Forestry Commission England

Abbeyford Forest Plan

2018 - 2028

West England Forest District

Ben Robinson

FCE File Ref: OP10/73

OLD Ref: PE26 & PE27

Forestry Commission England

List of Contents

About

The Abbeyford Forest Plan area is made up of two separate forest blocks totalling 208 hectares in Devon. As forest blocks set within the enclosed farmed and wooded landscape they have very high natural and landscape diversity and value.

The forests are part of the public forest estate and stretch from Abbeyford in the west, 1 miles from Okehampton, to Berrydown in the east which is within 2 miles of Sampford Courtney.

The public forest here is a predominantly ancient woodland having been planted with conifer to address the national timber shortage of the early Twentieth Century. The area is now known to produce high quality Douglas fir which makes up the majority of the trees here supplemented primarily with beech and larch. Areas of remnant ancient semi-natural woodland do remain and are made up of oak and birch with ash and beech. Most of the areas are actively managed to provide timber for local and national businesses, and to improve the quality of the remaining tree crop.

The Plan area is a rich for ecology with habitat such as Priority Lowland Mixed Deciduous Woodland used by for dormice, bats and nightjar as well as other important flora and fauna species.

The entirety of the Plan area is Open Access, confirmed by the Countryside Rights of Way Act. Abbeyford Woods is the main focus of informal recreational activity and is particularly nice place to picnic, walk or run given its close proximity to Okehampton, good path network and fine views over the town.

Objectives

The core aim of the Plan is to begin to progress 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.

  - To protect and enhance areas of Ancient Semi-natural Woodland and restore areas of PAWs in line with ‘Keepers of Time’.
- The provision and maintenance of recreation facilities.
- 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 .

Summary

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

The Plan makes provision to develop the complex and dynamic crop compositions of quality Douglas fir shelterwood forest. Areas identified as PAWS will be managed as mixed woodland to maximise their productive potential, with the aim of a gradual return to native woodland.

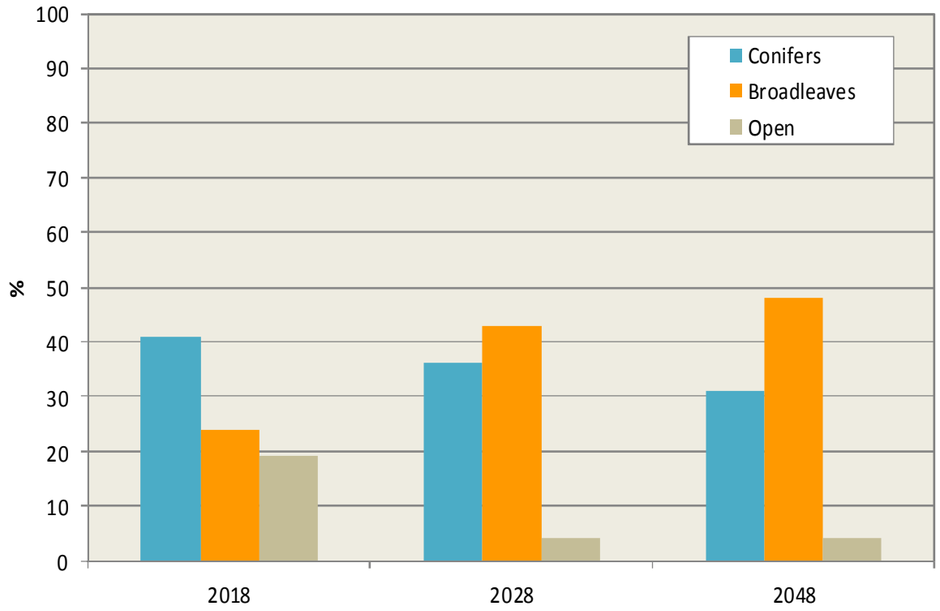
The Plan makes provision to ensure proposals are in keeping with the enclosed farmed and wooded landscape Implementation and maintenance of an environmental corridor system will continue to increase diversity of habitat and internal landscaping.

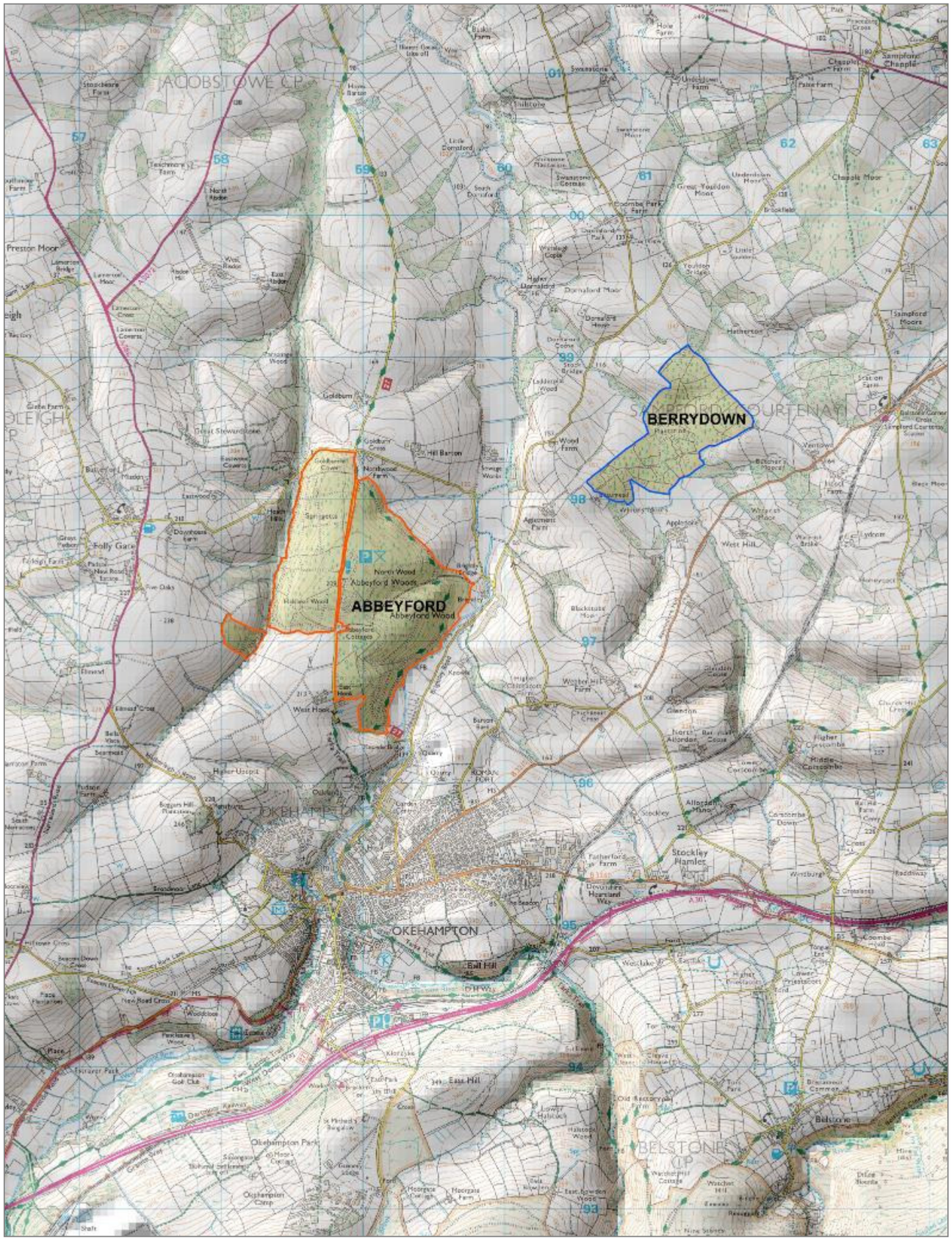
The planned areas of clearfelling, restocking and permanent open space creation during the ten years to 2028 are summarised in the chart below.

HECTARES	Conifers	Broadleaves	Open space
Clearfelling	7.1	0.0	-
Restocking/Regeneration	7.1	0.0	-

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 space at the beginning of the plan period are shown in the bar chart. The increase in native broadleaves within the plan period and over time is indicated in the middle and right hand columns of the chart.





Location

The Abbeyford Forest Plan area lies just north of Dartmoor in Devon immediate north of the regional town of Okehampton. The Plan area is made up of two substational woodland blocks within the catchment of the River Okement.

The Plan area sits within an intimate wooded valley landscape and provides both a visual feature and recreational attraction for the surrounding area. The woodlands' proximity to large settlements increase the social value of the Plan area.

The majority of the land is at 135-200 metres above sea level and is undulating to steep in places. The climate is warm and fairly moist with an average annual rainfall of 800—1100mm, a soil moisture deficit of around 140mm, and an accumulated temperature over 5°C of 1800°C.

The soils with Abbeyford are primarily medium to rich and fresh typical brown earths with gleying elements and an underlay of shallow rock. Berrydown is situated upon a moist typical surface-water gley which has medium nutrient availability underlain by the Culm clay measures.

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 dark green of coniferous forests; the lighter green of pastoral fields; occasional patches of rough grassland; ribbons of deciduous woodland following the valleys; and scattered grey huddles of farms and villages,* this Vision looks to achieve an area which is a haven for wildlife, fun and commerce. A 'Key Opportunity' of the Landscape Character Area (Devon County Council, 2008) is to *protect the landscape's rural character and the contrasts between its valley sides and plateau tops.* 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.

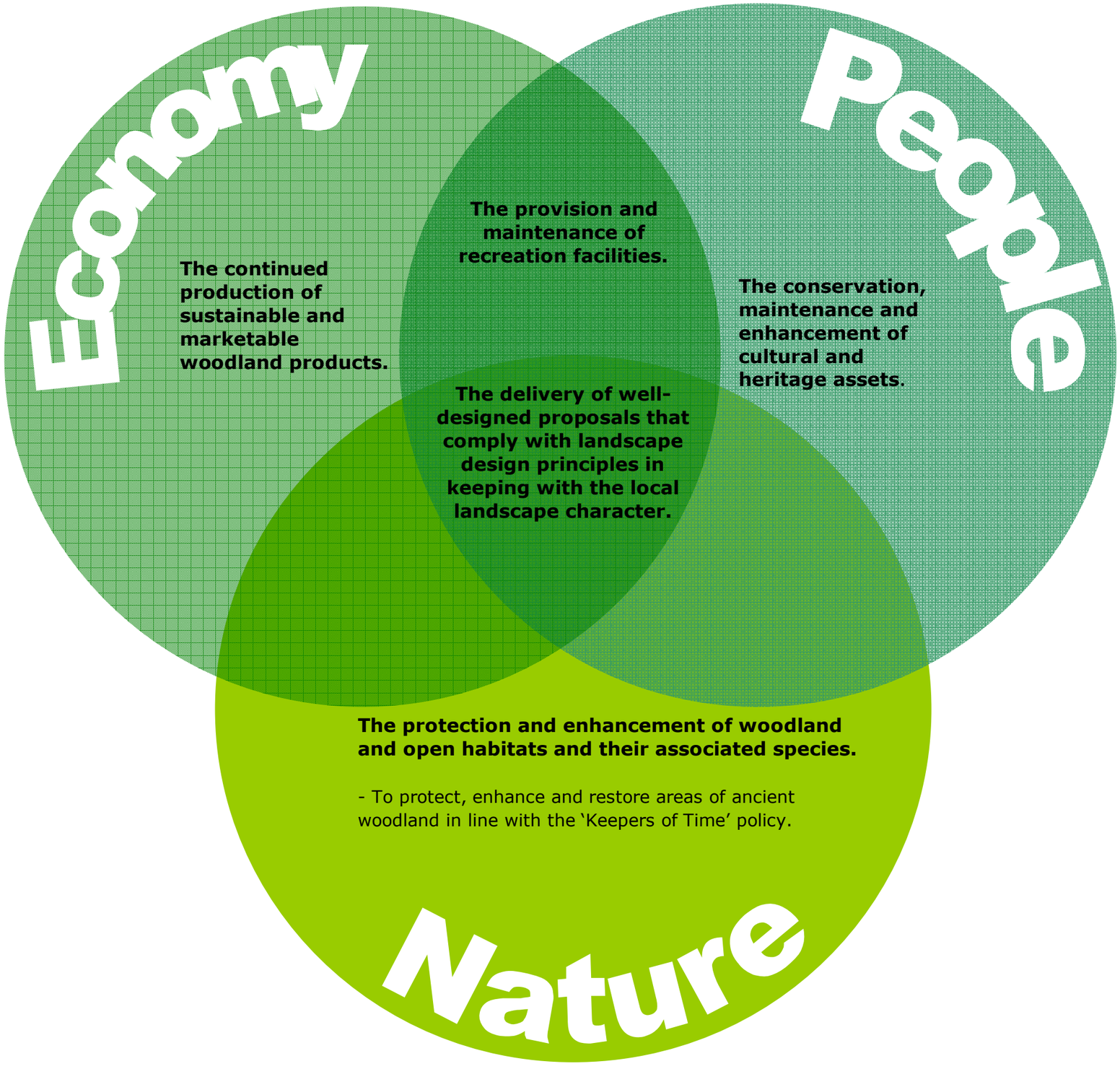
The conifer dominated forest will predominantly be managed through a mixture of clearfell and low impact silvicultural systems contributing to a vibrant woodland economy. Much of this will be restored overtime to native woodland to better reflect the historical cultural landscape. Rare and protected species, such raptors, badgers and bats will continue to call the forest home. The forest will also be a popular and safe place to come exercise, learn and relax in a resilient 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.

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. Veteran, 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 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 opened up to dappled shade to become invaluable to the quality and storage of water that passes through.

Ancient and native woodland, a key part of the Landscape Character, will feature more significantly in the area's makeup. Areas will be restored to oak dominated forest cover gradually to support the rare and protected flora and fauna species which populate these habitats. In addition to these, areas of conifer dominated forest managed through continuous cover forest techniques or clearfell/restock will become a home for numerous conifer and edge loving species such as bats, nightjar and raptors.

The considerable rides and roadside network 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 7 and 8 with the proposal and prescriptions following.



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.

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

Declaration by FC as an Operator.

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

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.

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.

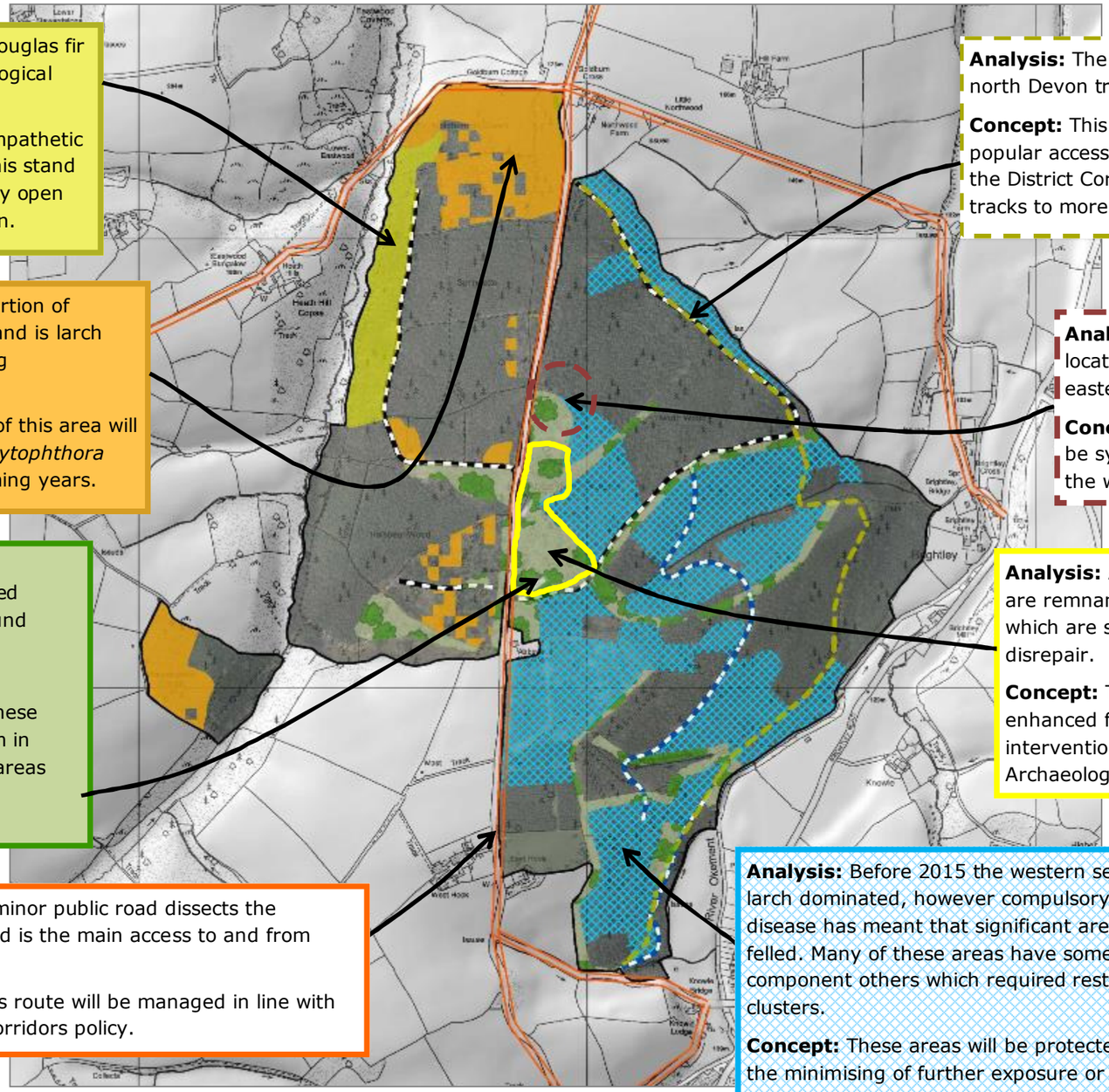
Provide high quality woodland based recreational opportunities for people and business focusing on the 3 principle Forest Centres.

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 total production forecast yield 3,500m³ (2018-2021) and 8,000³ (2018- 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. - 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. Restoration of ancient woodland through a gradual thinning process Raptor 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 of naturalness scores at Review stage Measured at Review stage through analysis of ongoing surveys and records.
The provision and maintenance of recreation facilities.	Visitor numbers will be maintained. Road and ride corridor and car park aesthetics enhanced and maintained. Felling together with a delayed restock program will continue to diversify stand and age structure. Viewpoints enhanced and maintained at time of intervention, where possible.	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	Fixed point photography analysis at Forest Plan review stage
The conservation, maintenance and enhancement of cultural and heritage assets.	Protect and enhance unscheduled sites at the time of intervention.	Operational site planning of harvesting and restocking operations will help monitor the effect of management.

Analysis & Concept

Abbeyford

Located just north of Okehampton, Abbeyford woods lie on a rounded hill, which is part of a ridge which runs from Higher Upcott to Jacobstowe. The south eastern half of the woodlands are visible from the housing east of the town between Giblands Cross and Cartref. The woods totalling 153 hectares in area are popular with walkers, runners and riders . The rich historic woodlands contain a large amount of pedunculated oak dominated Lowland Mixed Deciduous Forest with birch as a sub-species, as such it is considered to be National Vegetation Classification type W16. The woodlands also contain a number of significant trees. The eastern portion of the woodlands have gone through a significant change in recent years with compulsory felling of larch, leaving considerable areas of newly felled land awaiting restoration and an opportunity to diversify the woodland. The main objective within the ancient woodland areas is restoration to native species cover and the associated ecosystem functioning in an economically efficient way; that is through the tackling of immediate threats and then gradual removal of non-native trees in favour of native species. In other areas the continued production and diversification of timber species will be pursued whilst maintaining a woodland valued for biodiversity, recreation and amenity.



Analysis: A significant stand of original p.1920s Douglas fir borders the stream side and is of considerable ecological and amenity value.

Concept: The management of this area will be sympathetic to ecosystem services and riparian management this stand provides. This will be through the creation of patchy open space to create dappled shade and light penetration.

Analysis: A significant proportion of western section of the woodland is larch and at very risk of contracting Phytophthora ramorum

Concept: The management of this area will recognise the likelihood of *Phytophthora ramorum infection* in the coming years.

Analysis: Remnant Lowland Mixed Deciduous Woodland typical of ancient woodland registered throughout the majority of the woodland is found around in small pockets and often comprises Pedunculated oak dominated NVC type W16.

Concept: The management of areas around these specimens will be to protect and enhance them in perpetuity, through resilience building. These areas will be used as building blocks from which the perpetuate ancient woodland restoration.

Analysis: A minor public road dissects the woodlands and is the main access to and from Okehampton.

Concept: This route will be managed in line with the District Corridors policy.

Analysis: The Tarka Trail, a popular walking route through north Devon traverses the eastern edge of the woodland.

Concept: This popular route as well as many of the other popular access tracks and trails will be managed in line with the District Corridors policy. This work will look to open up the tracks to more sunlight, views and ecological diversity.

Analysis: A small but popular car park is located mid way through the wood on the eastern side of the woodland.

Concept: The management of this area will be sympathetic to needs of people accessing the woodland.

Analysis: A collection buildings and hardstanding are remnants of a WW2 military facility some of which are still in use others which are falling into disrepair.

Concept: This area will be protected and enhanced further where possible at the time of intervention, in consultation with the County Archaeology team.

Analysis: Before 2015 the western section of the woodland was larch dominated, however compulsory felling due to tree disease has meant that significant areas have recently been felled. Many of these areas have some retain broadleaf component others which required restocking through planting in clusters.

Concept: These areas will be protected where possible through the minimising of further exposure or threats from invasive species and predation. This has already begun with enrichment planting of oak and other site appropriate native species to

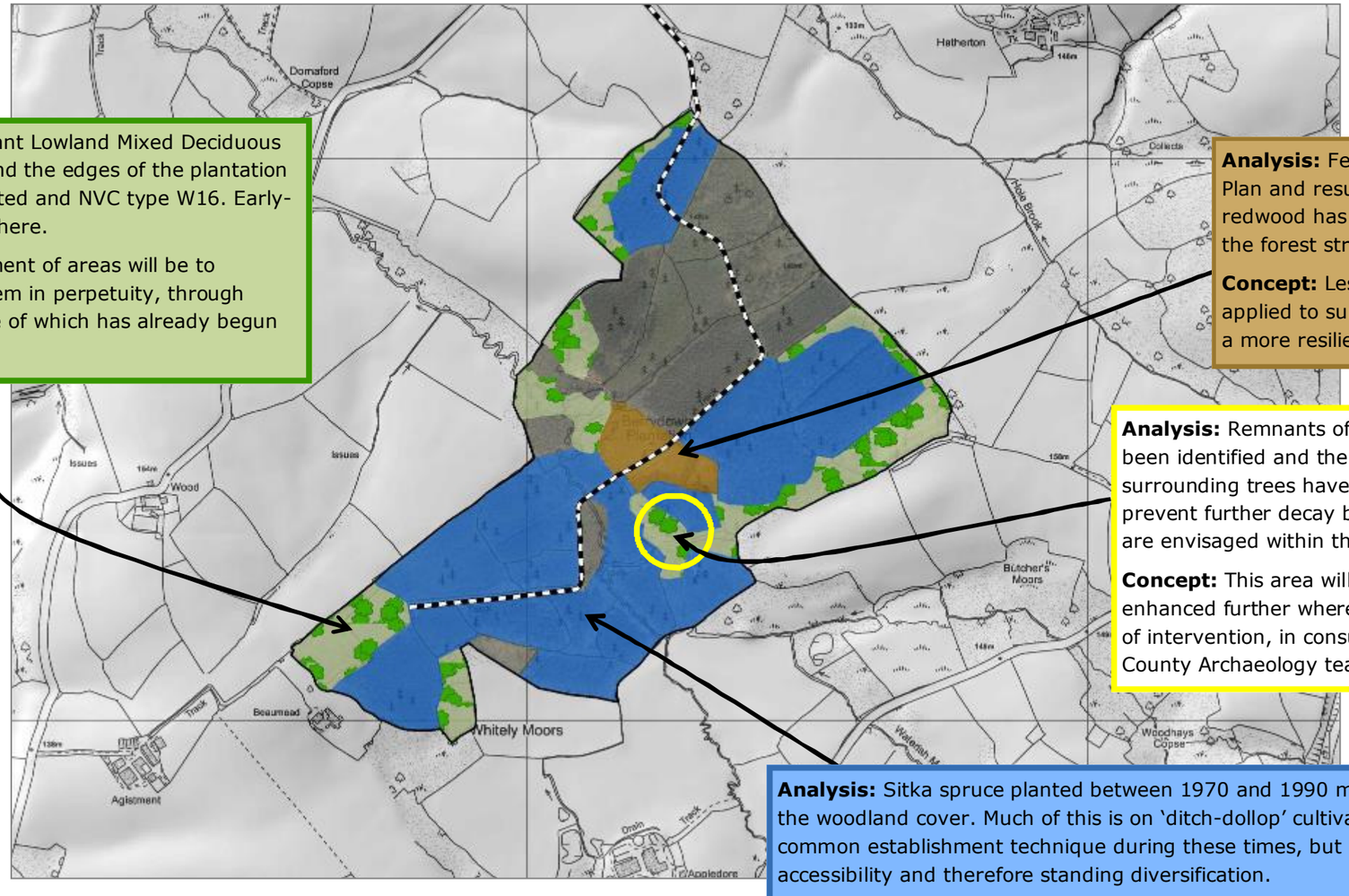
Legend

- Broadleaf woodland
- Mature Douglas fir
- Tarka Trail
- Larch
- Recently felled
- Minor Pubic Roads
- Class A/B Roads
- Class C Roads

Analysis & Concept

Berrydown

Berrydown is a single block of woodland of 55 hectares, approximately 3 miles north-east of Okehampton and is accessed from the Sampford Courtney to Okehampton road. The majority of the woodland is commercial conifer managed on a rotational basis, it is interspersed with areas of broadleaves. The woodland lies in a shallow valley and contains a watercourse flowing south to north, which is a headwater to the river Okement, which itself feeds the river Torridge. Large areas of the woodland are mid-rotation Sitka spruce on wet, acidic, gleyed soils with a significant amount of oak and hazel dominated broadleaf intrusion. Much of this is of a similar age and therefore uniform in structure and lacking diversity. The main objective within the woodland will be of productive conifer forestry, utilising continuous cover forestry principles where possible to diversify the structure, sympathetic to the ecological and cultural assets of the woodland and surrounding landscape.



Analysis: Typical remnant Lowland Mixed Deciduous Woodland is found around the edges of the plantation and is often oak dominated and NVC type W16. Early-purple orchid are found here.

Concept: The management of areas will be to preserve and protect them in perpetuity, through resilience building, some of which has already begun on the eastern edge.

Analysis: Felling as part of the old Forest Design Plan and resultant restocking with coastal redwood has started the process of diversifying the forest structure.

Concept: Lessons learnt from this site will be applied to surrounding upcoming coupes to build a more resilient woodland into the future.

Analysis: Remnants of a farmstead have been identified and the immediate surrounding trees have been removed to prevent further decay but no further works are envisaged within the plan period

Concept: This area will be protected and enhanced further where possible at the time of intervention, in consultation with the County Archaeology team.

Analysis: Sitka spruce planted between 1970 and 1990 makes up over 70% of the woodland cover. Much of this is on 'ditch-dollop' cultivation which was a common establishment technique during these times, but hampers thinning accessibility and therefore standing diversification.

Concept: Despite poor, acidic soils and significant weed competition other alternative species should be considered to diversify the overall woodland composition. This is particularly pertinent given the recent infestation with of spruce in the plantation with Dendochtronus micans

Legend

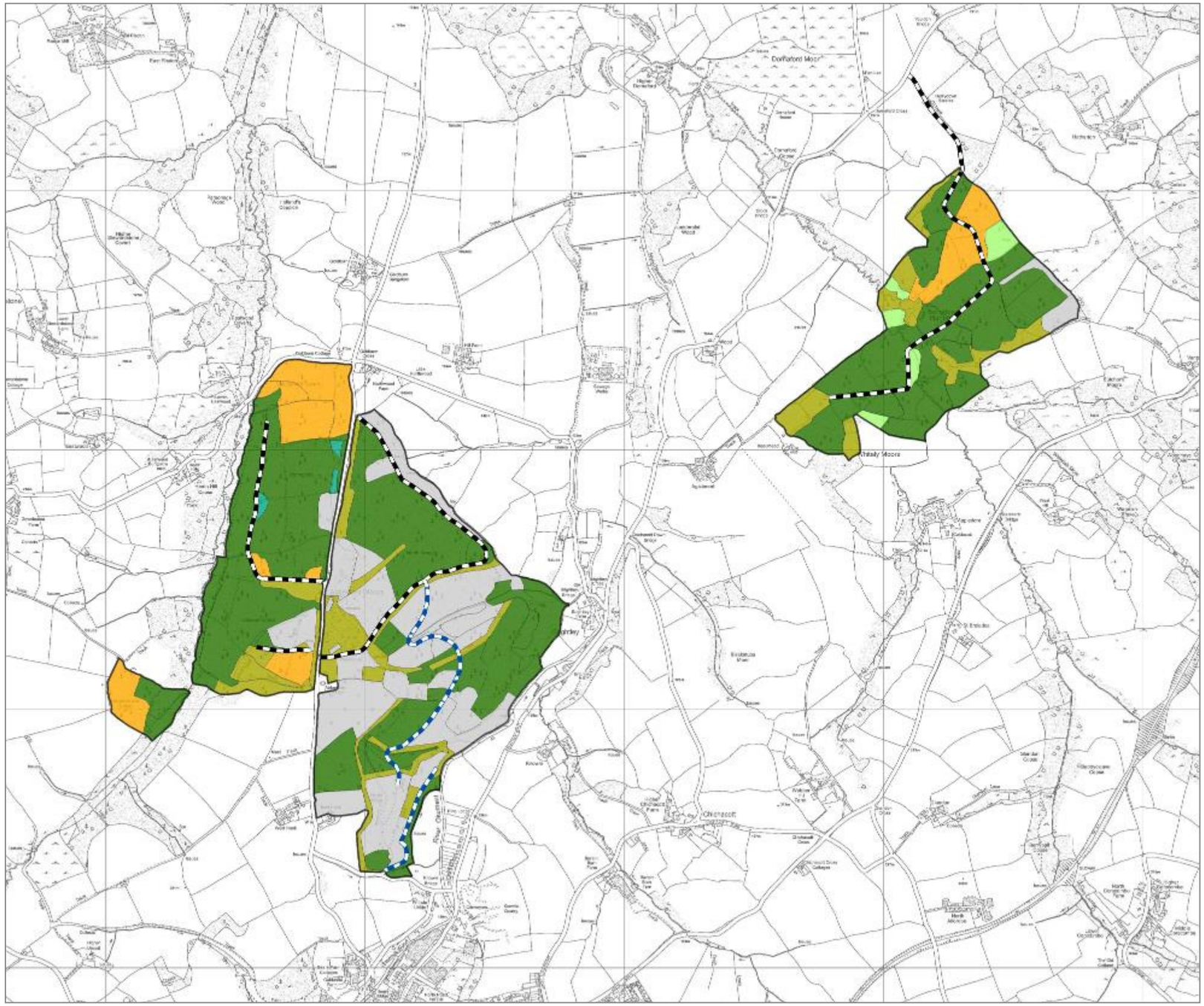
- Broadleaf woodland
- Mid-rotation Sitka spruce
- Recent planting
- Class A/B Roads
- Class C Roads

Woodland Composition

The Plan area is dominated by conifer with some ancient semi-natural and native broadleaf remnants. The majority of conifer component are made up of quality Douglas fir with Abbeyford (40ha) with Japanese larch, beech and western hemlock the major supplementary species and Sitka spruce (31ha) within Berrydown.

The age of conifer crops is spread between peaks of considerable planting having occurred in the 1920s and 30s and then in the 1970s and 80s. Broadleaf crops also vary in age with significant planting and regeneration establishment occurring in the early 1900 and 2015. The thinning of conifer crops has ensured that understorey development is beginning to establish, which in time will deliver a more structurally diverse woodland composition.

The broadleaf components of the Plan area comprise a mixture of ancient semi-natural oak, ash and beech assemblages and younger plantings and regeneration as a result of recent fellings. The overall broadleaf composition is predominantly made up of ash, beech and Pedunculate oak. Birch, alder and wild cherry are evident as pioneer species within discrete areas of the Plan area. The majority of stands are even aged with understory development evident but not always establishing as a secondary crop. Where broadleaf features within conifer crops these have been favoured and halo thinned where appropriate to assist crown development.

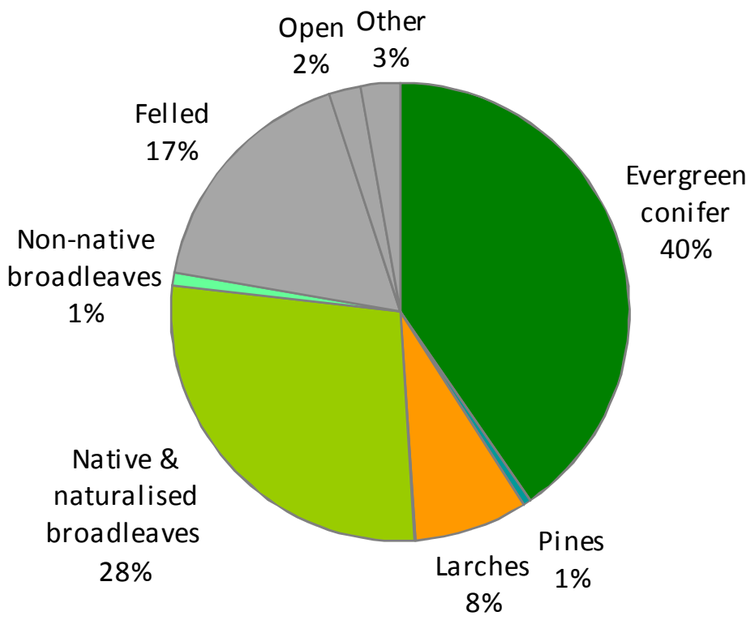


Legend

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

0 0.075 0.15 0.3 0.45 0.6 Miles

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



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 naturalness and restoration of Ancient Woodland Sites previously planted with non-native species. For this reason secondary woodland sites (i.e. Berrydown) have been omitted from this chapter.

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.

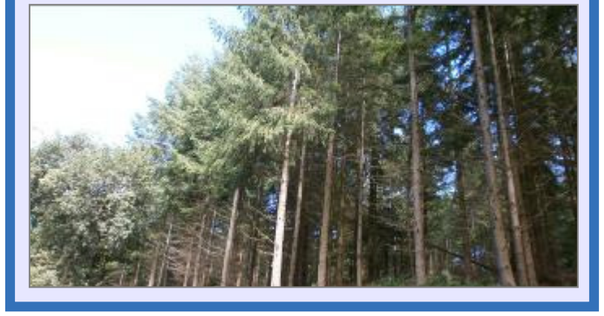
The transformation of Classes 2, 3 and 4 AWS towards Class 1 is a key objective of this Plan and is in line with the Forestry Commission England, *Keepers of Time* Policy (Forestry Commission, 2005).

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

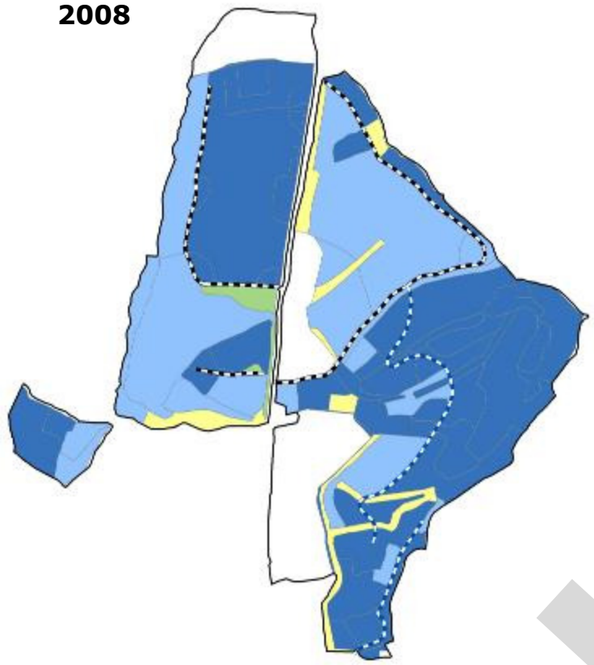
Class 2 – Plantation Woodland
(50 - 80% site native species)

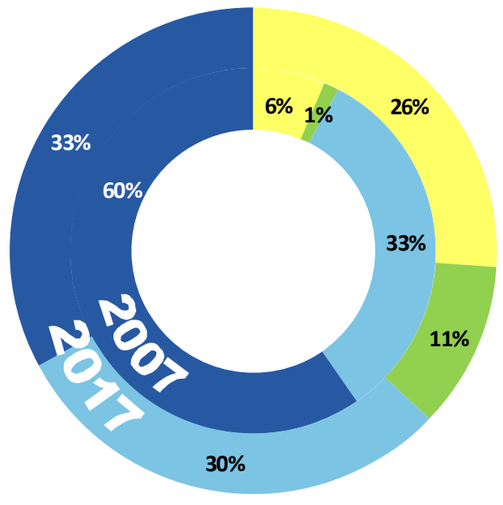
Class 3 – Plantation Woodland
(20 - 50% site native species)

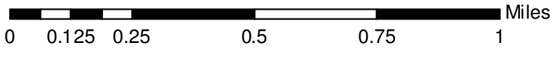
Class 4 – Plantation Woodland
(< 20% site native species)



2008



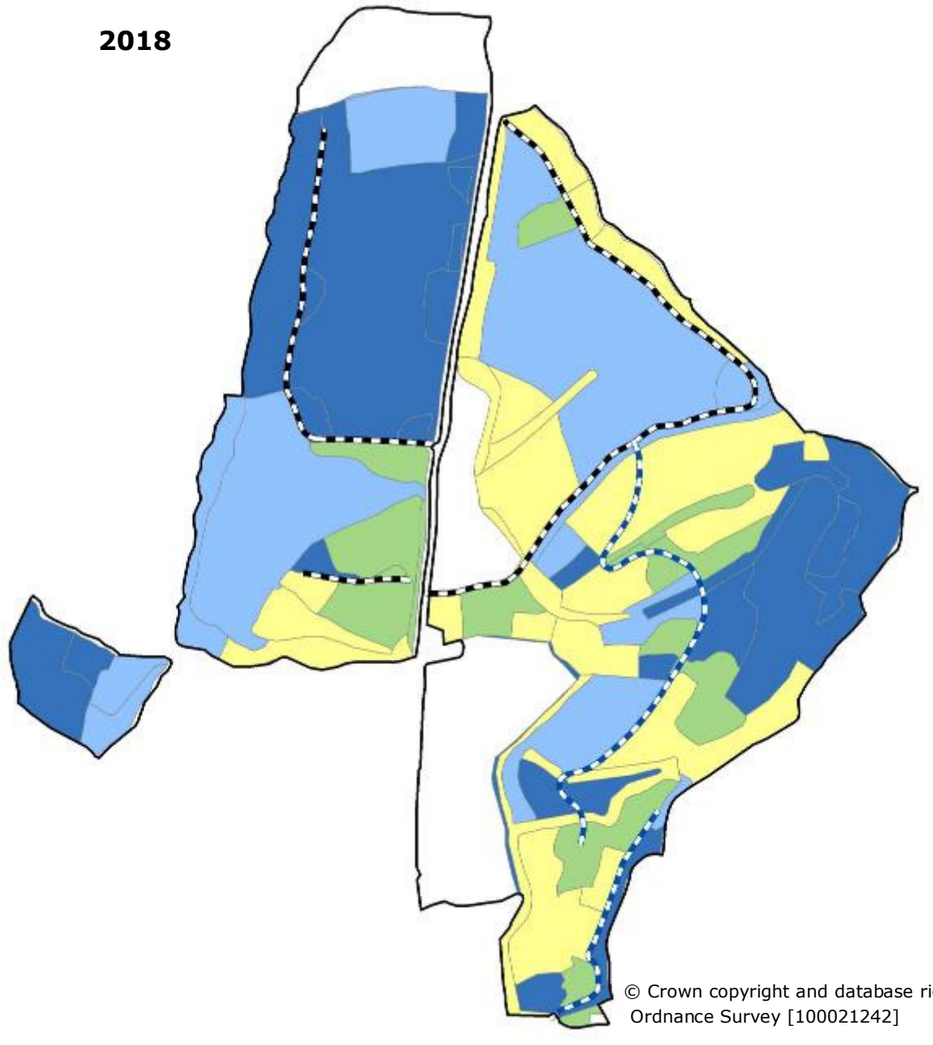




Legend

- 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

2018



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 throughout.
- 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.

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.

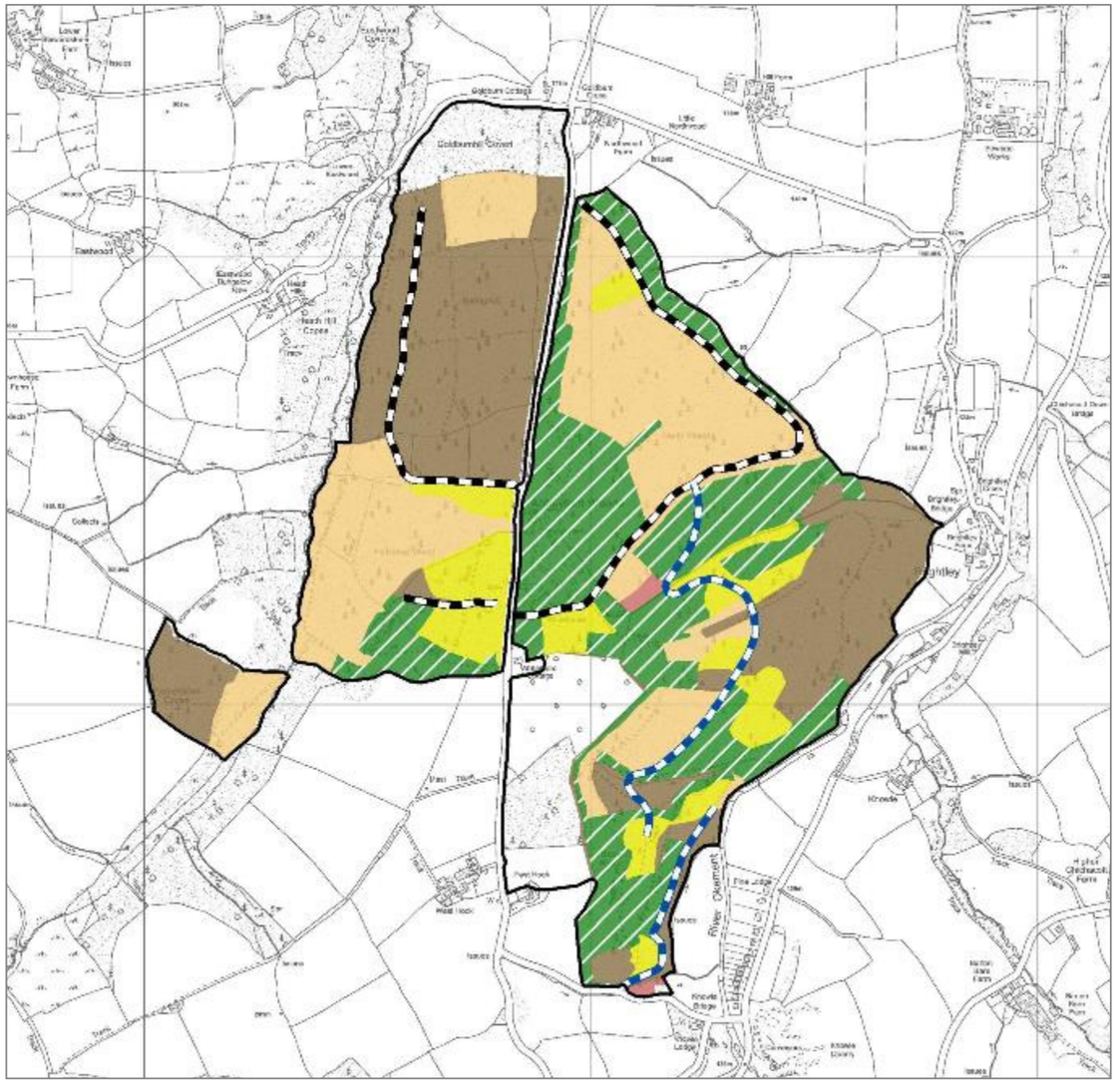
Non-native Zone

The proportion of native tree species within a management area is less than 20% of the crop.

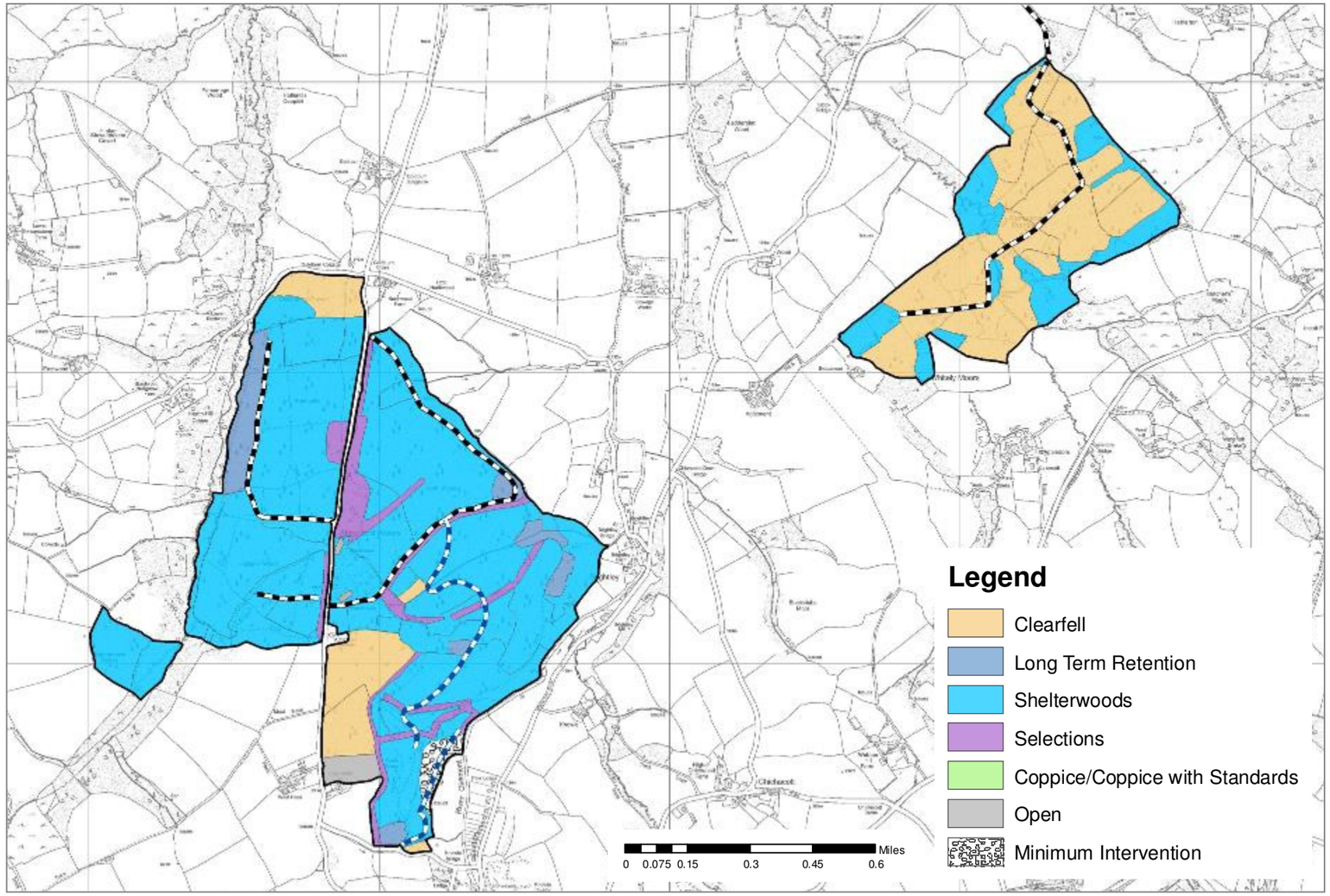
Thinning in both these sub-categories should encourage crown development of broadleaf components. Progress will be monitored and crops moved into the Preparation zone depending on development of stand structure and the response of natural regeneration.

Clearfell Zone

Two clearfells will be used to convert PAWS in 15-20 years time. This is felling of Western hemlock and is required to ensure the integrity of the coupe which is predominantly secondary woodland. This will be restocked with site suitable native species.



Silviculture



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

Long term retentions are in place where the landscape value of the woodland is key.

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

Open space 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.

Uniform shelterwoods are predominately broadleaved dominated and ASNW sites which will be managed using seeding fellings with possible under planting of site suitable species to control light levels and develop good timber quality. Small coppice coupes of less that 0.25ha may be used to inject diversity into the broadleaf woodland

Irregular shelterwoods will look to develop a complex CCF structure through the identification and thinning towards quality final crop trees for the future.

Group shelterwoods are used on windfirm, accessible crops to proactively diversify the woodland structure and composition, possibly through the use of enrichment replanting.

Thinning

Areas will be assessed and approved for thinning on a site-by-site basis by the local Beat Team. As attempts to improve the structural diversity of the crops are made, initiation of thinning may be made early (uneconomic) or later to address windfirm concerns. The intention to intervene every 5 years as well as on multiple occasions may not be appropriate and therefore will be administered in an adaptive approach by the Beat team.

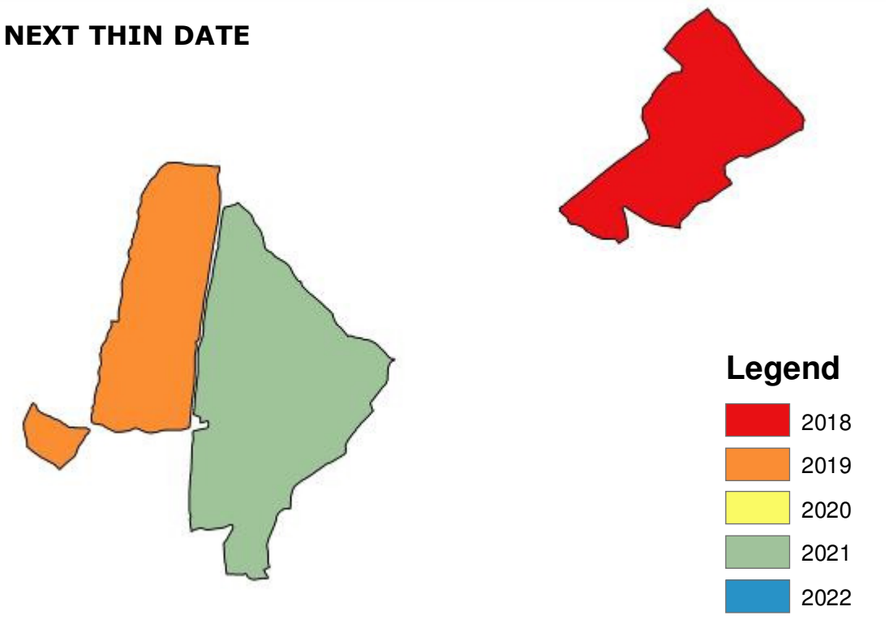
Conifer Thinning

Areas of conifer are assessed for thinning every 5 years with the targeted removal of larch species a key objective. 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 Thinning

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. Younger patches of regeneration can be thinned to favour site native species with trees of good form and vigour being retained. Where broadleaves consist primarily of a single species, it may be possible to enlarge natural gaps through irregular thinning rather than create new gaps through group felling, however, in all cases the size of gap will be dependent on slope, aspect and site fertility and must not be detrimental to crop stability.

NEXT THIN DATE



Declaration by FC as an Operator.

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

Felling and Restocking

Abbeyford
2018 - 2028

Coupe 73142 (3.3ha)
Fell 2022-2026

Restock 73142a (3.3ha)
90% Evergreen conifer
10% Open

Proposed species
90% Douglas fir

Legend

- Fell 2017 - 2021
- Fell 2022 - 2026
- Fell 2027 - 2028
- Retentions
- Minimum Intervention
- Natural Reserve
- Open
- Class A/B Roads
- Class C Roads

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

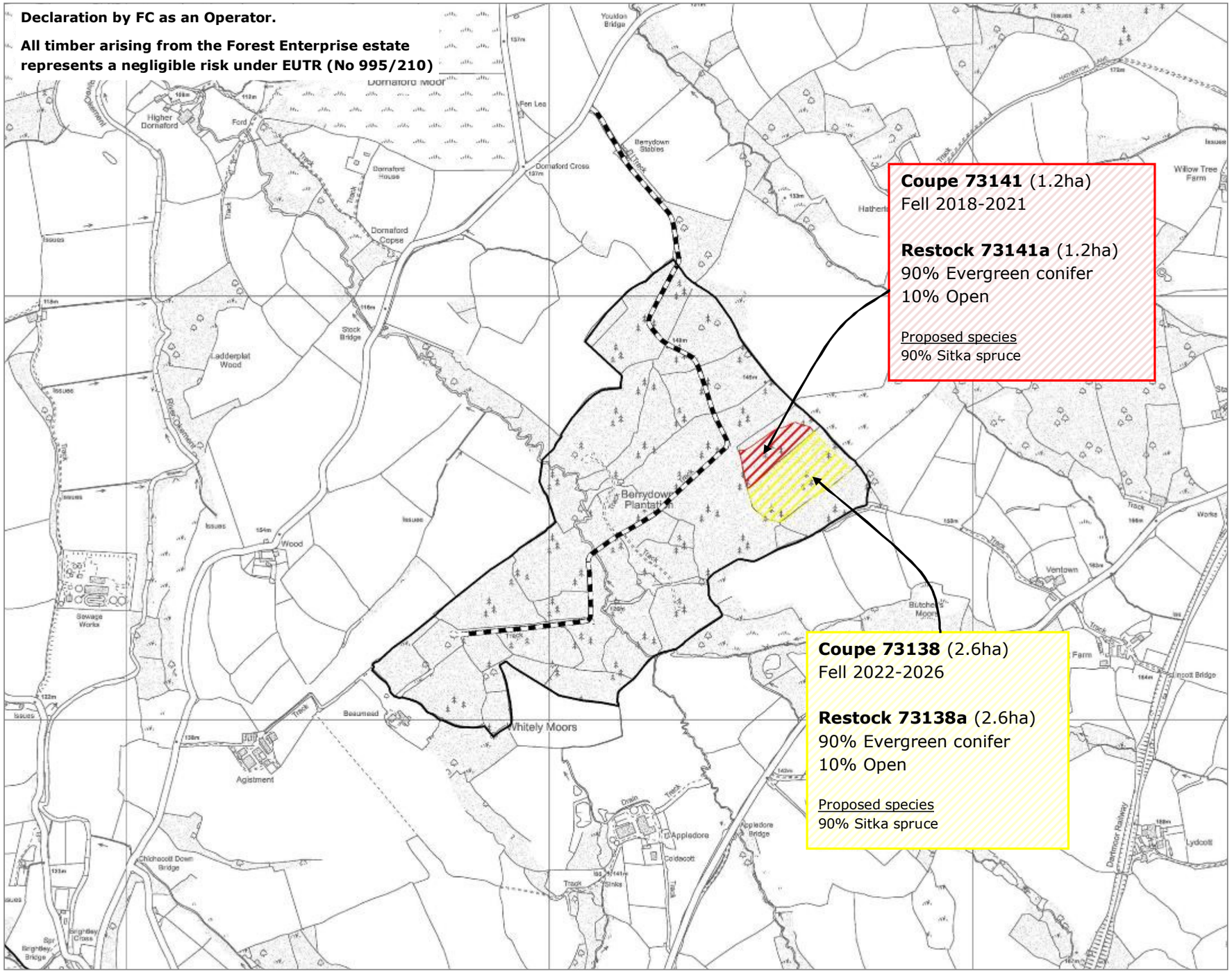
0 0.075 0.15 0.3 0.45 0.6 Miles

Declaration by FC as an Operator.

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

Felling and Restocking

Berrydown
2018 - 2028



Coupe 73141 (1.2ha)
Fell 2018-2021

Restock 73141a (1.2ha)
90% Evergreen conifer
10% Open

Proposed species
90% Sitka spruce

Coupe 73138 (2.6ha)
Fell 2022-2026

Restock 73138a (2.6ha)
90% Evergreen conifer
10% Open

Proposed species
90% Sitka spruce

Legend

- Fell 2017 - 2021
- Fell 2022 - 2026
- Fell 2027 - 2028
- Retentions
- Minimum Intervention
- Natural Reserve
- Open
- Class A/B Roads
- Class C Roads

0 0.075 0.15 0.3 0.45 0.6 Miles

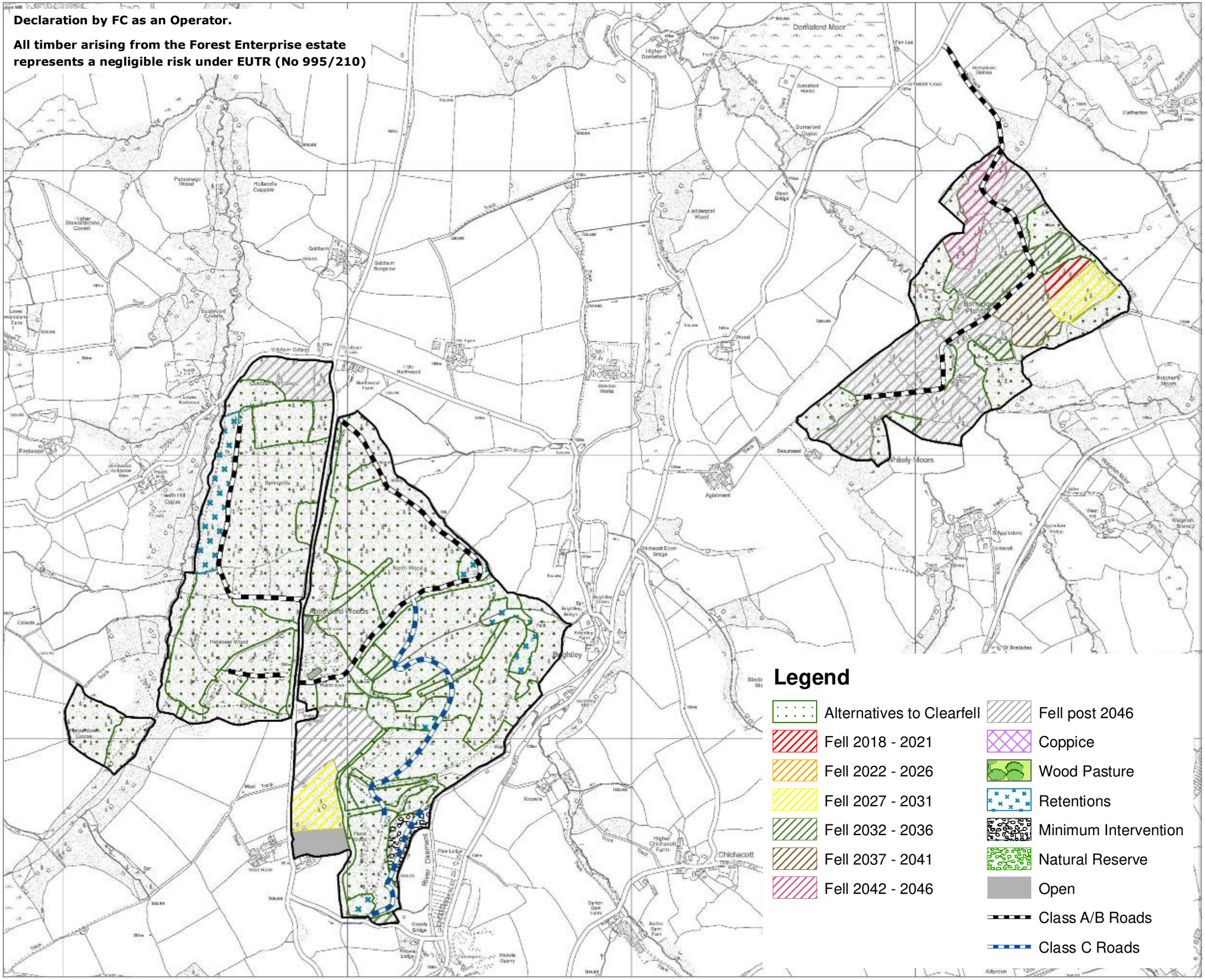
NB. Whilst 'Restock Proportion' is often prescribed at 100% Evergreen Conifer the use of suitable broadleaves to build in resilience and utilise site conditions is anticipated and in places is proposed.

Declaration by FC as an Operator.

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

Management Prescriptions
2018 - 2048

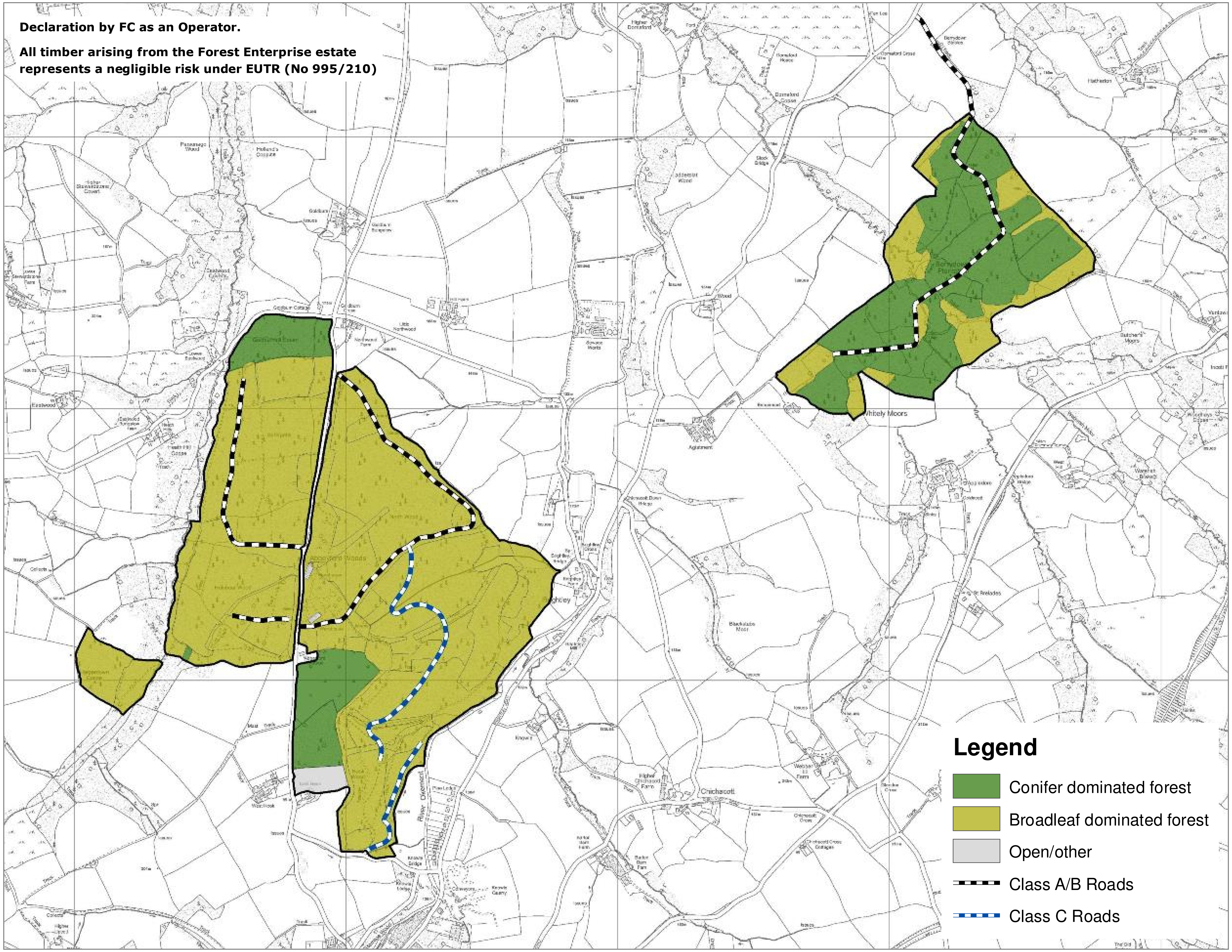
An outline of the intended management prescriptions for the Plan area for the next 30 years, including silvicultural, felling and open proposals**.**



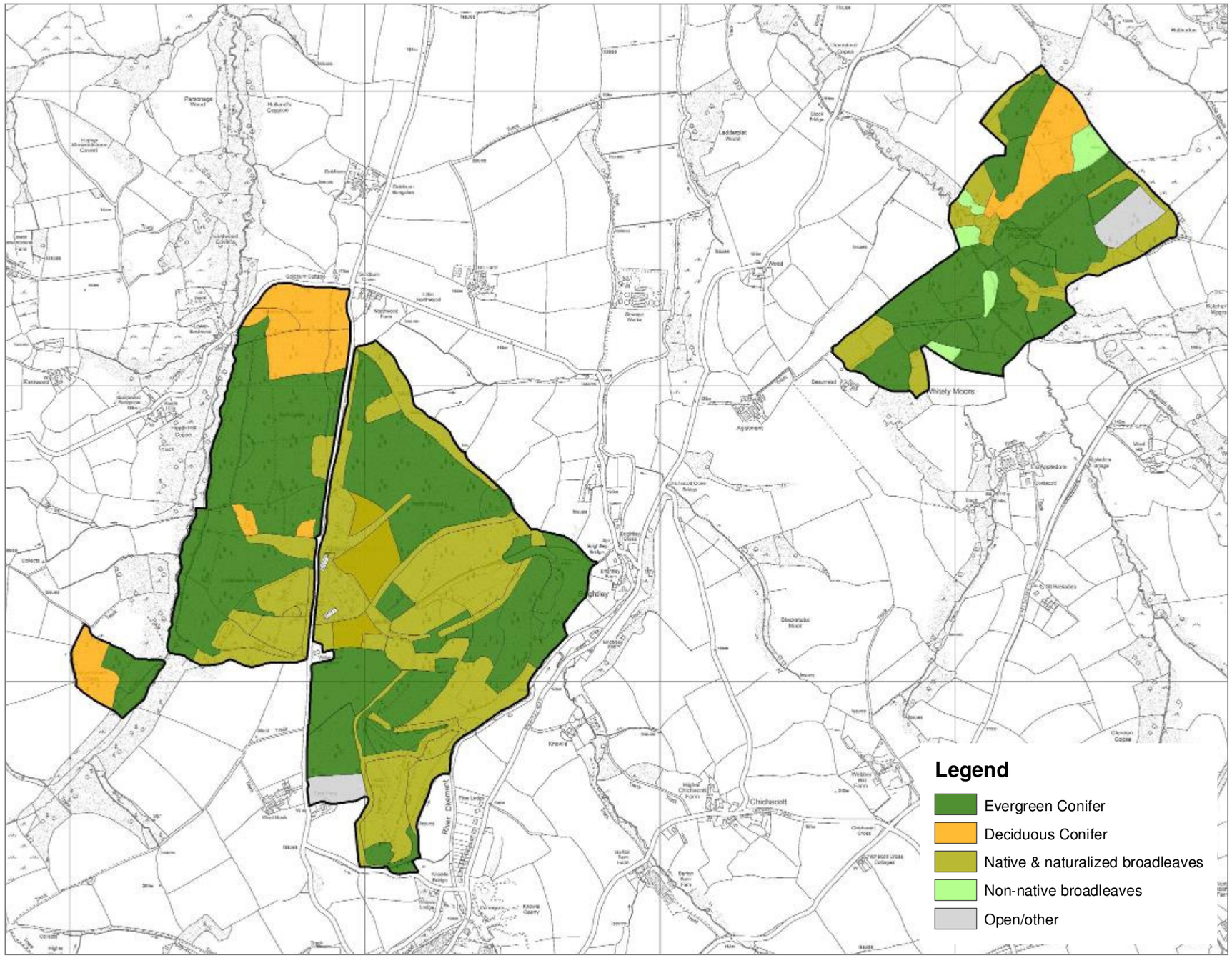
0 0.075 0.15 0.3 0.45 0.6 Miles

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.

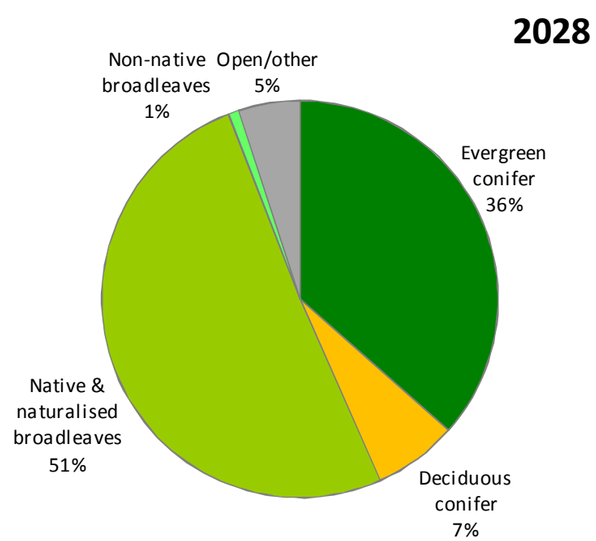


0 0.075 0.15 0.3 0.45 0.6 Miles



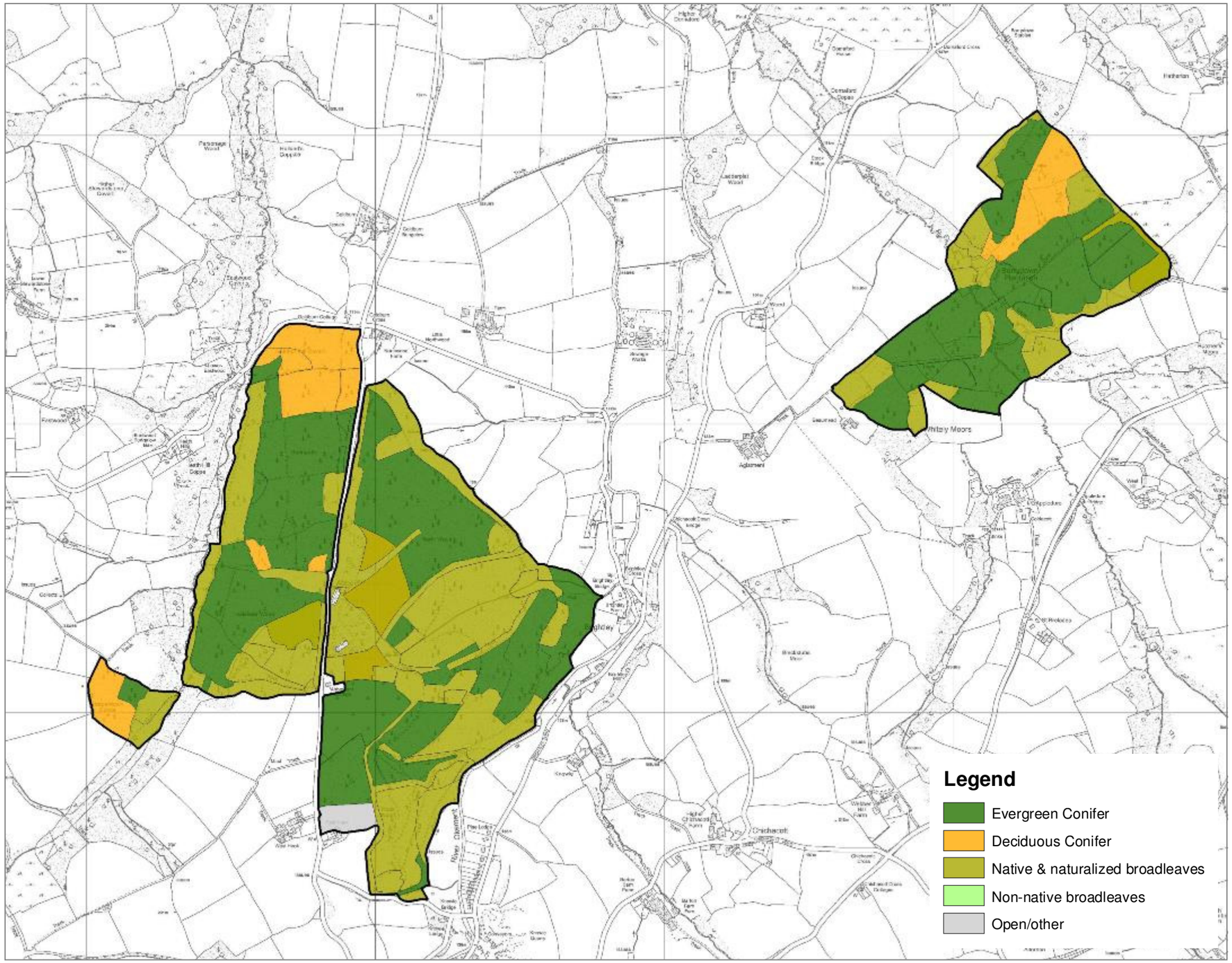
Indicative Future Species
2028

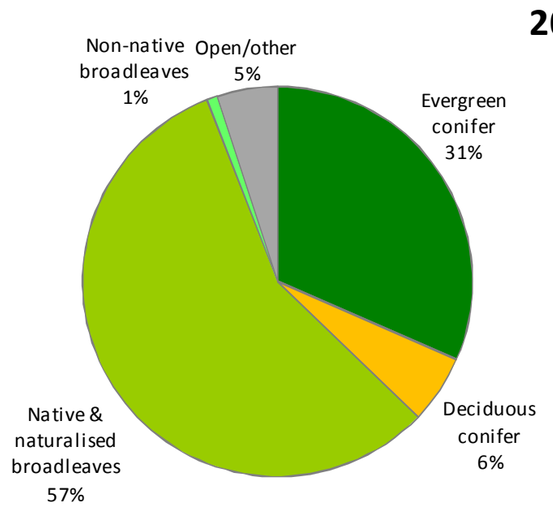
The projections made are indicative of species composition in ten years time. They do not constitute a guarantee and merely act as an indicator of how the vision for the Plan area will be delivered over time.



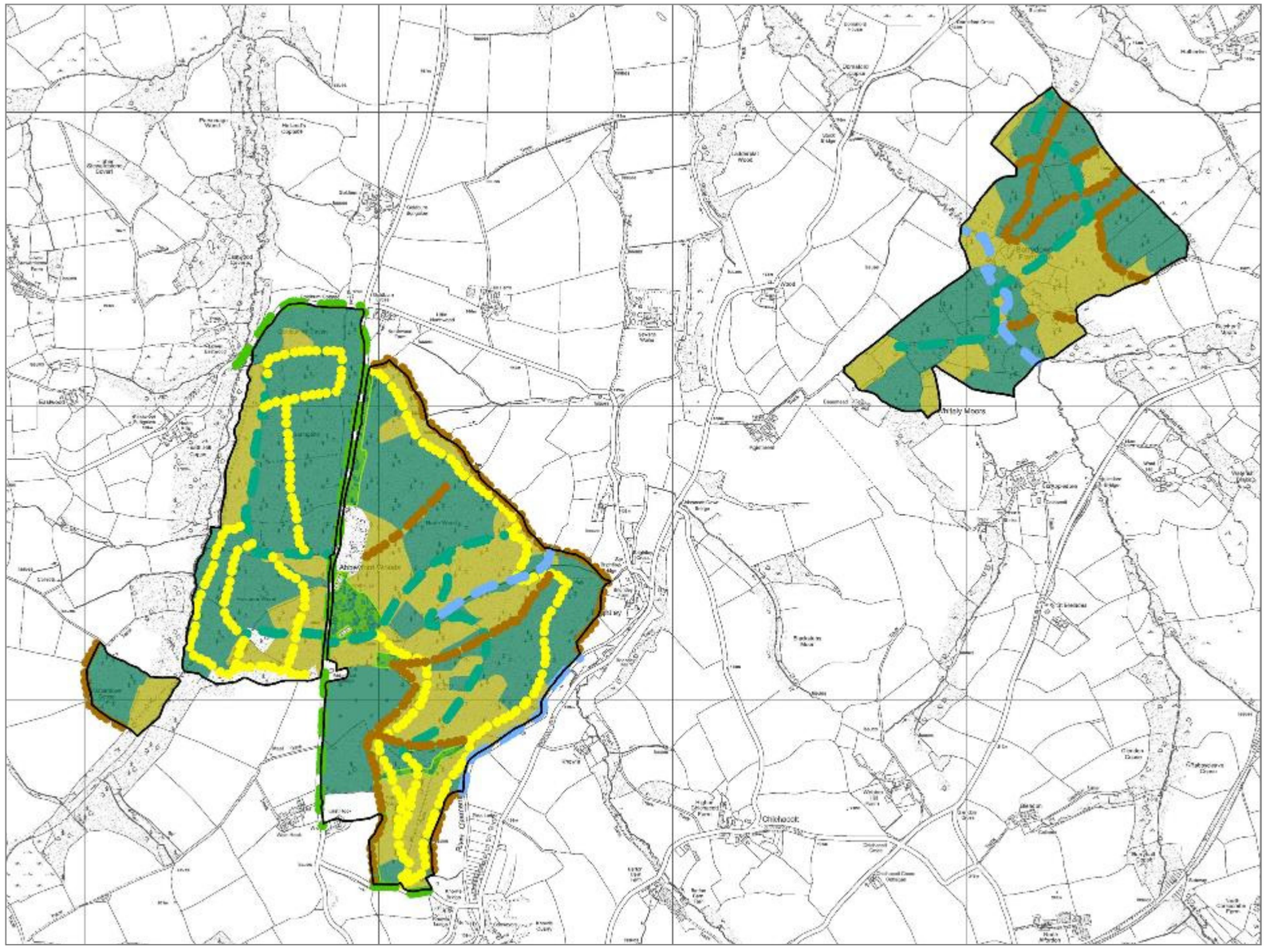
Indicative Future Species
2048

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.





Conservation - Habitats



Legend

- Moor and Heath
- Hedgerow
- Forest Road Edge
- Conservation + Recreation
- Public Roadside
- Windthrow protection
- Watercourse
- Broadleaved Belt
- Lowland mixed deciduous woodland
- BROADLEAVED; MIXED/YEW WOODLANDS
- CONIFEROUS WOODLANDS

0 0.075 0.15 0.3 0.45 0.6 Miles

Wet Woodland Habitats

The streamsides and wet woodland found at the bottom of hollows and small valleys remain predominantly willow dominated broadleaf woodland. The majority of these sites will be managed at the time of intervention to aid the recruitment of suitable wet woodland species such as alder, willow and birch encouraged as well as patchy open space to create dappled shade and light penetration.

Corridor Habitats

Road and rides sides will conform to the prescriptions outlined in the District document, *Design and Management of Environmental Corridors* (Lucas, 2006). The road and ride network within the Plan area will be utilised to extend and connect ride side habitats and transient open spaces, this will be achieved through targeted widening and unstocking of edges to some coupes following felling operations to create a mixed transient open and scrubby habitat for a multitude of species. In practice this means that regenerating vegetation on road sides will be regularly cut where access is easiest to create a dynamic edge habitat which the likes of Lepidoptera, insects and small birds choose to inhabit. Whilst wetter and less well used rides which are not used for deer control will be allowed to regenerate to provide habitat and linkage for a variety of species.

Deadwood

Mature established broadleaved trees with their moss and fauna will be retained as much as possible, and allowed to developed in senescent habitats. A variety of deadwood will be retained according to the level of ecological value and in line with Guidance (Humphrey & Bailey, 2012). Retaining decaying snags and logs as well senescent trees throughout the forest will create suitable deadwood habitat for numerous associated species including raptor, smaller birds and an array of insects.

Lowland Mixed Deciduous Woodland

A number of areas of remnant lowland mixed deciduous woodland (as shown) are found across the Plan area. These are predominantly made up of Sessile oak, ash, birch and beech. Some evidence of coppicing of hazel exists and looks to reassert. 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.

Conservation - Features

The Forest Plan area is used by an array of common and rare flora and fauna some of which are highlighted below. 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, wild deer and squirrel 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.

The introduction of new palatable tree species, in the bid to diversify the forest structure means that deer and small mammal impact will need to be taken into account. It is likely that protection and control will need to be increased and strategically targeted. This could include fencing, planting design and new deer glades which could be created following felling.

Bats and a number of suitable bat roosting points are located within the Plan area. These will be maintained into the future following Guidance (FC & NE, 2013b) to ensure suitable habitat to support the long-eared and Natterer's species found here.

Unscheduled Monuments - are found across the Plan area, demonstrating its rich cultural significance. Abbeyford contains a World War Two complex of building's and hardstanding. Berrydown includes an old farmstead with associated features.

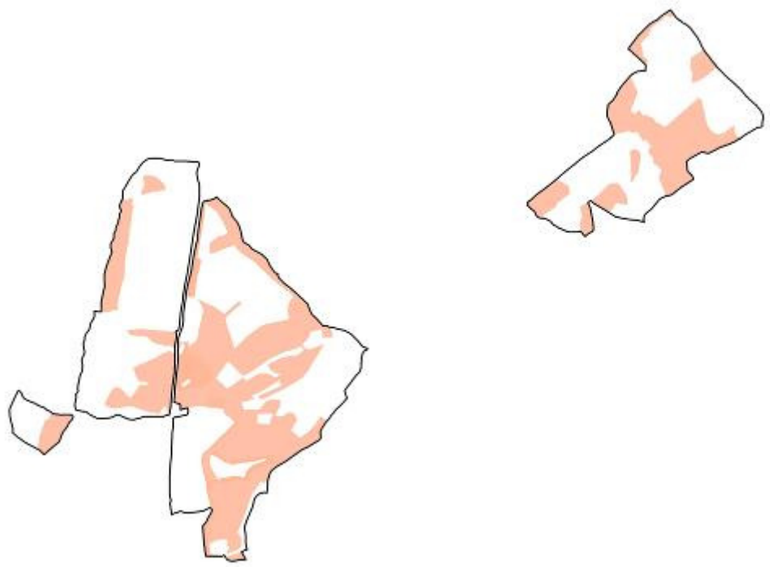
These features and the internal surrounding landscape needs to be preserved, and enhanced where possible, to retain and develop the Plan Area's cultural heritage. This will done over the Plan period through clearing of scrub on hardstanding and remnant buildings within Abbeyford and enhancement felling at the time of thinning within Berrydown. All unscheduled monuments will be identified and treated sympathetically at the time of operation in consultation with the County Archaeology team.

Trees of significance are found throughout the Plan area and will be retained for perpetuity. The majority of these trees are either oak (as shown) or sweet chestnut, as well as a number of specimen hornbeam trees. 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 Guidance (Ops No. 31).

Dormouse favourable habitat is found throughout the Plan area. 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 increase in coppicing in hazel dominated stands will significantly enhance habitat quality with prescriptions outlined in the Environmental Corridors document also ensuring appropriate habitat provision and management will be in line with Best Practice Guidance (FC & NE, 2007).

Legend

Favourable Dormouse Habitat



Water & Riparian Management

Riparian Management

All watercourses and riverine areas will be management sensitively to protect and enhance water and soil quality in line with best practice. Riparian zones 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 through coppicing at the time of intervention (usually clearfell), 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 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 to stimulate native species regeneration.

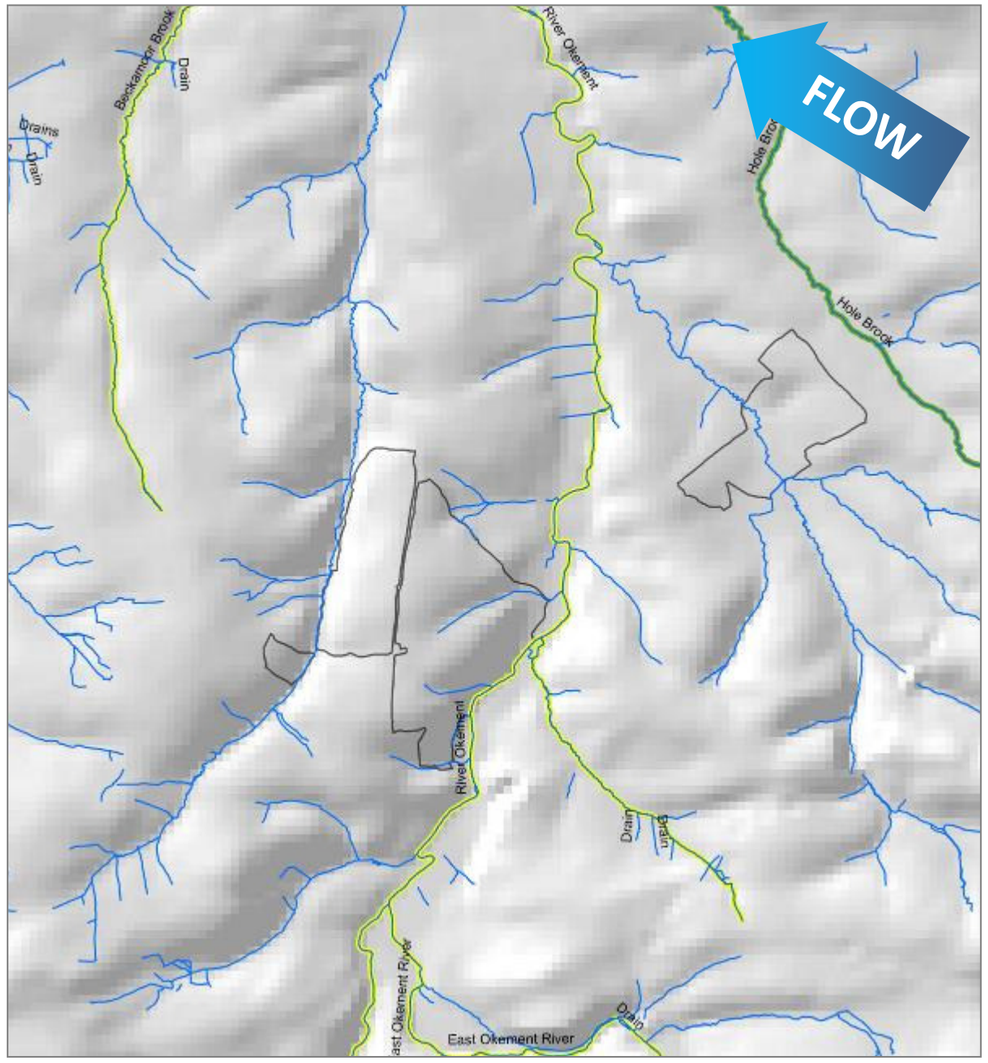
The Abbeyford Plan area is a component of for the Okement and then Torridge catchment therefore soil stabilisation and surface runoff, retaining forest cover and a move towards continuous cover systems together with maintained drains and water storage will ensure this continues to slow down peak flows into the future.

North Devon Basin

The North Devon catchment covers an area of some 2,300 km sq (900 square miles) and includes the areas drained by the River Taw and River Torridge and their tributaries, and the North Devon Coastal Rivers that flow directly into the sea. Annual rainfall ranges from more than 2,300mm (90in) in the upland areas of Dartmoor and Exmoor to 800mm (31in) at the coast.

North Devon is a catchment with varied landscape, including the rare Culm grasslands, marshland, parts of the two National Parks of Exmoor and Dartmoor, and woodlands. Much of the countryside in the catchment is recognised for its environmental and cultural value including an Area of Outstanding Natural Beauty (AONB) and 500 Scheduled Monuments.

There are 130 river water bodies in the catchment, with a combined length of almost 1000 km, and eight lakes. Currently, 35 per cent of surface waters (284 km or 28 per cent of river length and six lakes which represent three quarters of the total) achieve good or better ecological status/potential. Waters at good ecological status now include the East and West Lyn, the Hole Brook and the river Duntz. The main reasons for less than good status are, in order, high levels of phosphate, physical modification, impacted fish and diatom communities and high zinc concentrations. 69 per cent of waters assessed for biology are at good or high biological status now.



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.

Legend

- Watercourse
- Environment Agency Grading
  - High
  - Good
  - Moderate
  - Bad
  - Poor

0 0.125 0.25 0.5 0.75 1 Miles

Recreation and Access

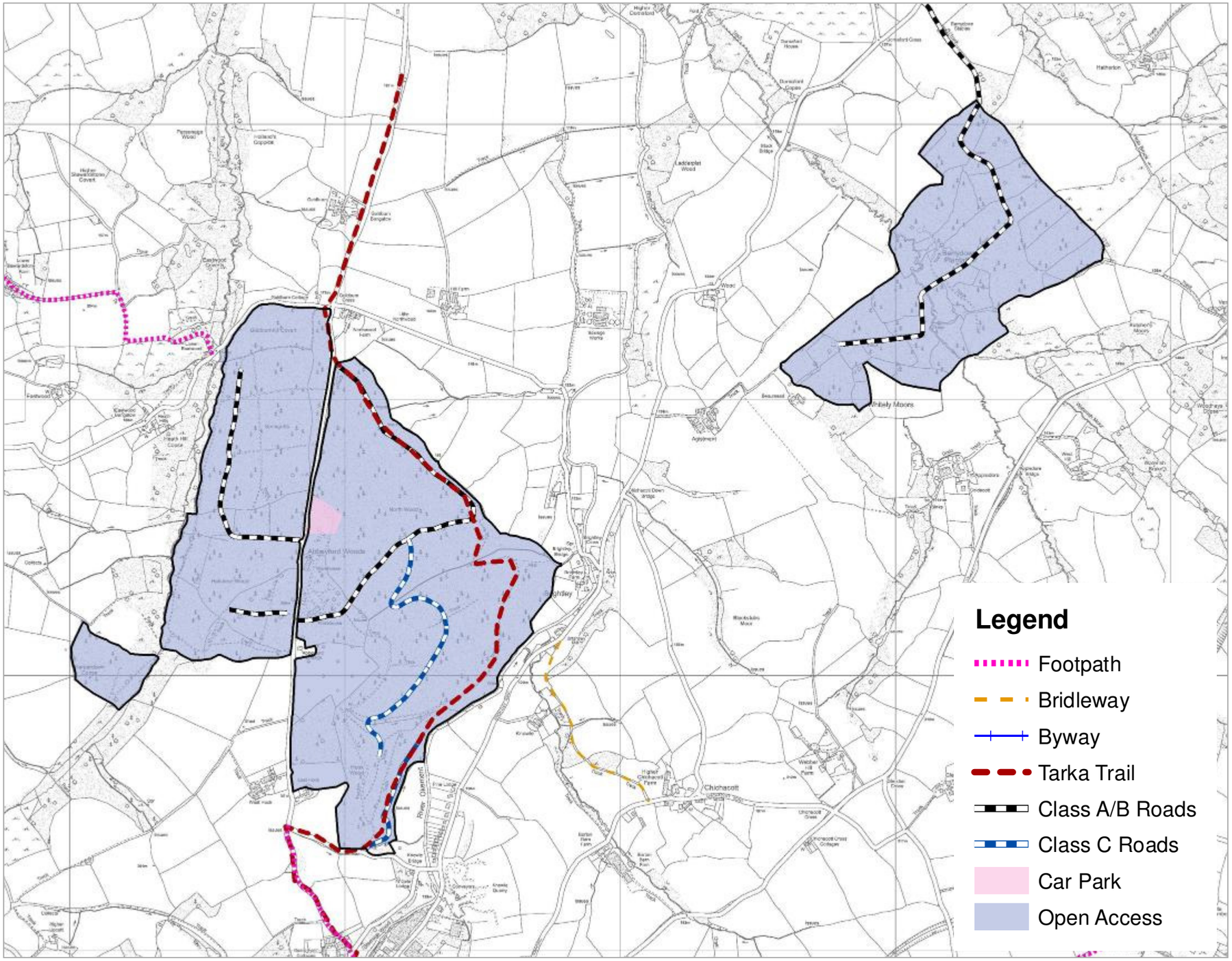
Abbeyford Forest Plan area experiences a high level of low-key recreational usage. The entirety of the Plan area is Open Access, this is confirmed by the Countryside Rights of Way Act. The use of the Plan area by local individuals as well as numerous visitors and tourists demonstrates the value of the forests to the local community, these features will be maintained in balance with ecological value.

One maintained car park is found at Abbeyford with a number of additional laybys to enable parking.

Berrydown is only accessible along a shared access.

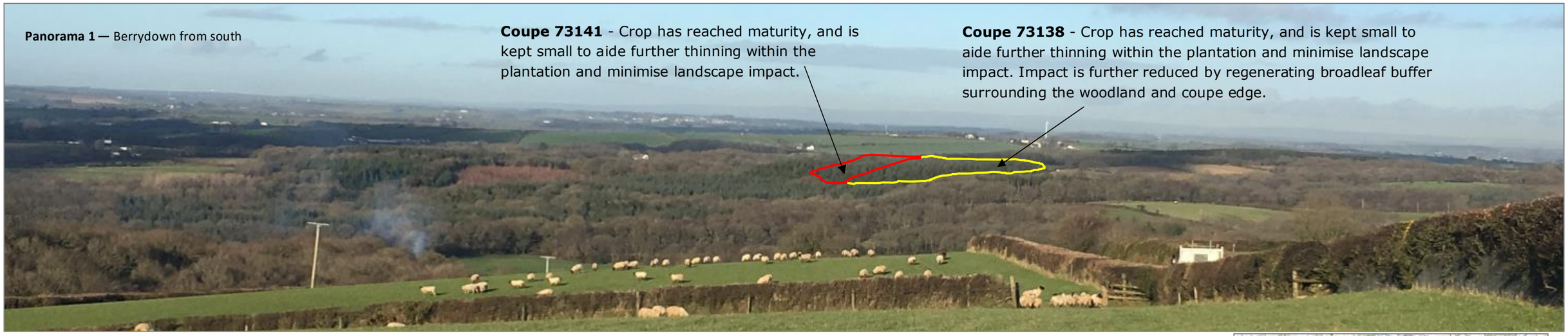
A number of Public Rights of Way in the form of footpaths and bridleways traverse the Plan area and connect with the surrounding landscape. Many of these Rights of Way are designated and/or signposted.

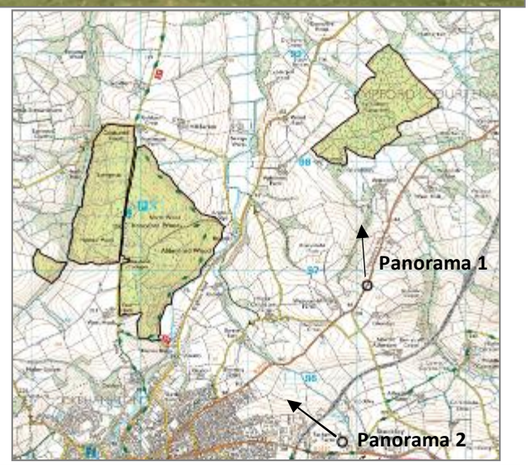
Numerous one-off and annual permissions are granted throughout the Plan area for recreational purposes. These include educational visits and community events.



Landscape Analysis

The proposed felling and restocking of coupes has been analysed from a number of significant viewpoints. These viewpoints have been identified because of the amount of foot and vehicle traffic they experience and the influence the forest has at these locations. Given the nature of the landscape around the Plan area, there are minimal settlements from which the Forest Plan area can be seen. The majority landscape analyses have been done along highpoints of these roads.

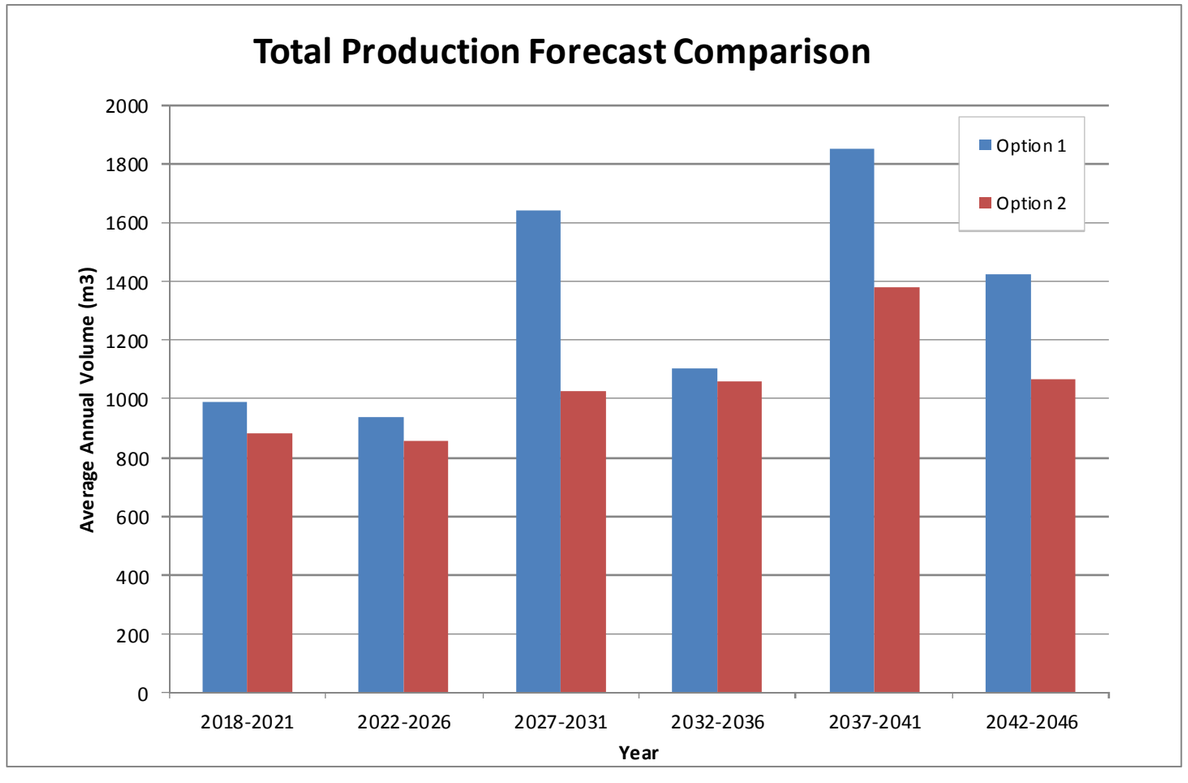


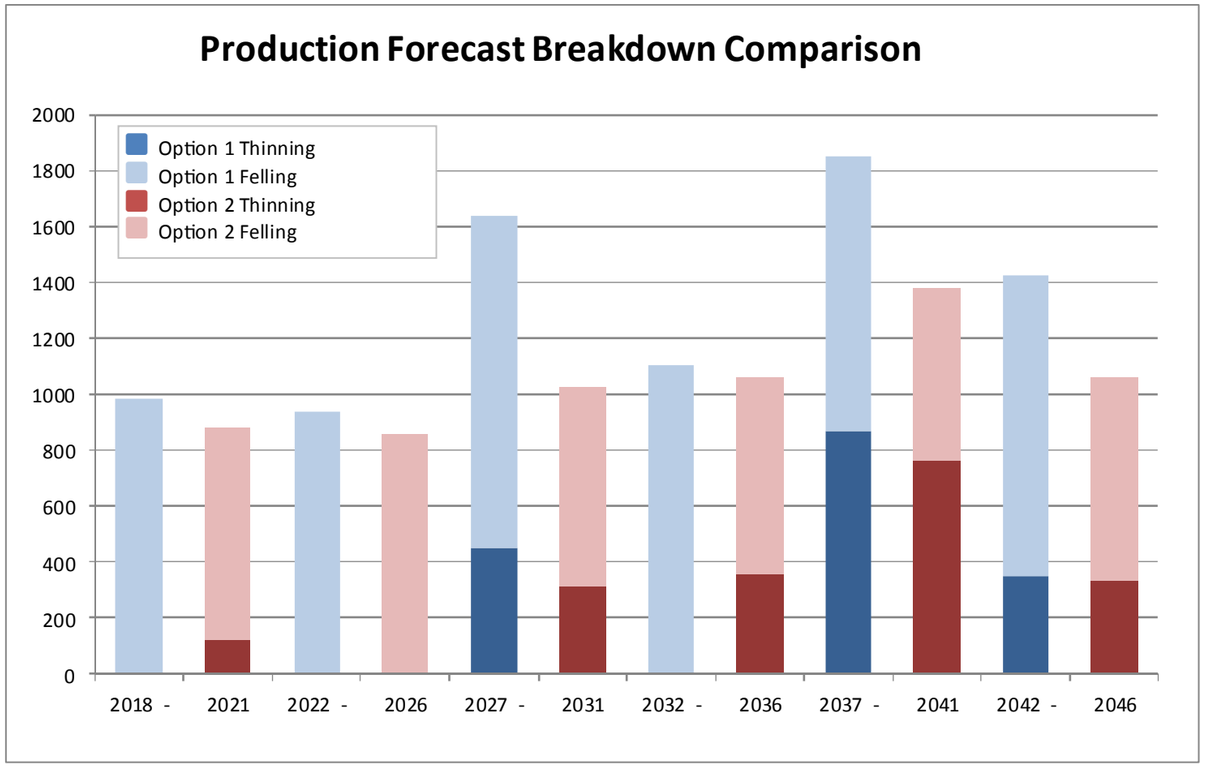


APPENDIX 2 -

Option Testing

Option 1 – Current Forest Plan (Master)	Option 2 – Proposed Forest Plan (Scenario)
The continued production of sustainable and marketable woodland products.	
The production of timber is somewhat reliant on volume resulting from clearfelling. This felling programme is experiences some periods significant of peaks and troughs. This combines together to make a less sustainable production model for woodland products.	The Plan attempts to spread the production over a longer period by extending rotations and moving towards CCF where possible. Peaks and troughs removed from the production.
The protection and enhancement of woodland and open habitats and their associated species. **- To protect and enhance areas of Ancient Semi-natural Woodland and restore areas of PAWs in line with 'Keepers of Time'.**	
Some acknowledgement is made of the need to restore ancient woodland. Restoration would be achieved through a mixture of clear felling and restocking, and group selection through natural regeneration over a short period.	The Plan makes provision for a sympathetic gradual restoration of priority habitats and ancient woodland in line with current thinking and following recent significant felling. It makes provision for addressing concerns to threats in the future.
The provision and maintenance of recreation facilities.	
The Plan acknowledges the role of informal recreation and public rights of way.	The Plan acknowledges the role of informal recreation and public rights of way as well as the role Abbeyford has to play in the social context given its proximity to Okehampton.
Deliver well-designed forests that both protect and enhance the internal and external landscape in keeping with the local landscape character	
The proposals consider the landscape context but do not demonstrate delivery of high quality, well design forests both internally and externally.	The majority of coupes have been retained. Where appropriate these have been altered in an attempt to extend rotations and address wind issues. This has then been modelled to ensure proposals contribute to a high value landscape.
To conserve, maintain and enhance cultural and heritage assets.	
The makes minimal reference to location and importance of cultural landscape and heritage assets.	The Plan looks to integrate unscheduled heritage assets into management as well as considering the cultural significance of the landscape and forests role within this.





Fell 2017 - 2021

Fell 2022 - 2026

Fell 2027 - 2028

Coupe Prescriptions

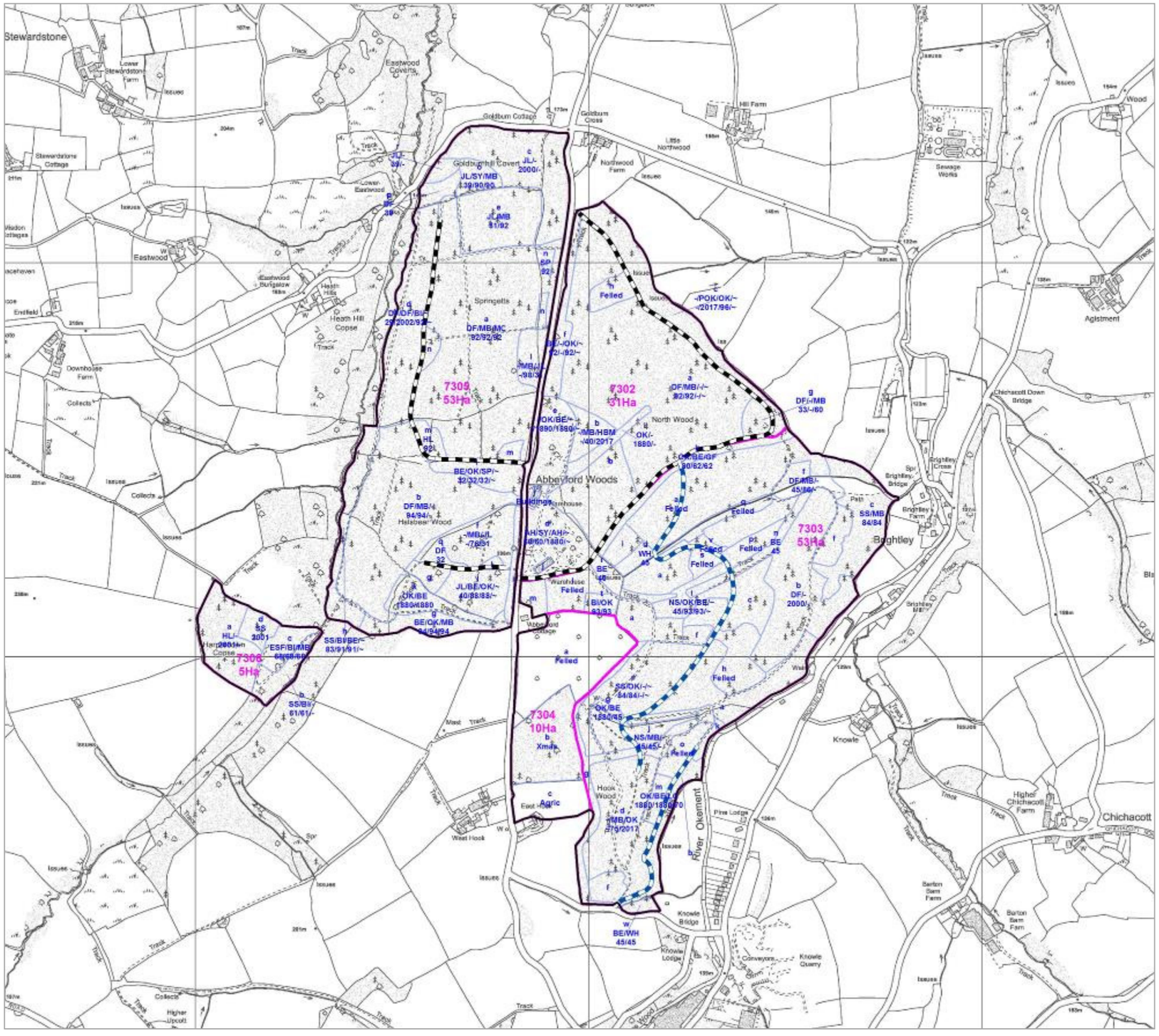
	Coupe	Area (ha)	Existing Crop	Rationale/Prescription	Restock	Area (ha)	Restock Proportion	Rationale/Prescription
Abbeyford	**73142**	3.3	p.85 NS	Crop of Christmas trees have now gone beyond their reasonable marketable and therefore reached economic maturity. Crops are located on thin soils and are relatively exposed and unthinnable.	**73142a**	3.3	100% Ev. Conifer	Site is relatively rich and well drained providing opportunities for a diverse set of productive conifer species options. Site is relatively exposed and south facing with high visual impact Consider Douglas fir, Coast redwood or Serbian spruce
Berrydown	**73141**	1.2	p.71 SS	Crop has reached maturity, is located on thin soils and is relatively exposed. Sitka spruce continues to appear stressed, is blowing in a number of locations and is beginning to suffer from *Dendochtronus micans*. Coupe kept small to aide further thinning within the plantation.	**73141a**	1.2	100% Ev. Conifer	Site is poor and thinned soils, with some Culm clay measures underlain. Relatively adequate drainage provides good moisture regime. Consider Sitka spruce, Leyland cypress or Oriental spruce
	73138	2.6	p.71 SS	Crops have reached maturity, are located on thin soils and are relatively exposed. Sitka spruce continues to appear stressed, is blowing in a number of locations and is beginning to suffer from *Dendochtronus micans*. Coupe kept small to aide further thinning within the plantation.	**73138a**	2.6	100% Ev. Conifer	Site is poor and thinned soils, with some Culm clay measures underlain. Relatively adequate drainage provides good moisture regime. Consider Sitka spruce, Leyland cypress or Oriental spruce

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

0 0.075 0.15 0.3 0.45 0.6 Miles

Stock Data 2018

Abbeyford



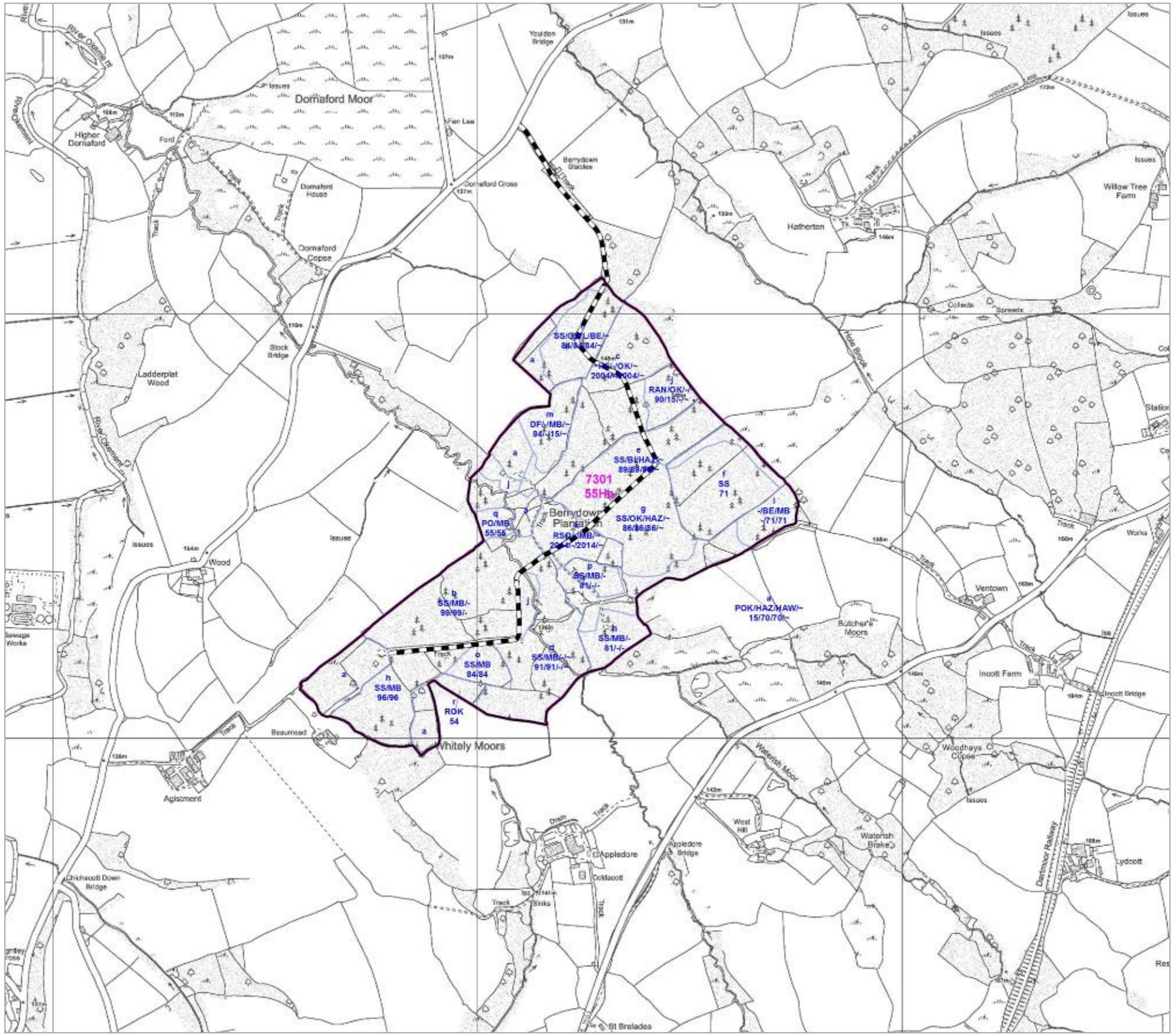
Legend

- Compartments
- Sub-Compartments
- Class A/B Roads
- Class C Roads

Stock Data 2018

Berrydown

0 0.075 0.15 0.3 0.45 0.6 Miles



Legend

- Compartments
- Sub-Compartments
- Class A/B Roads
- Class C Roads

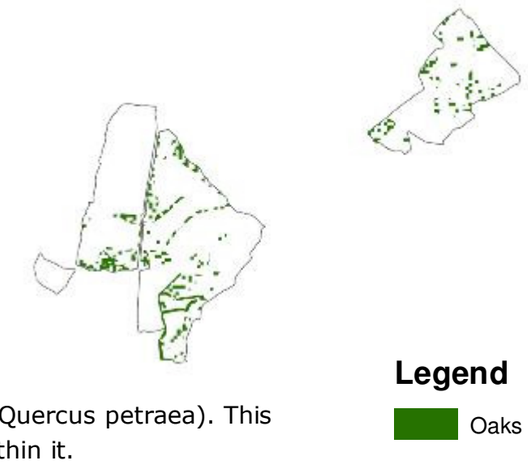
Pests & Diseases

Name: Oak 'dieback' or 'decline'

First appearance: unknown

Affects: Oak

Oak 'dieback' or 'decline' is the name used to describe poor health in oak trees and can be split into Chronic decline and Acute decline. Chronic decline is protracted taking effect on the Oak over a number of decades whilst Acute decline is much swifter acting over much shorter periods usually five years or so. Symptoms can be caused by a range of living agents e.g. insect and fungal attack, or non-living factors, e.g. poor soil and drought. Factors causing decline can vary between sites, as can the effects of the factors through time. Oak decline is not new; oak trees in Britain have been affected for the most part of the past century. Both native species of oak are affected, but Pedunculate oak (Quercus robur) more so than Sessile oak (Quercus petraea). This disease poses a significant risk to the Plan area given the proportion of oak found within it.

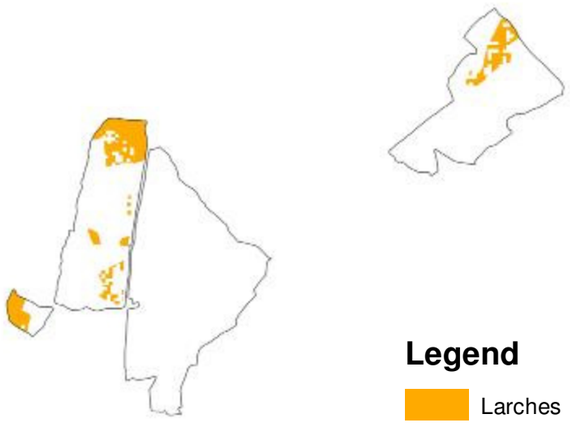


Name: *Phytophthora ramorum* (PR)

First appearance: 2009

Attacks: Larches

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. On some sites there is little or no rhododendron present. It is now known that Japanese larch can produce very high quantities of disease-carrying spores when actively growing in spring and summer, at much higher levels than those produced by rhododendron. These can be spread significant distances in moist air. 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.

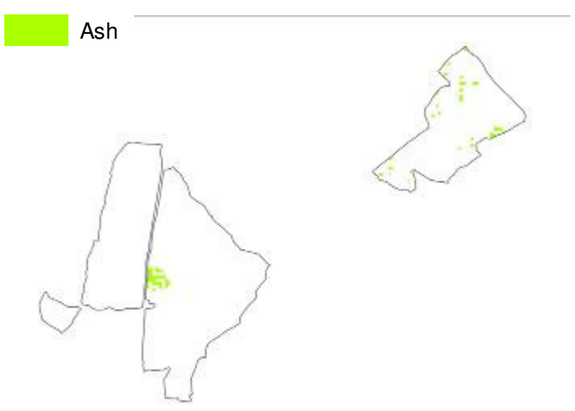


Name: *Hymenoscyphus fraxineus*

First appearance: currently N/A

Attacks: Ash

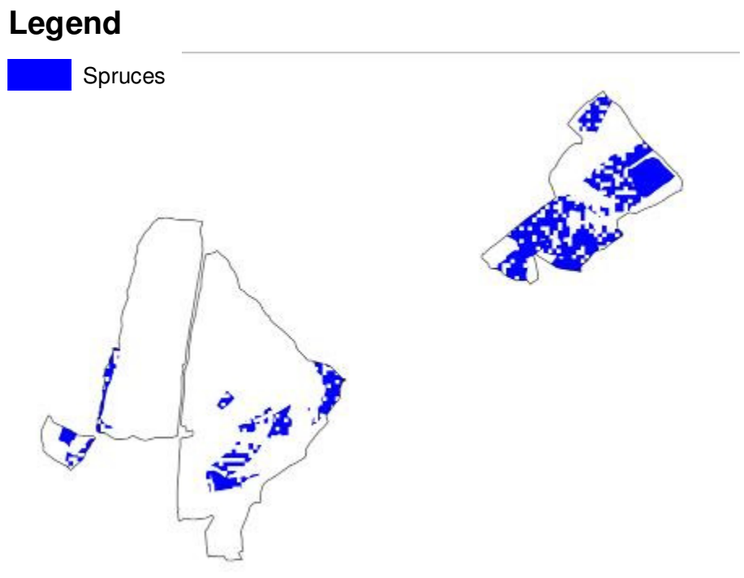
First confirmed in Britain in 2012, Chalara dieback of ash, also known as 'Chalara', ash dieback or Chalara ash dieback, is a disease of ash trees caused by a fungus called *Hymenoscyphus fraxineus.* The disease is now widespread throughout England and poses a threat to areas of the Plan area dominated by Ash, e.g. NVC type W8.This disease poses a significant risk to the Plan area given the proportion of intruded ash within stands and along hedgerows found within it.



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 relatively 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.



APPENDIX 3

Glossary

Term	Abbreviation	Description
Ancient Semi-Natural Woodland	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 Woodland 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 Regeneration	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.

References

Devon County Council, 2008, *CHARACTER ASSESSMENT — Broadbury Ridges,* Devon CC, Exeter

Devon County Council, 2008, *CHARACTER ASSESSMENT — High Taw Farmland,* Devon CC, Exeter

Environment Agency, 2011, *River Basin Management Plan, South West River Basin District,* DEFRA, Bristol

Forestry Commission, 2011, *The UK Forestry Standard*, Forestry Commission, Edinburgh

Forestry Commission, 2013a, *West England Forestry District Strategy 2013-2020,* Forestry Commission, Bristol

Forestry Commission, 2013b, *Strategic Plan for the Public Forest Estate in England*, Forestry Commission, Bristol

Humphrey, J. & Bailey, S., 2012, *Managing deadwood in forests and woodlands*, Forestry Commission, Edinburgh

Lucas, O., 2006, Design *and Management of Environmental Corridors*, Peninsula Forest District, Forestry Commission, Exeter

Natural England, 2012, *149 The Culm National Character Assessment Profile*, Natural England, York

UKWAS, 2012, *United Kingdom Woodland Assurance Standard*, UKWAS, Edinburgh