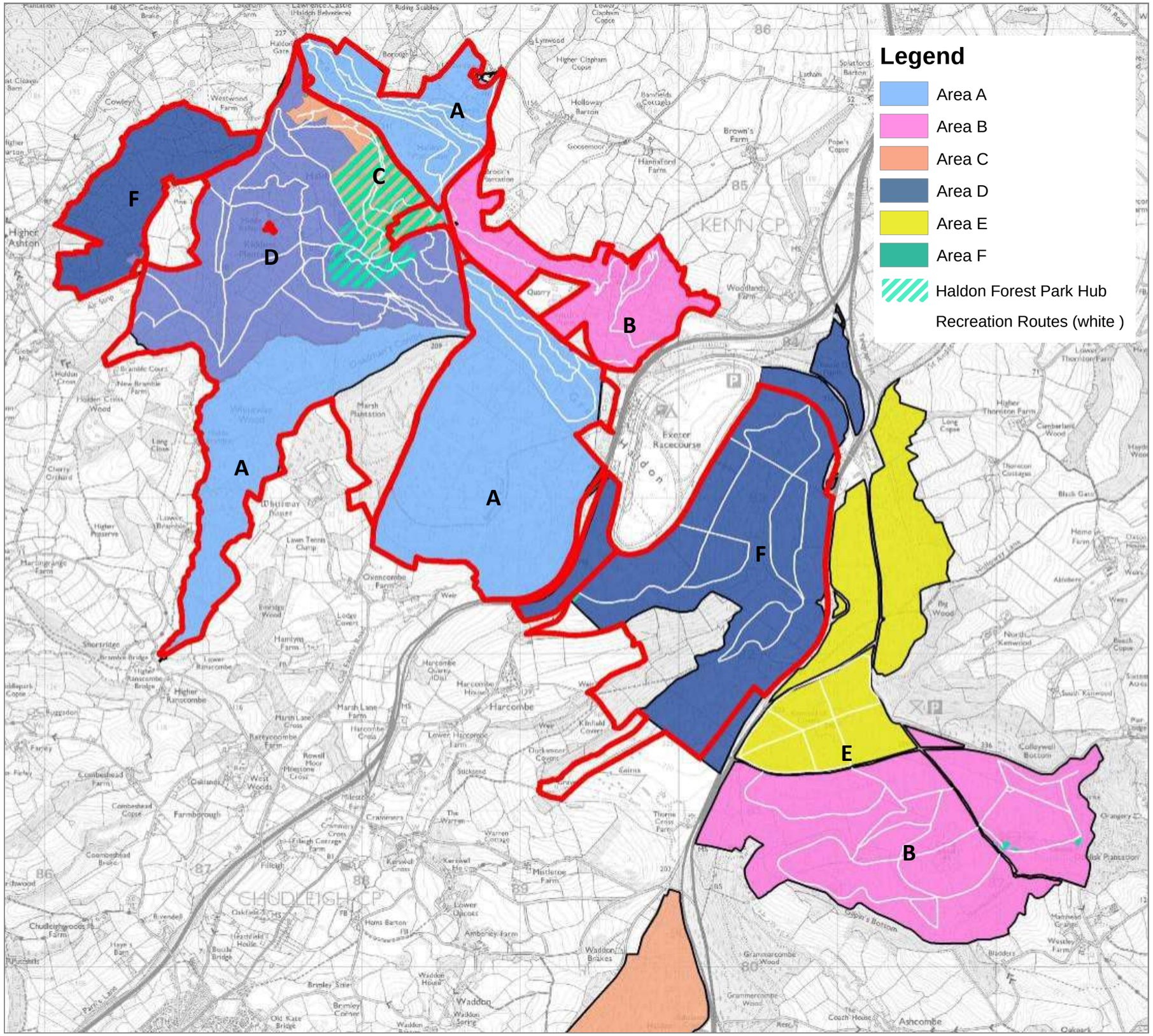
Management is led by the Beat Team.



Recreation Management Zones

Due to the high recreation provision within the ecologically sensitive landscape, the Plan area has been divided into four management zones, focussed around the Forest Park Hub. These have been determined by recreation importance and visitor experience.

The aim is to establish a clear understanding of the role the forest has in providing for the recreational needs of a large number of visitors alongside its importance in supporting a number of SSSI designated habitats and species all whilst remaining a productive working forest.



Operation Units & Working

To balance the impact of forest operations on the high recreation provision and visitor numbers around the Forest Park Hub area, the Main Block has been divided into six operational blocks. The intention is work these areas on a rotation so that forest operations are discreet and do not adversely affect the visitor experience.

The aim will be for operations to be targeted, swift and to a very high standard, utilising interpretation where appropriate so that the Haldon Forest becomes a showcase for exemplary forest management.

Opportunities to use operations to create temporary (e.g. ten year) view points will be utilised. These areas will be less than 0.5 ha and therefore within the threshold OF cms6.

2015 - 2025

Conservation - Ride sides & Habitats

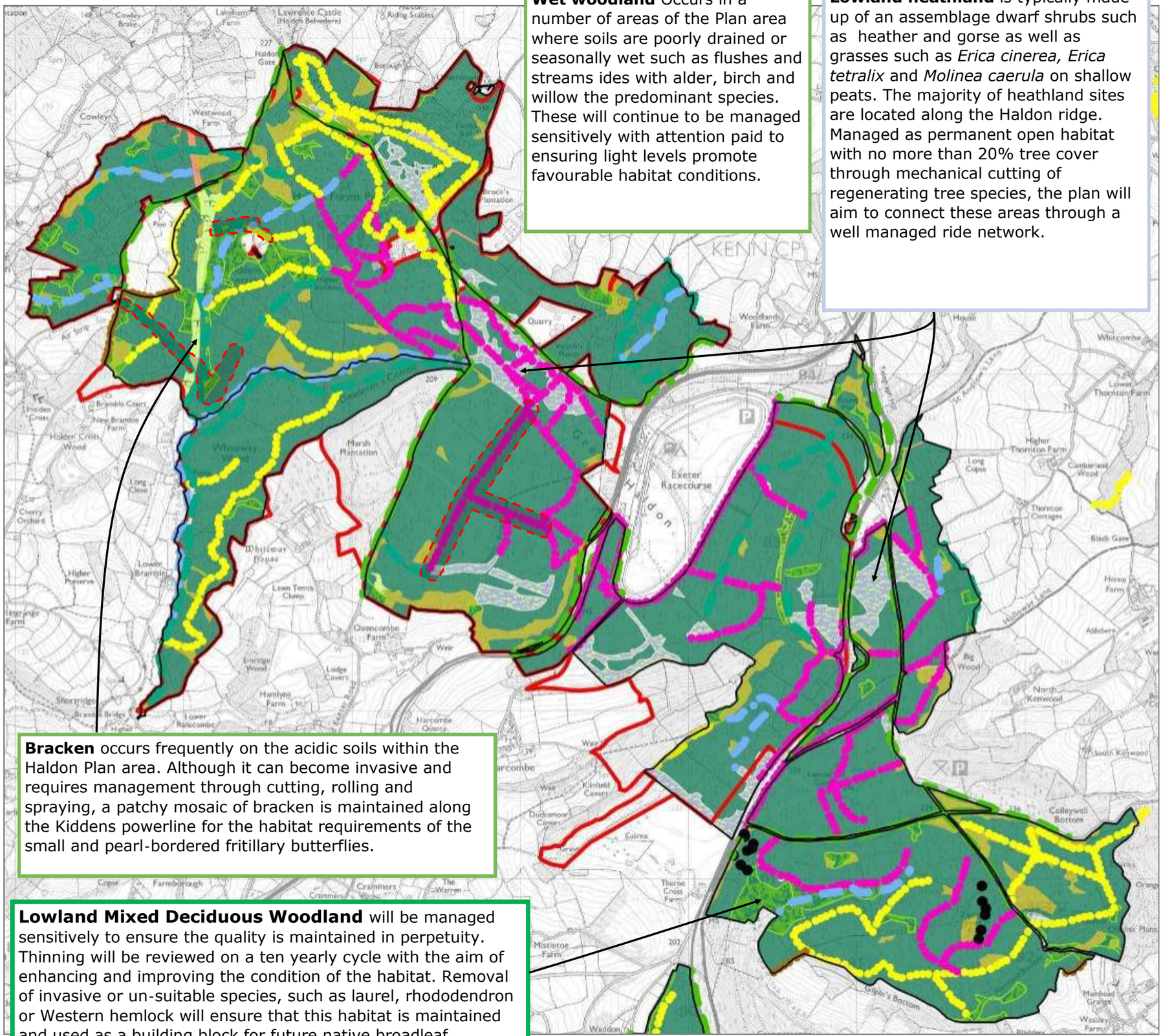
Ride and road sides, together with watercourses and hedgerow management will conform to the prescriptions outlined in the District document, Design and Management of Environmental Corridors (2017). This document outlines the management of light levels, pinch points and forest edge dynamics and is agreed with Forest Services. The objective is to use the ride network to extend and connect with the surrounding heathland, this will be achieved through proactive, targeted widening and unstocking of edges to some coupes following felling operations to create a mixed transient open and diffuse scrubby habitat. Where appropriate, following felling and cleaning operations, opportunities will taken to extend and buffer the priority habitats underlined. This work will be focussed on areas highlighted with red hatch - - - over the Plan period.

Wet woodland Occurs in a number of areas of the Plan area where soils are poorly drained or seasonally wet such as flushes and streams ides with alder, birch and willow the predominant species. These will continue to be managed sensitively with attention paid to ensuring light levels promote favourable habitat conditions.

Lowland heathland is typically made up of an assemblage dwarf shrubs such as heather and gorse as well as grasses such as *Erica cinerea, Erica tetralix* and *Molinea caerula* on shallow peats. The majority of heathland sites are located along the Haldon ridge. Managed as permanent open habitat with no more than 20% tree cover through mechanical cutting of regenerating tree species, the plan will aim to connect these areas through a well managed ride network.

Bracken occurs frequently on the acidic soils within the Haldon Plan area. Although it can become invasive and requires management through cutting, rolling and spraying, a patchy mosaic of bracken is maintained along the Kiddens powerline for the habitat requirements of the small and pearl-bordered fritillary butterflies.

Lowland Mixed Deciduous Woodland will be managed sensitively to ensure the quality is maintained in perpetuity. Thinning will be reviewed on a ten yearly cycle with the aim of enhancing and improving the condition of the habitat. Removal of invasive or un-suitable species, such as laurel, rhododendron or Western hemlock will ensure that this habitat is maintained and used as a building block for future native broadleaf restoration.



0 0.125 0.25 0.5 0.75 1 Miles

2015 - 2025

Legend

- Moor and Heath
- Hedgerow
- Forest Road Edge
- Conservation + Recreation
- Public Roadside
- Windthrow protection
- Watercourse
- Broadleaved Belt
- Lowland beech/yew woodland
- Wet woodland
- Lowland heathland
- Lowland mixed deciduous woodland
- BROADLEAVED; MIXED/YEW WOODLANDS
- CONIFEROUS WOODLANDS
- BOUNDARY & LINEAR FEATURES
- NEUTRAL GRASSLAND
- ACID GRASSLAND
- BRACKEN
- INLAND ROCK
- Surveyed; Unknown Habitat

Lowland Mixed Deciduous Woodland

A number of areas of remnant lowland mixed deciduous woodland are found across the Plan area. These are predominantly made up of Penduculate oak, ash, birch, beech and sweet chestnut. Some evidence of coppicing of hazel and sweet chestnut exists.

Management of these areas will be sensitive to ensure the quality is maintained in perpetuity. Thinning will be reviewed on a ten yearly cycle with the aim of enhancing and improving the condition of the habitat. Removal of invasive or un-suitable species, such as laurel, rhododendron or Western hemlock will ensure that this habitat is maintained and used as a building block for future native broadleaf restoration.

Lowland heathland is typically made up of an assemblage dwarf shrubs such as heather and gorse as well as grasses such as *Erica cinerea, Erica tetralix* and *Molinea caerula* on shallow peats. The majority of these are found internally along the Ideford Common and Great Plantation. These are managed as permanent open habitat with no more than 20% tree cover through mechanical cutting of regenerating tree species. The plan will look to connect these areas through the ride network.

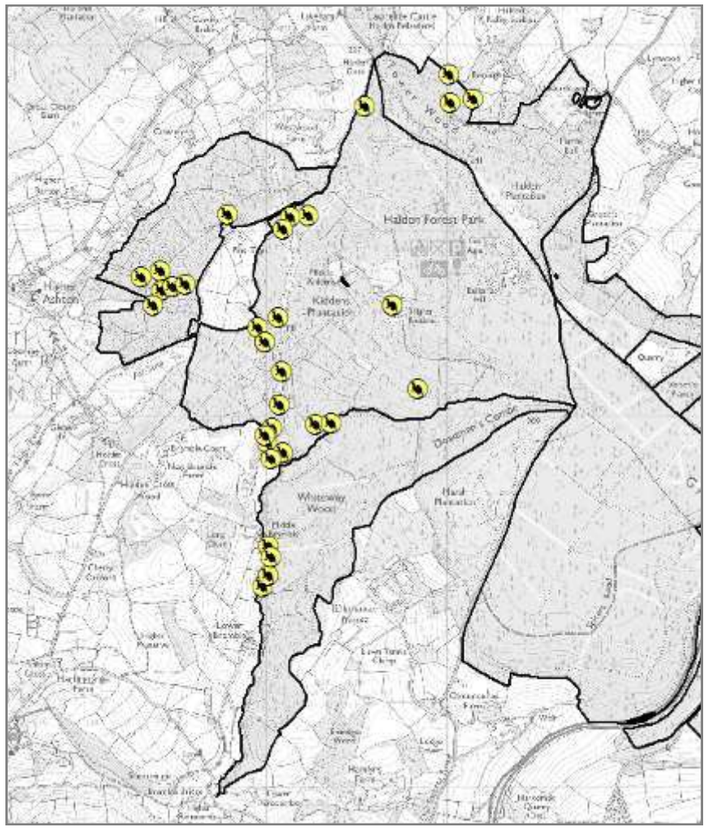
Conservation - Features

The Forest Plan area is used by a number of interesting flora and fauna some of which are highlighted below. Haldon Forest and its associated open habitats make a significant contribution to the provision of semi-natural habitats in the wider landscape.

On the other hand some non-native flora and grazing fauna species can have a detrimental impact on the forest and its features if their numbers are too high. Species such as rhododendron, encroaching wild deer, grey squirrel and boar will all be managed in line with District Strategy to ensure that their pressure does not have a negative impact on the condition of habitats and crops.

Dormouse favourable habitat is found throughout the Plan area, and there are records of this species in Kiddens and Lucy Balls (see map) but also in Great Plantation and Webberton.

This European Protected Species requires pinch points across corridors to allow habitat connectivity between broadleaved woodland, particularly in stands with a high hazel and/or sweet chestnut components. The prescriptions outlined in the Environmental Corridors document will ensure appropriate habitat provision and management will be in line with Best Practice Guidance (FC & NE, 2007).



0 0.125 0.25 0.5 0.75 1 Miles

Trees of Significant Interest (TSI) are found throughout the Plan area and will be retained in perpetuity. The majority of these trees are beech but also include wild service, crab apple and oak. When crops are thinned crowns will be released slowly to minimise the impact of sudden exposure to desiccating winds and sun scorch. Management will be in line with FC TSI Guidance (Ops No. 31).

Grizzled and Dingy Skipper (pictured) are becoming increasingly rare in the UK. The Kiddens area of the Plan area is home to a vibrant population of the butterfly. Favouring warm sheltered areas with sparse vegetation including ride sides, woodland clearings and abandoned quarries, both species will benefit from the clearfelling programme as well as the environmental corridor work proposed in this Plan.

Turtle Dove is a severely declining bird which once used Haldon Forest SSSI as a sanctuary and was designated accordingly. This bird prefers to inhabit hedgerows (particularly hawthorn), woodland edges and scrub, however due, in part, to the agricultural intensification it is in steep decline. Haldon has some rumoured sightings of Turtle Dove in recent years but confirmed sightings have been absent for a number of years. Management will aim to provide areas of dense scrub and shrub layers along woodland edge and seed rich habitat throughout open grassland and rides.

Heritage Features

People have lived and farmed on Haldon for at least 5,000 years. It has been both a barrier to transport but also a commanding position from which to control the surrounding countryside. The Plan area holds a number of indications of this rich cultural heritage some of which can be dated back to the Bronze age. These include disused settlements, barrows, wells and kilns.

Windy Cross Scheduled Monument, is situated 13m north of the crossroads, at the southern edge of North Wood. It is aligned NNW to SSE. The cross survives as a simple Latin cross which is octagonal in section, and is Listed Grade II. It is most likely a Christian cross erected during the medieval period between the 9th and 15th centuries AD

More recent indications also exist: Mamhead Park (now a Registered Park and Garden) was once owned by the Balle family, then the Newmans who rebuilt the house to the designs of famous architect Anthony Salvin. Lancelot 'Capability' Brown landscaped the gardens. The famous Obelisk, erected c1742 by Thomas Balle stands 100 feet high and was used as a navigational aid for the Exe estuary.

Numerous other heritage features, including boundary stones and crop marks, are within the Plan area and are recorded within the Historic Environment Record. This database, and where appropriate experts, will be consulted before operations take place to ensure features are preserved for the future enlightenment and education and enhanced though management.

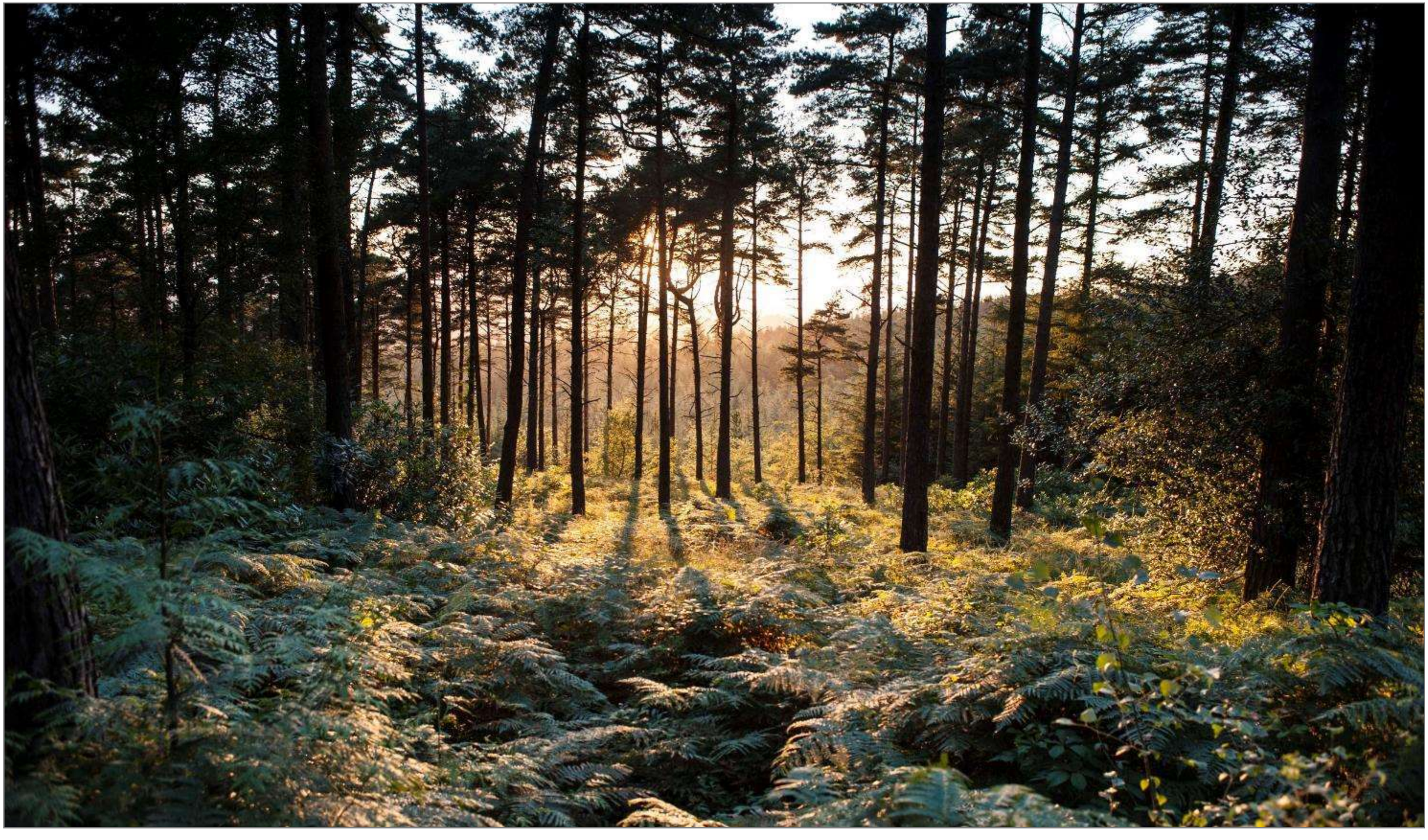
Mature hedgebanks are found throughout the Plan area and are managed at the time of operation in line with the District document, Design and Management of Environmental Corridors (2017).

Legend

- Scheduled Monument
- Unscheduled Monument
- Mamhead Park Registered Park and Garden
- Powderham Castle Registered Park and Garden

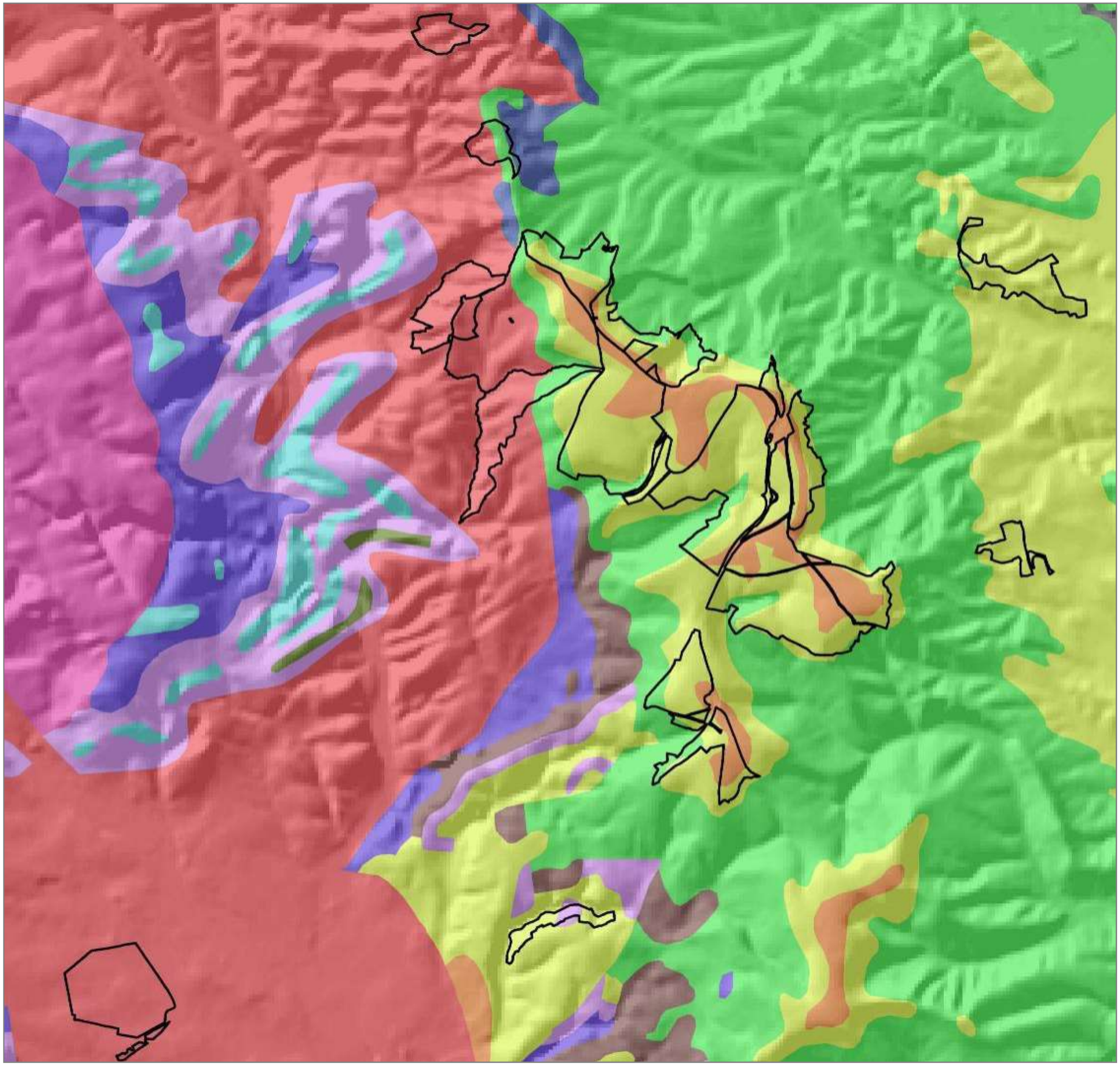
0 0.375 0.75 1.5 2.25 3
Miles

APPENDICES



APPENDIX 1: Physical environment

Geology



Legend

- BASALT, LAVA
- BRECCIA
- CONGLOMERATE
- DOLERITE (SYNONYMOUS WITH MICROGABBRO)
- GRANITIC-ROCK
- LAVA (UNDIFFERENTIATED) and TUFF
- LIMESTONE
- SANDSTONE (UNDIFFERENTIATED)
- SILICICLASTIC ARGILLACEOUS-ROCK
- SILICICLASTIC ARGILLACEOUS-ROCK and CHERT
- SILICICLASTIC ARGILLACEOUS-ROCK and SANDSTONE

0 0.375 0.75 1.5 2.25 3
Miles

Soils

Legend

- 1 [Typical brown earth]
- 12t [Argillic brown earth]
- 1u [Upland brown earth]
- 1z [Podzolic brown earth]
- 3 [Typical podzol]
- 5 [Typical ground-water gley]
- 7 [Typical surface-water gley]
- 7z [Podzolic surface-water gley]
- 13b [Brown ranker]

0 0.375 0.75 1.5 2.25 3 Miles

Landform Analysis

The landscape analysis is used to assess the landform patterns and demonstrates how it is in keeping with the surrounding landscape character.

One's eye is naturally dawn up the valleys and down the ridges. These principles will be used to design the shape of future coupes. Ensuring that the shape and size of felling and restocking areas do not detract from the natural appearance of the forest and its contribution to the landscape character.

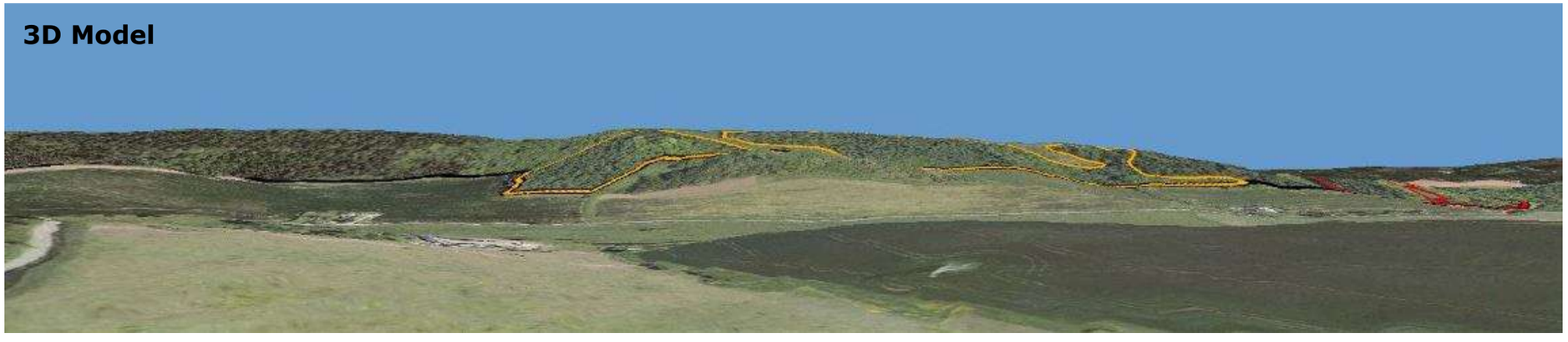
Lines of upward force
(valleys and hollows)

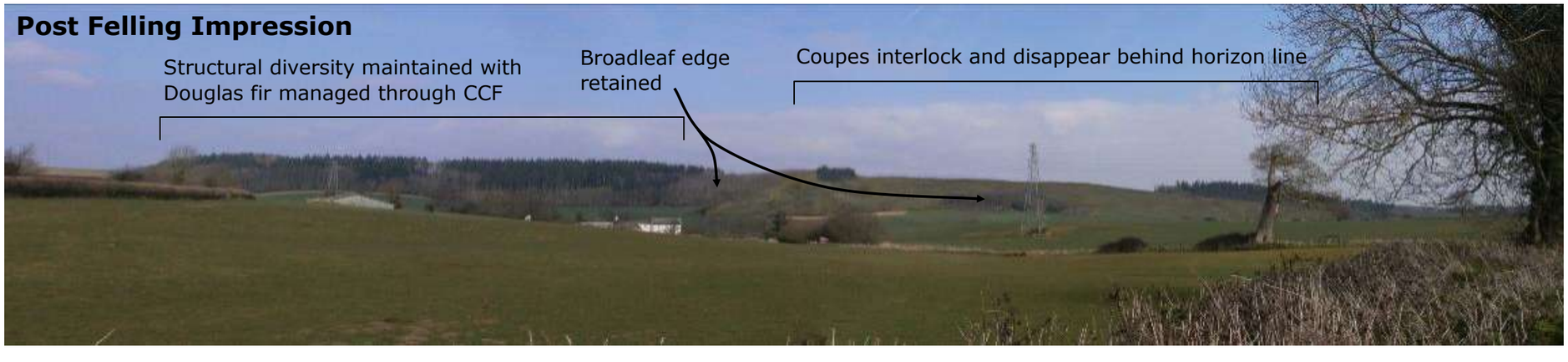
Lines of downward force
(ridges and plateaus)

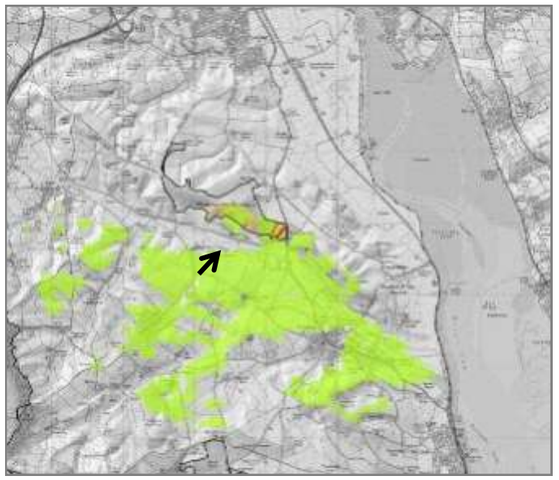
0 0.375 0.75 1.5 2.25 3
Miles

Landscape Analysis

Coupe 81773 - **Powderham South**
Viewpoint 1

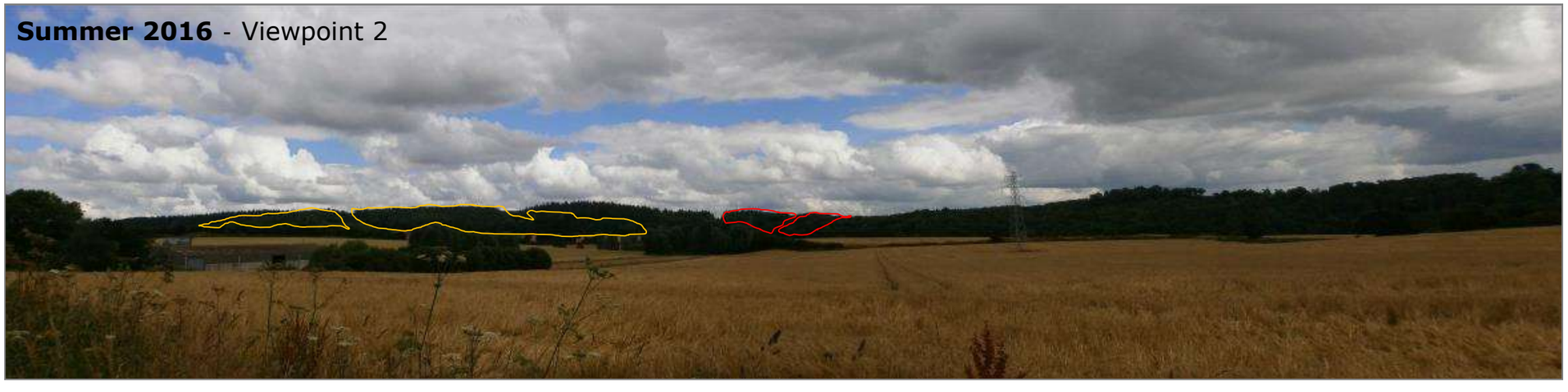


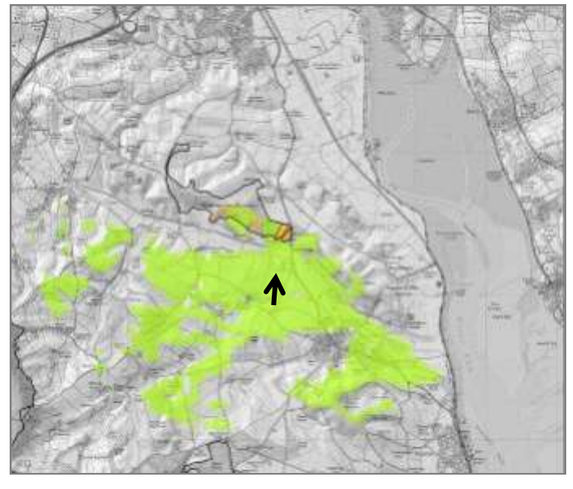


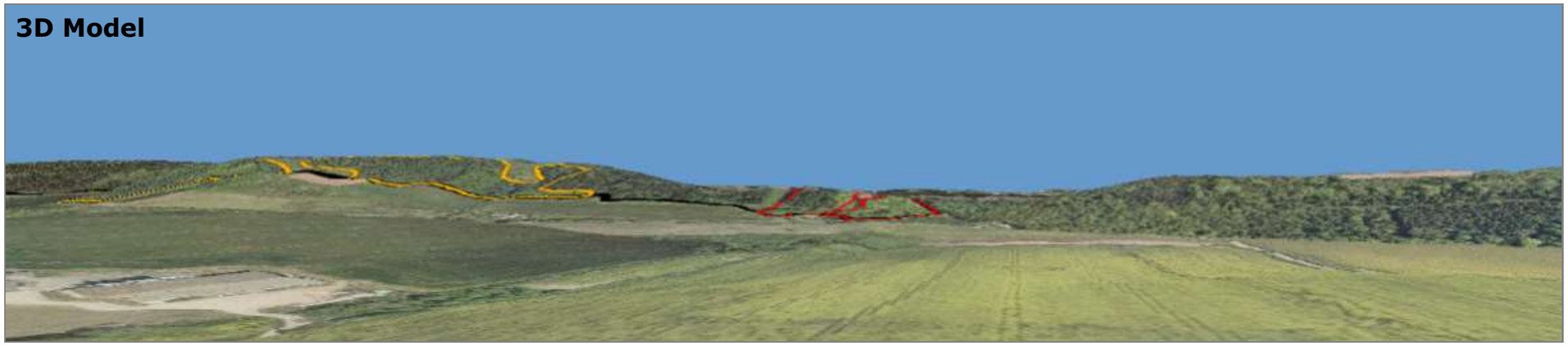


0 0.25 0.5 1 1.5 2
Miles

Coupe 81683 & 81773 - **Powderham South**
Viewpoint 2



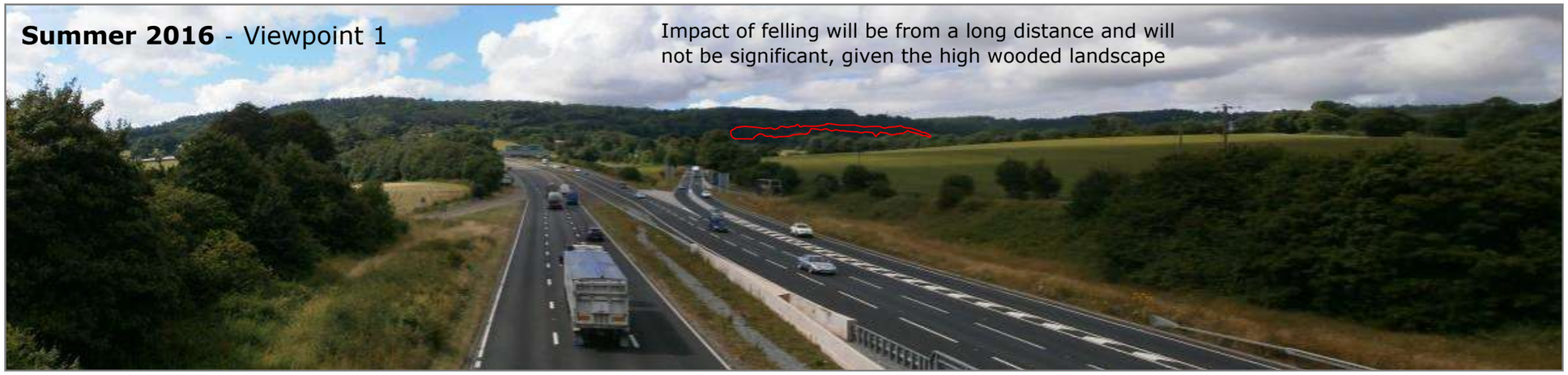




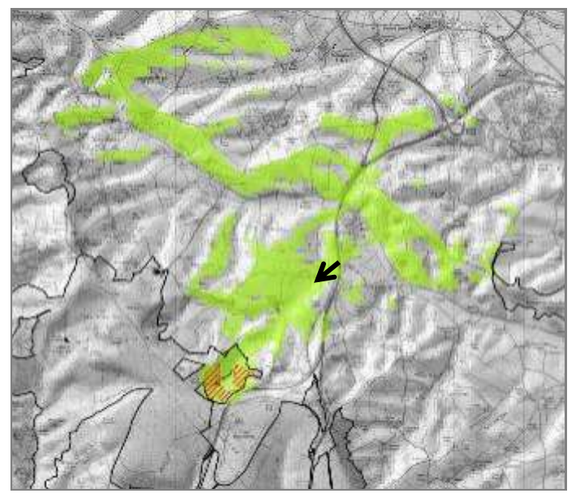
0 0.25 0.5 1 1.5 2 Miles

Summer 2016 - Viewpoint 1

Impact of felling will be from a long distance and will not be significant, given the high wooded landscape



Coupe 81659 & 81839 - **Freers**
Viewpoint 1

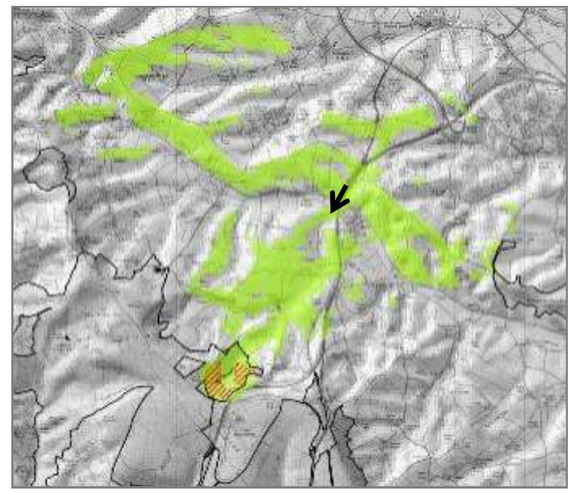


3D Model - Viewpoint 1

Summer 2016 - Viewpoint 2

Impact of felling will be from a long distance and will not be significant, given the high wooded landscape

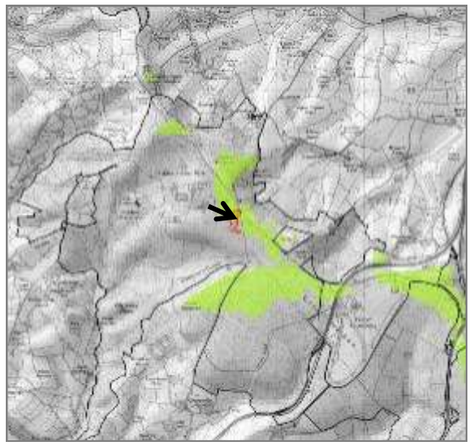
Coupe 81659 & 81839 - **Freers**
Viewpoint 2



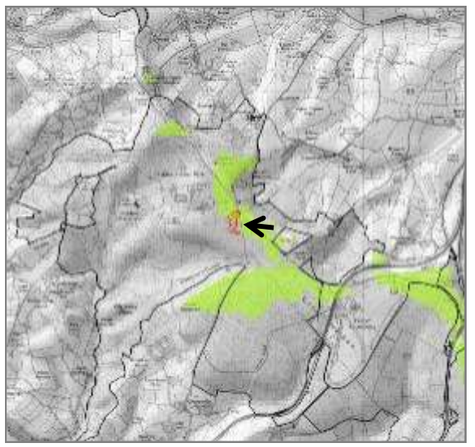
3D Model - Viewpoint 2

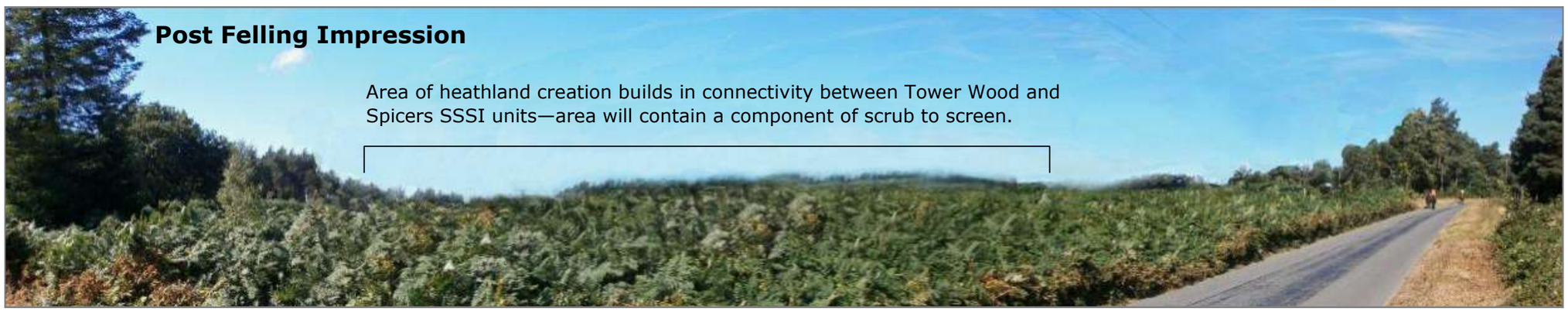
0 0.25 0.5 1 1.5 2
Miles

Coupe 81915 — Bullers Hill
Viewpoint 1



Coupe 81915 — Bullers Hill
Viewpoint 2





0 0.25 0.5 1 1.5 2 Miles

Water & Riparian Management

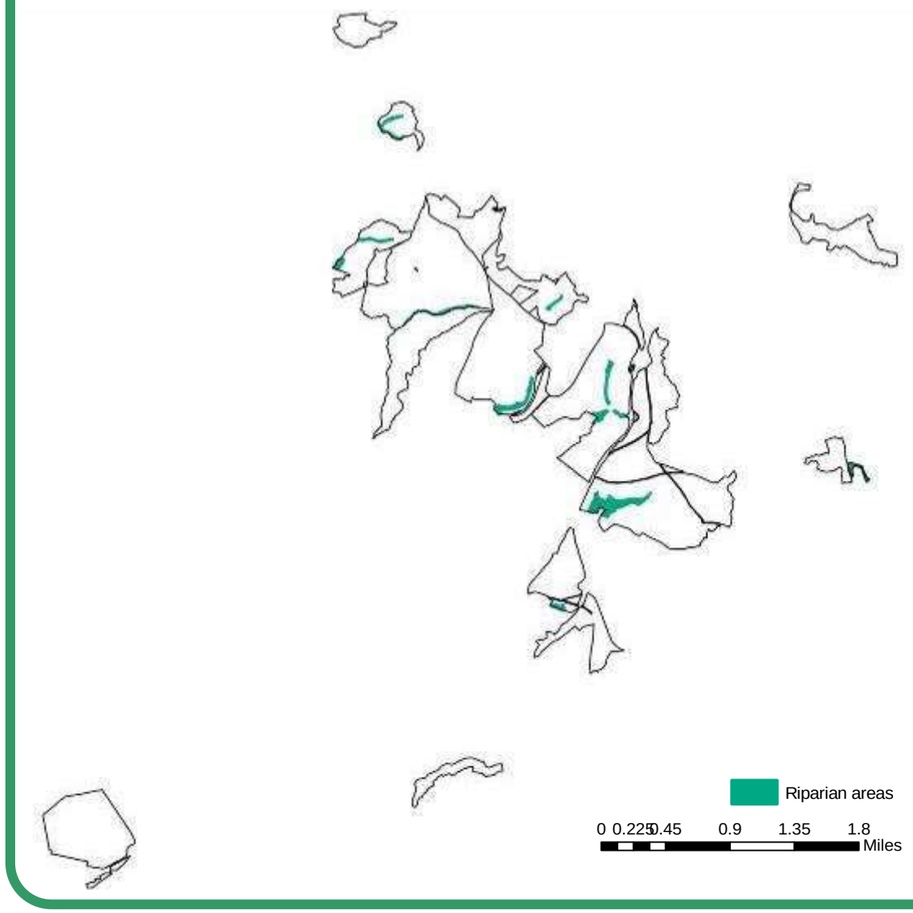
2015 - 2025

Riparian Management

All watercourses and riverine areas will be management sensitively to protect and enhance water and soil quality in line with best practice. The 'riparian zones' (39ha) identified will be developed to create and maintain areas of up to 50% continuous forest cover through gradual regeneration or enrichment with site appropriate tree species, such as *Alnus, Salix* and *Ulmus* spp. A gradual change to this type of wet woodland habitat will create a environment of dappled shade with good light penetration and aeration as well as buffer the riverine systems from forestry operations.

Clearfells within the area have been designed and phased to minimise surface water runoff and soil erosion ensuring the riverine systems and SSSI are protected and improved into the future. All felling and restocking operations will work within the guidelines set out in UKFS, Forests and Water with the aim of developing further riparian areas at the time of intervention through heavier thinning of conifer and stimulating native species regeneration.

The Haldon Plan area forests are a component of flood alleviation for the Teign and Exe estuary and the wider South Devon Catchment through soil stabilisation and surface runoff, retaining forest cover and a move towards continuous cover systems together with maintained drains and water storage will ensure this continues to slow down peak flows into the future.

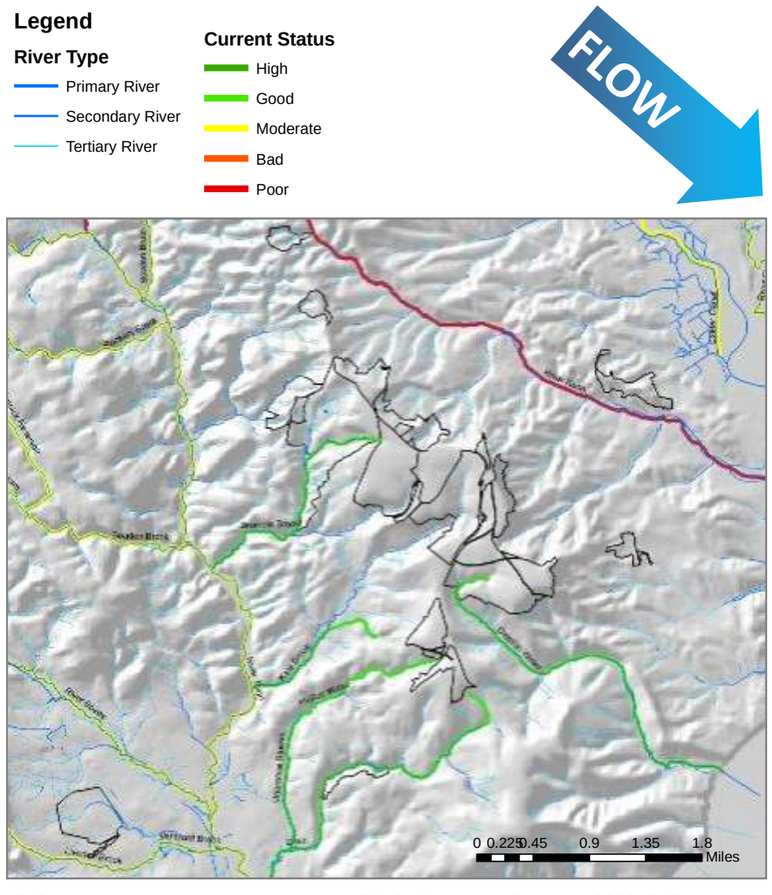


South West Catchment District

Just over 3 million people live in the South West River Basin District. The economy is dominated by the service sector, and each year millions of visitors to the district make a vital contribution to the economy. However, the resulting seasonal fluctuations in population bring challenges for protecting the water environment, especially in coastal areas.

The district has a huge network of internationally, nationally and locally recognised wildlife sites, from the uplands of Dartmoor and Exmoor and outstanding rivers such as the Camel and Hampshire Avon, to the fantastic estuaries and coastline. There are two national parks, and the Jurassic Coast in Devon and Dorset is the only natural world heritage site in England.

The farming and land management sector has a big role in looking after and improving the quality of the rural environment. Agriculture accounts for approximately three quarters of the land area in the South West River Basin District.



South Devon Basin

The South Devon Basin covers the catchments of the Rivers Teign, Dart, Erme and Avon, which flow west and south from Haldon into the estuaries and sea. The area is environmentally rich, containing several important environmental sites and a very high quality river system.

The South Devon Basin covers an areas of some 1,500 square kilometres (580 square miles). The main physical characteristics of the catchments are steeply sloping watercourses rising in the Dartmoor National Park, that then flow into wider, more permeable valleys in the lower reaches. Annual rainfall ranges from more than 2,300mm (90in) in upland areas to less than 1,000mm (39in) on the coast. The England and Wales average is 920mm (36in).

There are 113 river water bodies in the catchment, with a combined length of almost 700 km, and 10 lakes. Currently, 43 per cent of surface waters (199 km or 29 per cent of river length and 5 of the lakes) achieve good or better ecological status/potential. 49 per cent of surface waters assessed for biology are at good or high biological status now.

East Devon Basin

A small proportion of the Plan area (Powderham, Black Forest and Dawlish Waterworks) have slopes and watercourses which feed into the East Devon basin. This catchment is characterised by diverse habitats ranging from the moorland of Exmoor National Park at the headwaters of the River Exe, to the Exe Estuary at Exmouth, the gateway to the Jurassic Coast World Heritage Site.

Critical Load Area

The Plan area sits entirely within a high impact critical load area. As a result felling will be phased and co-ordinated with consideration given to minimising residues, whole tree harvesting, stump removal and short rotation forestry.

Wildfire Management Plan 2015 - 2025
Wildfire Risk

Fire Risk

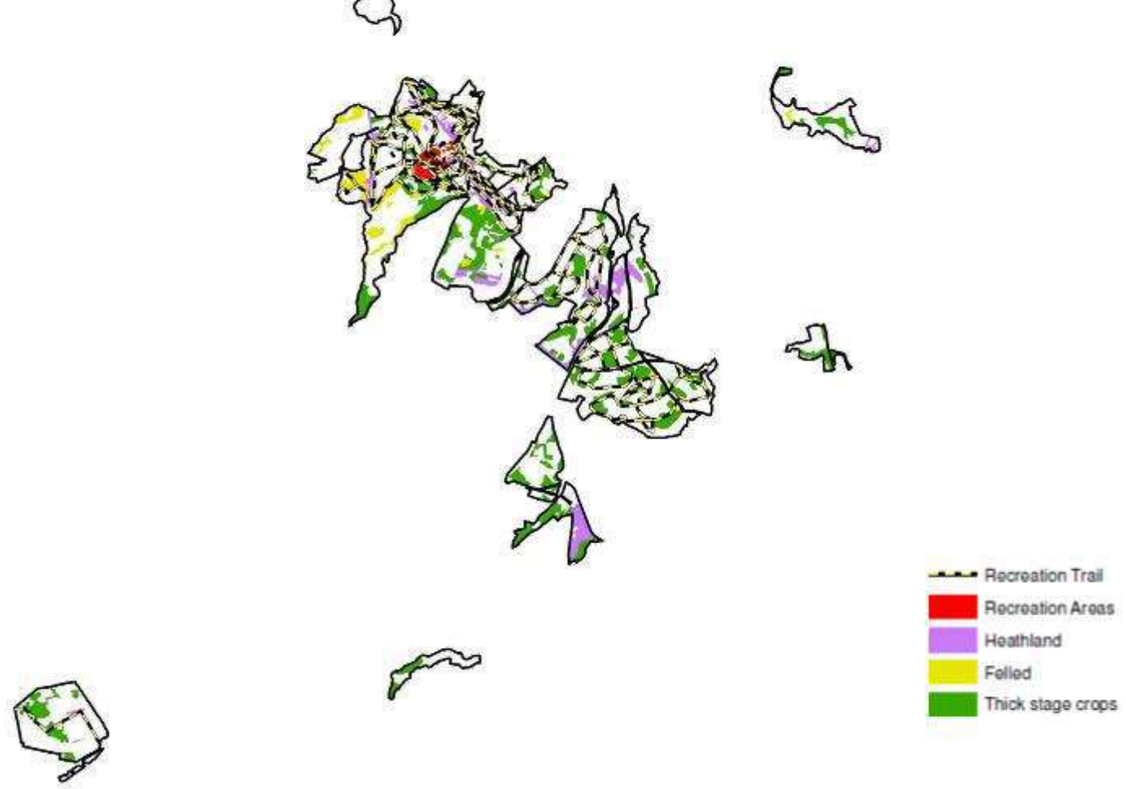
Wildfires are relatively rare however their impacts can be disproportionately large and costly to society and their frequency are predicted to increase due to increased land pressure and climate change. Young coniferous woodland of pine, spruce or fir are at particularly high-risk from wildfire as are dwarf shrub heath, gorse, bracken and grasses. This makes the Haldon Plan area at specific risk due to both the nature of the tree crops, the planned management in future decades and the significant amount of heath grassland which surrounds it.

The vast majority of wildfires are caused by people, accidentally or deliberately. The risk of this is increased by periods of dry hot weather. The nature of the site, its topography, land use and vegetation type as well as tree health and wind all determine the ferocity and extent of a fire.

The Plan area does experience periods of high visitor numbers, particularly around the main hub area. Therefore sites close to car parks and popular trails are at greatest risk of experiencing the initiation of a fire event. The fact that the majority of the Plan area is moderately sloped to the south also creates a higher risk factor given the propensity for prolonged pre-heating of the forests.

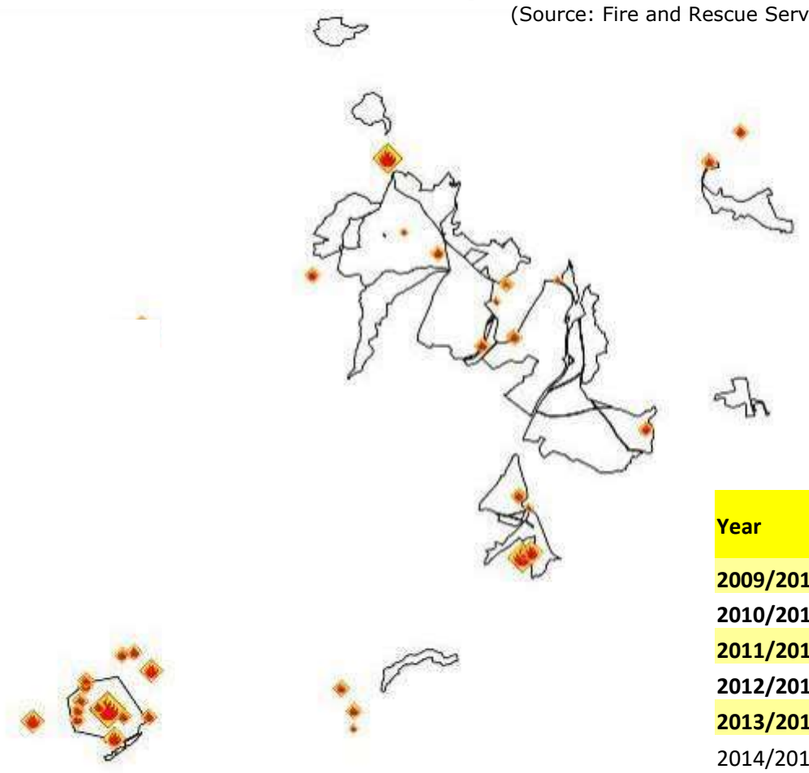
Fire Risk Mapping

Stage	Likelihood of surface fire	Likelihood of crown fire	Likelihood of ladder fire
New Planting	M	N/A	N/A
Pre-thin	H	H	H
Post-thin	L	L	L
Fell & Restock	M	N/A	N/A



Recent Reported Fires - within 1km of Plan area

(Source: Fire and Rescue Service Incident Reporting System)



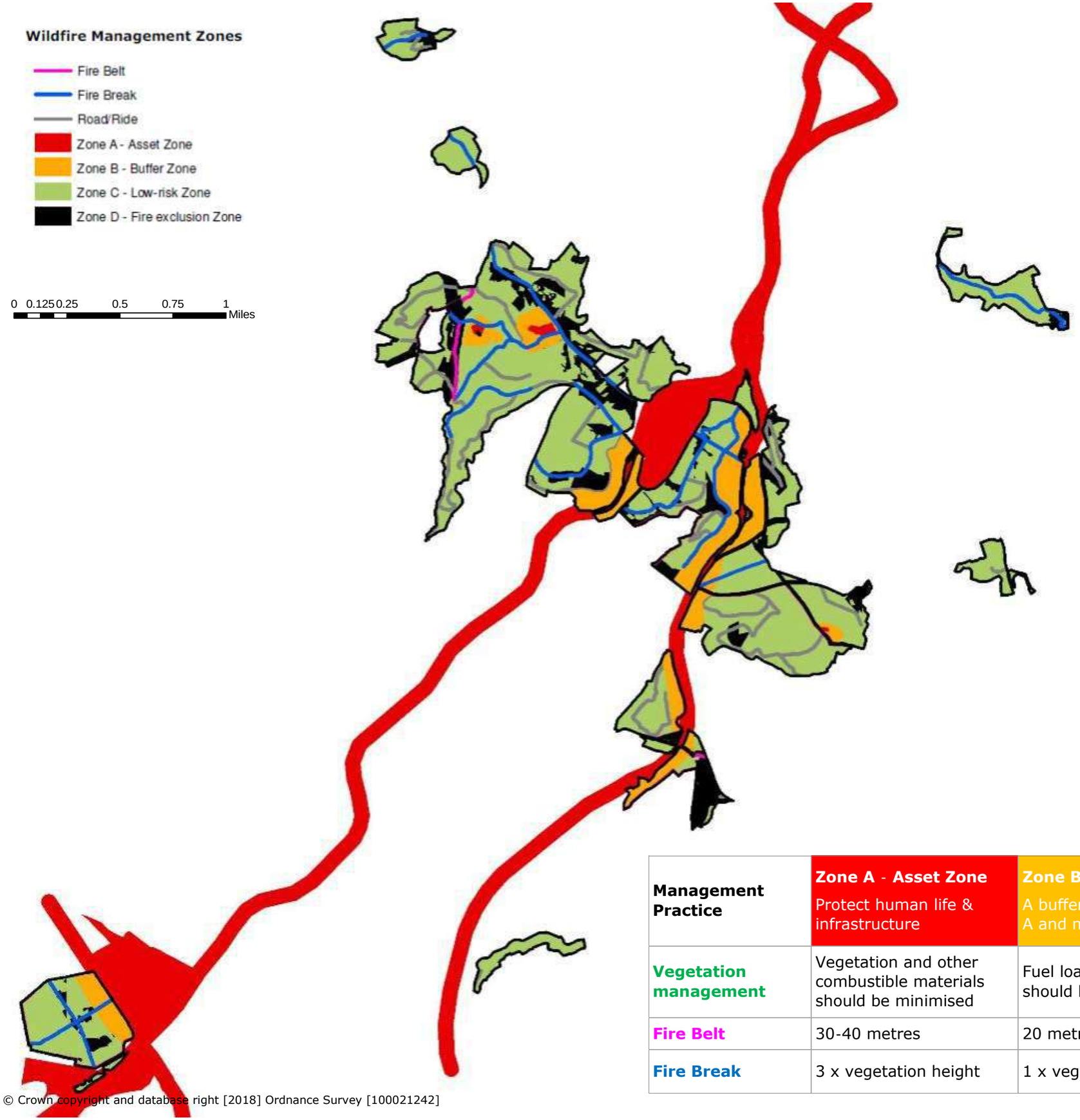
Year	Number of Fires	Total Duration (hrs)
2009/2010	1	5.3
2010/2011	7	14.0
2011/2012	9	30.2
2012/2013	1	1.8
2013/2014	18	26.8
2014/2015	2	1.8

Wildfire Risk Assessment

Hazard	Source	Initial Risk			Steps to manage risk	Revised Risk		
		L	S	Risk		L	S	Risk
Fire initiation from public	Barbeques and camp fires Cigarettes Arson	4	3	2 = Low	Education through signage Fire breaks along popular routes	3	3	1.5 = Low
Fire initiation from infrastructure	Utility powerlines Café and office appliances Public highways	2	4	10 = Moderate	Fire breaks and belts around assets and infrastructure	1	4	5 = Low
Fire initiation from vehicles	Public and staff vehicles Harvesting machinery	2	3	1 = Low	Fire breaks along main routes Fire fighting equipment with vehicle	2	2	0.1 = Low
Fire spread from neighbouring property	Controlled burning Residential & commercial property	3	3	1.5 = Low	Education and liaison with neighbours Belts along boundary	2	2	0.1 = Low
Fire spread from onsite fuel loads	Stored petroleum fuels and chemicals Grassland and Scrub Young forest crops	4	4	16 = High	Fire breaks and belts around areas of high asset importance and fuel load. Suitable storage of fuel	2	3	1 = Low
Loss of control of managed heathland burn	Controlled burning Grassland and Scrub	2	3	1 = Low	Liaison with fire service Appropriate training and risk management	2	2	0.1 = Low

Wildfire Management Plan

Wildfire Mitigation and Adaptation



Mitigation and adaptation due to wildfire risk can be achieved by managing vegetation and fuels, creating fire breaks and belts, improving forest design and silvicultural diversity and the management and education of people. The key principles outlined follow the FC Practice Guide (2014).

Vegetation will be managed as part of standard forest operations and maintenance. Fire breaks have been identified and located at critical locations such as at the bottom of slopes and in conjunction with other fire resistance liner features, such as roads, rides and rivers. Fire belts already exist in places and predominantly consist of fire retardant broadleaves. The criteria for location and extent of these is much the same for fire breaks and they offer an alternative form of wildfire mitigation

Clearance of windthrow and deadwood in high risk areas as well as remaining wood residues and products will contribute to lowering the fuel load factor and minimising the risk of ladder fires. We will work with local the Fire and Rescue Service when considering controlled burning in order to manage risk. Uncontrolled fires will be dealt with in line with the West District Emergency Incidents Management Plan.

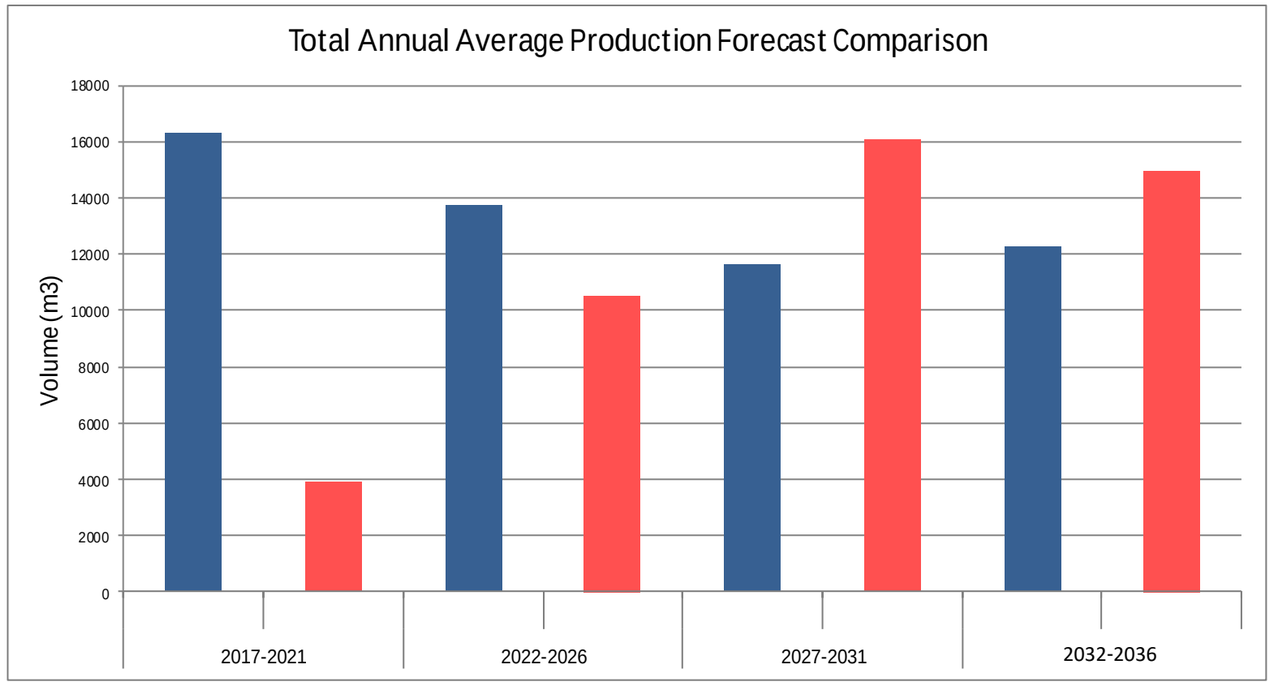
Education as well as provision of practical information are the key factor to wildfire mitigation, this will be focused around areas of highest recreational footfall. Vegetation management around key recreation sites, notably the main hub and Mamhead car park and along popular trails will lower the fuel load factor and thus the risk of fire ignition.

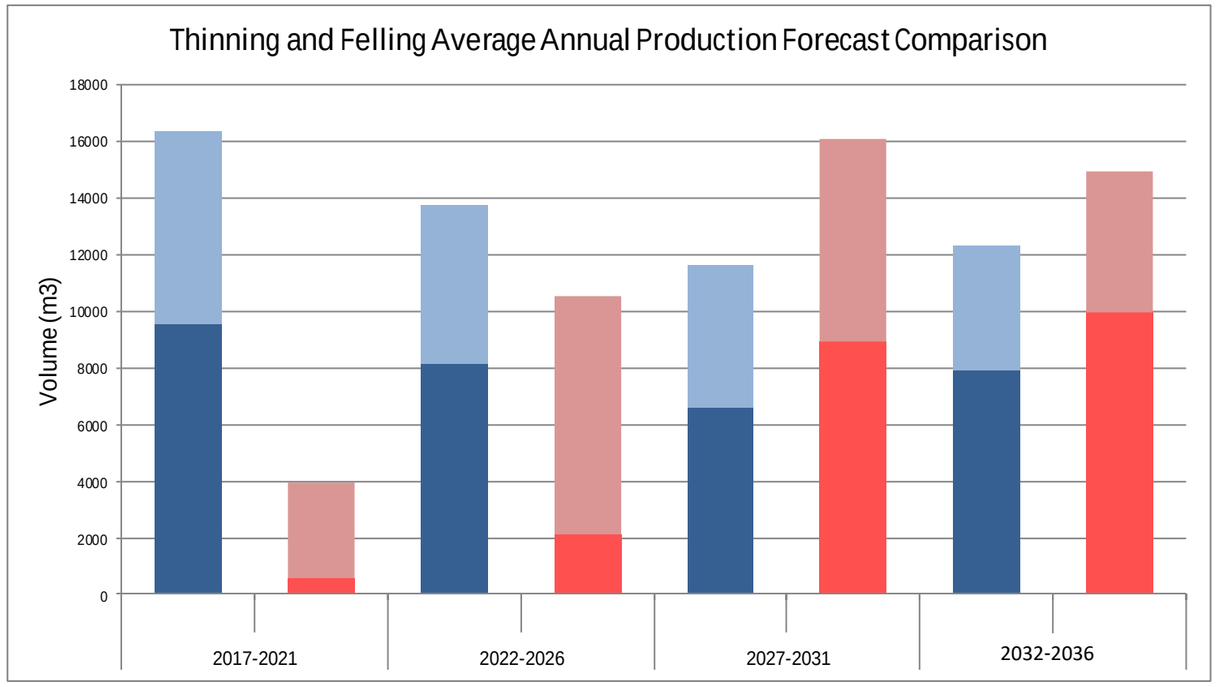
Management Practice	**Zone A - Asset Zone** Protect human life & infrastructure	**Zone B - Buffer Zone** A buffer areas around Zone A and major roads	**Zone C - Low-risk** Low to medium risk area for normal management	**Zone D -Fire excl. Zone** Protect habitats
Vegetation management	Vegetation and other combustible materials should be minimised	Fuel loading and deadwood should be reduced	Conventional vegetation management practices	
Fire Belt	30-40 metres	20 metres	20 metres	20 metres
Fire Break	3 x vegetation height	1 x vegetation height	1 x vegetation height	3 x vegetation

APPENDIX 2: Management considerations

Option Testing

Option 1 – Current Forest Plan (Master)	Option 2 – Proposed Forest Plan (Scenario)
The continued production of sustainable and marketable woodland products.	
The programme of planned clearfelling is unsustainable, ecologically or economically given the significant clearance of windblow in recent years. The postponement of a number programmed felling has led to a backlog in production for the coming five years.	The proposals look to balance out clearfell production and delay felling following recent high volume extract following windblow clearance. It is acknowledged that this leads to a 'flashier' production graph. The drop in clearfell volume production is balance by greater volume realised through thinning.
The conservation, maintenance and enhancement of cultural and heritage assets .	
The Plan makes little acknowledgement of the cultural landscape and therefore fails to adequately address its importance within FC strategy and more widely within sustainable forest management.	The Plan makes acknowledgment of the area's rich cultural heritage and landscape. Proactive proposals to enhance the physical setting of certain designate features will enhance the accessibility and significance of these features.
The provision and maintenance of recreation facilities. - Support the development of increased recreation provision. - Improve stand resilience around recreation infrastructure.	
The plans and proposals acknowledge and make allowance for recreation in the Plan area. The methods for achieving this are not stipulated or measurable.	The Plan clearly outlines a strategy which integrate land management with recreation delivery to meet the Haldon Forest Park Business Plan. The zoning and programming of operations mean that recreation benefits from the forest management practice.
The delivery of well-designed proposals that comply with landscape design principles in keeping with the local landscape character.	
The proposals acknowledge the importance of delivery of well-designed coupes and management but are, in places, unachievable following considerable windblow. Where possible coupe shapes and sequencing have been retained with adjustments made in light of changes in woodland structure.	The Plan makes acknowledgement and provision for the forests contribution to the local landscape character. Coupes are designed in a way to enhance the local character both from a short and long-distance, Steps have been taken to improve the approach to the Forest Park as well as using corridors to improve internal landscape views.
The protection and enhancement of woodland and open habitats and their associated species. - The creation and maintenance of permanent and transient open habitats. - The restoration and management of the Site of Special Scientific Interest.	
The proposals acknowledge the importance and value of the woodlands for habitats and their associated species. In particular raptor, nightjar and butterfly species. The Plan fails to utilise opportunities and corridors to maximise the benefits of the forest for ecology,	The Plan uses an evidence base to produce a Plan which encompasses SSSI and forest management. It demonstrates how problems are being addressed and identities opportunities for habitats to be enhanced which can be monitored into the future.





Fell 2018 - 2021

Fell 2022 - 2026

Fell 2027 - 2028

2015 - 2025

Coupe Prescriptions

	Coupe	Area (ha)	Existing Crop	Rationale/Prescription	Restock	Area (ha)	Restock Proportion	Rationale/Prescription
Powderham	**81683**	3.37	p.54 ROK p.63 DF P.54 CP	Coupe is dissected by two large wayleaves with the busy A379 to the east. These constraints make these crops complex to manage. Clearfelling and restocking will allow issues to be addressed and the management consolidated.	**81683a**	3.37	60% Broadleaf 40% Ev. Conifer	Felling should look to deliver broadleaf component through coppice regrowth, with conifer planting sympathetic to this. The site is suitable for a number of species being nutrient rich, well drained and south facing. Allow areas to close to wayleaves remain unstocked to a allow scrubbing up with broadleaf species. Consider ….
	81773	8.08	p.55 JL p.55 ROK	Crop has reached maturity and yield has dropped off. The susceptibility and threat of infection from *Phytophthora ramorum* in the woodland with larch chestnut and larch components mean action is required to mitigate the impact of future possible compulsory felling. Broadleaf understorey of hazel, beech and sweet chestnut is has established, this should be coppiced.	**81773a**	8.08	100% Ev. Conifer	Felling should look to deliver broadleaf component through coppice regrowth, with conifer planting sympathetic to this. The site is suitable for a number of species being nutrient rich, well drained and south facing. Consider Douglas fir, Walnut, Coast redwood and Leyland cypress.
Black Forest	**81922**	3.69	p.12 SC	Crop has reached maturity as large single stemmed quality logs. Holly is well established in the understorey. There are some minor signs of dieback in the crowns and the stand needs an injection in structural diversity to stimulate growth.	**81922a**	3.69	100% Broadleaf	Felling should look to develop coppice regrowth with possible supplementary planting with broadleaf species if regeneration does not reach 2,500stems/ha by year 10 or if holly colonises rapid.
Webberton	**81667**	2.67	p.62 DF p.62 CP	CP is suffering considerably for Dothistroma needle blight. Both crops are under thinned, exposed a wind vulnerable. Safety concern with minor roads immediate adjacent on east and west boundary of the crops. Further thinning will exacerbate issues.	**81667a**	2.67	100% Ev. Conifer	Site is rich and well drained with higher reaches of the site less fertile or well drained. Minor convexities across the site add to the site complexity. A number of historic features (i.e. hedge banks/sunken lanes) are throughout the coupe. Consider Weymouth pine, Noble fir and Scots pine.
Mamhead	**81932**	0.64	p. 68 DF	Crop is stable and well thinned but surrounding the culturally significant Mamhead Obelisk. This operation is aimed at improving the views to and from this built feature to enhance the Mamhead Registered Park and Garden designation.	**81932**	0.64	100% Open	Area will remain unstocked and maintained through motor-manual cutting and weeding on rotation which may mean that the scrub develops upto 2m in height at times.
Ideford	**81827**	2.99	p.55 CP p.55 SP p.70 WH	Pine crops are suffering considerably from Dothistroma needle blight with yield significantly debilitated. Small Western hemlock to the south of the road is seeding profusely into the heathland area creating a management issue. The mature crop is of good timber and is ready for market.	**81827a**	2.99	100% Lowland heathland	Site has a very high stone component and flint cap which limits rooting and the relatively dry and poor soil quality means that species choice is limited. Heathland assemblages are evident under the canopy and area will be restored to lowland heathland.
Great Plantation	**81978**	7.21	p.62 SP p.62 CP P.62 WH p.62 JL p.63 NS	Site is very wet in places causing mortality in the JL and NS. This is becoming a safety and visual issue to the adjacent A342. CP and LP to the north of the coupe is in decline and sporadically blowing. Felling should look to retain stable broadleaves where possible, but coppice the hedge adjacent to the public road to minimise risk.	**81978a**	7.21	70% Ev. Conifer 30% Broadleaf	Replanting should focus along the drier westerly parts of the coupe. Ample space should be provided to widen corridors. Restocking in the extreme wet parts should focus around willow and birch regeneration and enrichment with suitable broadleaves, (i.e. alder and aspen) elsewhere consider Macedonian pine, Sitka spruce, Western red cedar or Pedunculate oak.
	81765	2.52	p.64 CP	Crop is suffering from Dothistroma needle blight and having been heavily thinned has a significant broadleaved understorey developing. This operation is required in the near future to ensure damage to the understorey is minimised and the management of the felling should be done with this in mind.	**81765a**	2.52	60% Broadleaf 40% Ev. Conifer	Utilising any established broadleaf understorey the site should be planted with a high broadleaf component. This will be to reflect the richer site and higher proportion of broadleaves in the local vicinity. Consider Pedunculate oak, Serbian spruce or Wild cherry.
	81797	8.59	p.62 CP	Crop is suffering from Dothistroma needle blight in the crown, but increment samples suggest yield is still sufficient. Crop is a single contiguous block which makes a stable and visually appropriate coupe.	**81797a**	8.59	60% Ev. Conifer 40% Broadleaf	The opportunity to underplant with Hornbeam and/or Pedunculate oak whilst the pine overstorey is still providing shelter and shade should be explored further. If suitable underplanting throughout should be feasible, otherwise restock with a diverse range of conifer and broadleaf species. Ample space should be provided to widen corridors. Consider Western red cedar, Lawson cypress, Serbian spruce, Hornbeam or Pedunculate oak.
	81640	5.2	p.67 SP p.68 DF	Crop is underthinned and yield is tailing off. Felling should look to reinvigorate and kickstart the productive capacity of the north area of the woodland.	**81640a**	5.2	100% Ev. Conifer	Site is heath-like with a high Calluna component, it is very moist in places with medium nutrient availability. Ample space should be provided to widen corridors. Consider Western red cedar, Lawson cypress, Serbian spruce or Douglas fir.

Fell 2018 - 2021

Fell 2022 - 2026

Fell 2027 - 2028

2015 - 2025

Coupe Prescriptions

	Coupe	Area (ha)	Existing Crop	Rationale/Prescription	Justification within SSSI	Restock	Area (ha)	Restock Proportion	Rationale/Prescription	Justification within SSSI
Spicers	**81915**	1.99	p.78 SS	Crops are experiencing sporadic windblow given the poor rooting conditions and crop reaching terminal height. Exposed areas are to be felled to complement to surrounding open heathland and recreation routes.	**Unit 106** **The underthinned and unstable condition of these crops mean that current and future raptor habitat potential is minimal.**	**81915a**	1.30	100% Ev. Conifer	Site has a very high stone component and flint cap which limits rooting and the relatively dry and poor soil quality means that species choice is limited. Planting will provide a screen to the Forest Park from the road. Consider Scots and Monterey pine and rowan.	**Unit 106** **These plantings will deliver structural diversity within the heathland suitable habitat for a number of species into the future.**
						81915b	0.69	100% Lowland Heathland	Site has a very high stone component and flint cap which limits rooting and the relatively dry and poor soil quality. Heathland assemblages are evident under the canopy and area will be restored to lowland heathland.	**Unit 106** **The creation of open habitat will create connectivity between Tower Wood and Spicers heathland whilst building on the newly created area at Bullers Hill.**
	81833	2.14	p.78 SS p.78 JL	Crop has been underthinned having only been racked and matrix thinned once. The stand is whippy, thin and wind vulnerable, close to two popular recreation routes.	**Unit 110** **The underthinned and unstable condition of these crops mean that current and future raptor habitat potential is minimal.**	**81833a**	2.14	100% Lowland Heathland	Site has a very high stone component and flint cap which limits rooting and the relatively dry and poor soil quality means that species choice is limited. Heathland assemblages are evident under the canopy and area will be restored to lowland heathland.	**Unit 110** **The creation of additional heathland habitat will contribute to heathland which surrounds it.**
	81924	0.79	p.78 SS	Crop has been underthinned having only been racked and matrix thinned once. The stand is whippy, thin and wind vulnerable, close to two popular recreation routes.	**Unit 110** **The underthinned and unstable condition of these crops mean that current and future raptor habitat potential is minimal.**	**81924a**	0.79	100% Lowland Heathland	Site has a very high stone component and flint cap which limits rooting and the relatively dry and poor soil quality means that species choice is limited. Heathland assemblages are evident under the canopy and area will be restored to lowland heathland.	**Unit 110** **The creation of additional heathland habitat will contribute to heathland which surrounds it.**
	81334	1.17	p.72 WH	W hemlock fir is of adequate form and could be thinned again however it is seeding profusely into adjacent heathland and other crops.	**Unit 110** **The unstable condition of these crops mean that current and future raptor habitat potential is minimal.**	**81334a**	1.17	100% Lowland Heathland	Site has a very high stone component and flint cap which limits rooting and the relatively dry and poor soil quality means that species choice is limited. Heathland assemblages are evident on the edges of the canopy and the area will be restored to lowland heathland.	**Unit 110** **The creation of additional heathland habitat will contribute to heathland which surrounds it.**
Kiddens	**81652**	6.34	p.67 DF p.66 SS	Crop has experienced significant blow both on the edge and within the stand. Surrounding crops has been removed following catastrophic windthrow. Vulnerability of the crop due to exposure means that if retained further significant windthrow is anticipated.	**Unit 104** **The current condition and future prospects of the crop, due to windthrow mean that whilst the area has an established history as a raptor nesting area, these trees will offer limited future habitat potential.**	**81652a**	6.34	90% Ev. Conifer 10% Open	Site is medium to poor in nutrient availability with moist to wet moisture regimes. Wetter areas are towards the south of the coupe along flush and boundary fence. Rooting depth is a concern on higher slopes so tap/heart rooting species should be favoured. Consider Western hemlock, Silver fir, Serbian spruce and aspen.	**Unit 104** **These plantings will deliver stable conifer crops suitable raptor habitat for the future.**
	80001	0.67	p.91 DF	Regeneration of mixture of conifer and broadleaf is threatening the inttergirty of the mains powerline and will become an increasing hazard	**Unit 101** **The underthinned and unstable condition of these crops mean that current and future raptor habitat potential is minimal.**	**80001a**	0.67	100% Ev. Conifer	Site will be allowed to naturally regenerate as woodland into the future with minimal investment,	**Unit 101** **The creation of additional scrub habitat will provide temporary habitat for lepidoptera in the area.**

Fell 2018 - 2021

Fell 2022 - 2026

Fell 2027 - 2028

2015 - 2025

Coupe Prescriptions

	Coupe	Area (ha)	Existing Crop	Rationale/Prescription	Justification within SSSI	Restock	Area (ha)	Restock Proportion	Rationale/Prescription	Justification within SSSI
Freers	**81659**	5.57	p.59 GF p.59 DF p.59 WH	The coupe has sporadically windblown throughout with particular loss of cover towards the valley bottom in the drawn up Grand fir. Vulnerability of the crop due to exposure means that if retained further significant windthrow is anticipated.	**Unit 109** **The current condition of the majority of crop provides limited areas of raptor habitat. Areas that do hold suitable habitat on the forest edge to the north, have been retained.**	**81659a**	5.57	100% Ev. Conifer	The coupe has deep, medium to rich soils which are moist. Areas to the east of the track should be planted at wider spacing to allow greater broadleaf regeneration and create integration with neighbouring old broadleaf woodland. Consider Lawson cypress, Grand fir and Coast redwood.	**Unit 109** **These plantings will deliver stable conifer crops suitable raptor habitat for the future.**
	81839	11.35	p.58 CP p.58 DF	The pine crop has catastrophically wind blown, most significantly towards the east of the coupe. Rhododendron has become established throughout and the site is difficult to access The standing crop is heavily infected with Dothistroma and is unlikely to recover. Wholesale removal and replanting is the only appropriate course of action, with the felling of the more stable crop to the north west appropriate to address the significant issues of the site and provide a robust forest management intervention.	**Unit 109** **The current condition and future prospects of the crop, due to windthrow mean that these trees will offer limited future habitat potential. The retention of stable p.59 DF to the north will mitigate the impact of any loss in raptor habitat.**	**81839a**	11.35	100% Ev. Conifer	Whilst the site does have a high stone component the soils are moist in places with a poor nutrient regime. Soils get richer and deeper further down the slope. The site sits with its own small basin, is fairly secluded but visible for the M5 and A38. Consider Western hemlock, Douglas and Silver fir and Sitka spruce.	**Unit 109** **These plantings will deliver stable conifer crops suitable raptor habitat for the future.**
	81754	2.54	p.78 WH	W hemlock fir is of adequate form and could be thinned again however it is seeding profusely into adjacent heathland and other crops.	**Unit 109** **The current crop is seeding profusely into adjacent areas of heathland leading to a loss in condition.**	**81754a**	2.54	100% Wooded Heath	The site will not be restocked to create open habitat and broadleaf wooded heathland. Regeneration will be removed at the age of first thinning of adjacent coupe with allowance for retention of a few stable will be made to enhance diffuse edge.	**Unit 109** **The creation of additional heathland habitat will contribute to heathland which surrounds it.**
Harcombe	**81670**	5.02	p.28 SP p.75 WH	Pine crops are of poor form and minor increment. W. hemlock is of adequate form and could be thinned again however it is seeding extensively into adjacent heathland and other crops.	**Unit 114 & 117** **These crops provide raptor habitat but are adversely affecting Unfavourable—Recovery Condition Unit. Felling of invasive seed source will improve heathland condition.**	**81670a**	5.02	100% Lowland Heathland	Site is varied with significant historical cultivation. Flint cap and substrate is prevalent, limiting rooting. Heathland assemblages are evident under the canopy and area will be restored to lowland heathland.	**Unit 114 & 117** **The creation of additional heathland habitat will contribute to heathland which surrounds it.**

2015 - 2025

Utilities

Legend

- Drain
- Watercourses
- Water Supply Point
- Water Pipeline
- Open Water
- Reservoirs
- Quarries
- Dams
- Bridges
- Class A/B Roads
- Class C Roads
- Legal access/Unclassified
- Powerline Overhead
- Powerline Underground
- Gas Pipeline
- Telephone Line Underground
- Telephone Line Overhead
- A Roads

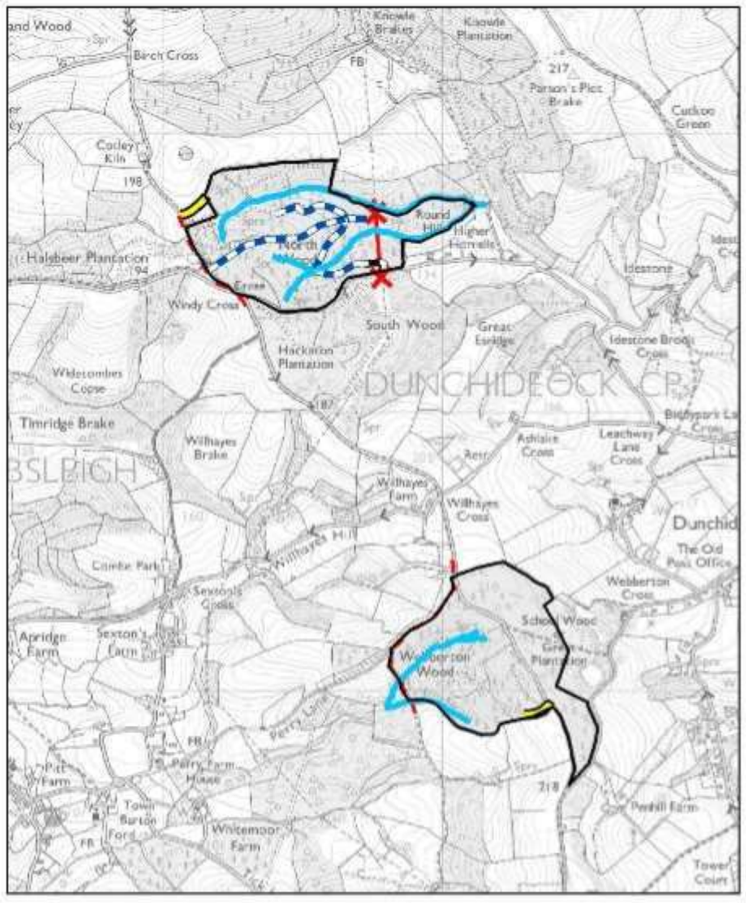
0 0.125 0.25 0.5 0.75 1 Miles

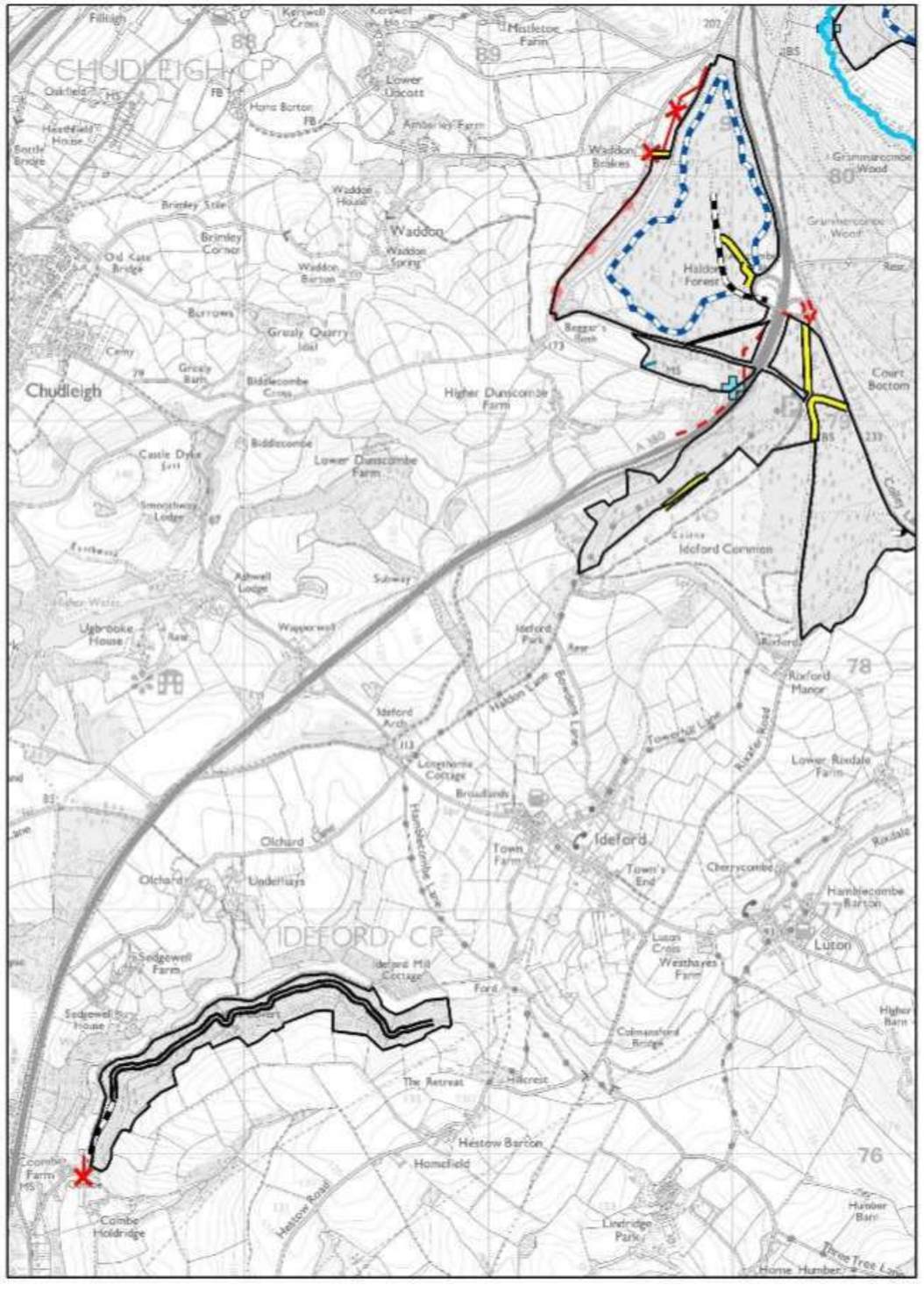
0 0.125 0.25 0.5 0.75 1 Miles

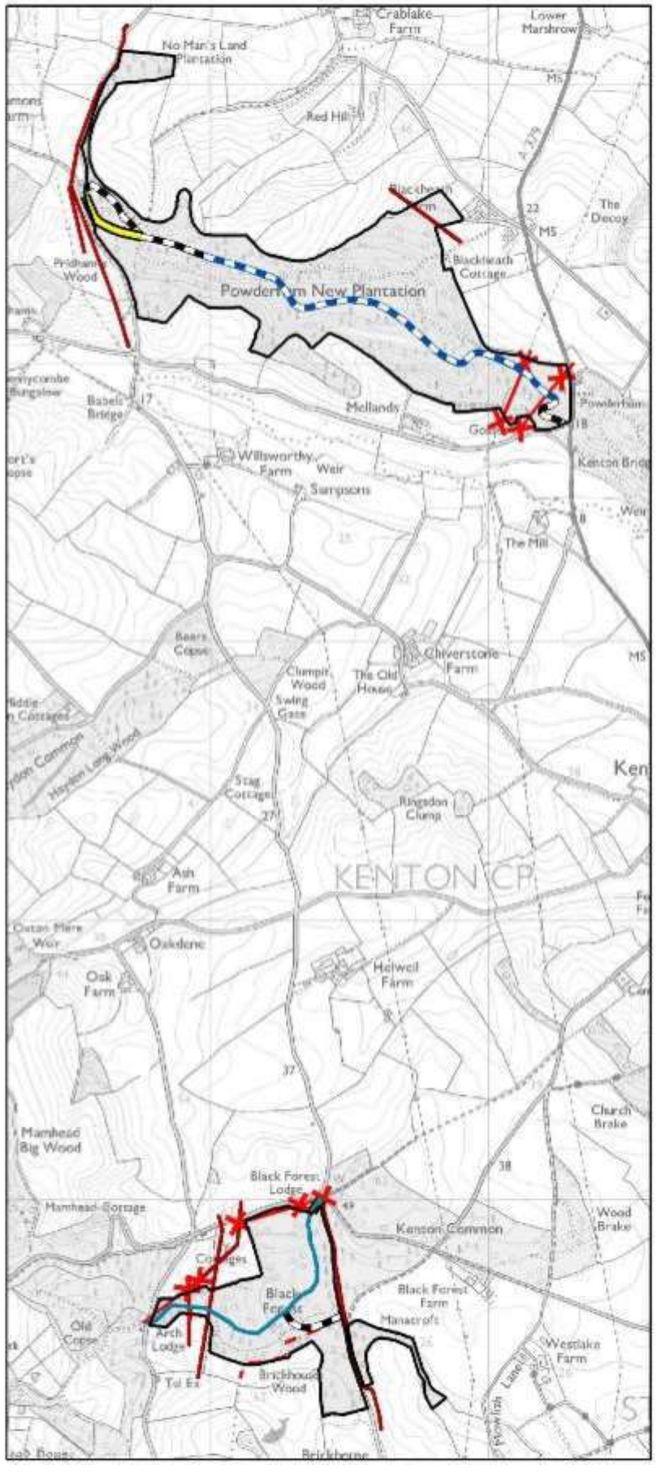
Utilities - 2025

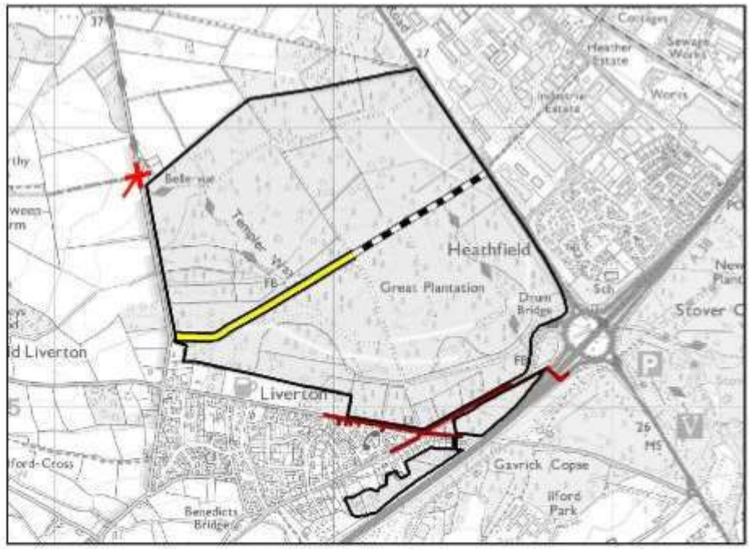
Legend

- Drain
- Watercourses
- Water Supply Point
- Water Pipeline
- Open Water
- Reservoirs
- Quarries
- Dams
- Bridges
- Class A/B Roads
- Class C Roads
- Legal access/Unclassified
- Powerline Overhead
- Powerline Underground
- Gas Pipeline
- Telephone Line Underground
- Telephone Line Overhead
- A Roads









2015 - 2025

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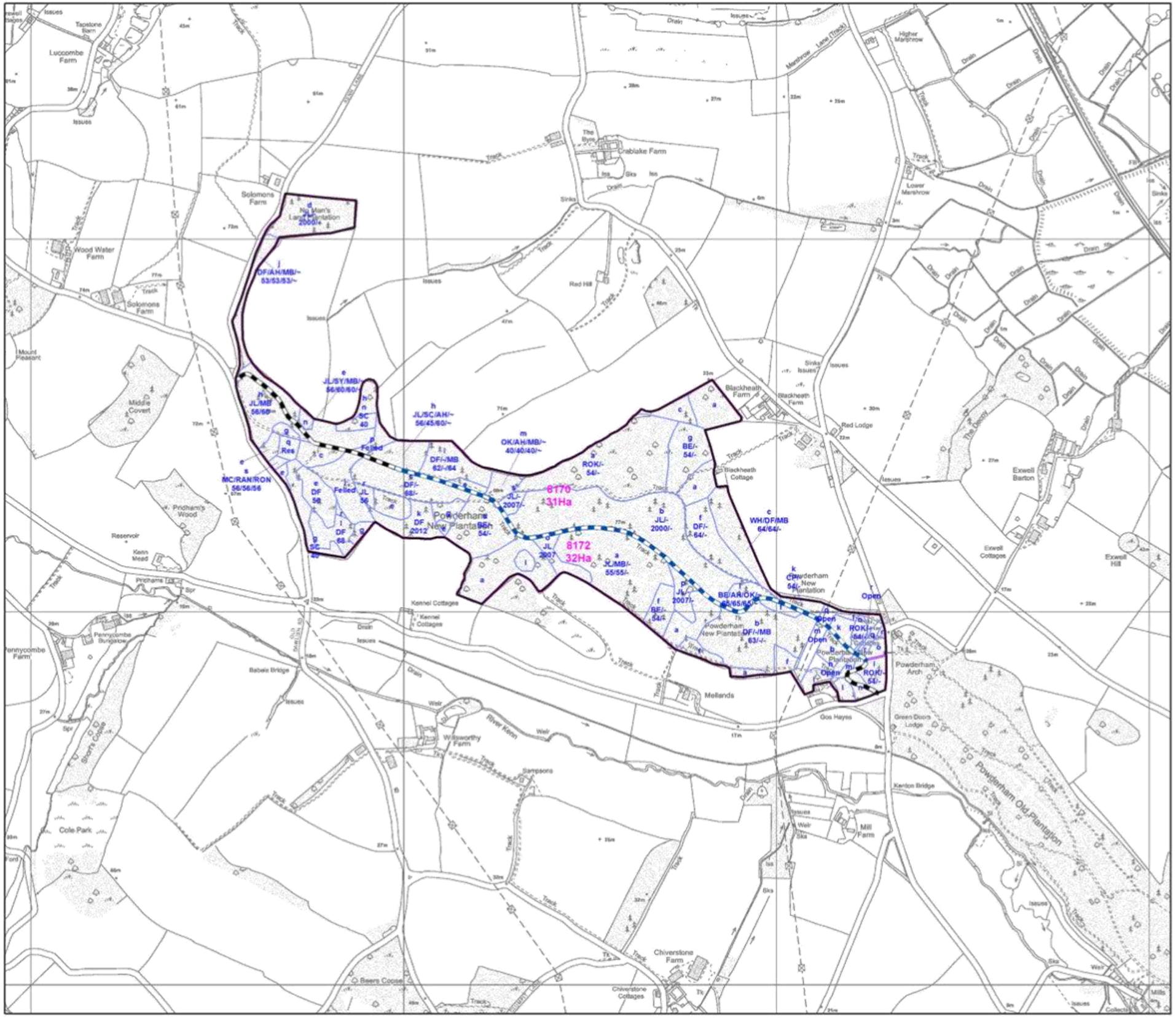

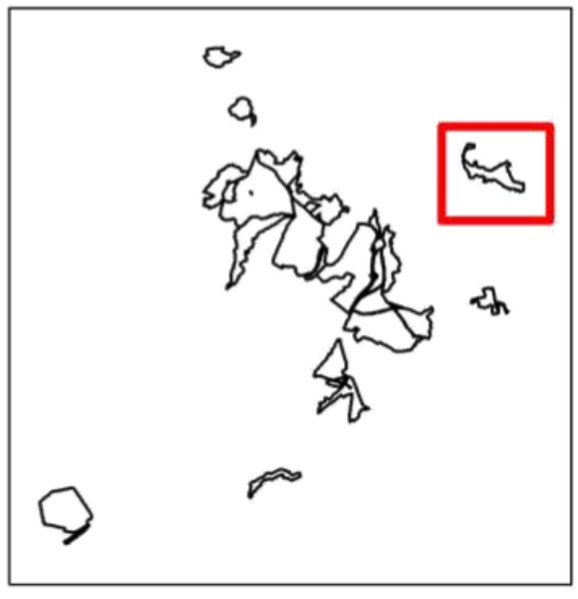

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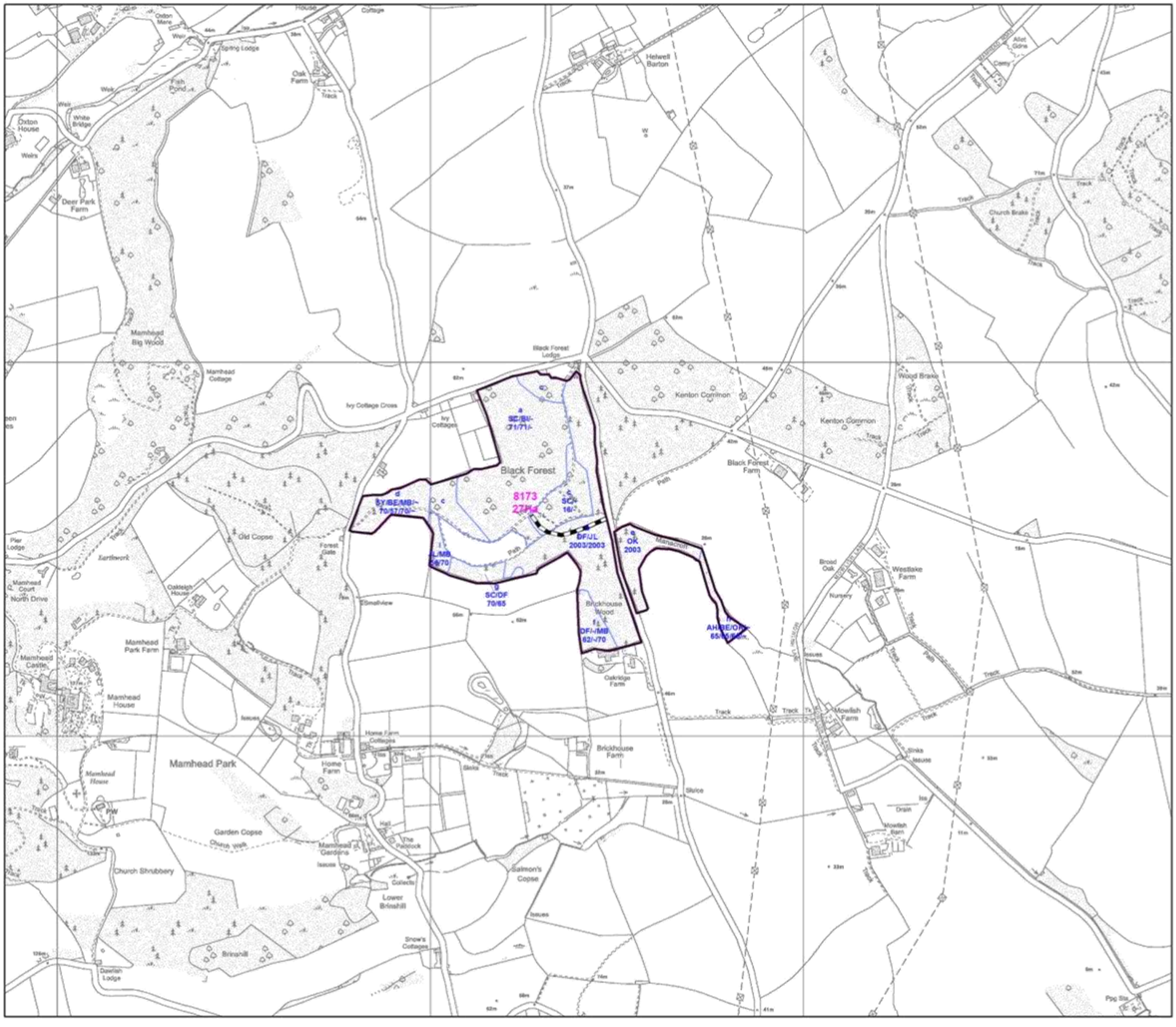

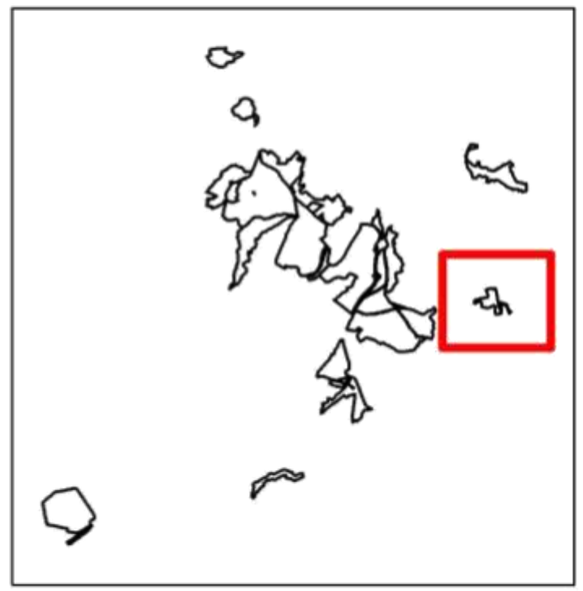

2015 - 2025

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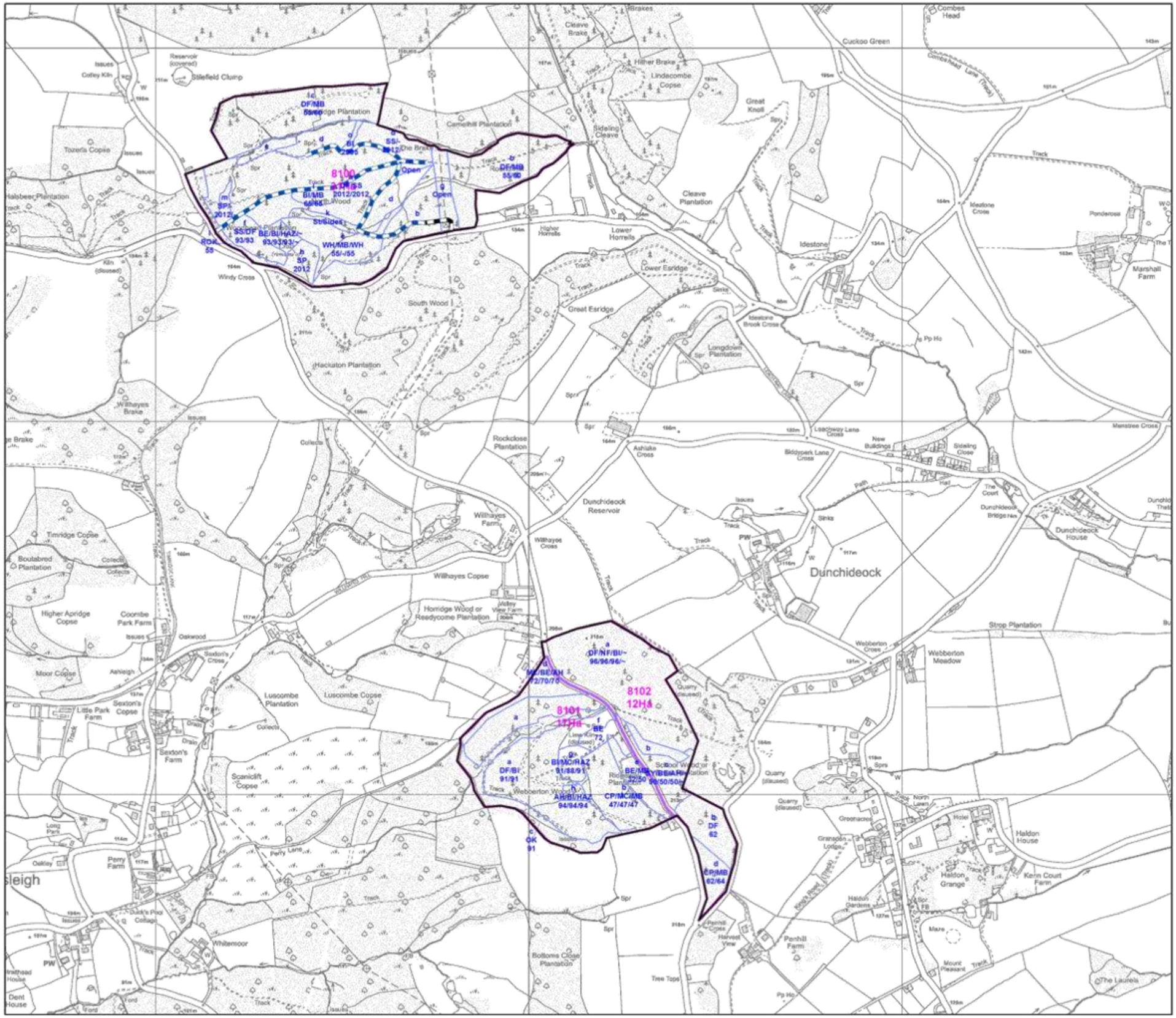

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Miles

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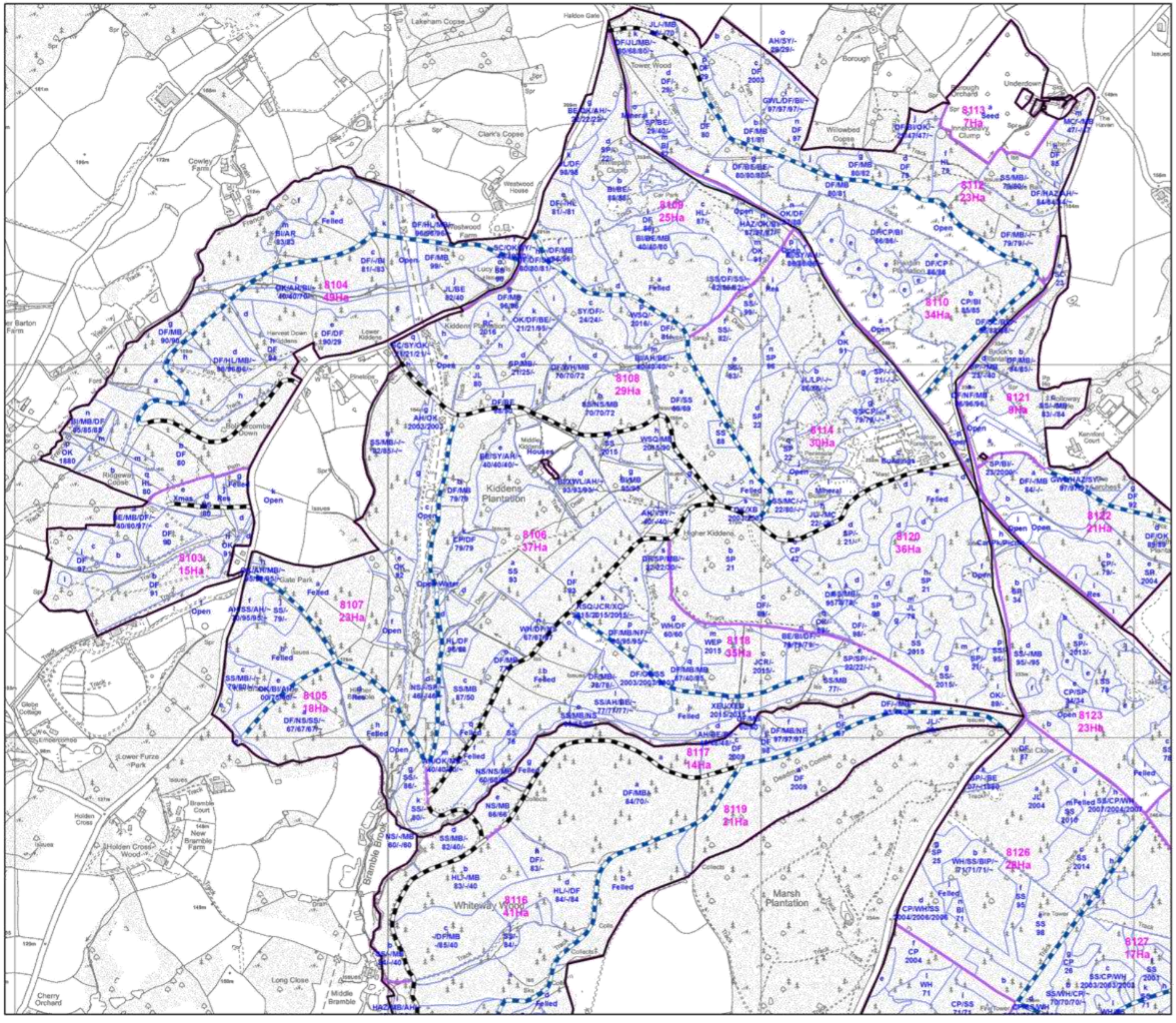

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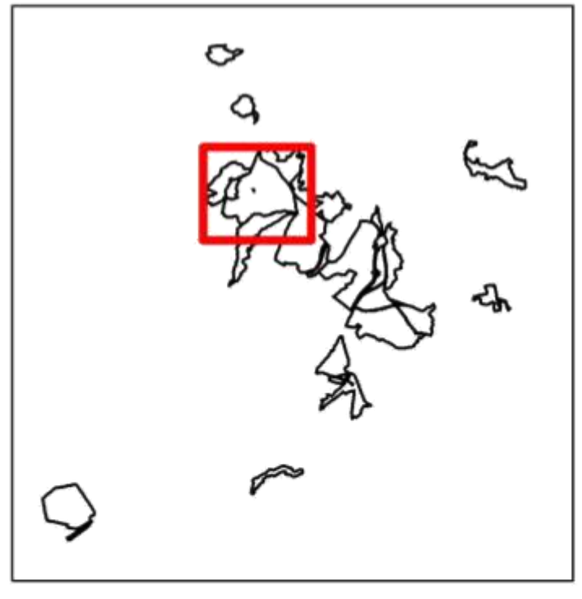

2015 - 2025

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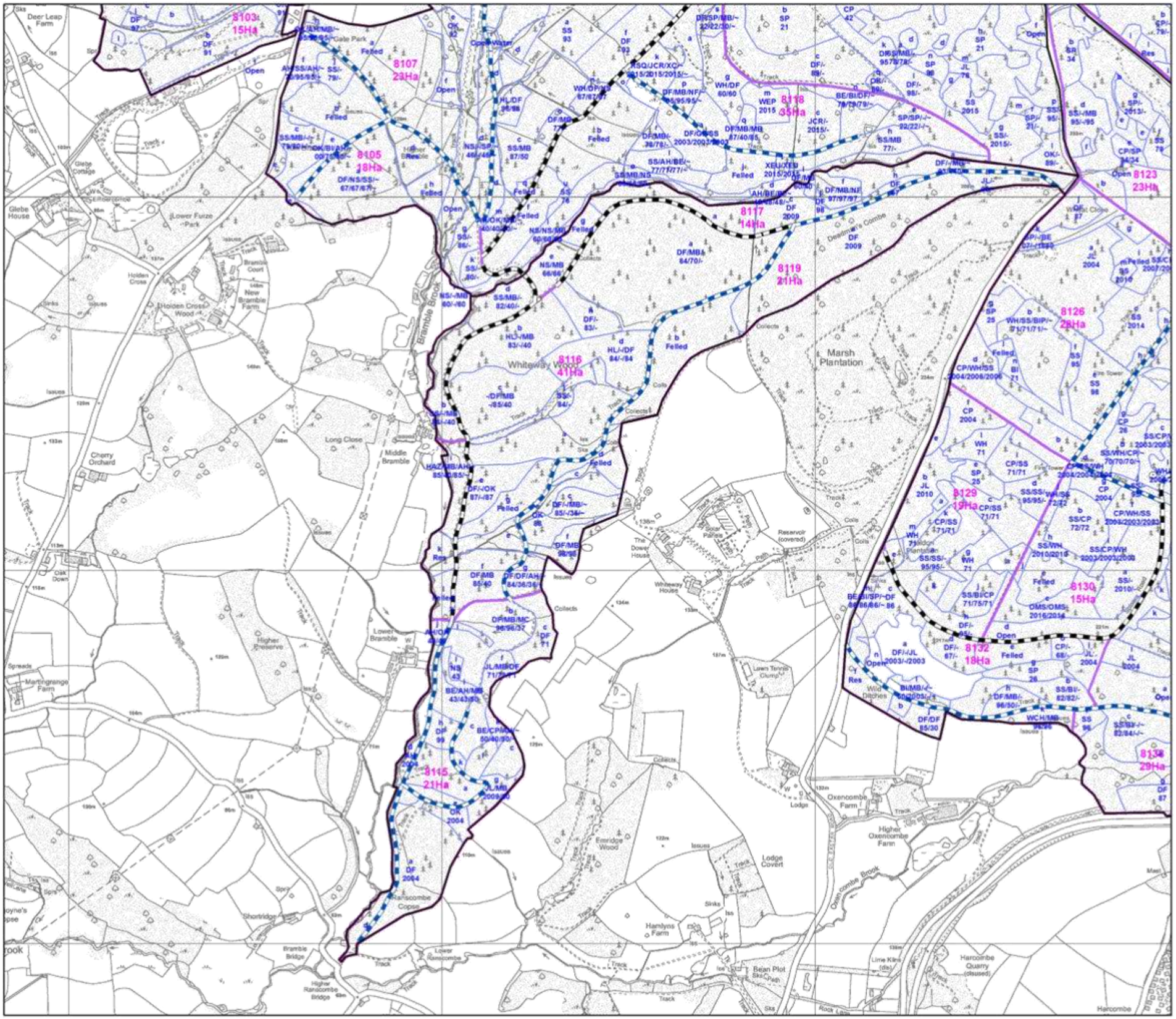

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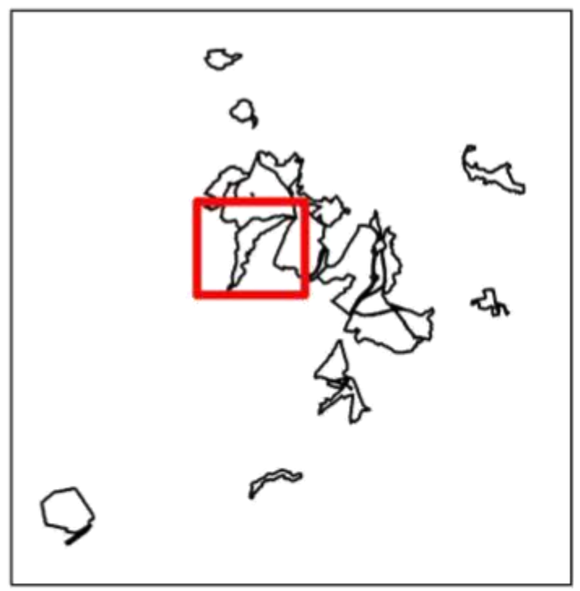

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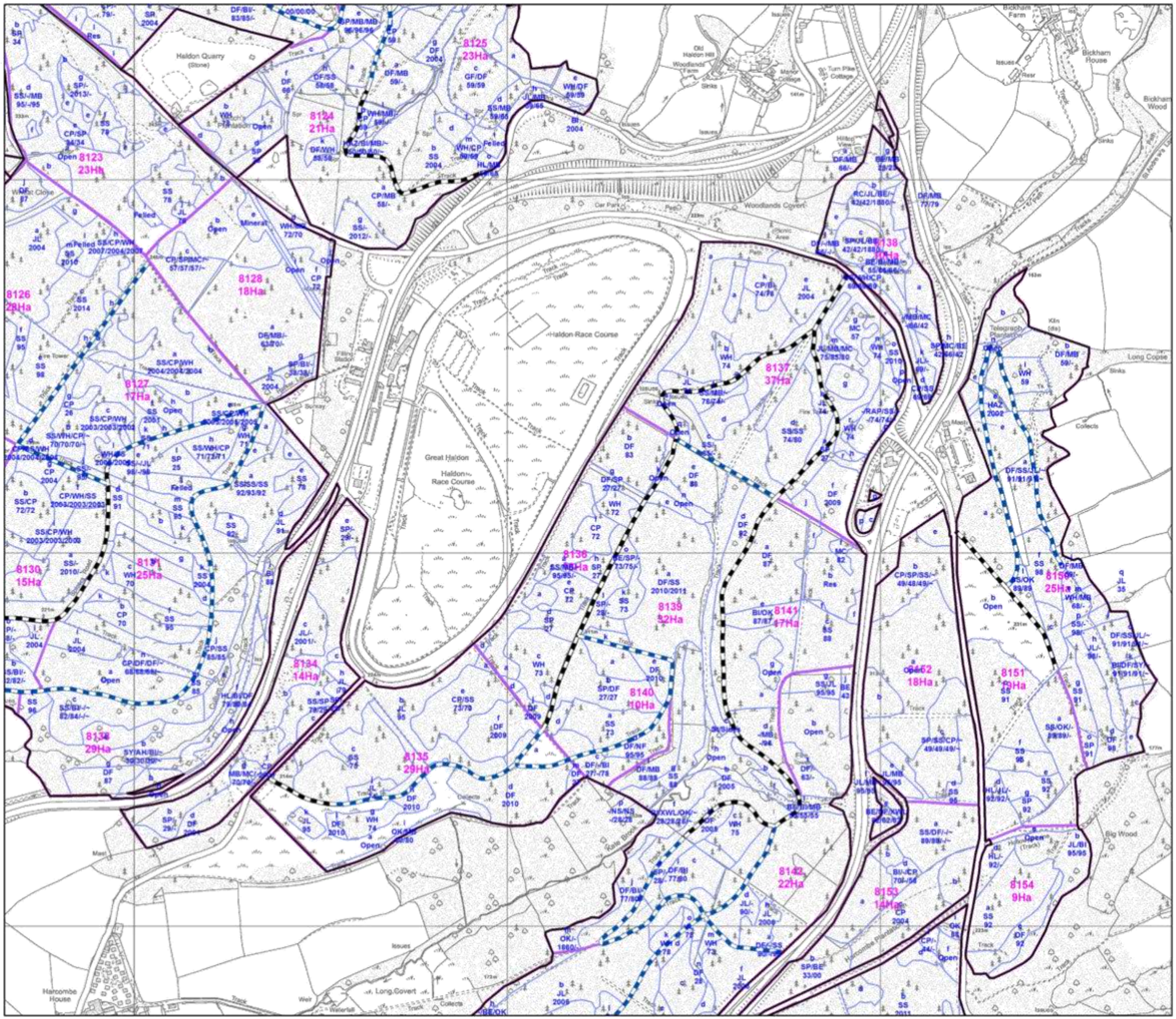

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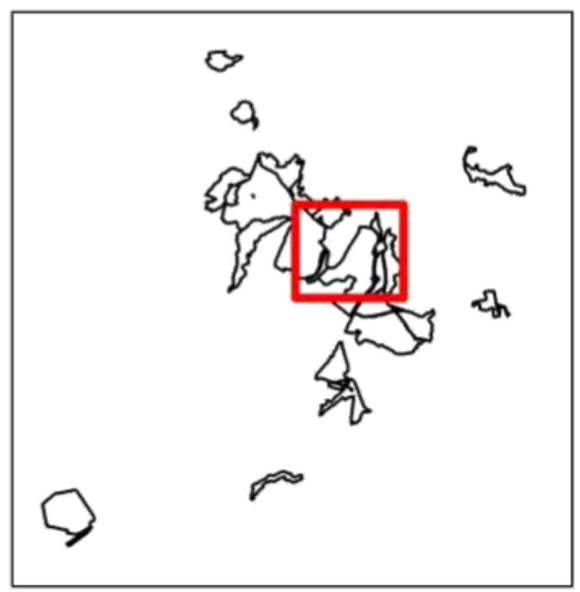

2015 - 2025

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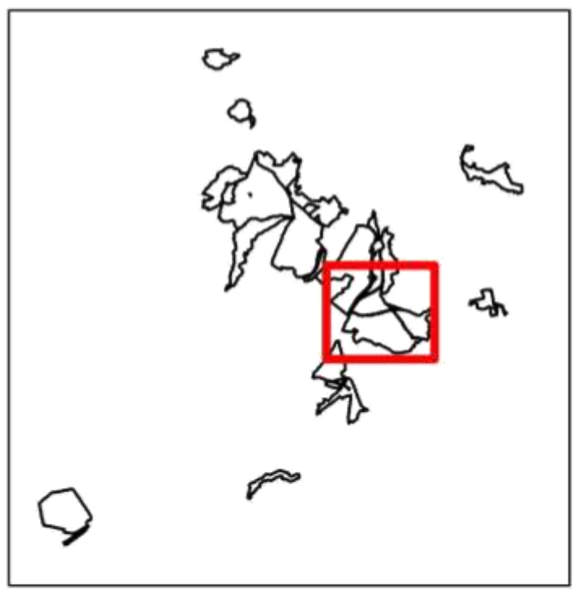

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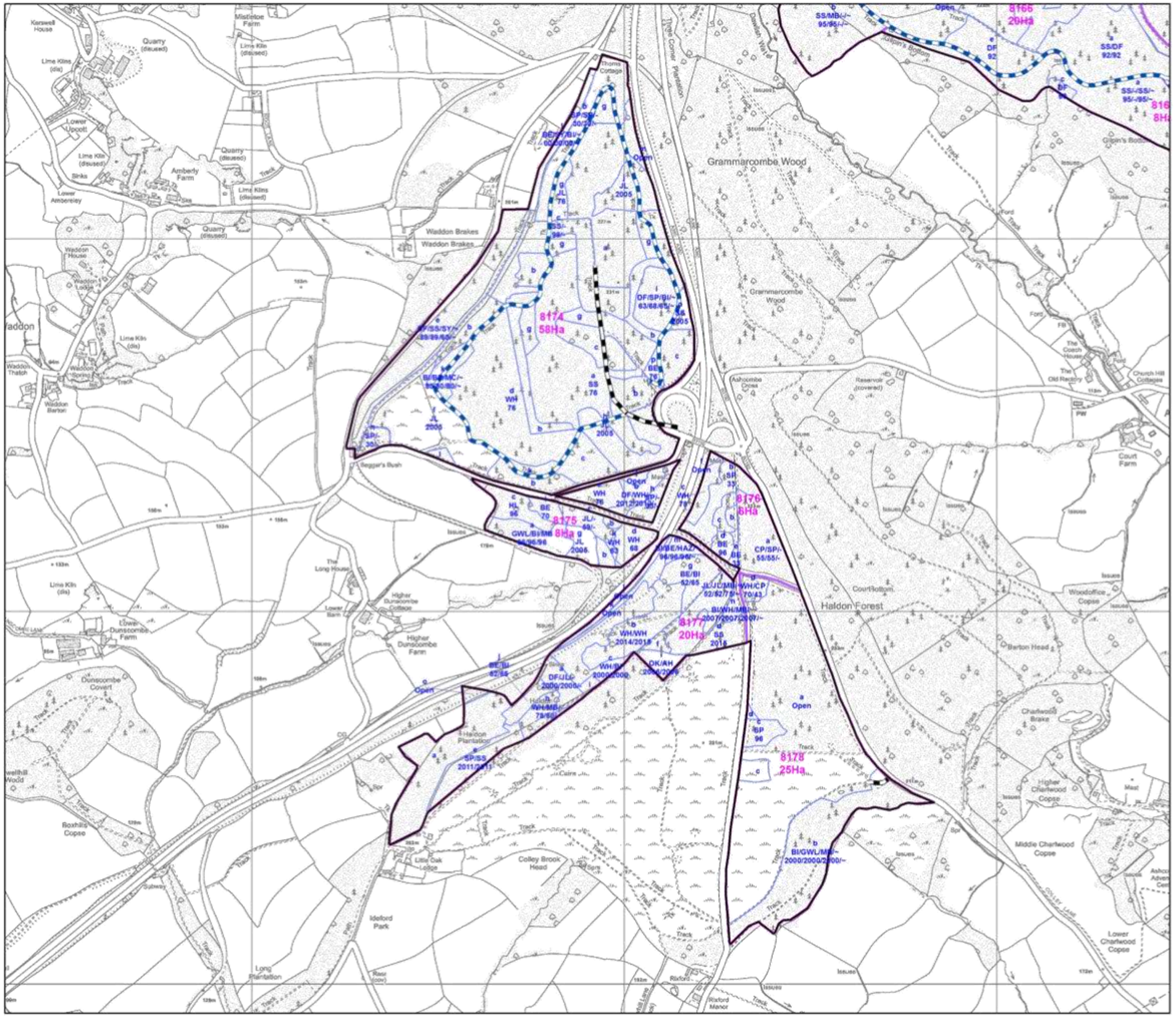
Ideford



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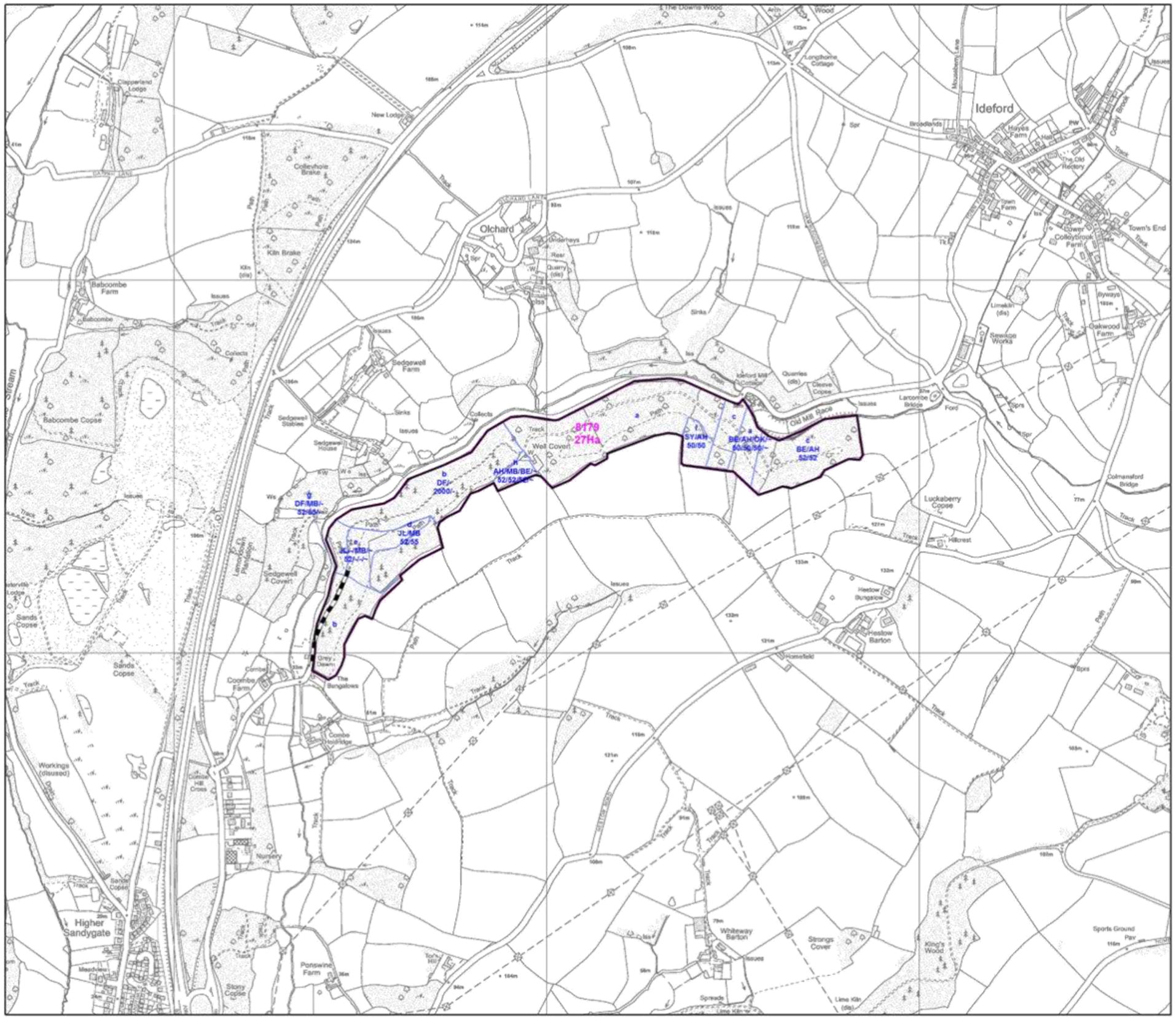

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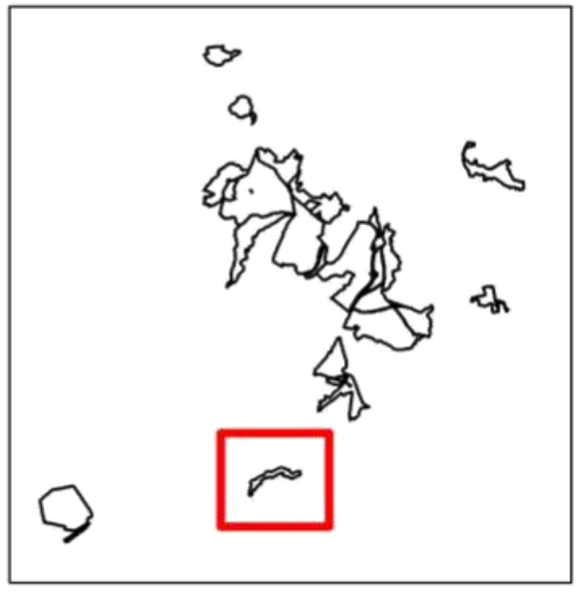

2015 - 2025

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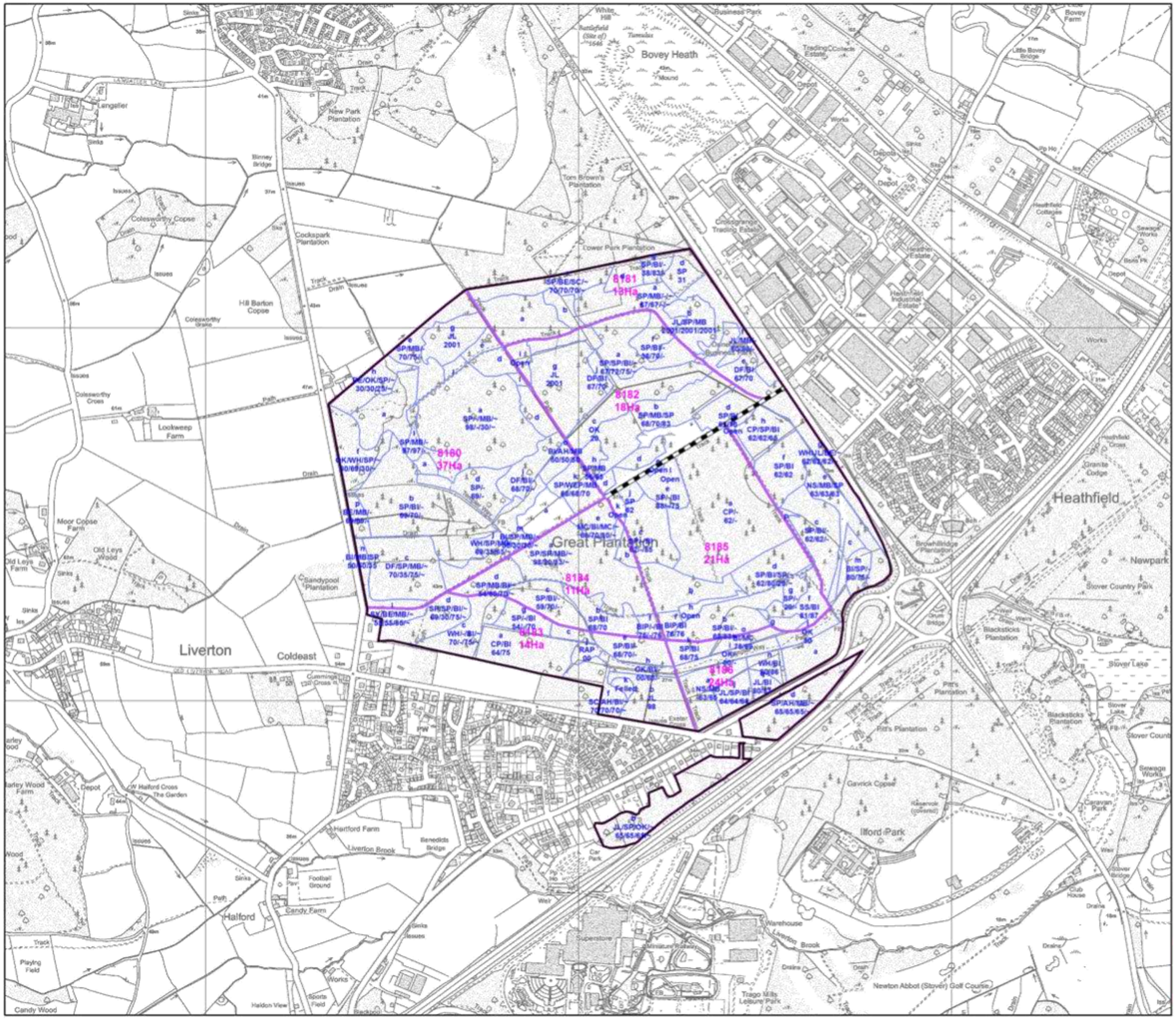
Great Plantation



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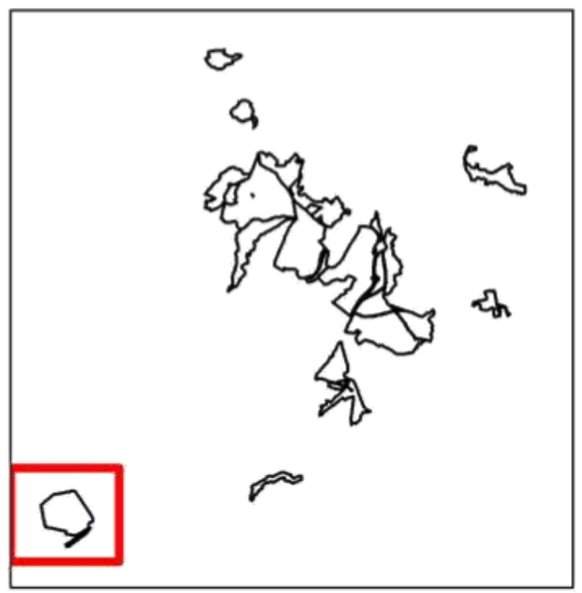
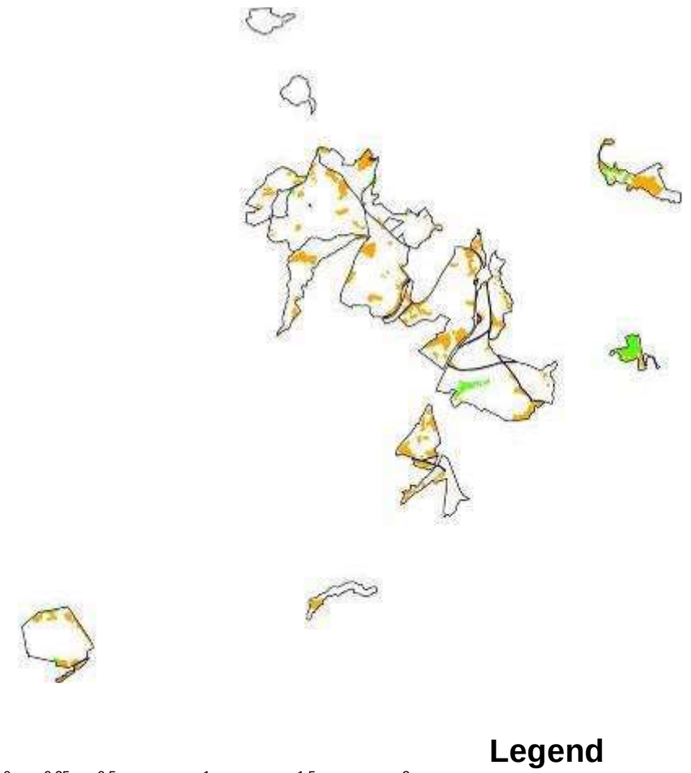


2015 - 2025

Pests & Diseases

Phytophthora ramorum (PR)

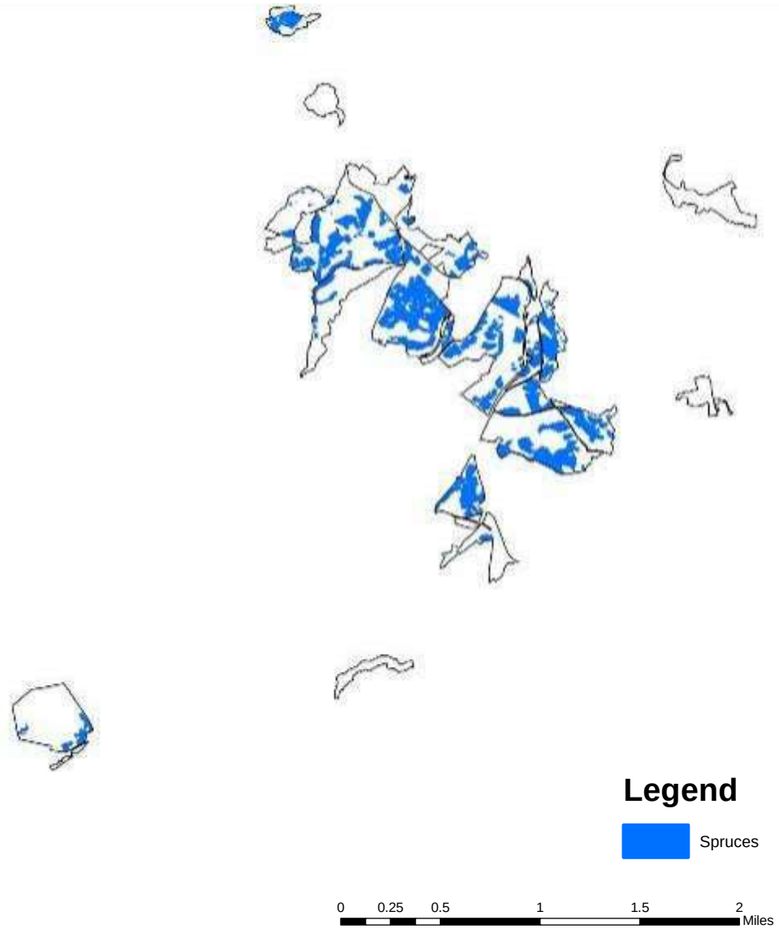
P. ramorum was first found in the UK in 2002 and until 2009 in the woodland environment had largely been associated with rhododendron species acting as a host from which spores are produced. In August 2009 P. ramorum was found on a small number of dead and dying Japanese Larch in South West England, causing particular concern since some affected trees were not close to infected rhododendron and showing a significant change in the dynamics of the disease than experienced previously. Following this testing in Devon and west Somerset confirmed the presence of PR in mature Japanese larch as well as species in its under-storey, including sweet chestnut, beech, birch, oak, Douglas fir and Western hemlock. PR is a notifiable disease dealt with by felling the infected area under a statutory plant health notice (SPHN) issued through FERA and the Forestry Commission. PR was found in North Wood a number of years ago and was felled through an SPHN. However the amount of susceptible larch and Sweet chestnut in the Plan area remains high. Steps will be taken to target the removal of these species where appropriate.



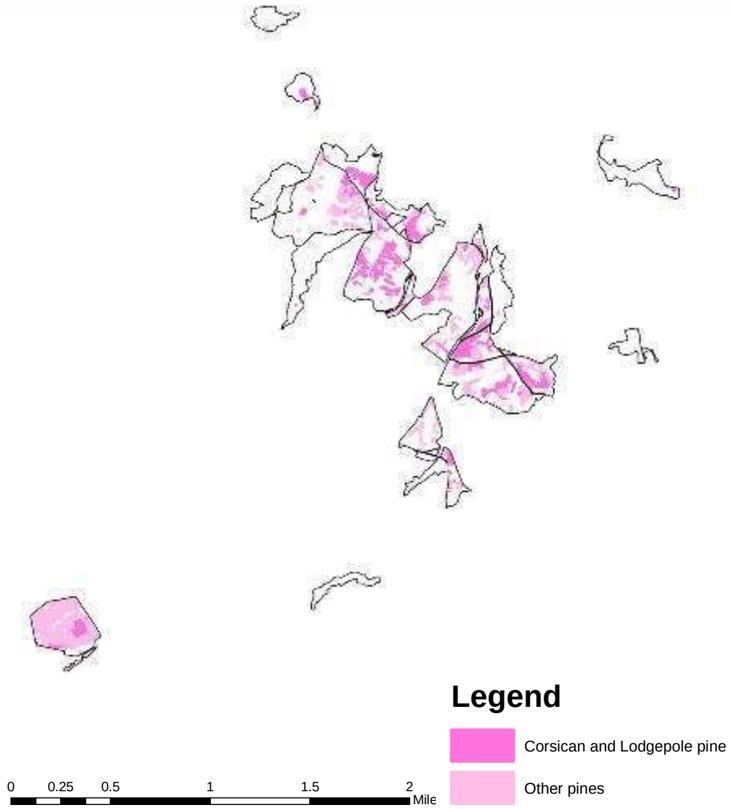
Dendochtronus micans

Also known as great spruce bark beetle, this pest is found throughout continental Europe and increasingly in west England, Wales and southern Scotland. It damages spruce trees by tunnelling into the bark of living trees to lay its eggs under the bark. The spread of *D micans* across west England has been unrelenting having developed a stronghold in north Devon and continues to move ever south and east wards, usually assisted by the wind. The beetle is particularly drawn to the smell of resin and thus fresh cut or broken timber. It prefers moist, warm and therefore unthinned stands of all types of spruce, but particularly Norway and Oriental although its ultimate destructive capability on Sitka is greater. The spread of *D micans* can be controlled by the release of *Rhizophagus grandis,* a natural predator in its native range.

The Plan area is at significant risk of infection from *Dendochtronus micans* not least because of the high proportion of spruce. Therefore steps need to be taken to diversify these crops where site conditions allow. Minimising stress of the spruce through good planting and species choice as well as regular thinning can limit the susceptibility of the spread.



Dothistroma Needle Blight (DBN)



Often referred to as Red Band Needle Blight (RBN) and can reduce growth rates by between 70 and 90%. Effects of RBN are managed through thinning the wood more heavily than you would normally to introduce higher levels of air flow through the remaining crop. A large proportion of the Haldon Plan area is pine, namely Scots and Corsican pine. In places this pine, particularly Corsican (and the small components of Lodgepole pine are suffering from Dothistroma. Steps will be taken to target the removal of these species where appropriate or use them as an over-storey aide to create the right conditions for underplanting.

APPENDIX 3: Supporting Information

Glossary

Term	Abbreviation	Description
Ancient Semi-Natural Wood-land	ASNW	An ancient woodland site, where trees and other plant species appear to of established naturally rather than having been planted. Predominantly these sites will contain 80% or over of site native species or species native to the surrounding area.
Alternatives to Clearfell	ATC	Alternative to Clearfell is similar to CCF and refers to management systems where stands are regenerated without clearfelling.
Ancient Wood-land Site	AWS	A site that has technically been wooded since 1600AD and is unlikely to have been converted to farmland in the last few centuries.
Continuous Cover Forestry	CCF	Continuous Cover Forestry is an approach to forest management that enables an owner of woodland to manage the woodland without the need for clearfelling. This enables tree cover to be maintained, usually with one or more levels and can be applied to both conifer or broadleaf stands. With Conifer it is possible to regenerate the crop a lot faster than in broadleaf crops, where the canopy is generally removed a lot slower and over a much longer time span. A decision to use CCF must be driven by management objectives and will have long-term vision often aimed at creating a more diverse forest, both structurally and in terms of species composition. There are no standard prescriptions meaning CCF is very flexible in ensuring opportunities can be taken advantage of as they arise. This development of a more diverse forest is a sensible way to reduce the risks posed by future changes in the climate and biotic threats.
Clearfell	C/F or CF	To cut and remove all trees from a certain area of woodland.
Crop		A stand of trees. Often associated with stands completely or partially managed for its timber. Just as farmers manage crops so does forestry the only difference is a farmers' rotation is shorter and often realised in 1 year. Trees are a much longer term crop with rotations varying from 6 years to 400 years. (also see definition for rotation)
Enrichment planting		Planting different species within areas of regen that helps diversify the range of species in a wood and in doing so can make it more resilient to future climate change and future threats from disease. Enrichment may be desirable in areas where success of regeneration is uneven, patchy or where a regen crop is limited by the number of species present.
Group felling / group planting		This is where small areas of woodland are felled hence the name "group felling" and then either allowed to develop through the use of nat-regen or in this case planted hence "group planting". These techniques can help to develop structure* within a wood over a given length of time and is often used in conjunction with continuous cover. *Either in terms of age or number of tree species present, since shelter and shade are provided by the remaining upper storey one can consider a larger number of tree species when deciding what to plant.
Hectare	Ha	Unit of area equating to 2.47 acres.
Native (and honorary native)		The trees making up the woodland are part of England's natural, or naturalised flora. Determined by whether the trees colonised Britain without assistance from humans since the last ice age (or in the case of 'honorary natives' were brought here by people but have naturalised in historic times); and whether they would naturally be found in this part of England.
Natural Regen-eration	Regen or nat-regen	Trees growing on a site as a result of natural seed fall, and can be used as a management process and can allow cleared areas of woodland to germinate, grow and develop naturally. This process can happen anywhere and woods can be managed to encourage nat-regen although there is no guarantee of success. In these instances, or if nat-regen is unlikely for a variety of reasons, one can use enrichment planting or group planting to achieve the same affect. The process usually relies on an overstorey of "parent trees" being present or on parent trees being close by to provide the seed. These parent trees will usually of been thinned and managed with natural regeneration in mind. Existing areas of nat-regen are then usually developed through carefully thinning the surrounding woodland over a number of years, to give more light and space to ensure the young trees can establish themselves into larger trees eventually allowing them to be incorporated ('recruited') into the main crop for the next rotation at some point in the future. Usually done in small groups or in strips this system can allow a varied woodland structure to develop over time. Protection from competing plant species and mammal browsing might be required in the early stages by fencing or using tree shelters.

Rotation		Generally a commercial term used to describe the length of time an area of trees is growing for, from the time of planting to the time of felling. For broadleaves a rotation is generally a lot longer than that of conifer species* and can broadly speaking be anywhere between 80 years to 3-400 years, as opposed to conifer crops whose rotation is generally shorter but can vary from 20-25 years to 120 years plus. *The exception being that of coppice where rotation length can vary from 5 or 6 years up to 30 years plus depending on management objectives. "First rotation" would refer to an area of wood planted on open ground not previously wooded. And so "second rotation" is one where woodland has been cleared and replanted.
Shelterwood		A management system that is applicable to conifer or broadleaf, where tree canopy is maintained at one or more levels without the need to clear-fell the whole site. Felling can occur, but generally in small "groups" whose size shape and spatial distribution will vary depending on site conditions. The "groups" are then either: allowed to develop and establish by the use of natural regeneration, are planted or are established using a mixture of both techniques. This known as a "group shelterwood system" A variation on this is "Single tree selection". This variation removes individual trees of all size classes more or less uniformly throughout the stand to maintain an uneven-aged stand and achieve other stand structural objectives. While it is easier to apply such a system to a stand that is naturally close to the uneven-aged condition, single tree selection systems can be prescribed for even-aged stands, although numerous preparatory thinning interventions must be made to create a stand structure where the system can truly be applied.
Silviculture		A term coined during late 19th century from the Latin *silva meaning* 'wood' and the French *culture* meaning 'cultivation' and so Silviculture is the art and science of controlling the establishment, growth, composition, and quality of forest vegetation to achieve a full range of forest resource objectives.
Stand		A group or area of trees that are more or less homogeneous with regard to species composition, density, size, and sometimes habitat.
Thin	TH	Selective removal of trees from a wooded area, giving remaining trees more space to grow into larger trees. Thinning is done to: Improve the quality and vigour of remaining trees. Remove trees interfering with mature or veteran broadleaf trees. Give space for tops (or "crowns") of broadleaf trees to develop and potentially act as a future seed source. Give space for natural regeneration to grow and develop with the intention of recruiting these younger naturally grown trees as a part of the future woodland structure. Create gaps for group planting or enrichment. Remove species of tree that may compromise the intended management objective of the woodland eg: non-native or invasive species such as Sycamore, Western Hemlock or birch. Improve the economic value of a wood. Help realise opportunities to enhance ecological value. **NOTE:** This list is not in any order of priority and will vary depending on management objectives.
Yield Class	YC	A method of measuring the growth rate or "increment" of a crop of trees by age and height; measured in m3 per Ha per annum. E.g. A crop with a YC of 16 is one that has an annual increment of more than 16m3 but less than 17m3, although generally only even numbers are used when stating YC.

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Appendix 5: SSSI Management Plan for Haldon Forest SSSI, Tower Wood Quarry SSSI and Buller's Hill Quarry SSSI

1. Agreement and Consent

District West England Forest District

Name of SSSI Haldon Forest SSSI - SX866838
Tower Wood Quarry SSSI - SX877857
Buller's Hill Quarry SSSI - SX882847

Period of Plan January 2018 - January 2028

Phil Stocks:
Land Management and Conservation Adviser
South Devon Team

Date: 13th December 2017

Jon Grimes:
Lead Adviser
South Devon Land Team

Date: _15th December 2017_____

Kevin Stannard:
Forest Management Director
West England Forest District

Date:

The signing of this plan by Natural England gives the necessary consent under Section 28 (6) of the Wildlife and Countryside Act (1981), as amended, for the management prescriptions detailed in this plan and to be undertaken without necessity to consult prior to each operation during the plan.

FC England will keep a written record of work carried out during the period of this plan.

2. SSSI Notification

County Devon

Site Name Haldon Forest SSSI
Tower Wood Quarry SSSI
Buller's Hill Quarry SSSI

District West England Forest District

Status Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 as amended

Local Planning Authority Devon County Council
Teignbridge District Council

National Grid Reference SX866838
SX877857
SX882847

Area 1007.6 ha
0.4 ha
0.62 ha

Ordnance Survey Sheet 1:50,000: 192,191
1:10,000: SX 88 NE/98 SW

Date Notified (Under 1981 Act) 1992
1989
1989

The Forestry Commission manages 17 units of SSSI at Haldon Forest. At the time of writing all the coniferous woodland units (101,102,103,104,106,107,108,109,111,112,113 and 114) are in Favourable condition, the remainder, the lowland heathland units are in Unfavourable Recovering condition (105,110,115,116,117).

The Forestry Commission manages Tower Wood Quarry and Buller's Hill Quarry SSSI. Both quarries have one unit each designated as Favourable condition.

3. Potentially Damaging Operations

Reference Number	Type of Operation
1	Cultivation, including ploughing, rotovating, harrowing, and re-seeding.
2	Changes in the grazing regime, including type of stock or intensity or seasonal pattern of grazing and cessation of grazing.
3	The introduction of stock feeding and changes in stock feeding practice.
4	The introduction of mowing or other methods of cutting vegetation and changes in the mowing or cutting regime, including cessation.
5	Application of manure, fertilisers and lime.
6	Application of pesticides, including herbicides (weed killers).
7	Dumping, spreading or discharge of any materials.
8	Burning.
9	The release into the site of any wild, feral or domestic animal, plant or seed.
10	The killing or removal of any wild animal, other than pest control.
11	The destruction, displacement, removal or cutting of any plant or plant remains, including shrub, herb, dead or decaying wood, moss, lichen, fungus, leaf-mould and turf.
12	Changes in tree and/or woodland management including afforestation, planting, clear and selective felling, thinning, coppicing, modification of the stand or underwood, changes in species composition, cessation of management.
13a	Drainage (including use of mole, tile, tunnel or other artificial drains)
13b	Modification of the structure of watercourses (eg. streams), including their banks and beds, as by re-alignment, re-grading or dredging
13c	Management of aquatic and bank vegetation
14	The changing of water levels and tables and water utilisation, including irrigation, storage and abstraction through boreholes.
15	Infilling of ditches, ponds, pools or marshes
16a	The introduction of or subsequent changes in freshwater fishery production and/or management, including sporting fishing and angling.
20	Extraction of minerals, including topsoil and subsoil.
21	Construction, removal or destruction of roads, tracks, walls, fences, hardstands, banks, ditches or other earthworks, or the laying, maintenance or removal of pipelines and cables, above or below ground.
22	Storage of materials
23	Erection of permanent or temporary structures, or the undertaking of engineering works, including drilling.
26	Use of vehicles likely to damage or disturb features of interest.
27	Recreational or other activities likely to damage the trees and epiphytic lichens.
28	Introduction of game management and changes in game management and hunting practice.

4. Designated Features

Haldon Forest SSSI

4.

Habitat Type	Specific Designated	Description	Current Status
Dwarf Shrub Heath	H8 *Calluna vulgaris-Ulex gallii* heath	Lowland dry heath	Present across a total area of 77 hectares
	H4 *Ulex gallii-Agrostis curtisii* heath	Lowland dry heath	
	Aggregation of breeding birds: Nightjar *Caprimulgus*	3% of British population at notification. An	Present – 63 churring males during 2016
Coniferous and Mixed Woodland	Rare bird feature: raptor assemblage (goshawk, sparrowhawk, hobby,	An exceptional assemblage of breeding raptor species	Present
	Aggregation of breeding birds: Goshawk *Accipiter gentilis*	A nationally scarce schedule 1 bird species	Present
	Aggregation of breeding birds: Honey -buzzard *Pernis*	A nationally rare Schedule 1 bird species, on Annex 1	Has not nested on the SSSI since 1995
	Small pearl-bordered fritillary *Boloria selene*	Nationally declining priority butterfly species	Present on Kidden's powerline
	Pearl bordered-fritillary *Boloria euphrosyne*	Nationally declining butterfly priority species	Present on Kidden's powerline
	Wood White *Leptidea sinapsis*	Nationally declining priority butterfly	Not recorded on SSSI since 2004

Buller's Hill Quarry

Habitat Type	Geological Features	Description	Current Status
N/A	Disused quarries and pits	GCR Block: Palaeogene This quarry is the type section for the Buller's Hill Gravel, the residual faces of the Palaeogene 'Haldon Gravel'	Exposures present

Tower Wood Quarry SSSI

Habitat Type	Geological Features	Description	Current Status
N/A	Disused quarries and pits	GCR Block: Palaeogene This quarry is the type section for the Tower Wood Gravel, the residual faces of the Palaeogene 'Haldon Gravel'	Exposures present

5. Important Evaluation Criteria

5.1 Diversity

Although primarily managed as a productive conifer plantation, Haldon Forest SSSI supports a surprisingly diverse range of habitats from clearfell and early rotational conifer and mixed high forest to grazed lowland heath, acidic grassland and ponds and scrub. A network of rides, roads and powerlines provides additional interest in the form of connected open habitat and edge habitat. A varied geology and topography ranging from the flinty, acidic soils on the ridge to more fertile, damper soils at the base of the slope provides a range of important niches and conditions.

5.2 Rarity

Haldon Forest SSSI provides habitat for a number of designated species: goshawk, hobby, sparrowhawk, buzzard, kestrel, nightjar, small pearl-bordered fritillary and pearl bordered fritillary. Species such as the goshawk and hobby are listed on Schedule 1 of the Wildlife and Countryside Act, the nightjar is listed on Annex 2 of the Birds Directive. The butterfly species are all showing national declines, listed as species of Principal Importance (NERC 2006).

5.3 Intrinsic Appeal

Haldon Forest SSSI has enormous intrinsic appeal being easily accessible from the nearby city of Exeter and supporting an interesting and varied topography and incorporating stunning views over the surrounding landscape. The forest attracts a large number of people for a range of activities including walking and mountain biking.

6. SSSI Habitat Management Prescriptions and Factors Influencing Management

Management	Explanation	SSSI Habitat	Factor	Mitigation
Ground preparation for restocking	**Excavator preparation**: Use of tracked excavator to rake up brash into windrows or piles which will be left on site and allowed to rot down naturally. **Scarification**: Use of a purpose built machine to cultivate the top 15-30cm of soil/ humus. This forms raised, linear 'traces' where the trees are planted. **Mulching**: Use of a forestry tractor or purpose-built mulcher to mulch up brash, stumps and other woody debris. **Drainage operations**: Drains are cut to remove surface water from the site. UKFS stipulates that they should be re-profiled to 2 degrees to limit speed of run off. Sometimes old drains are cleaned and re-profiled.	Conifer	Disturbance of nightjar and other ground nesting birds	Ground preparation should be carried out in the autumn and winter months or immediately post harvesting. The nightjar breeding season (May to August) will be avoided.
Pre and post planting chemical application	**Herbicide application pre planting:** application of glyphosate to target weeds before other ground preparation is undertaken. This operation generally focuses on bramble and bracken which can remain vigorous even after other mechanical preparation is undertaken. **Herbicide application post plant spot/lane spraying:** Application of herbicides, most commonly, but not limited to, glyphosate to control weeds around tree after planting. In either case some ground between the trees or between the rows is left untreated. **Insecticide:** Application of cypermethrin or acetamiprid to control Hylobius weevil. Both chemicals can be applied before planting (at the nursery) or after planting (by operators using spot guns or knapsack sprayers) **Fertilisers** Phosphorous fertilisers are applied to young trees to provide a balanced nutrition. This is increasingly uncommon but is occasionally undertaken.	Conifer and Broadleaf	Disturbance of nightjar and other ground nesting birds	All chemical applications should follow the FC Operational Guidance Booklet No. 15 "Using chemicals in the Forest" If nightjar nests are identified during the course of the work, operators must leave a 20m buffer around the nest.
Mechanical weeding and clearing	Cutting weeds to reduce competition around crop trees. A powered clearing saw, brushcutter or strimmer is used. Vegetation from around tree either as a 1.2m diameter spot or 1.2m wide swathe down planting line. The work is done at any time of the year.	Conifer and Broadleaf	Disturbance of nightjar and other ground nesting birds	Checks for records of breeding bird should take place before works commence. If nightjar nests are identified during the course of the work, operators must leave a 20m buffer around the nest.

Management	Explanation	SSSI Habitat	Factor	Mitigation 2015 - 202
Restocking and beating up	Planting trees by hand using a spade. **Conifers:** planted at a density >2500/ha. **Broadleaves:** planted at a density <2500/ha.	Conifer and Broadleaf	Pearl-bordered Fritillary and small pearl-bordered fritillary	Forests are designed and planted in accordance with UK Forest Standard which ensures that there is adequate provision of open habitat, native broadleaves, watercourse buffer zones and species diversity. Planting takes place between November-May.
Cleaning/ Respacing	Removal of scrub competition (e.g. gorse, birch, superfluous conifer regeneration) just before canopy closure (usually around year 4-6). The operation is usually undertaken by hand using clearing saws and chainsaws.	Conifer and Broadleaf	Disturbance of nightjar and other ground nesting birds	No work to be undertaken April mid-August. This will avoid disturbance to nesting birds and breeding dormice.
Harvesting	Felling of trees to meet the site objectives which may include timber production, silvicultural development of the crop or conservation. Felling is undertaken by motor-manual methods (chainsaws and winches) or purpose built timber harvesters and forwarders. Brash (branches and waste timber) is used to form a brash mat, upon which the machines travel across. Watercourses are crossed by either using temporary log crossings or ridged pipes.	Conifer and Broadleaf	Disturbance of raptor assemblage	No work to be started from end-January to mid-August (except when safety or under statutory plant health notice_ to avoid disturbance to nesting birds, displaying raptors and breeding dormice. Operational Site Assessments will be carried out to ensure all site constraints and opportunities have been identified
Windblow clearance	Felling trees using chainsaws and winches or purpose built harvesting machinery.	Conifer	Disturbance of raptor assemblage and other schedule 1 breeding birds	Windblow clearance should be undertaken between mid-August and February unless it is posing a risk to public health and safety. Pockets of suitable raptor nesting trees that have not been subjected to windblow should be retained unless they are at risk from further windblow.
Road/ride/open habitat flailing	Cutting back of vegetation such as bracken, bramble, scrub, grass from open habitat/road /ride side using a tractor mounted rotary mower/topper or side-arm flail. Cutting of hedges using a tractor mounted side-arm flail.	Conifer and Broadleaf/Lowland heathland	Disturbance of nightjar and other ground nesting birds Pearl-bordered Fritillary and small pearl-bordered fritillary	No cutting of grass rides and butterfly habitat between May and mid-August. No hedge cutting to be undertaken between 1st March and 31st August. Operational Site Assessments will be carried out to ensure all site constraints and opportunities have been identified

Management	Explanation	SSSI Habitat	Factor	Mitigation
Road/ride reparation	Using civil engineering machinery to scrape surface vegetation from roads; re-profile roadside drains; and repair the surface of the road by laying new stone and rolling. Can also include blading and widening of existing tracks, and the installation of extraction ramps at rack-ends. Surface vegetation is piled adjacent to roads in small (<80cm high) piles.	Conifer and Broadleaf/ Lowland heathland interface	Pearl-bordered Fritillary and small pearl-bordered fritillary	Undertaken throughout year but install exclusion zones around all known raptor nests to prevent disturbance. Where birds have chosen to nest in busier parts of the site (e.g. near to the main visitor carpark), these exclusion zones may be significantly reduced. Provisional safe working distances as published in "Forests and Birds: A guide to Managing Forests for Rare Birds" should be adhered to. (NB—where guidance doesn't cover all species—seek advice of Wildlife Ranger) Operational Site Assessments will be carried out to ensure all site constraints and opportunities have been identified
Rhododendron clearance	Mature rhododendron bushes are cut down using chainsaws or mulchers. Regrowth of these plants, along with smaller seedlings are treated with glyphosate and Mixture B NF through a knapsack sprayer. This spraying often needs to be undertaken several times to kill the extensive root network of mature plants.	Conifer, Broadleaf and Lowland heathland	Disturbance of raptor assemblage Disturbance of nightjar and other ground nesting birds	Chainsaw cutting is undertaken at any time of year. Mulching is avoided during the period April-mid-August. All chemical applications should follow the FC Operational Guidance Booklet No. 15 "Using chemicals in the Forest" Spraying is undertaken March-November. Exclusion zones are applied around known raptor nests although the published figures may be reduced for low key spraying operations. Bird and dormouse breeding seasons are avoided when mulching.
Tree Safety Work	Undertake regular tree safety inspections commensurate with the level of public use around them. Carry out remedial work on trees to reduce safety risks. Such work can range from removing deadwood, pruning or felling. Work is undertaken by arborists or FC ground teams using chainsaws. Access is usually gained by rope and harness or Mobile Elevated Platform (MEWP).	Broadleaf	Disturbance of raptor assemblage	Staff are trained and the remedial work is only undertaken where absolutely necessary. Arborists will take note of potential bat roosts /bird nests and if occupied, work will be suspended and specialists engaged. Work is undertaken throughout the year, although exclusion zones around known Schedule 1 bird nests will be installed. Opportunities will be utilised to retain an assortment of quality deadwood of different sizes and at different densities , standing deadwood will be retained in-situ where it is safe to do so.

Management	Explanation	SSSI Habitat	Factor	Mitigation 2015 - 202
Deer control	Shooting deer by trained marksman using a rifle to protect forestry crops, natural regeneration and PAWS and ASNW features.	Conifer and Broadleaf	Disturbance of raptor assemblage	Shooting will not take place in the proximity of raptor nests during the breeding season.
Provision of recreation trails and associated maintenance	Haldon Forest Park attracts 300,000 visitors per year who come to enjoy the walking and cycling trails. Much of the trail network is already installed but further alterations and some additional routes may be provided over the coming years. The trail surface is stoned, and is maintained in a similar way to forest roads, (see above) albeit using smaller machinery. Vegetation is cut back from the routes regularly during the summer months.	Conifer, Broadleaf and Lowland heathland	Disturbance of raptor assemblage Pearl-bordered Fritillary and small pearl-bordered fritillary	Any new trails will be subject of discussion between FC and NE at the planning stage. Trail maintenance generally occurs in high disturbance areas and as such there are no proposals to limit the timings of these operations.
Recreation Events	A number of recreation events are held throughout the year. Event organisers are required to apply for a permit from the FC.	Conifer, Broadleaf and Lowland heathland	Disturbance of raptor assemblage Disturbance of nightjar and other ground nesting birds	FC staff can consult/comment on permits. Any events planned for within the bird breeding season will be assessed for their likelihood of disturbance and re-routed if necessary
European Protected Species	All woodland management / recreational operations and events that take place within the vicinity of EPS (great-crested newt, dormouse, bats and otter)	Conifer, Broadleaf and Lowland heathland	EPS	All operations that could potentially injure or kill a EPS or disturb, damage or destroy a breeding or resting place must comply with the most up to date guidance on managing woodlands supporting these species. All felling and restocking associated operations should be recorded during the Operational Site Assessment and Natural England licences sought if guidance cannot be followed.
Brash burning	Brash from the clear-felled conifer crop will be heaped and burned to facilitate heathland restoration, for public amenity or to maintain site productivity.	Lowland Heathland	Disturbance of nightjar and other ground nesting birds	An EA license will be sought. FC best practice will be followed, taking particular care to ensure the correct weather conditions.

Management	Explanation	SSSI Habitat	Factor	Mitigation
Heathland and Butterfly Habitat scrub control	Birch and conifer regeneration on lowland heathland areas will be removed with clearing saws and chainsaws. Herbicide (glyphosate) and propyzamide is sometimes applied to stumps or to coppice regrowth.	Lowland Heathland	Disturbance of nightjar and other ground nesting birds	Scrub cutting is undertaken in the period September-March in a bid to avoid bird nesting season. Glyphosate and propyzamide application is undertaken throughout the year. Care is taken to minimise herbicide drift onto heathland flora, however some drift is inevitable and within reason this can help to break up dense heather, gorse or purple moor grass.
Burning	Burning will be carried to maintain the open nature of lowland heathland units as a more sustainable alternative to continual cutting and herbicide application.	Lowland Heathland	Disturbance of nightjar and other ground nesting birds	Burning will comply with The Heather and Grass etc. Burning (England) Regulations 2007 and Natural England Burning Code & the guidelines for burning lowland heathland. FC beat practice will be followed, including the daring up of need for burning plans taking particular care to ensure the correct weather conditions.
Bracken management	Bracken will be managed using a combination of methods including cutting using a tractor mounted rotary mower/topper or side-arm flail or A tractor mounted roller. On the Kidden's powerline, aim of bracken management is to break up the bracken during early spring to ensure gaps in canopy allow for the germination of violets. **Herbicide application :** Application of herbicides, most commonly, but not limited to, glyphosate to control bracken will be carried out by operators using spot guns or knapsack sprayers.	Lowland Heathland and Kidden's Powerline	Disturbance of nightjar and other ground nesting birds Pearl-bordered Fritillary and small pearl-bordered fritillary	Bracken cutting should take place in late May or early June in small areas 0.5 – 1 hectare. Glyphosate application is undertaken throughout the year. Care is taken to minimise herbicide drift onto other flora, however some drift is inevitable. Operational Assessments will be carried out, where undertaken by machine, to ensure all site constraints and opportunities have been identified.
Scraping/disturbing accumulated leaf/needle	Remove the litter up to 10cm using an 360 excavator to remove nutrients and allow for restoration of dwarf shrub heathland, but ensure that the surface of the mineral soil receives minimal damage. Where the litter is less than 5cm, disturb the litter layer to stimulate germination of the seed bank In well-established heath bare ground can be created where otherwise no bare ground would otherwise be present. Arisings will be removed and carefully landscaped to ensure they provide habitat for a range of invertebrates and reptiles and are visually acceptable .	Lowland Heathland	Disturbance of nightjar, and other ground nesting birds and great crested newts	Scraping should be carried out in the autumn and winter months to avoid disturbance to ground nesting birds. Operational Site Assessments will be carried out to ensure all site constraints and opportunities have been identified

7. Record of SSSI Management

Operation	Signed	Date