

Camel Valley Forest Plan

2018 - 2028

West England Forest District



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



Ben Robinson
FCE File Ref: OP10/73
OLD Ref: PE26 & PE27



Declaration by FC as an Operator.

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


Application for Forest Plan Approval

Forest District:	West England FD
Woodland or property name	Helligan, Shell, Dunmere, Eastwood, Grogley, Bishop's & Hustyns
Nearest town, village or locality:	Bodmin
OS Grid reference:	SX 053 686
Local Authority District/Unitary Authority:	Cornwall County Council
Plan Area:	686 ha
Conifer Felling:	65.3 ha
Broadleaved Felling:	0ha

1. I apply for Forest Plan approval for the property described above and in the enclosed Forest Plan.
2. I confirm that the scoping, carried out and documented in the Consultation Record attached, incorporated those stakeholders that the FC agreed must be included. Where it has not been possible to resolve specific issues associated with the plan to the satisfaction of consultees, this is highlighted in the Consultation Record.
3. I confirm that the proposals contained in this plan comply with the UK Forestry Standard.
4. I undertake to obtain any permissions necessary for the implementation of the approved Plan.

Signed 
Forest Management Director 

Date 27/6/2018

Signed 
Area Director

Date of approval..... 10/09/2018

Date approval ends..... 10/09/2018



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



List of Contents

PART 1 – Description, summary & objectives

Application for Forest Plan Approval	2
Contents	3
Summary	4
Location	5
A 50 Year Vision	6
Management objectives	7
Meeting Objectives	8

PART 2 – Analysis & concept

Designations	9
Analysis & Concept	10-13

PART 3 – Composition and future management

Woodland Composition	14
River Camel Valley and Tributaries SSSI	15-17
Naturalness on Ancient Woodland	18
PAWS Management	19

PART 4 – Thinning, felling and future composition

Silviculture	20
Felling and Restocking 2018-2028	21-24
Management Prescriptions 2018-2047	25
Restocking Prescriptions	26
Indicative Future Species, 2028	27
Indicative Future Species, 2048	28

PART 5 – Conservation, heritage and recreation

Conservation—Habitats	29
Conservation—Natural and Cultural Heritage Features	30
Water & Riparian Management	31
Recreation & Access	32

APPENDIX 1: Management considerations

Landscape Analysis	33-35
Coupe Prescriptions	36
Stock data – 2018	37-40

APPENDIX 2: Supporting Information

Glossary of Terms	41-42
References	43

APPENDIX 3: Consultation

Consultation Record	44-45
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APPENDIX 4: River Camel Valley and Tributaries SSSI

SSSI Management Plan	46-49
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APPENDIX 5: Dunmere Castle SM

SM Management Plan	
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APPENDIX 6: Penhargard Castle SM

SM Management Plan	
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About

The Plan area is made up of four substantial woodland blocks totalling 686 hectares within the catchment of the River Camel in Cornwall. The Plan area sits within an intimate wooded valley landscape and provides both a visual feature and recreational attraction for the surrounding area.

The forests are part of the public forest estate and stretch from Helligan and Shell in the north to Hustyn in the south and all are within close proximity to the urban settlements of Wadebridge and Bodmin.

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 Sitka spruce and Douglas fir which make up the majority of the trees here supplemented primarily with beech and western hemlock. Areas of remnant ancient semi-natural woodland do remain and are made up of oak and birch with ash and alder. 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 ecologically rich with habitat including Wet Woodland and Lowland Mixed Deciduous Woodland used by otter, dormice, bats and nightjar as well as other important flora and fauna species. This is confirmed by the River Camel SSSI and SAC which dissects the Plan area and is in unfavourable recovering condition.

The entirety of Bishop’s Woods, Hustyns, Eastwood, Shell and parts of Lower Helland. The Camel Trail is a very popular cycling and walking route through north Cornwall from Wenford Bridge to Padstow and traverses the Plan Area.

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, enhance and restore areas of ancient woodland in line with the ‘Keepers of Time’ policy.**
 - The restoration and management of the Site of Special Scientific Interest and Special Area for Conservation.
- 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 restore the River Camel SSSI and SAC through wholesale conifer removal. Other 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.

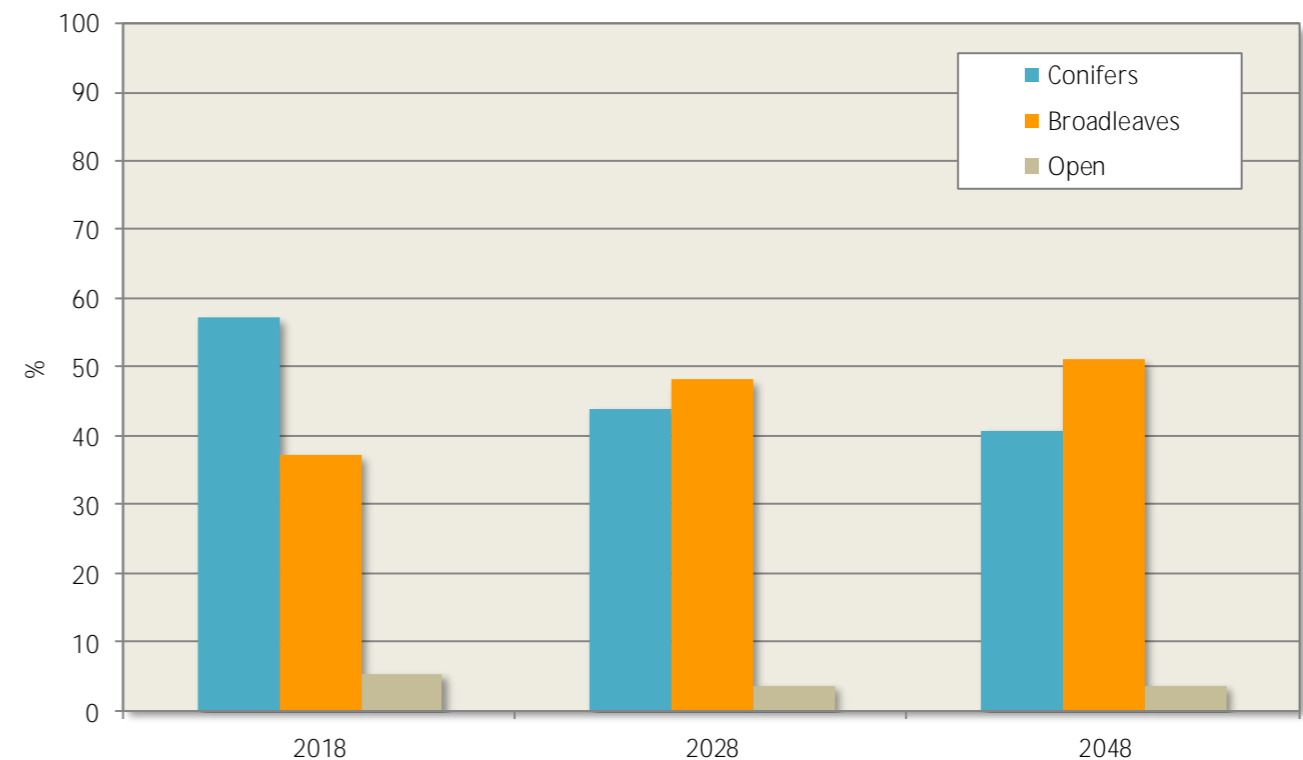
The Plan makes provision to ensure proposals are in keeping with the enclosed farmed and wooded landscape. Implementation and maintenance of an environmental corridor system will continue to increase diversity of habitat and internal landscaping.

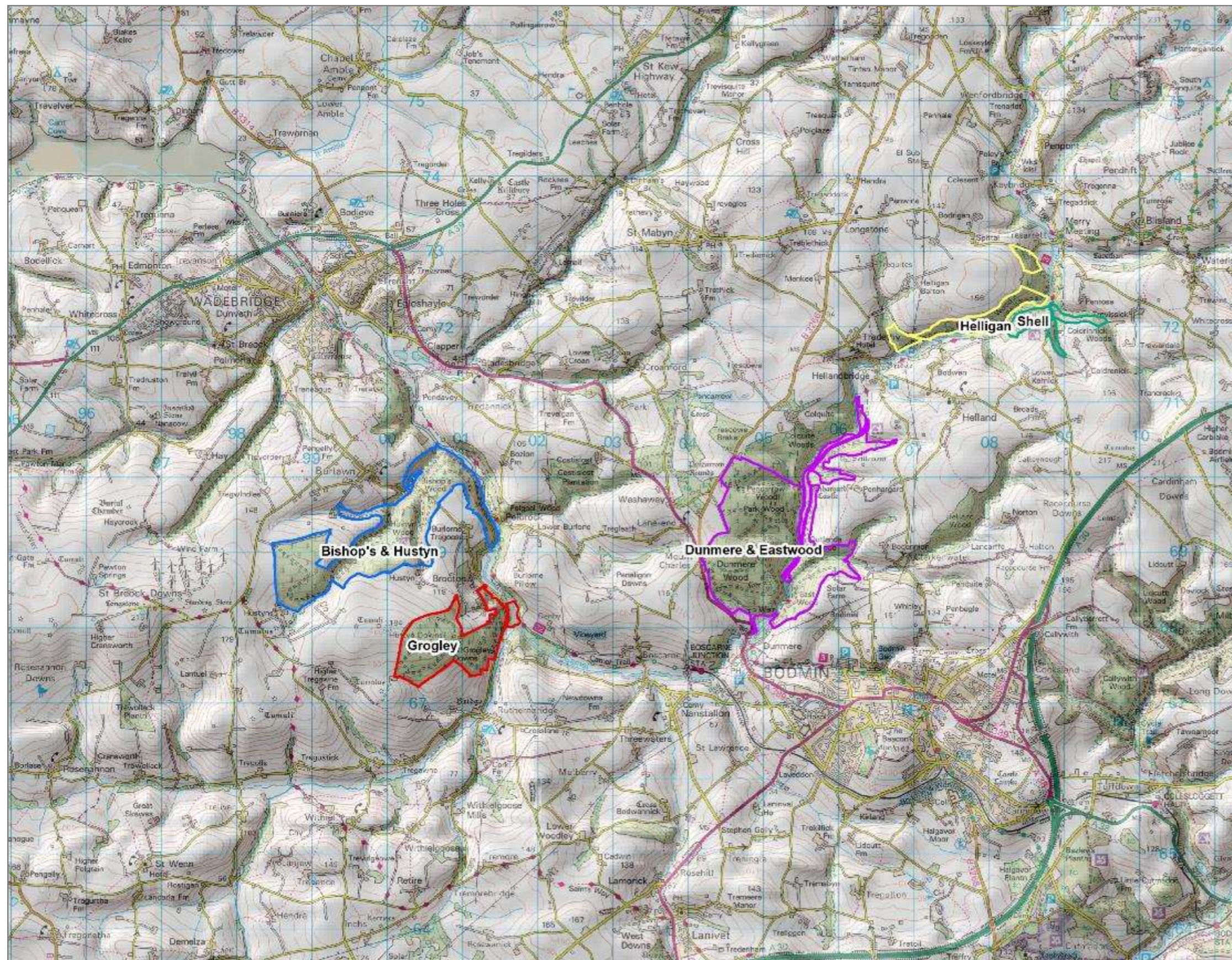
The planned areas of clearfelling, restocking and permanent open space creation during the ten years to 2028 are summarised in the chart below.

HECTARES	Conifers	Broadleaves	Open space
Clearfelling	65.3	-	-
Restocking/Regeneration	36	20	9.3

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

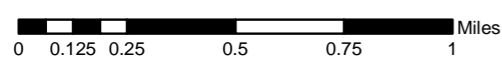
The Camel Valley Forest Plan area lies just south of Bodmin Moor in Cornwall between the regional towns of Bodmin and Wadebridge. The Plan area is made up of four substantial woodland blocks within the catchment of the River Camel.

The Plan area sits within an intimate wooded valley landscape and provides both a significant woodland feature in an otherwise agricultural landscape 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 50-150 metres above sea level and is undulating to steep in places. The climate is warm and fairly moist with an average annual rainfall of 1100mm – 1400mm, a soil moisture deficit of around 130mm, and an accumulated temperature over 5°C of 1800°C.

The soils across most of the Camel Valley Plan area are poor and slightly dry upland brown earths. Areas of Hustyn Downs are poor to very poor, fresh ironpan soils.

	Area	%
 Bishop's & Hustyn	214.6	31.3
 Dunmere & Eastwood	291.8	42.6
 Grogley	104.8	15.3
 Helligan	49.5	7.2
 Shell	24.9	3.6
TOTAL	685.6	100





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 Area whereby *western oak woodland perpetuates; a habitat of international importance rich in lichen and bryophyte species. These are evocative, often secret places running to the water's edge*, this Vision looks to achieve an area which is a haven for wildlife, recreation and business. A 'Key Opportunity' of the Landscape Character Area (Cornwall County Council, 2008) is *manage the broadleaved woodland to maintain landscape character and replace coniferous planting with broadleaved over time*. In 50 years time this Plan will look to have delivered a rich mosaic of robust streamside and woodland habitats which support a multitude of rare and common flora and fauna species such as bullhead, salmon and deciduous woodland as well as contributing to a low-carbon economy.

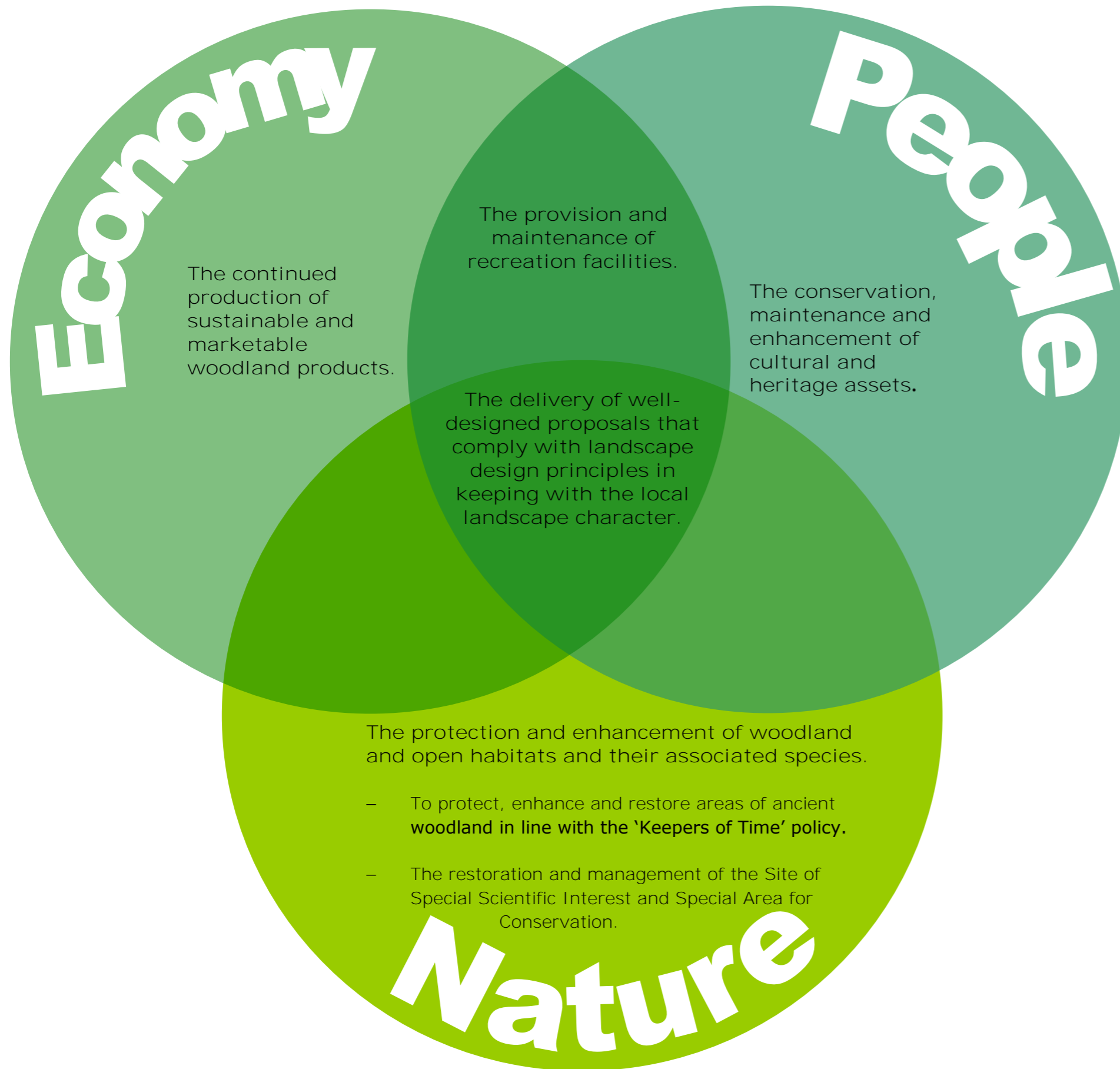
The area is defined by the River Camel which flows its way through the Plan Area and breathes life into the rich and diverse wooded valleys which it has shaped. Riparian areas will be enhanced through conifer removal and diverse broadleaf intrusion. These areas will be opened up to dappled shade to become 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. 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.

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.

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.

The mark of responsible forestry



Declaration by FC as an Operator.

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



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
<p>The continued production of sustainable and marketable woodland products.</p>	<p>The majority of the Plan area will remain productive through thinning yield.</p> <p>Some clearfell timber production of mature crops will occur, majority from the conifers.</p>	<p>Comparison of total production forecast yield 16,000m³ (2018-2021) and 40,000³ (2018- 2028) with actual production at the Forest Plan (FP) five and ten-year review.</p>
<p>The protection and enhancement of woodland and open habitats and their associated species.</p> <ul style="list-style-type: none"> - To protect, enhance and restore areas of ancient woodland in line with the 'Keepers of Time' policy. - The restoration and management of the Site of Special Scientific Interest and Special Area for Conservation. 	<p>Appropriate reinstatement works will be carried out once operations have been concluded.</p> <p>Protection and enhancement of water supplies and soil quality through sensitive implementation of operations and improved restocking practices.</p> <p>Restoration of ancient woodland through a gradual thinning process</p> <p>Carry out habitat management as outlined in SSSI Plan</p>	<p>Operational site planning of harvesting and restocking operations will help monitor the effect of management.</p> <p>Ongoing monitoring of soil and water quality pre and post harvesting with input from outside stakeholders.</p> <p>Analysis of naturalness scores at Review stage</p> <p>Measured at Review stage through analysis of ongoing surveys and records.</p> <p>SSSI Plan assent and monitoring by NE</p>
<p>The provision and maintenance of recreation facilities.</p>	<p>Visitor numbers will be maintained.</p> <p>Road and ride corridor and car park aesthetics enhanced and maintained.</p> <p>Felling together with a delayed restock program will continue to diversify stand and age structure.</p> <p>Viewpoints enhanced and maintained at time of intervention, where possible.</p>	<p>Visitor feedback comments, to be included in Review where appropriate.</p>
<p>The delivery of well-designed proposals that comply with landscape design principles in keeping with the local landscape character.</p>	<p>Implementation of proposals will soften and better integrate the woodland with the surrounding landscape</p>	<p>Fixed point photography analysis at Forest Plan review stage</p>
<p>The conservation, maintenance and enhancement of cultural and heritage assets .</p>	<p>Protect and enhance unscheduled sites at the time of intervention.</p>	<p>Operational site planning of harvesting and restocking operations will help monitor the effect of management.</p>



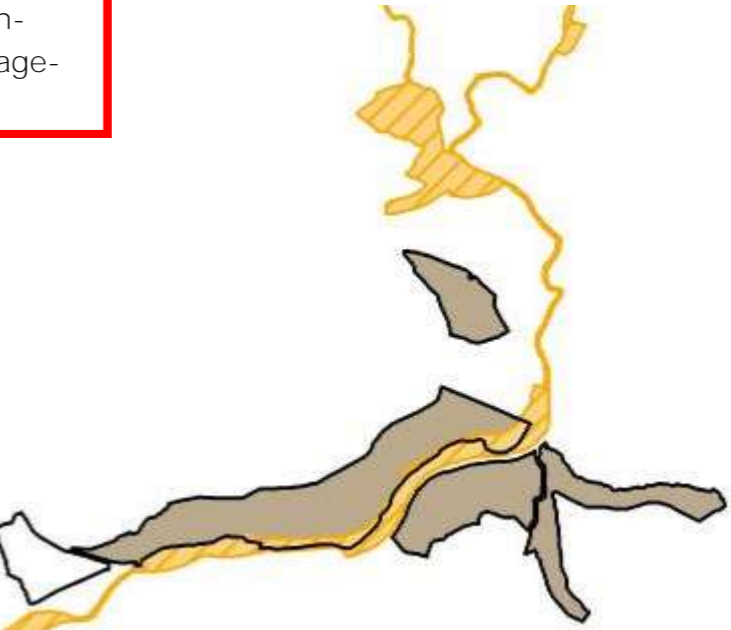
Designations

Ancient Woodland—makes up 476ha of the Plan area, 459ha of which is plantation on ancient woodland. 54% (257ha) of this ancient woodland is pure conifer (<20% Native component), which means there is significant amount of long term restoration to come.

Specific management in light of this designation and the objective to restore to native cover is outlined on pages 18-19.

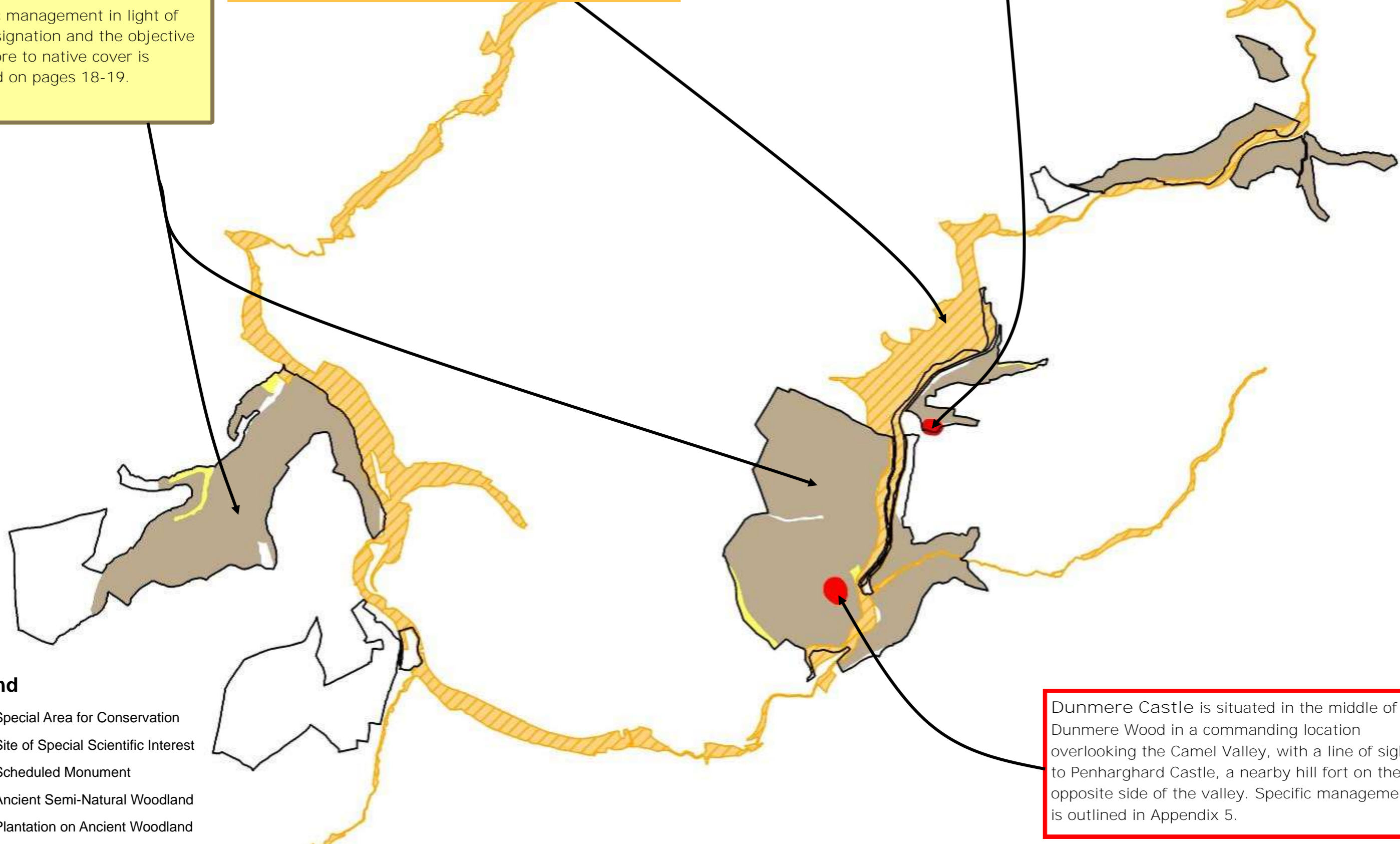
The Rivers Camel and tributaries SSSI and SAC — and their associated woodlands, carr, fen, heath and wet meadows are of special interest for wildlife. The system is particularly important for otters which benefit from some of the most unspoilt river corridors in the South West with extensive woods, excellent bankside cover and little disturbance. Specific management is outlined on pages 15-17 and in Appendix 4.

Penharghard Castle is situated in Outlands Wood on the north slope above the River Camel adjacent to the forest road that runs through the wood. It is a well preserved Iron Age hill fort some 89 metres in diameter with a simple entrance on the south-west side. Specific management is outlined in Appendix 6.



- Legend**
- Special Area for Conservation
 - Site of Special Scientific Interest
 - Scheduled Monument
 - Ancient Semi-Natural Woodland
 - Plantation on Ancient Woodland

Dunmere Castle is situated in the middle of Dunmere Wood in a commanding location overlooking the Camel Valley, with a line of sight to Penharghard Castle, a nearby hill fort on the opposite side of the valley. Specific management is outlined in Appendix 5.





Analysis & Concept

Helligan and Shell

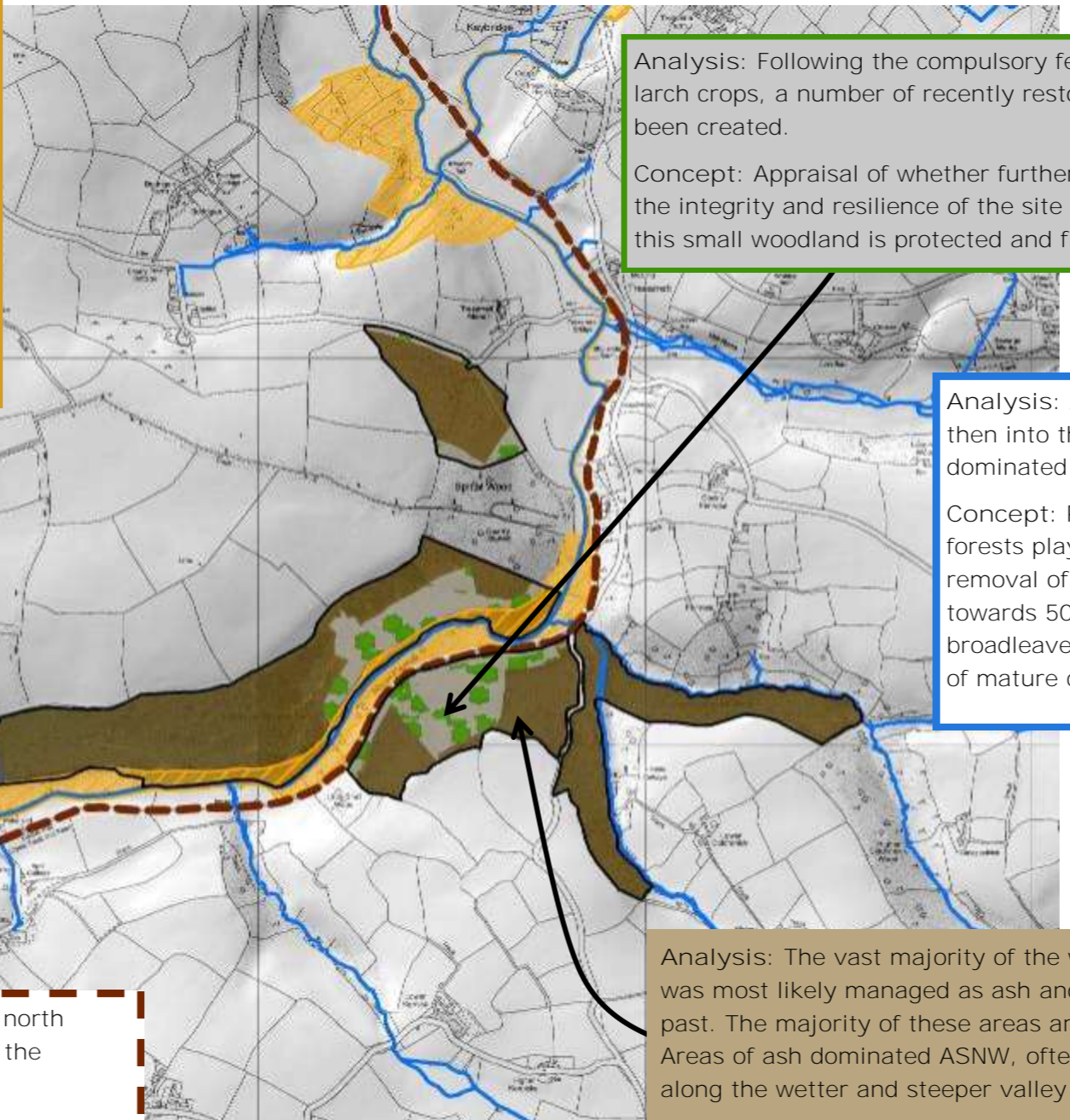
Helligan and Shell woods are located north of the village of Helland and are typical of the type of woodland found along the Camel Valley. The woodland is locally prominent in the landscape and can be viewed from the adjacent local minor roads. The majority of the woodland is recorded as being an ancient woodland site. The area within the SSSI/SAC will gradually be restored to broadleaved woodland, with the majority of the remainder of the wood managed under continuous cover system where by the broadleaved component will increase and invasive exotic tree species will be felled. Helligan wood is managed on a lease as such public access facilities cannot be developed. However local people often park in the gateway at the west of the wood and enjoy walking along the forest road. Shell wood is owned by the Forestry Commission and as such an new and attractive car park with associated benches and interpretation are maintained there to encourage access to the wood and the Camel Trail. The woodlands have gone through a significant change in recent years with compulsory felling of *Phytophthora ramorum* diseased 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: The Rivers Camel, Allen and tributaries, their associated woodlands, carr, fen, heath and wet meadows are of special interest for wildlife. The system is particularly important for otters *Lutra lutra* which benefit from some of the most unspoilt river corridors in the South West with extensive woods, excellent bankside cover and little disturbance.

Concept: This SAC dissects the Helland and Shell block and is consistent through the Plan area. The SSSI will be managed through conifer removal and invasive species treatment so that there is an improvement and restoration in the condition of this valuable ecological area.

Analysis: A significant stand of p.1950s western hemlock borders the stream side casting considerable shade and seed leading to prolific regeneration.

Concept: The management of this area will be sympathetic to ecosystem services and riparian condition. This will be through the clearfelling of the crop, in time and then creation of patchy open space and broadleaf cover.



Analysis: Following the compulsory felling of diseased larch crops, a number of recently restocked areas have been created.

Concept: Appraisal of whether further work to improve the integrity and resilience of the site will ensure that this small woodland is protected and fit for the future.

Analysis: A number of watercourses traverse the forest and feed then into the River Camel. Some areas of alder, willow and ash dominated riparian woodland are situated along the stream sides.

Concept: Prescriptions will be sensitive to the important part the forests play in water management. This will be through targeted removal of some overly shade bearing conifers and management towards 50% open 50% dappled shade, provided by regenerated broadleaves. This may in places be achieved through the clearfelling of mature conifer crops on stream sides.

Legend

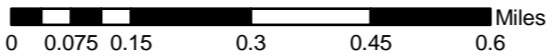
- River Camel SAC
- Ancient Woodland
- Watercourses
- Camel Trail
- Recently felled
- Mature western hemlock

Analysis: The Camel Trail, a popular and cycling walking route through north Cornwall from Wenford Bridge to Padstow 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: The vast majority of the woodland is Ancient Woodland and was most likely managed as ash and oak with hazel coppice in the past. The majority of these areas are now conifer and therefore PAWS. Areas of ash dominated ASNW, often W10, remain in small pockets along the wetter and steeper valley sides and bottoms.

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, and protecting areas of remnant ancient woodland.



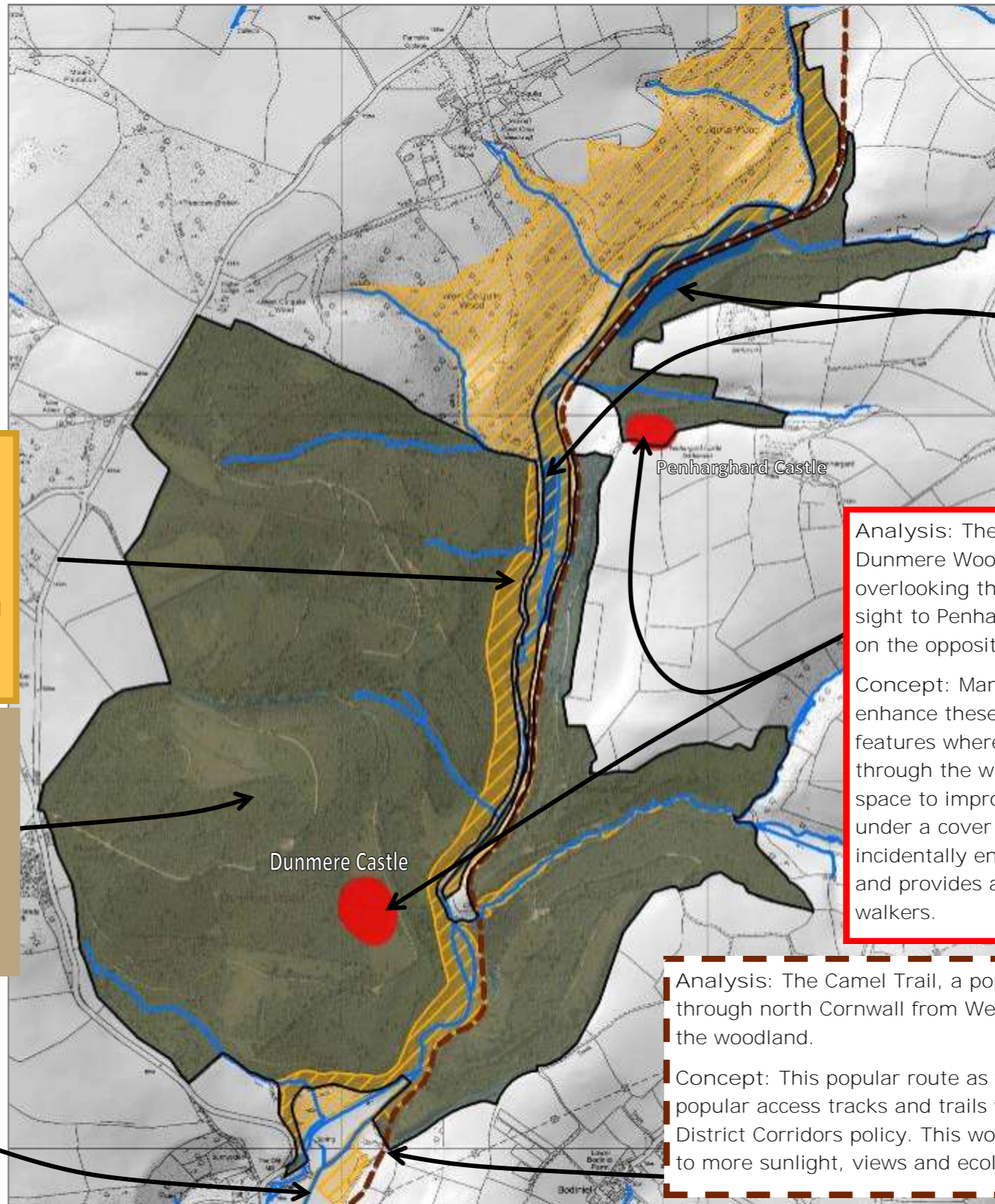


Analysis & Concept

Dunmere and Eastwood

Dunmere and Eastwood are situated either side of the River Camel. The woodland is very diverse and is characteristic of mixed woodland found along the Camel Valley. The forest contains prime stands of Douglas fir. In order to maintain these and promote conservation objectives the forest is now under continuous cover management. The woodland is prominent in the landscape and can be viewed from the A389 Bodmin to Wadebridge trunk road as well as from other minor roads. Dunmere is an ancient woodland, in time much of the forest will revert to a more native woodland structure and look more natural. The woodland adjacent to the River Camel is a designated Site of Special Scientific Interest and Special Area of Conservation in order to protect alluvial woodlands, the resident otter population and other aquatic life, such as bullhead. The majority of the conifers will be removed from this zone over the next ten years. Within the woodland there are two Scheduled Monuments, Dunmere Fort and Penharghard Castle. The Camel Trail and the River Camel run through the forest, so public access can be high, however it is not permitted in the leasehold areas off the Trail. Both the external and internal landscaping are of particular importance adjacent to the Trail with retentions, broad-leaved planting, open space and corridor management being used to aesthetically improve the area. 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.

- Legend**
- River Camel SAC
 - Scheduled Monument
 - Ancient Woodland
 - Watercourses
 - Camel Trail
 - Mature Norway spruce



Analysis: The Rivers Camel, Allen and tributaries, their associated woodlands, carr, fen, heath and wet meadows are of special interest for wildlife. The system is particularly important for otters *Lutra lutra* which benefit from some of the most unspoilt river corridors in the South West with extensive woods, excellent bankside cover and little disturbance.

Concept: SAC dissects Dunmere and is consistent throughout the Plan area. The SSSI will be managed through conifer removal and invasive species treatment so that there is an improvement and restoration in the condition of this valuable ecological area.

Analysis: The vast majority of the woodland is Ancient Woodland and was most likely managed as ash and oak with hazel coppice in the past. The majority of these areas are now conifer and therefore PAWS. Areas of ash dominated ASNW, often W10, remain in small pockets along the wetter and steeper valley sides and bottoms.

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, and protecting areas of remnant ancient woodland.

Analysis: A number of watercourses traverse the forest and feed then into the River Camel. Some areas of alder, willow and ash dominated riparian woodland are situated along the stream sides.

Concept: Prescriptions will be sensitive to the important part the forests play in water management. This will be through targeted removal of some overly shade bearing conifers and management towards 50% open 50% dappled shade, provided by regenerated broadleaves. This may in places be achieved through the clearfelling of mature conifer crops on stream sides.

Analysis: Mature Norway spruce borders the stream side casting considerable shade.

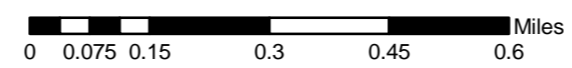
Concept: The management of this area will be sympathetic to ecosystem services and riparian condition. This will be through the felling to create dappled shade and light penetration.

Analysis: The camp is situated in the middle of Dunmere Wood in a commanding location overlooking the Camel Valley, with a line of sight to Penharghard Castle, a nearby hill fort on the opposite side of the valley.

Concept: Management will be to preserve and enhance these features and other unscheduled features where possible. This will likely be through the widening and connecting of open space to improve the monument's setting under a cover of broadleaf woodland which incidentally enhances the woodland for ecology and provides a more interesting landscape for walkers.

Analysis: The Camel Trail, a popular and cycling walking route through north Cornwall from Wenford Bridge to Padstow dissects 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 & Concept

Grogley

Grogley is predominantly made up of coniferous species and has a diverse age structure. The topography of the woodland is equally diverse with steep valley sides rising to an exposed undulating cap. Grogley is locally prominent in the landscape and can be viewed from the A30, the A389 Bodmin to Lanivet trunk road, and other minor roads. Broadleaved planting, open space and corridor management is being used to improve the internal and external landscaping of the area. Crops are managed on a rotation basis, whereby successive cohorts of mature trees are felled and replaced through replanting. This management will improve and enhance the conservation value of the woodland as plans are implemented over time and a varied range of habitats develop. A small riparian area of the woodland is within the river Camel Site of Special Scientific Interest and Special Area of Conservation. This area and the woodland adjoining it will be converted to broad-leaved woodland. The existing broadleaved trees will be safeguarded and enhanced throughout the Plan area, however some conifers will be retained to protect a heronry. Areas of open ground will be maintained to preserve habitat for adder populations. The forest is owned by the Forestry Commission and is dedicated open public access land under the Countryside and Rights of Way Act (2000). The Camel Trail runs adjacent to the woodland and levels of public access can be high. In particular the forest is a popular unofficial mountain biking area given the steep slopes and varied crop structures. The past practise of creating sequential felling coupes has created a favourable habitat for nightjars and this habitat will be maintained through continued sequential felling and replanting. This demonstrates whilst timber production remains the key focus of the Grogley plantation, ecology benefits hugely from habitat diversity and mosaics provided by the forests. Conifer production will continue in most areas with allowance for the high amenity value and ecological value whilst building resilience through the diversification of stand structure and composition.

Analysis: Following compulsory felling of diseased larch surround crops have been compromised and are now wind vulnerable.

Concept: These crops will be managed to ensure robust and landscape appropriate measures are in place to continue timber production into the future.

Analysis: A heronry is located close to the River Camel and is popular spot for bird watchers.

Concept: The management of this area will be sympathetic to ecosystem services and ecological features of this very wet area. This will be through the targeted removal of the conifer crop and then creation open and broadleaved areas within a wetland.

- Legend**
- River Camel SAC
 - Watercourses
 - Camel Trail
 - Nightjar habitat
 - Heronry
 - Wind vulnerable crops

Analysis: Nightjar are recorded within the plantation, particularly the recent felled and restocked areas.

Concept: Proposals will ensure that cyclical provision of transient open habitat is provided, both through clearfell and through rotation ride site cutting.

Analysis: The Camel Trail, a popular and cycling walking route through north Cornwall from Wenford Bridge to Padstow traverses the eastern edge of the woodland.

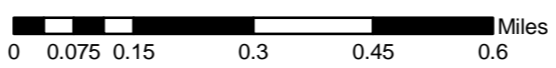
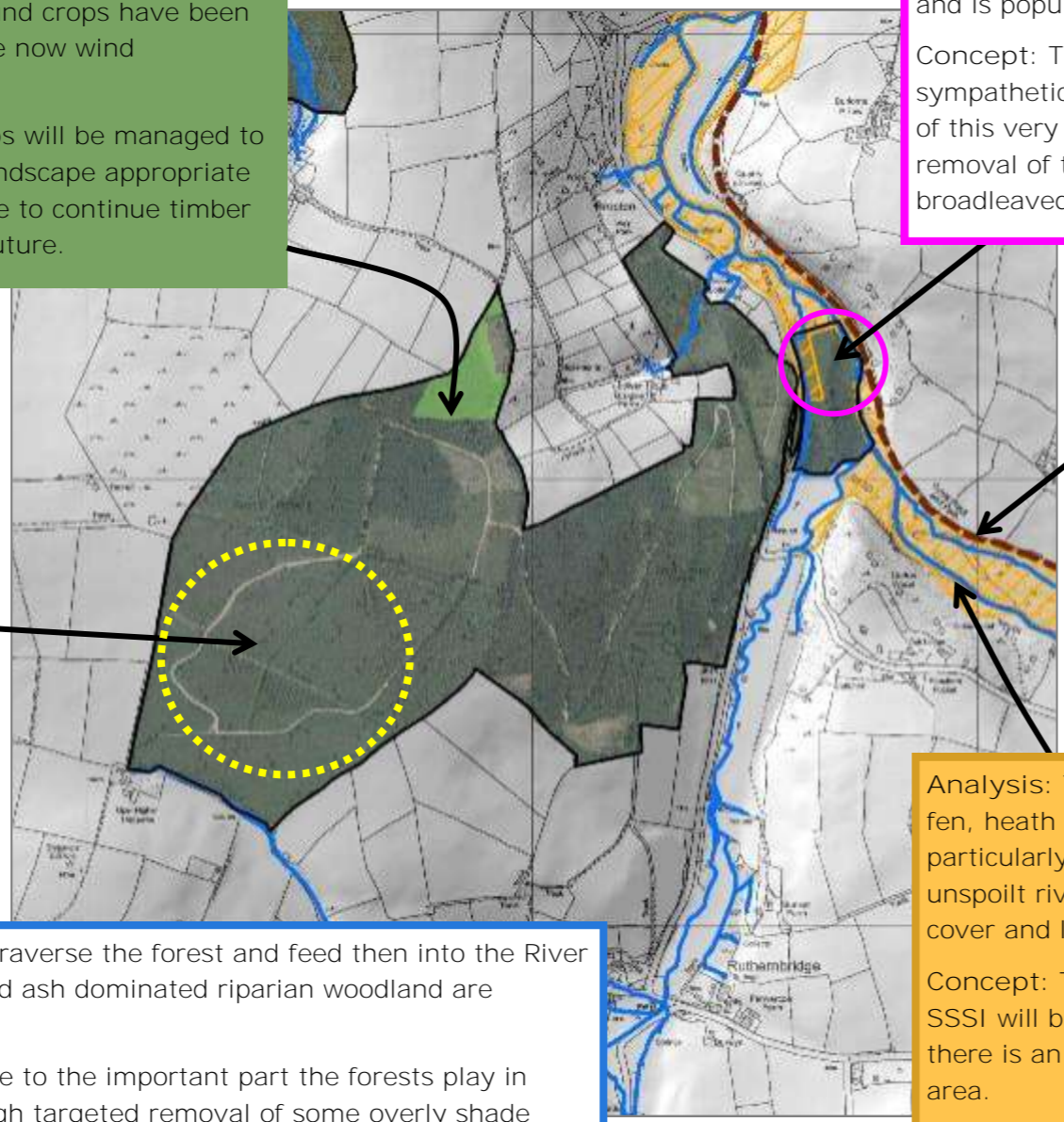
Concept: This popular route as well as many of the other popular access tracks and trails will be managed in line with the District Corridors policy. This work will look to open up the tracks to more sunlight, views and ecological diversity.

Analysis: A number of watercourses traverse the forest and feed then into the River Camel. Some areas of alder, willow and ash dominated riparian woodland are situated along the stream sides.

Concept: Prescriptions will be sensitive to the important part the forests play in water management. This will be through targeted removal of some overly shade bearing conifers and management towards 50% open 50% dappled shade, provided by regenerated broadleaves. This may in places be achieved through the clearfelling of mature conifer cops on stream sides.

Analysis: The Rivers Camel, Allen and tributaries, their associated woodlands, carr, fen, heath and wet meadows are of special interest for wildlife. The system is particularly important for otters *Lutra lutra* which benefit from some of the most unspoilt river corridors in the South West with extensive woods, excellent bankside cover and little disturbance.

Concept: This SAC borders Grogley and is consistent throughout the Plan area. The SSSI will be managed through conifer removal and invasive species treatment so that there is an improvement and restoration in the condition of this valuable ecological area.





Analysis & Concept

Bishop's Wood and Hustyn

Bishops Wood and Hustyn are adjacent to the River Camel three miles upstream from Wadebridge. The nearest settlement is the hamlet of Burlawn. The woodland is very diverse and is characteristic of woodland found along the Camel Valley. The woodlands are locally prominent in the landscape, the area can be viewed from the A39 trunk road as well as other minor roads. The external and internal landscaping of this area is of particular importance, continuous cover forestry systems, long term retention, broadleaved planting, open space and environmental corridor management are all methods used to aesthetically improve the area. Regeneration of these areas will be achieved by incorporating the understorey of natural regeneration, encouraging further natural regeneration and enrichment planting where required. Much of Bishops Wood and Hustyn is on an ancient woodland site and contains areas of broadleaved woodland, mainly in wet valley bottoms. A small area of Bishops Wood is designated a Site of Special Scientific Interest and Special Area of Conservation due to the otter population and quality of the riverine habitat. This area is predominantly unplanted ground adjacent to the minor watercourse that flows into the Camel. The area will be maintained and managed to diversify the height structure of the vegetation. The woodland is owned by the Forestry Commission and are dedicated under the Countryside and Rights of Way Act (2000) as public open access land. We actively encourage public access. The woods lie adjacent to the Camel Trail and public access is high, although informal. The main objective across 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 number of watercourses traverse the forest and feed then into the River Camel. Some areas of alder, willow and ash dominated riparian woodland are situated along the stream sides.

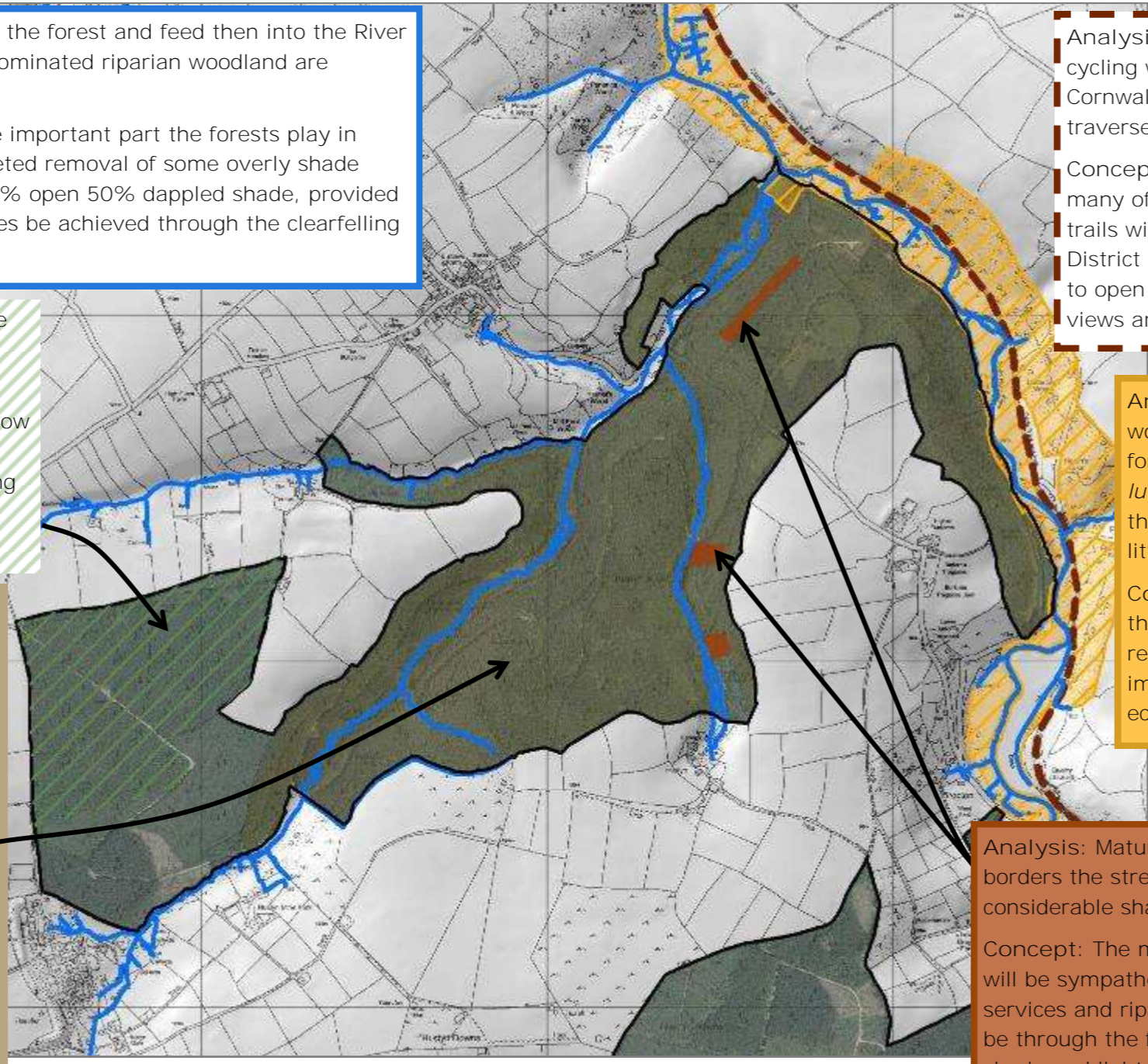
Concept: Prescriptions will be sensitive to the important part the forests play in water management. This will be through targeted removal of some overly shade bearing conifers and management towards 50% open 50% dappled shade, provided by regenerated broadleaves. This may in places be achieved through the clearfelling of mature conifer crops on stream sides.

Analysis: A number of planned clearfells have not taken place. This has led to a stacking of coupes due to be felled.

Concept: The concern for catastrophic windblow in this area is relatively low and therefore the redesigning of the coupe shape and sequencing is required to ensure the long term viability of the restructuring of this plantation.

Analysis: The vast majority of the woodland is Ancient Woodland and was most likely managed as ash and oak with hazel coppice in the past. The majority of these areas are now conifer and therefore PAWS. Areas of ash dominated ASNW, often W10, remain in small pockets along the wetter and steeper valley sides and bottoms.

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, and protecting areas of remnant ancient woodland.



Analysis: The Camel Trail, a popular and cycling walking route through north Cornwall from Wenford Bridge to Padstow 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.

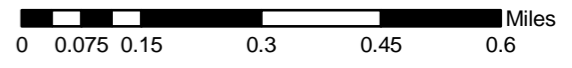
Analysis: The Rivers Camel, Allen and tributaries, their associated woodlands, carr, fen, heath and wet meadows are of special interest for wildlife. The system is particularly important for otters *Lutra lutra* which benefit from some of the most unspoilt river corridors in the South West with extensive woods, excellent bankside cover and little disturbance.

Concept: This SAC borders Bishops Wood and is consistent throughout the Plan area. The SSSI will be managed through conifer removal and invasive species treatment so that there is an improvement and restoration in the condition of this valuable ecological area.

Analysis: Mature Lawson cypress borders the stream side casting considerable shade and seed.

Concept: The management of this area will be sympathetic to ecosystem services and riparian condition. This will be through the felling to create dappled shade and light penetration.

- Legend**
- River Camel SAC
 - Ancient Woodland
 - Watercourses
 - Camel Trail
 - Mature Lawsons cypress
 - Overdue felling

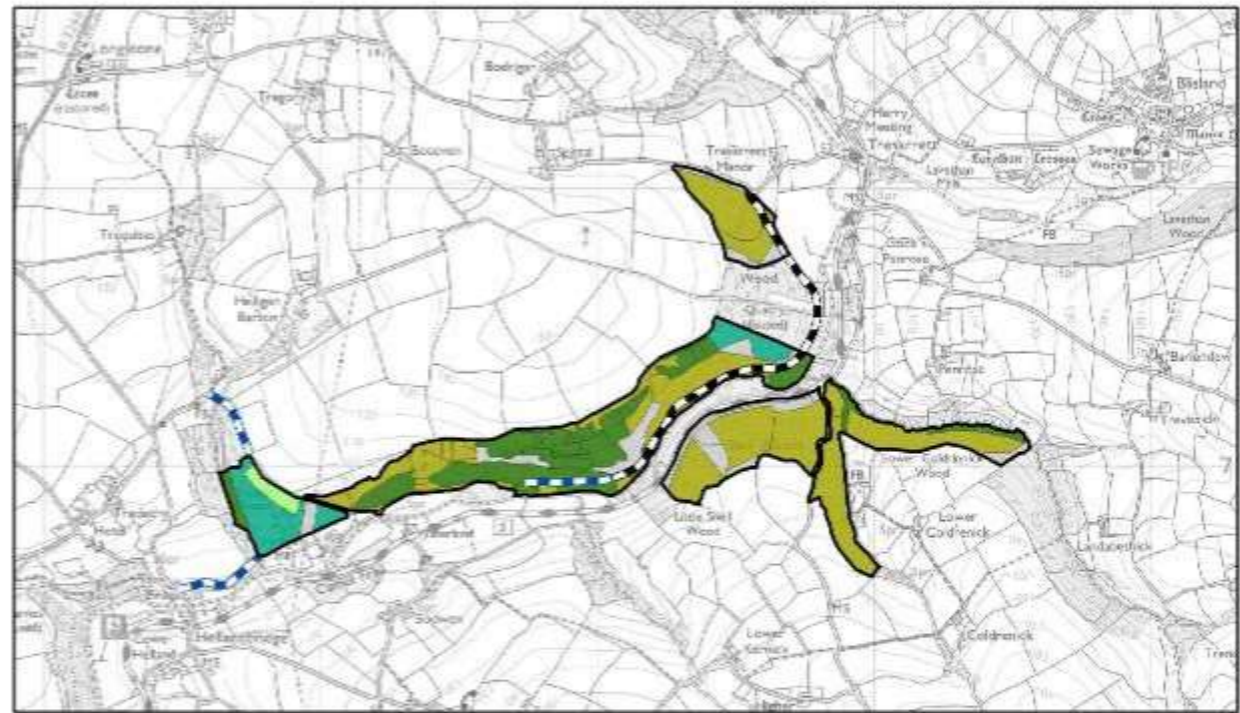




Legend

- 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'

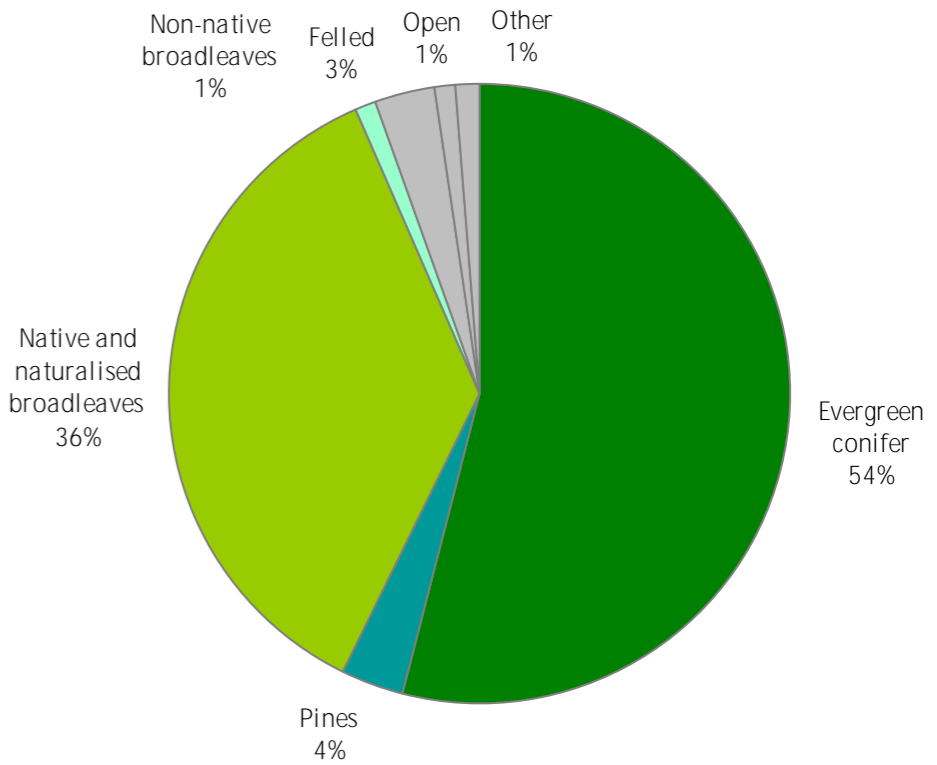
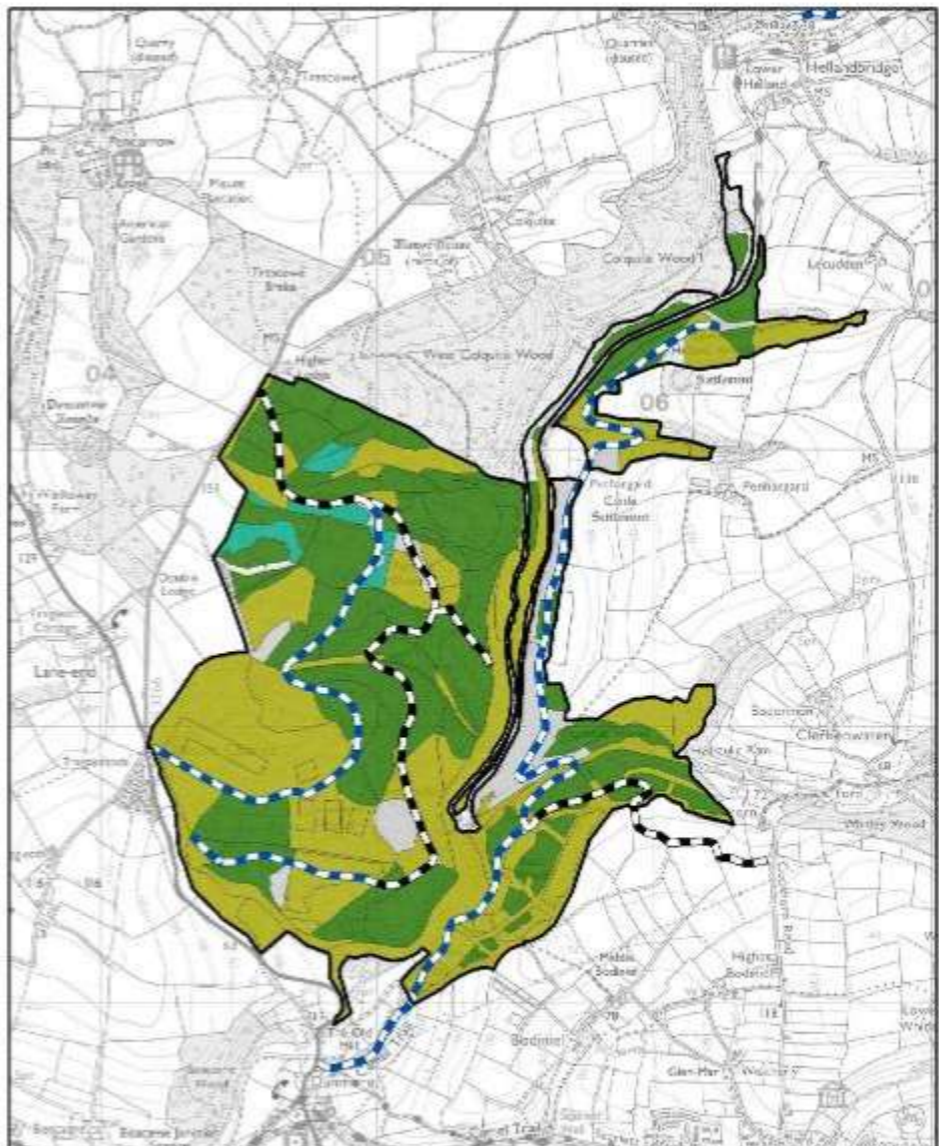
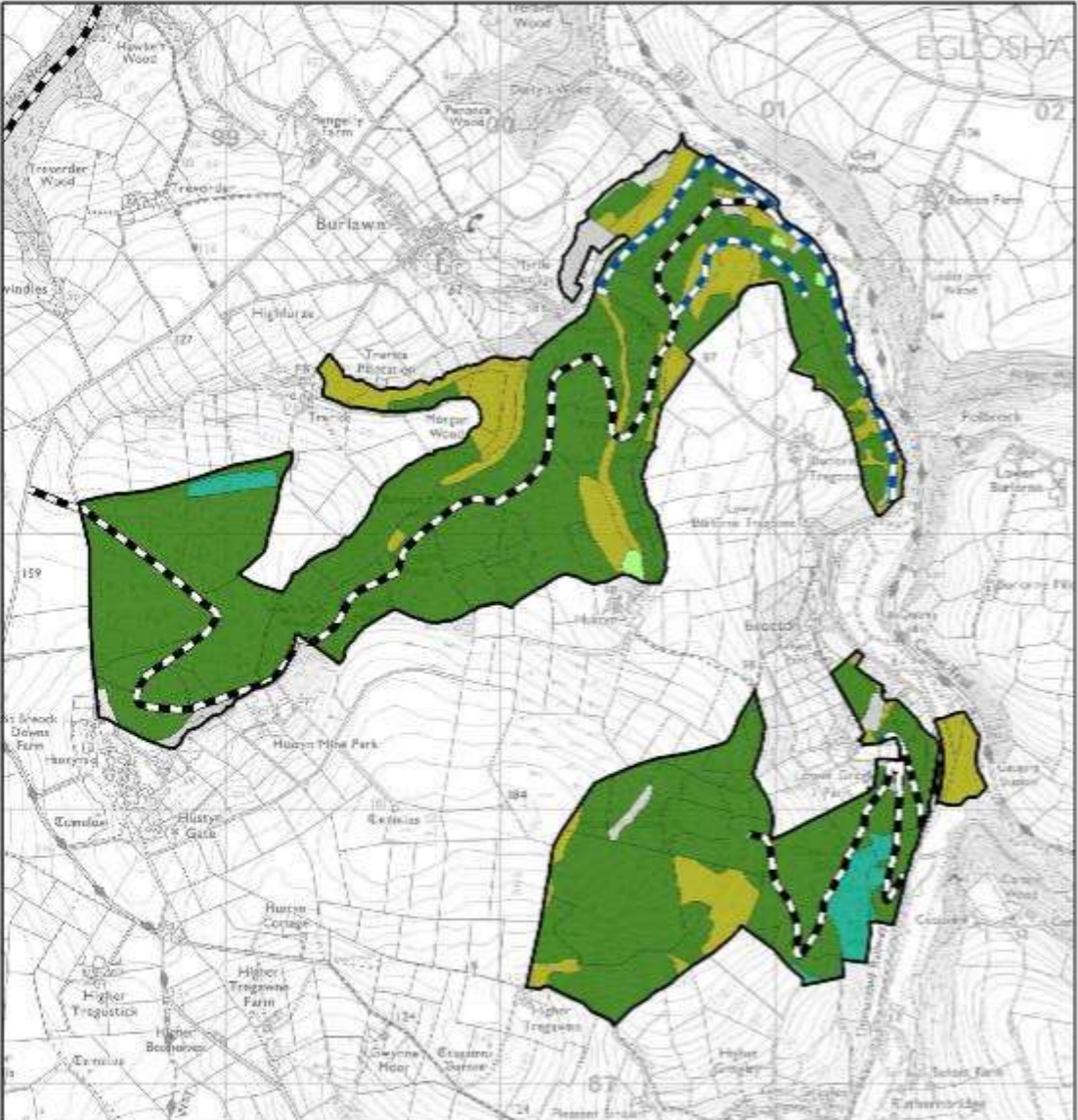


Woodland Composition

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 Sitka spruce (180ha) with Douglas fir (127ha) and western hemlock the major supplementary species.

The age of conifer crops is spread between peaks of considerable planting having occurred in the 1930s and 40s and then in the 1960s and 70s. 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 Pedunculate oak and beech. Ash, birch, alder and wild cherry are evident as pioneer species within discrete areas of the Plan area. The majority of stands are complex with understorey 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.





River Camel Valley and Tributaries SSSI

Biological Information

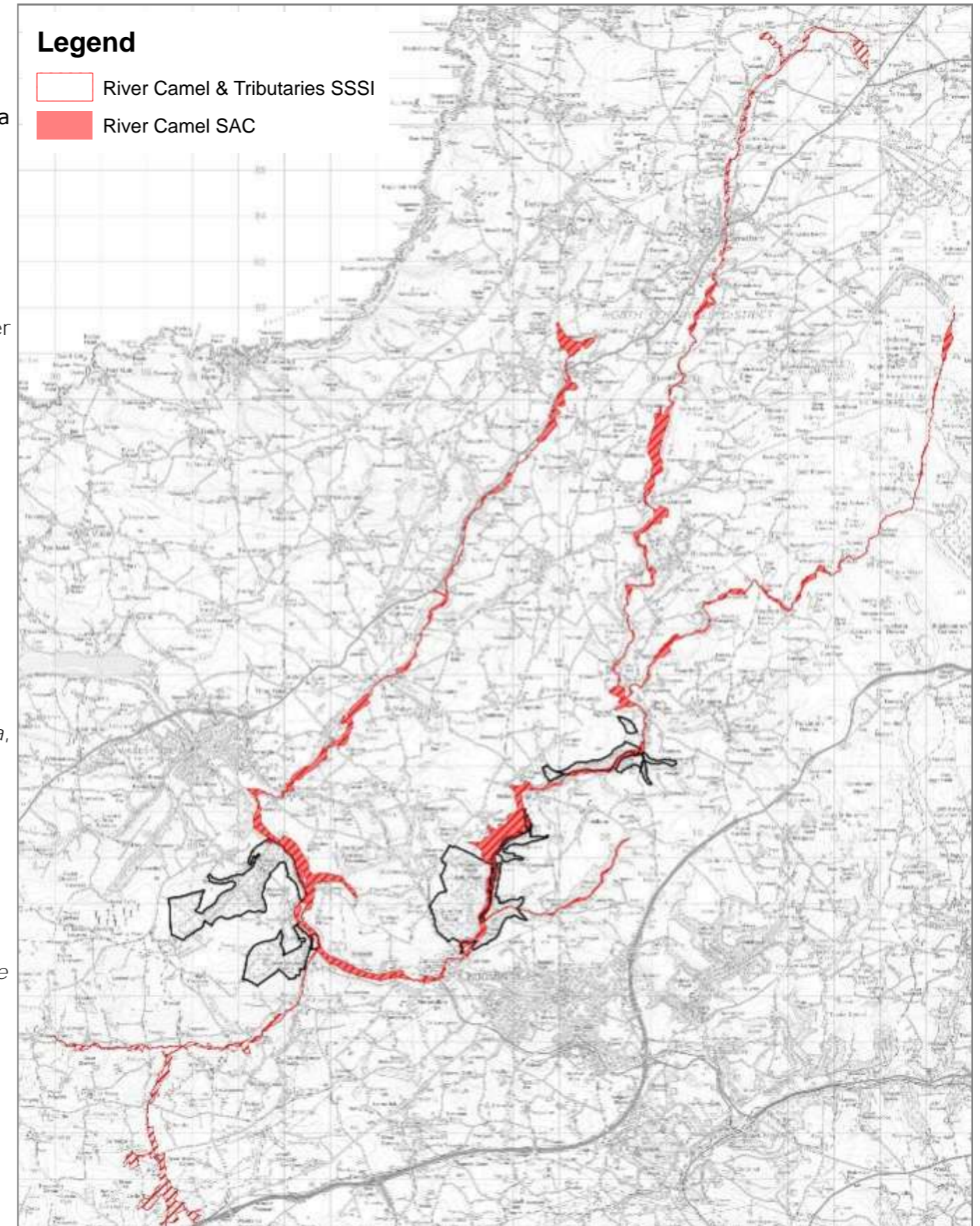
The Rivers Camel, Allen and tributaries, their associated woodlands, carr, fen, heath and wet meadows are of special interest for wildlife. The system is particularly important for otters *Lutra lutra* which benefit from some of the most unspoilt river corridors in the South West with extensive woods, excellent bankside cover and little disturbance. The rivers are also of great value for fish such as the Atlantic salmon *Salmo salar*, bullhead *Cottus gobio*, sea trout *Salmo trutta* and sea lamprey *Petromyzon marinus*. Rare greater and lesser horseshoe bats *Rhinolophus ferrumequinum* and *R. hipposideros* feed along the watercourses along with the kingfisher *Alcedo atthis*, dipper *Cinclus cinclus*, grey wagtail *Motacilla cinerea* and water vole *Arvicola terrestris* which also breed.

Bankside flora includes common marsh bedstraw *Galium saxatile*, the marsh St John's wort, marsh violet *Viola palustris*, the nationally scarce Cornish moneywort *Sibthorpia europaea*, the moss *Polytrichum commune* and liverwort *Pellia epiphylla*. The middle section is steeper and the vegetation is dominated by bryophytes and plants of coarse bedded rivers with rapids and large in-stream boulders. Here alternate water milfoil *Myriophyllum alternifolium* and floating club-rush are often dominant in the channel. Sharp-flowered rush *Juncus acutiflorus* and the nationally scarce coral necklace *Illecebrum verticillatum* are found along the edge. The middle and lower sections are bordered by deciduous woodland, mainly sessile oak.

Woodland is particularly characteristic of the Camel, Allen, Clerkenwater and parts of the Ruthern. The steeper valley side woods on acid to neutral soils comprise oak wood characterised by bramble *Rubus fruticosus* agg. and bracken *Pteridium aquilinum* or birch *Betula* spp. and wavy hair-grass *Deschampsia flexuosa*. Much of it has been historically coppiced. In some areas heathy plants such as heather *Calluna vulgaris* and bilberry *Vaccinium myrtillus* dominate the ground flora. In others mosses such as *Leucobryum glaucum* or herbs such as bluebells *Hyacinthoides non-scripta* provide striking displays. Rocky outcrops provide habitat diversity and support species such as foliose lichens, wood melick *Melica uniflora* and smooth stalked sedge *Carex laevigata*. At Treworder on the River Allen the outcrops, clitter and open areas associated with a railway cutting through woodland support two national rarities - the only Cornish population of toadflax-leaved St John's wort *Hypericum linariifolium* and the only inland Cornish population of slender bird's-foot trefoil *Lotus angustissimus*.

Where woodland soils are enriched ash *Fraxinus excelsior* and sycamore *Acer pseudoplatanus* become more **dominant with a richer ground flora including dog's mercury *Mercurialis perennis* and wild garlic *Allium ursinum*.** Beech *Fagus sylvatica* is also common. Understorey species include holly *Ilex aquifolium*, hazel *Corylus avellana* and rowan *Sorbus aucuparia*. Fringing areas to the woods support blackthorn *Prunus spinosa*, hawthorn *Crataegus monogyna*, bramble and bracken characterised vegetation. The nationally rare Cornish bladderseed *Physospermum cornubiense* and the nationally scarce butterfly pearl-bordered fritillary *Boloria euphrosyne* are found in this habitat.

The woods support a wide range of interesting and uncommon species such as bryophytes, including oceanic species and the nationally scarce *Fissidens polyphyllus* and *Anthoceros punctatus*; lichens including the nationally scarce *Sticta canariensis*; fungi and invertebrates. The latter include the nationally scarce rove beetle *Deleaster dichorus*, snipe fly *Ptiolina obscura*, white-letter hairstreak butterfly *Strymonidia w-album* and the moths waved carpet *Hydrelia sylvata*, white spotted pinion *Cosmia diffinis* and ruddy carpet *Cattarhoe rubidata*. A wide range of birds are associated with the woods including buzzard *Buteo buteo*, green woodpecker *Picus viridis*, wood warbler *Phylloscopus sibilatrix* and redstart *Phoenicurus phoenicurus*.





SSSI - Conservation Objectives and Management Aims

Conservation Objective

Maintain the managed woodland habitat in unfavourable recovering condition and carry out any necessary woodland management practices as required by Natural England to move the SSSI into favourable condition. The condition status of the SSSI is monitored by Natural England at regular intervals conforming to the reporting cycle for SSSI.

We also aim to further enhance the areas conservation value. In our woodlands adjacent to the SSSI/ SAC this aim will be balanced with our objectives to enhance the landscape; sustain sound silviculture and the perpetuation of a timber resource; and the promotion of public access.

The River Camel Designated Special Area of Conservation (SAC) is 621.17ha with 45% of the area broad-leaved deciduous woodland. Much of this proportion is made up of Annex I habitat. old sessile oak woods with *Ilex* and *Blechnum* and Annex I habitat, alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*. The remaining 65% is dry heath (Annex I habitat), bog, marshes, water bodies, scrub and grassland. Annex 2 species are bullhead and otter.

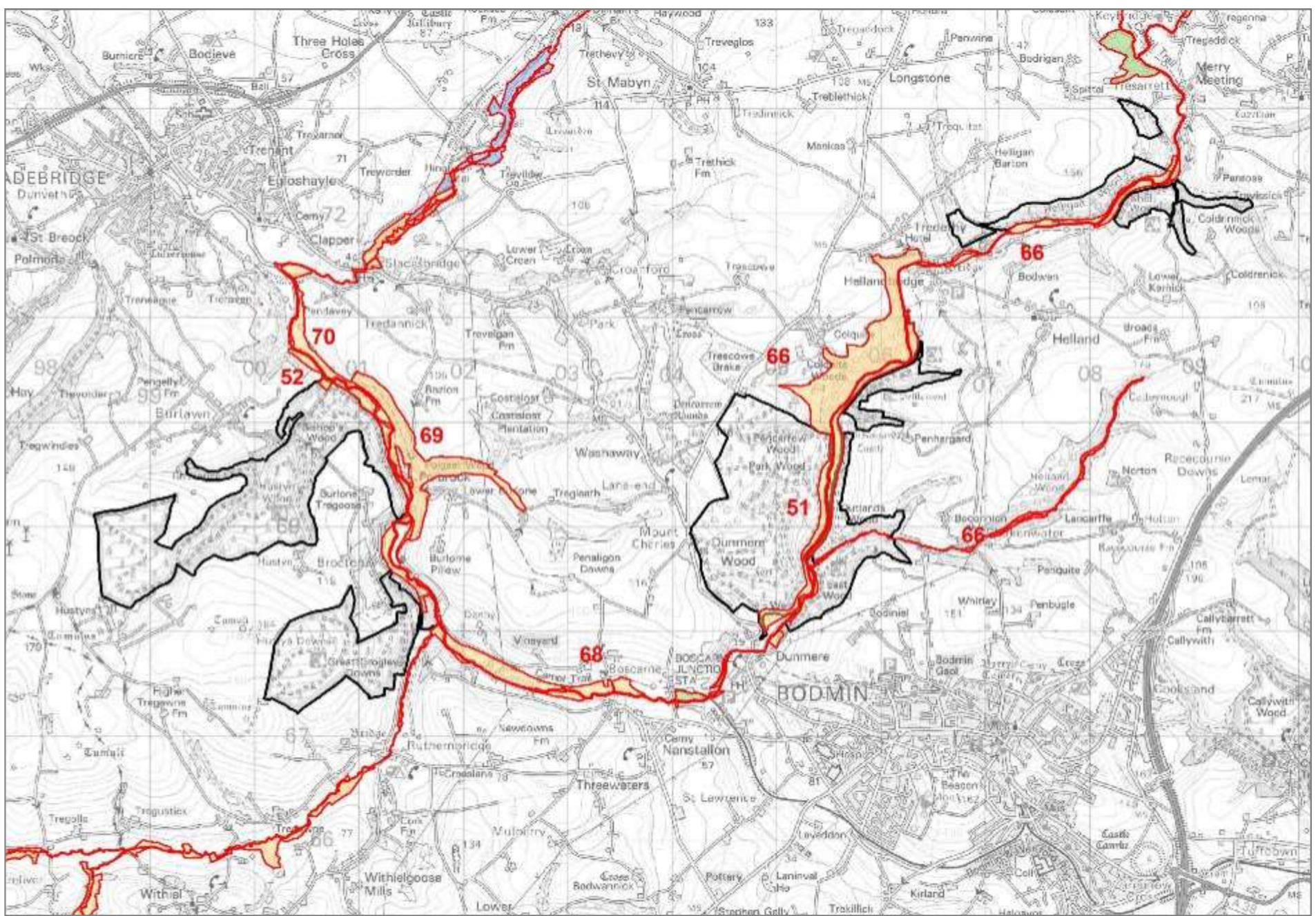
The Forestry Commission is responsible managing 25.6ha of woodland within the SSSI/SAC. This plan outlines the operations and management direction for the FC managed sections of the SAC and surrounding woodland area.

Management Aims

1. Maintain and enhance the extent and condition of the ancient semi natural broadleaf woodland.
2. Ensure suitable conditions are provided for the important riparian habitat for which the site is designated SSSI and SAC.
3. Ensure the woodland continues to provide a diverse suite of habitat types for a range of species and to mitigate against a changing climate.
4. Manage PAWS sites to ensure they are diverse and gradually reverted to broadleaf.
5. Ensure open space including rides, glades and streams is carefully managed and provides suitable conditions for a range of woodland edge species dependent on more, open sunny conditions.

Legend

- FAVOURABLE
- UNFAVOURABLE RECOVERING
- UNFAVOURABLE NO CHANGE
- UNFAVOURABLE DECLINING





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



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



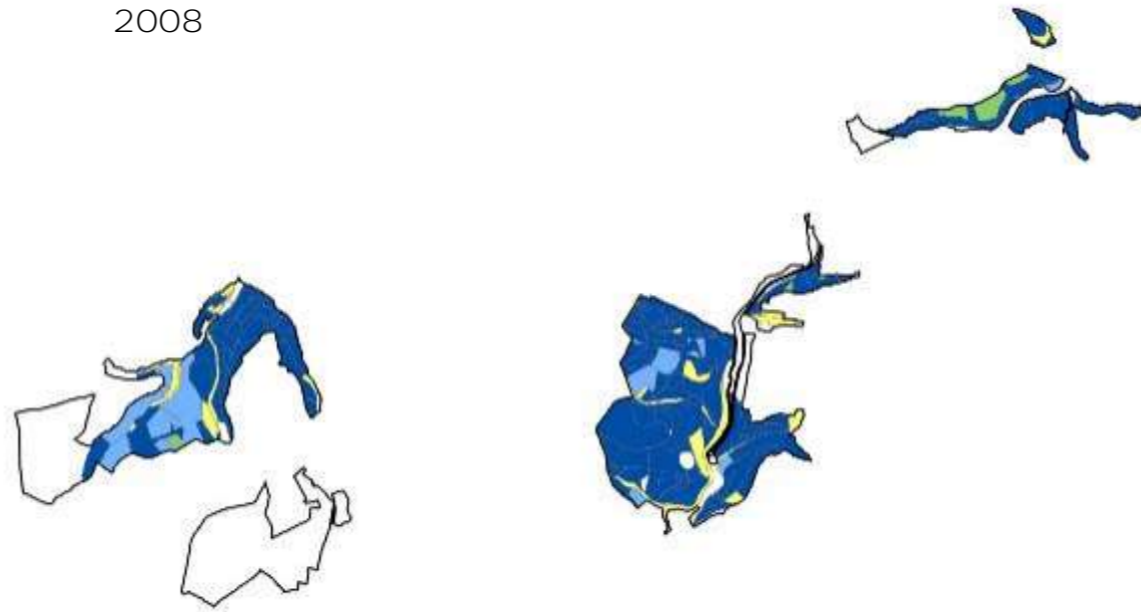
Class 3 – Plantation Woodland
(20 - 50% site native species)



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



2008



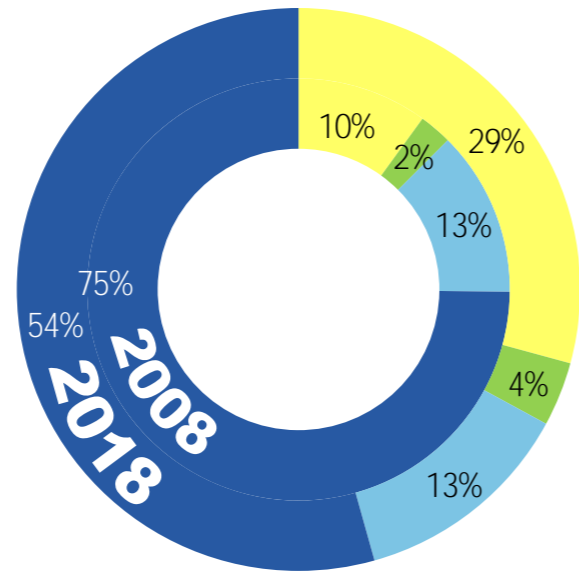
Naturalness on Ancient Woodland

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. Grogley) have been omitted from this chapter.

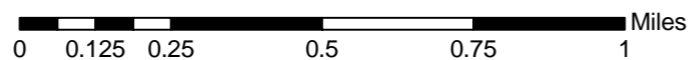
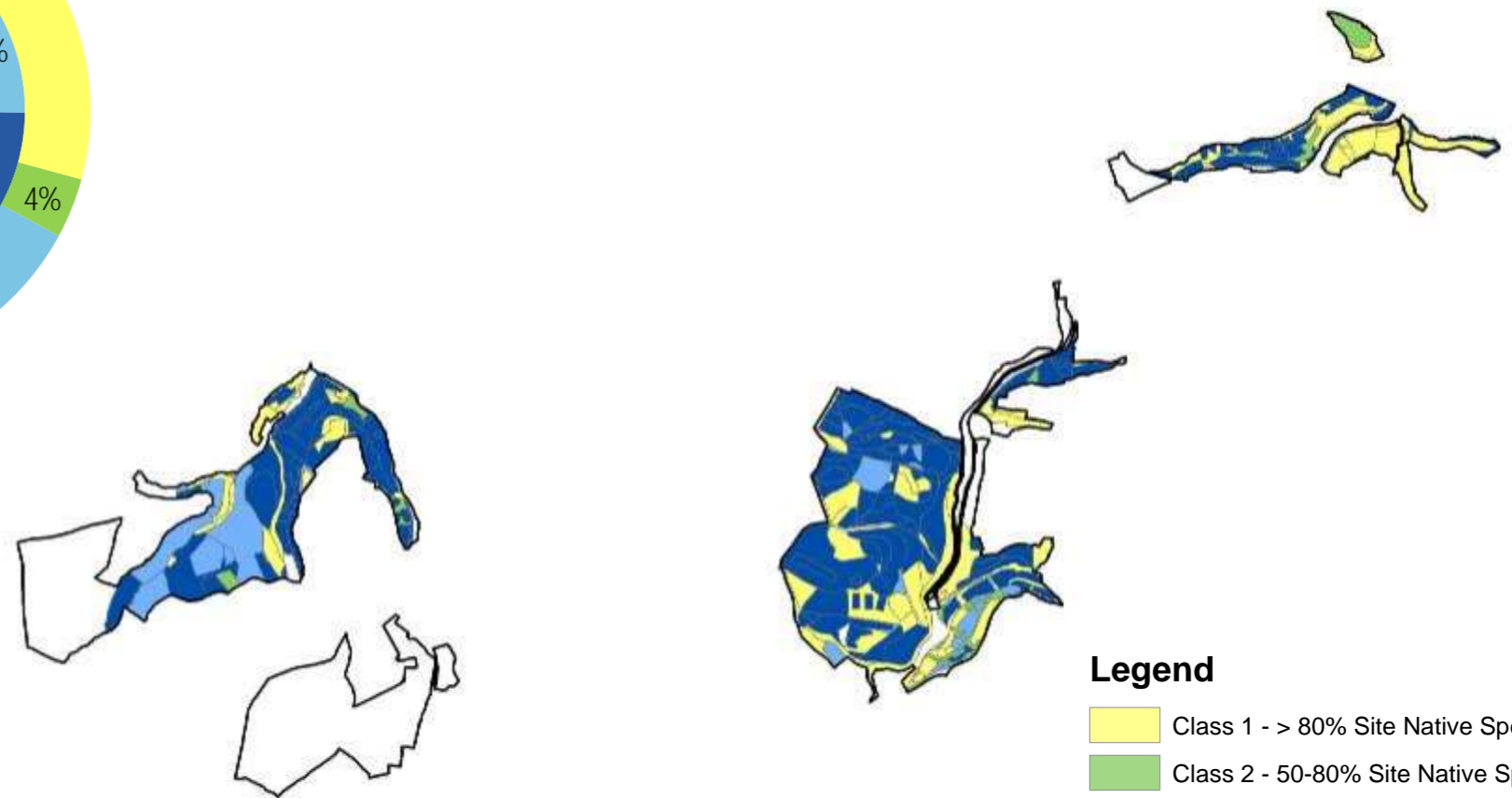
Classes 2, 3 and 4 are classified as Plantations on Ancient Woodland Sites (PAWS). Areas of Semi-Natural Woodland (Class 1 - > 80% site native species) are mostly found towards the bottom of valleys, in wetter riparian areas where the soils are richer.

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).

These maps and chart show the transition in naturalness across the ancient woodland in the Plan Area between 2008 and 2018.



2018



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Ordnance Survey [100021242]

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

PAWS Management



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

Multiple 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.

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.**



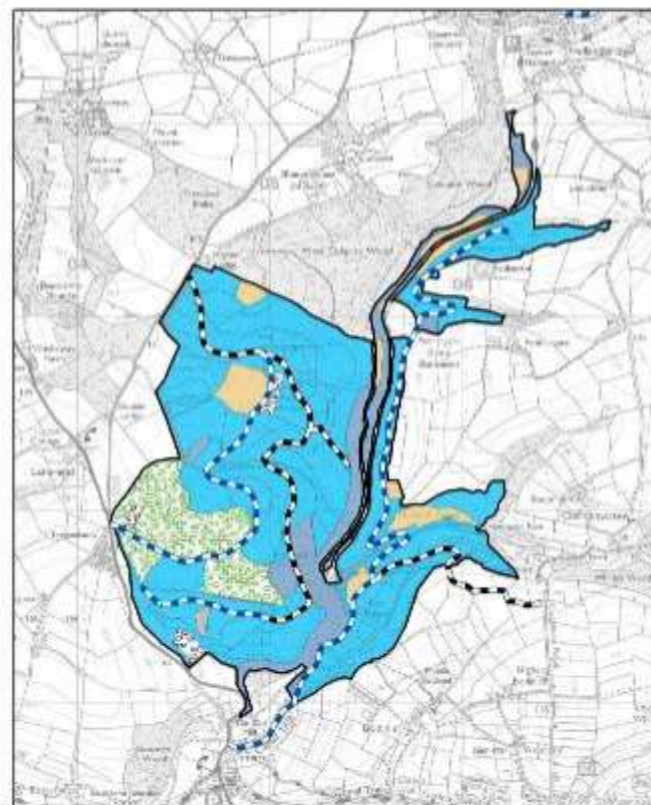
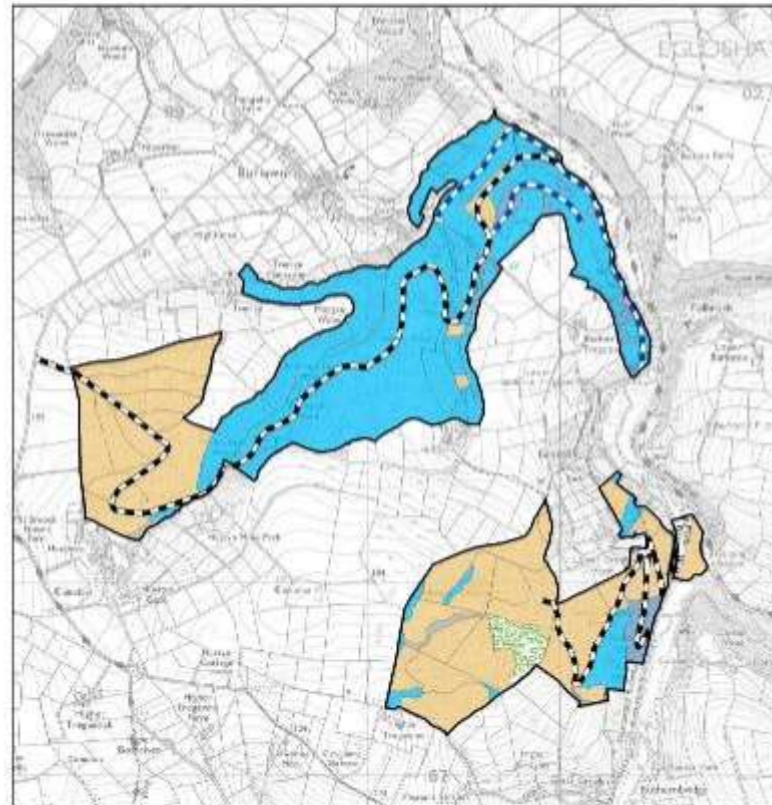
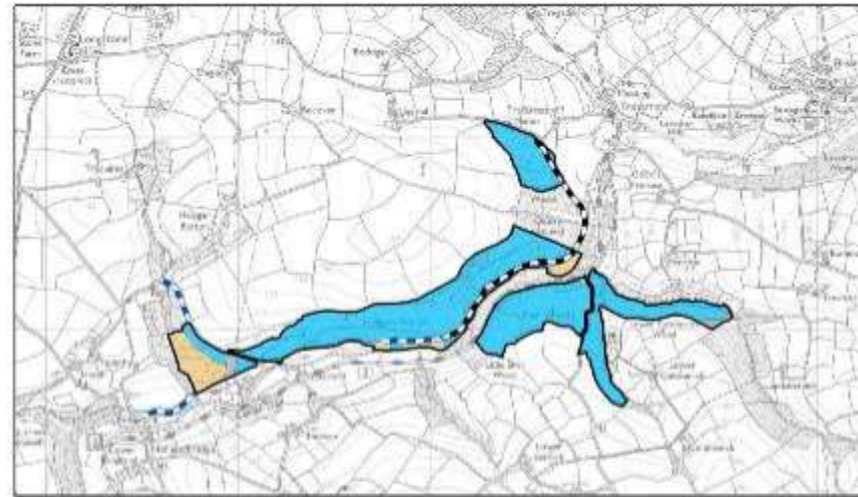


Legend

- Clearfell
- Long Term Retention
- Shelterwoods
- Selections
- Open
- Minimum Intervention
- Natural Reserve



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Silviculture

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.

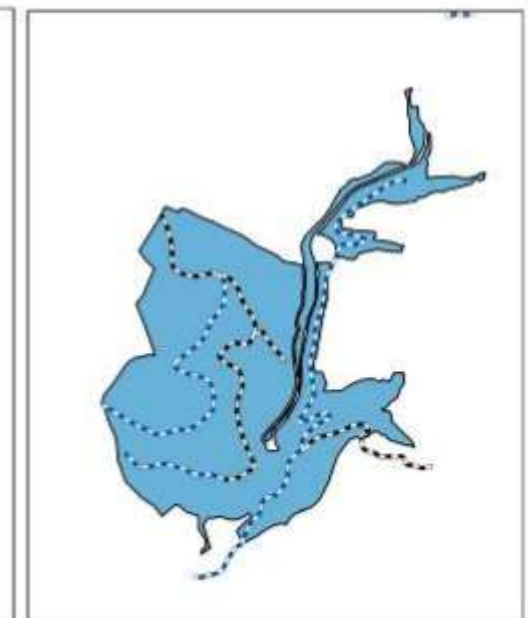
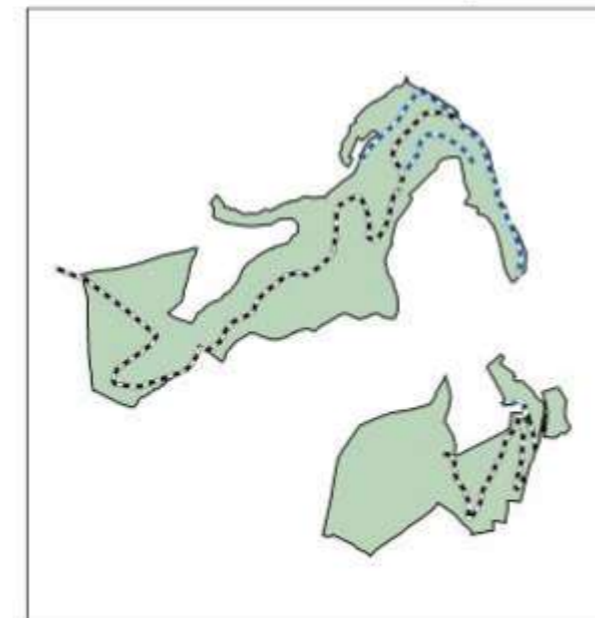
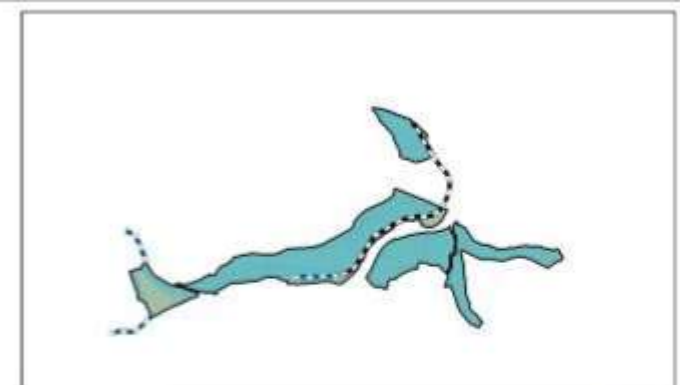
Broadleaf Thinning

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

Legend

- 2018
- 2019
- 2020
- 2021
- 2022
- 2023
- 2024



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 than 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.

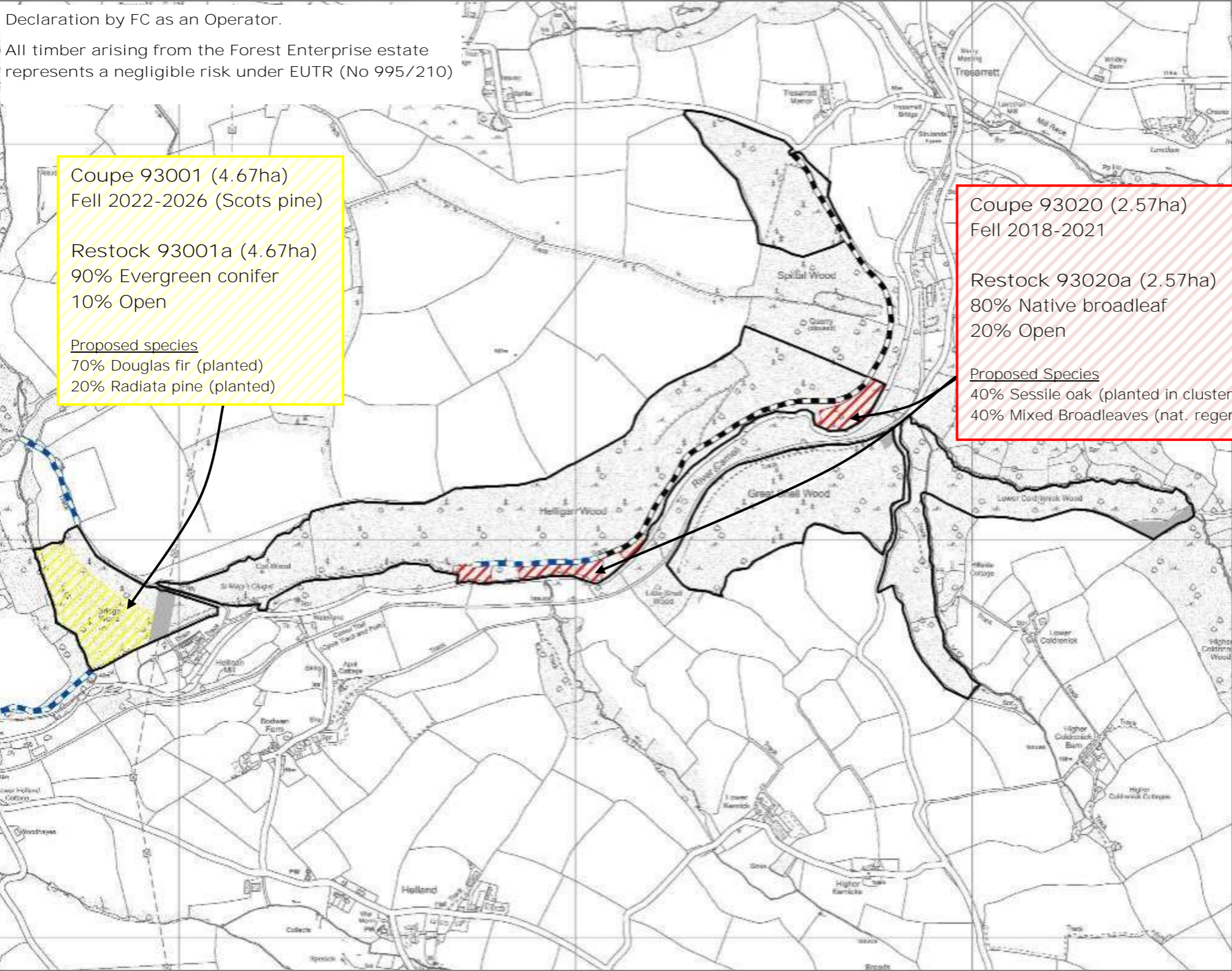
Group shelterwoods are used on windfirm, accessible crops to proactively diversify the woodland structure and composition, possibly through the use of enrichment replanting.



Felling and Restocking Helligan and Shell 2018 - 2028

Declaration by FC as an Operator.

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

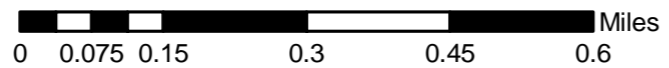


Legend

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

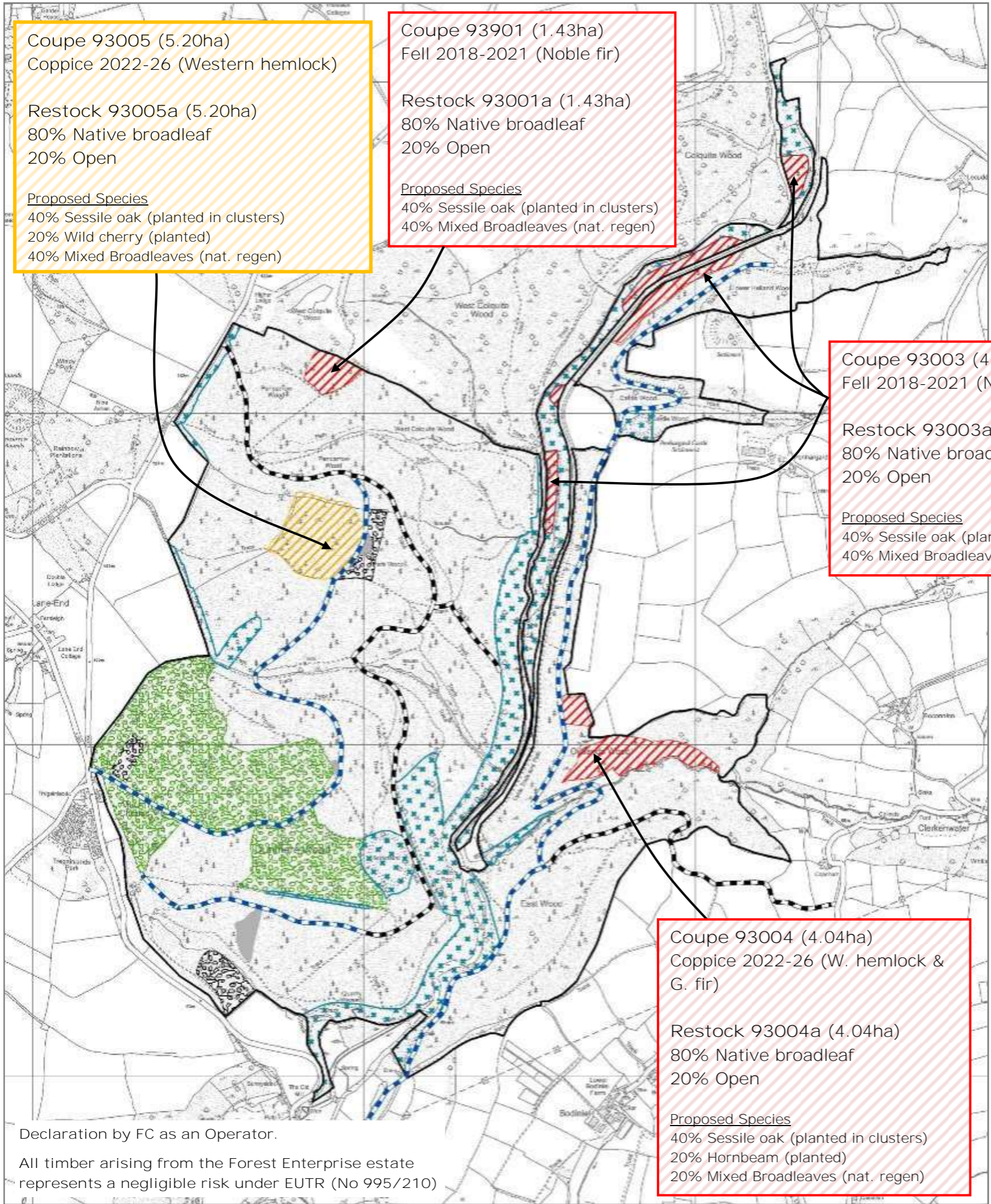
Detailed coupe prescriptions as a result of felling and restocking 2018-28 are outlined on page 36.

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.





Felling and Restocking Dunmere and Eastwood 2018 - 2028



Coupe 93005 (5.20ha)
Coppice 2022-26 (Western hemlock)

Restock 93005a (5.20ha)
80% Native broadleaf
20% Open

Proposed Species
40% Sessile oak (planted in clusters)
20% Wild cherry (planted)
40% Mixed Broadleaves (nat. regen)

Coupe 93901 (1.43ha)
Fell 2018-2021 (Noble fir)

Restock 93001a (1.43ha)
80% Native broadleaf
20% Open

Proposed Species
40% Sessile oak (planted in clusters)
40% Mixed Broadleaves (nat. regen)

Coupe 93003 (4.53ha)
Fell 2018-2021 (Norway spruce)

Restock 93003a (4.53ha)
80% Native broadleaf
20% Open

Proposed Species
40% Sessile oak (planted in clusters)
40% Mixed Broadleaves (nat. regen)

Coupe 93004 (4.04ha)
Coppice 2022-26 (W. hemlock & G. fir)

Restock 93004a (4.04ha)
80% Native broadleaf
20% Open

Proposed Species
40% Sessile oak (planted in clusters)
20% Hornbeam (planted)
20% Mixed Broadleaves (nat. regen)

Legend

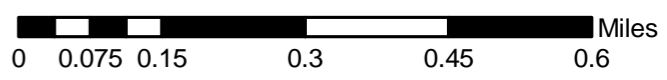
- Fell 2017 - 2021
- Fell 2022 - 2026
- Fell 2027 - 2028
- Retentions
- Minimum Intervention
- Natural Reserve
- Open
- Class A/B Roads
- Class C Roads

Detailed coupe prescriptions as a result of felling and restocking 2018-28 are outlined on page 36.

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)

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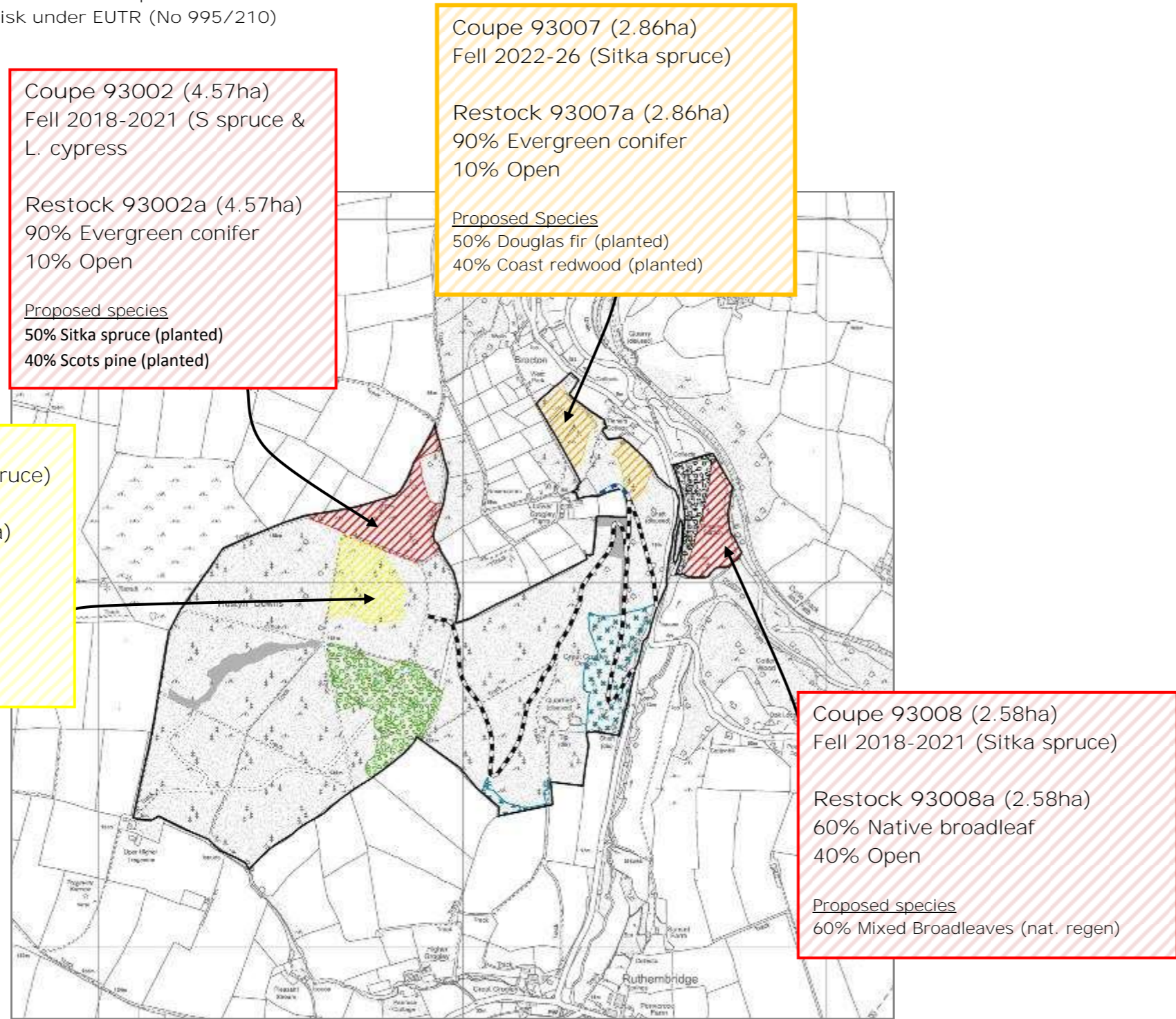




Declaration by FC as an Operator.

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

Felling and Restocking Grogley 2018 - 2028



Coupe 93002 (4.57ha)
Fell 2018-2021 (S spruce & L. cypress)

Restock 93002a (4.57ha)
90% Evergreen conifer
10% Open

Proposed species
50% Sitka spruce (planted)
40% Scots pine (planted)

Coupe 93007 (2.86ha)
Fell 2022-26 (Sitka spruce)

Restock 93007a (2.86ha)
90% Evergreen conifer
10% Open

Proposed Species
50% Douglas fir (planted)
40% Coast redwood (planted)

Coupe 93914 (3.60ha)
Fell 2022-2026 (Sitka spruce)

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

Proposed species
50% Sitka spruce (planted)
40% Noble fir (planted)

Coupe 93008 (2.58ha)
Fell 2018-2021 (Sitka spruce)

Restock 93008a (2.58ha)
60% Native broadleaf
40% Open

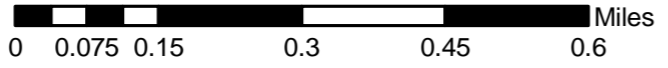
Proposed species
60% Mixed Broadleaves (nat. regen)

Legend

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

Detailed coupe prescriptions as a result of felling and restocking 2018-28 are outlined on page 36.

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.





Felling and Restocking Grogley 2018 - 2028

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

Coupe 93031 (8.16ha)
Fell 2018-2021 (Sitka spruce)

Restock 93031a (8.16ha)
90% Evergreen conifer
10% Open

Proposed species
90% Sitka spruce (nat. regen.)
Leyland cypress (enrich)

Coupe 93032 (6.23ha)
Fell 2022-26 (Sitka spruce)

Restock 93032a (6.23ha)
90% Evergreen conifer
10% Open

Proposed species
90% Sitka spruce (nat. regen.)
Nobile fir (enrich)

Coupe 93105 (1.39ha)
Fell 2022-26 (Douglas fir)

Restock 93105a (1.39ha)
80% Native broadleaf
20% Open

Proposed Species
80% Mixed Broadleaves (nat. regen)

Coupe 93089 (2.54ha)
Fell 2022-26 (L. cypress and w. hemlock)

Restock 93089a (2.54ha)
80% Native broadleaf
20% Open

Proposed Species
40% Sessile oak (planted in clusters)
20% Wild service (planted)
20% Mixed Broadleaves (nat. regen)

Coupe 93101 (0.98ha)
Fell 2022-26 (Lawson's cypress)

Restock 93101a (0.98ha)
100% Native broadleaf

Proposed Species
80% Mixed Broadleaves (nat. regen)

Coupe 93070 (6.32ha)
Fell 2018-2021 (Sitka spruce)

Restock 93070a (6.32ha)
90% Evergreen conifer
10% Open

Proposed species
90% Sitka spruce (planted)

Coupe 93083 (3.66ha)
Fell 2022-26 (Sitka spruce)

Restock 93083a (3.66ha)
90% Evergreen conifer
10% Open

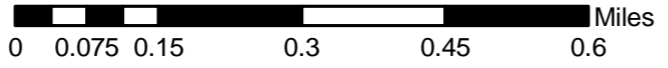
Proposed species
90% Sitka spruce (nat. regen.)
Leyland cypress (enrich)

Legend

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

Detailed coupe prescriptions as a result of felling and restocking 2018-28 are outlined on page 36.

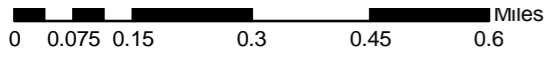
NB. Whilst 'Restock Proportion' is often prescribed at 100% Evergreen Conifer the use of suitable broadleaves to build in resilience and utilise site conditions is anticipated and in places is proposed.



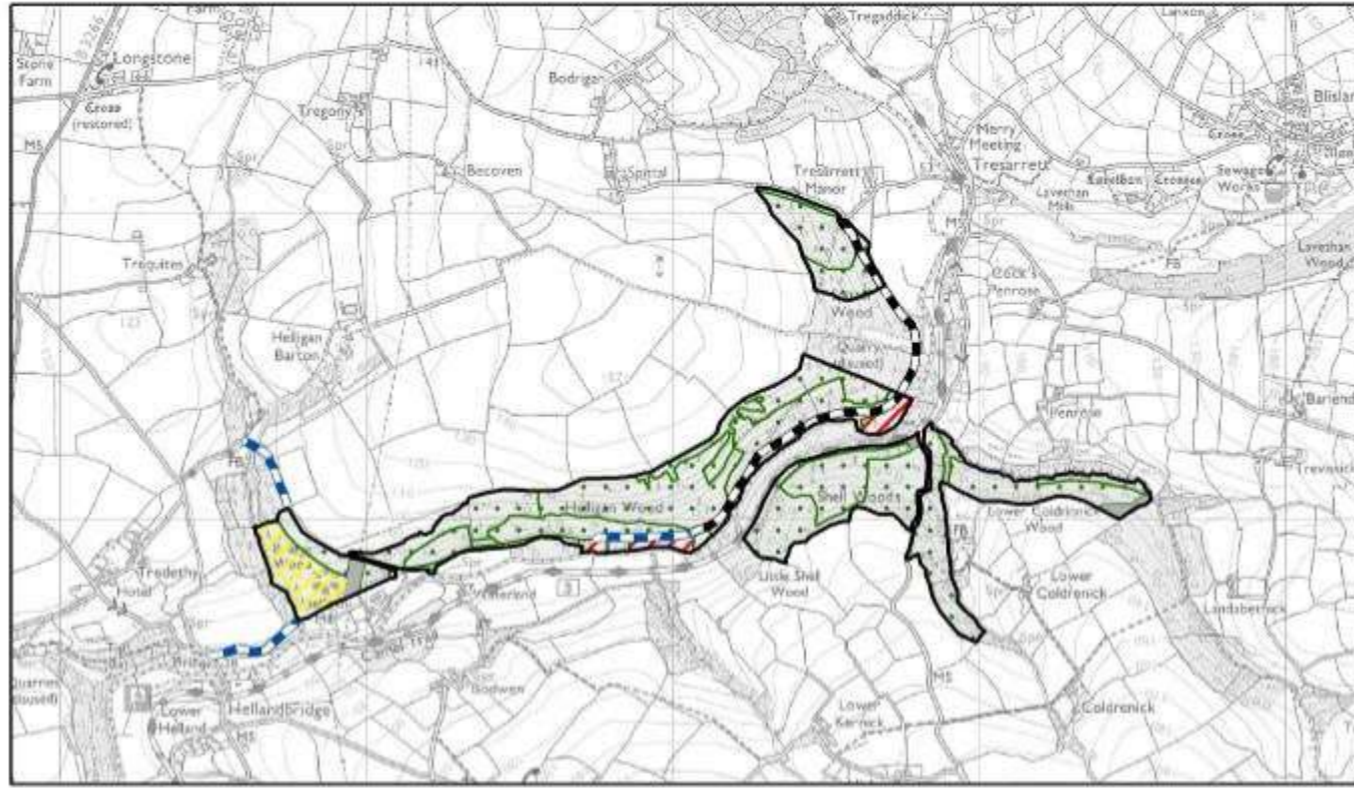


Legend

- Alternatives to Clearfell
- Fell 2018 - 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

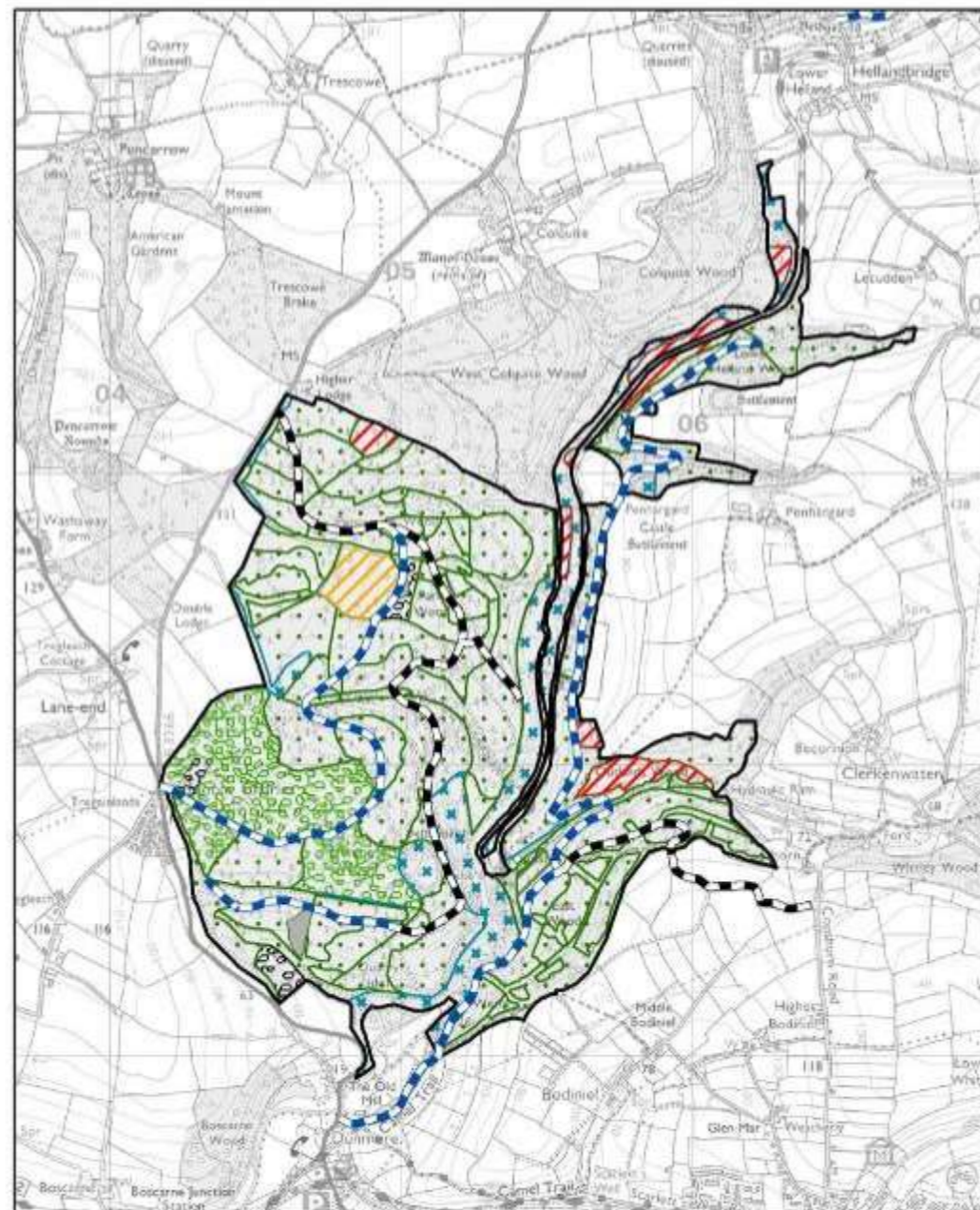
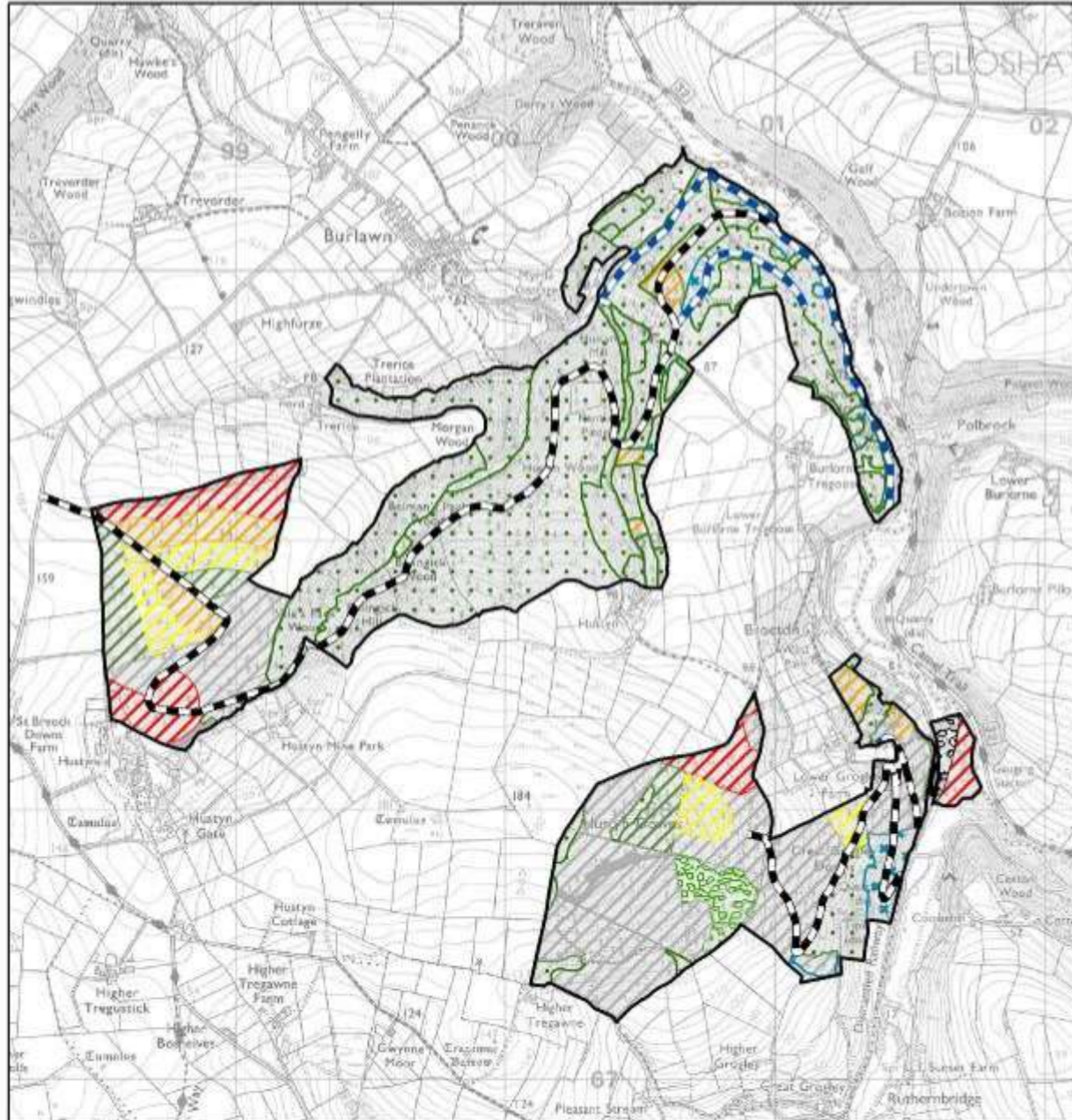


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Ordnance Survey [100021242]



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.



Declaration by FC as an Operator.

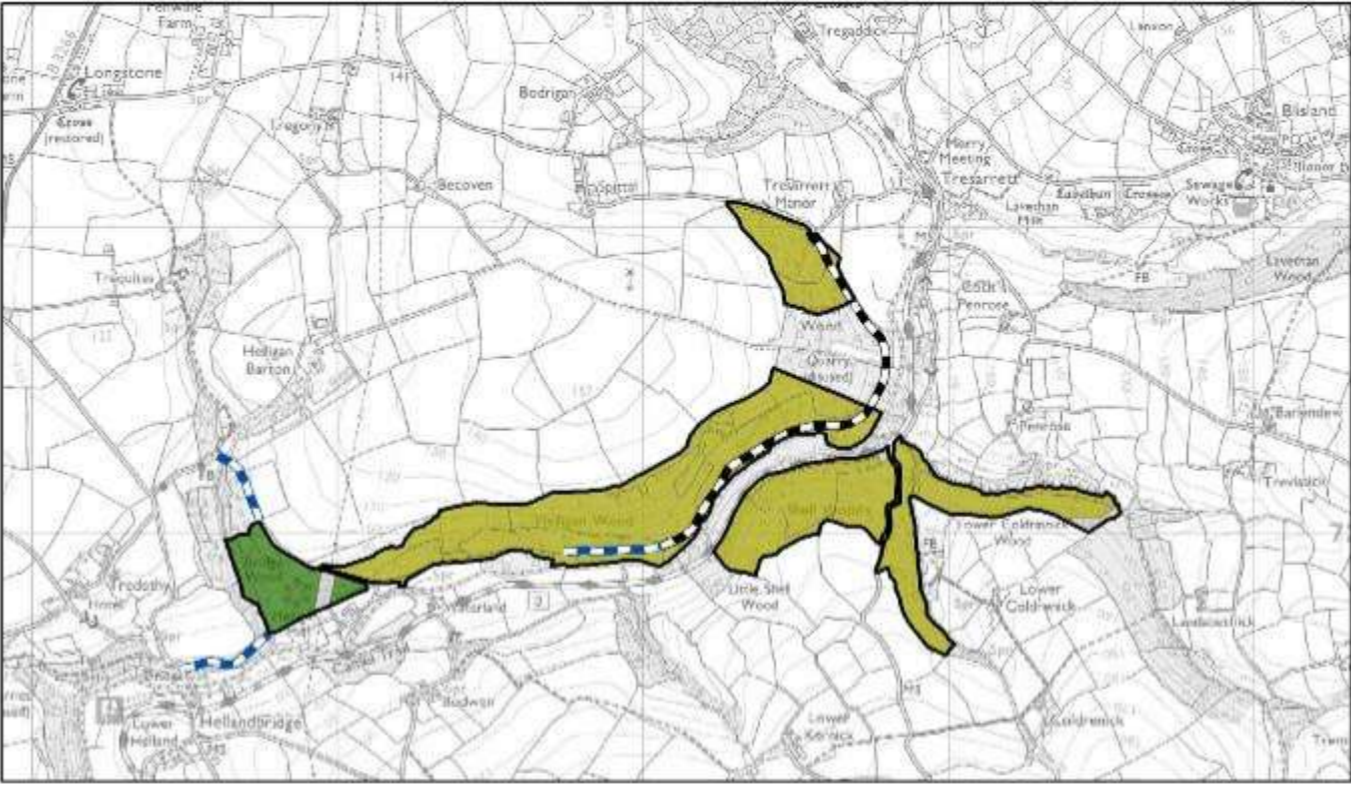
All timber arising from the Forest Enterprise estate represents a negligible risk under EUTR (No 995/210)



Legend

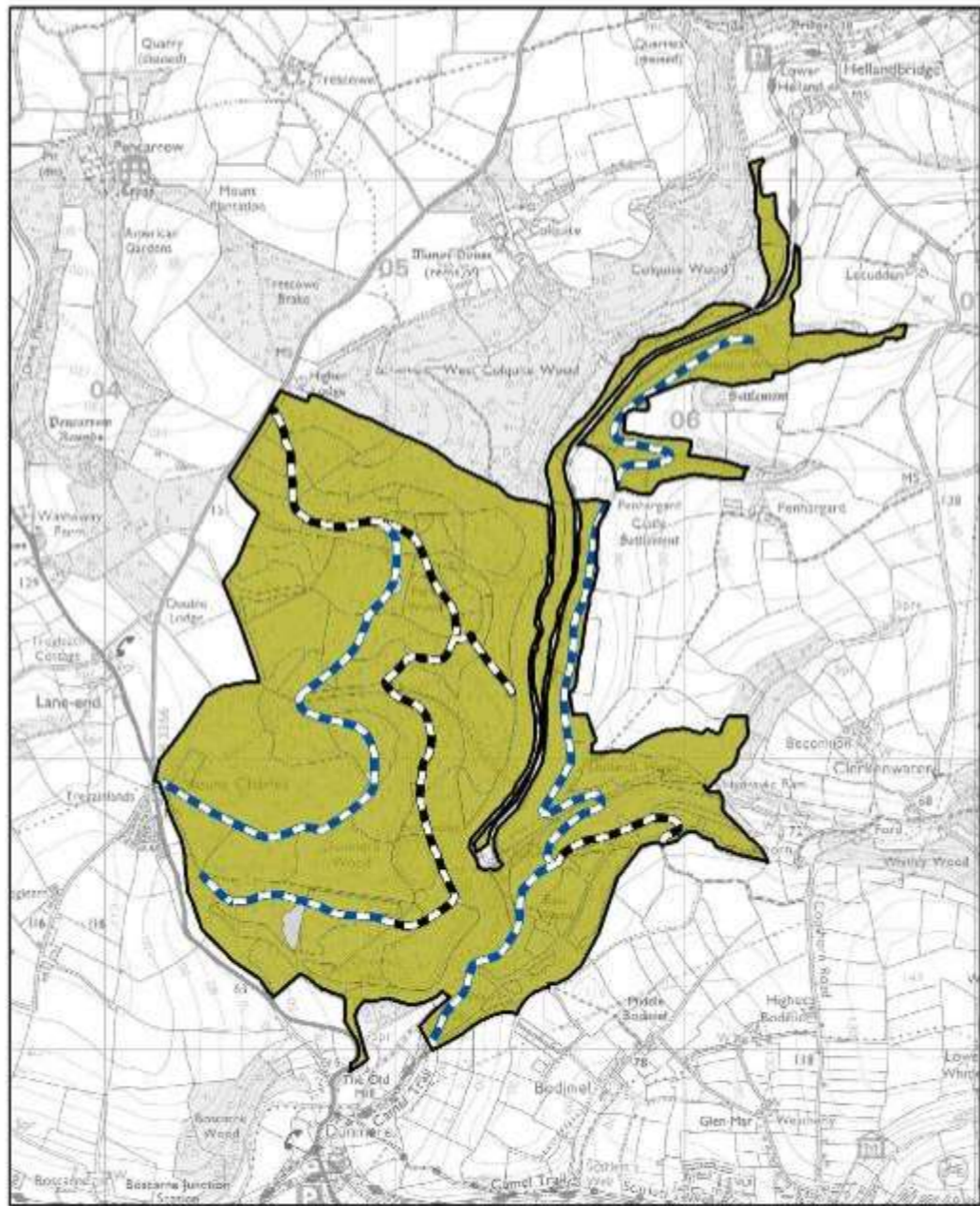
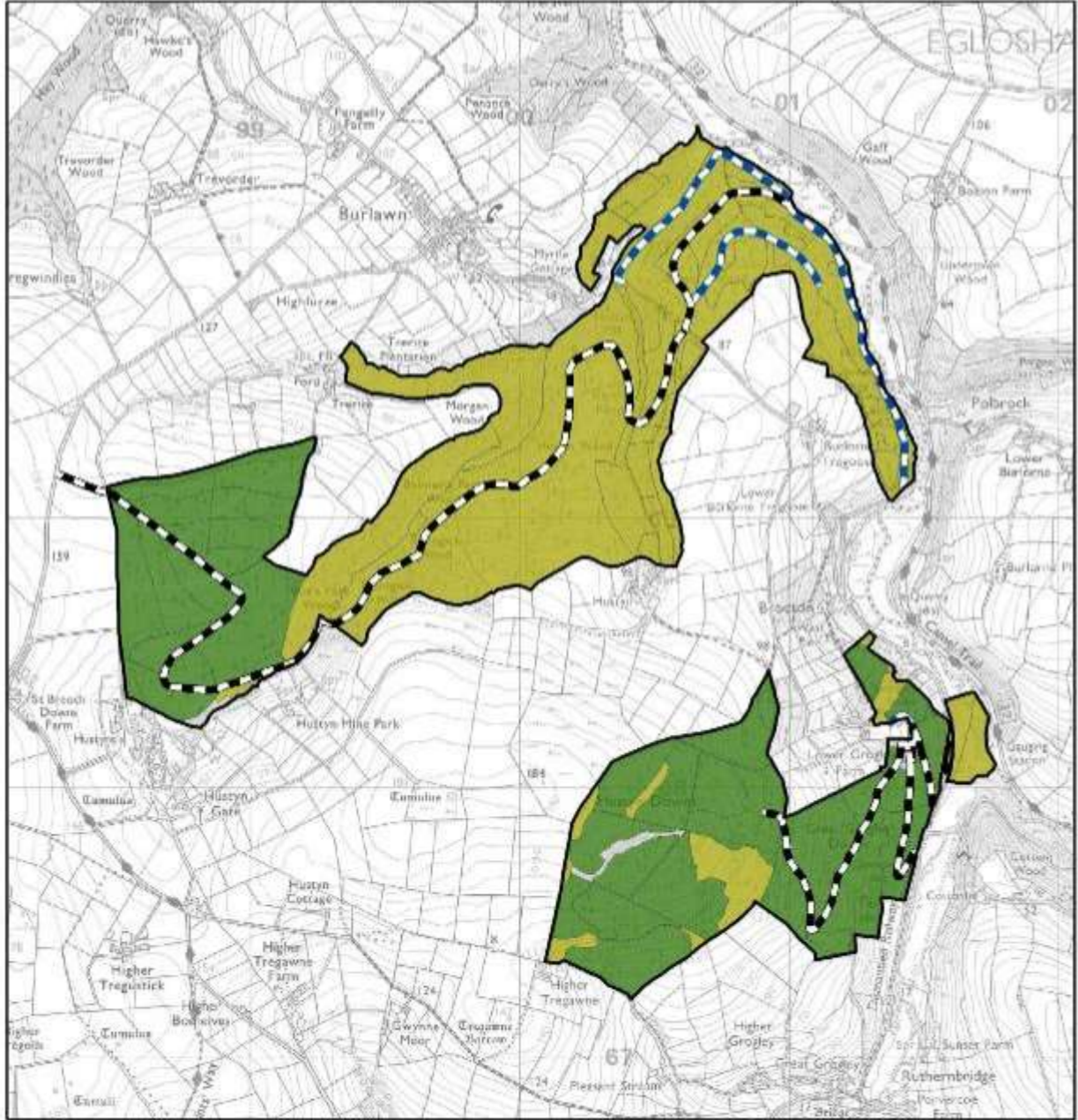
- Conifer dominated forest
 - Broadleaf dominated forest
 - Open/other
 - Class A/B Roads
 - Class C Roads
- Miles
0 0.075 0.15 0.3 0.45 0.6

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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.



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

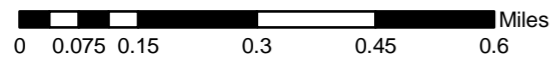


Declaration by FC as an Operator.

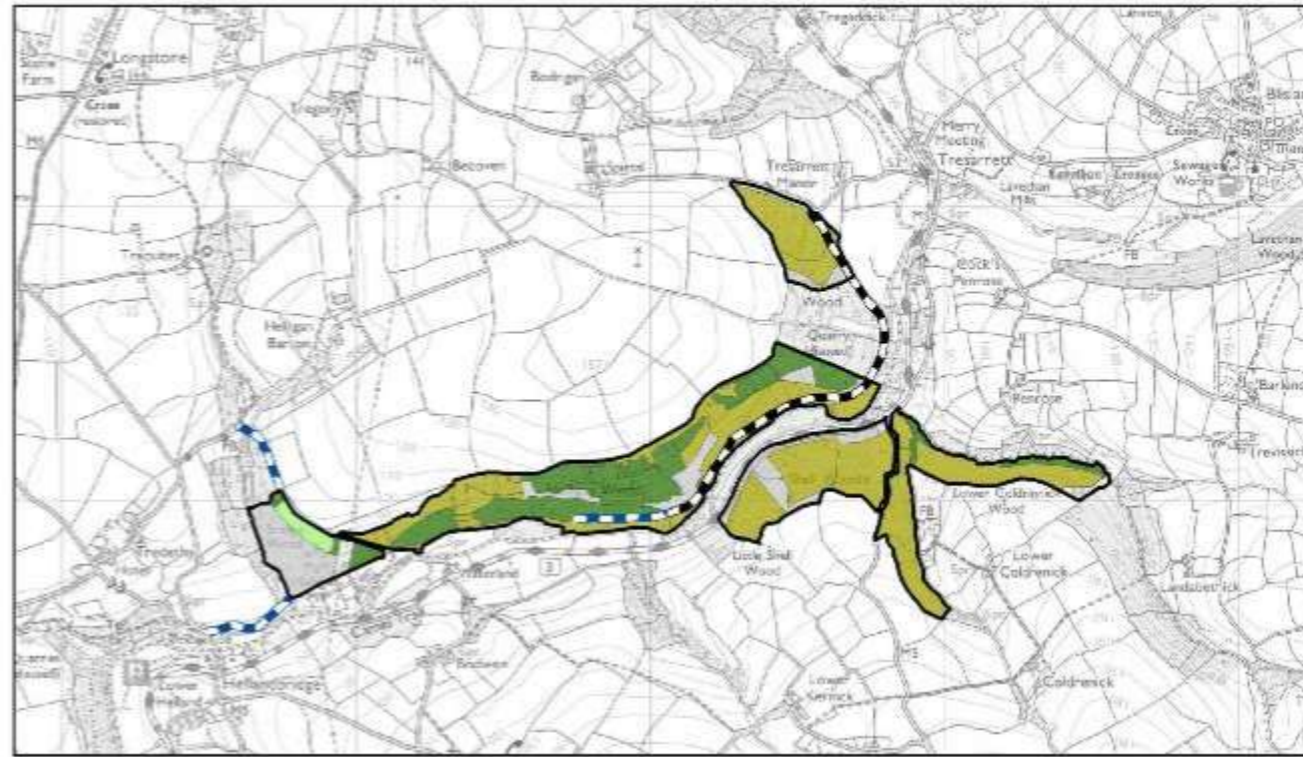
All timber arising from the Forest Enterprise estate represents a negligible risk under EUTR (No 995/210)

Legend

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

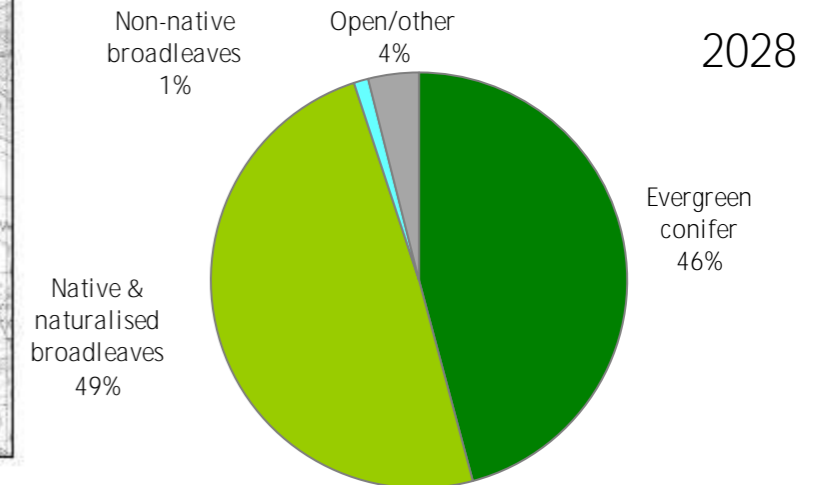
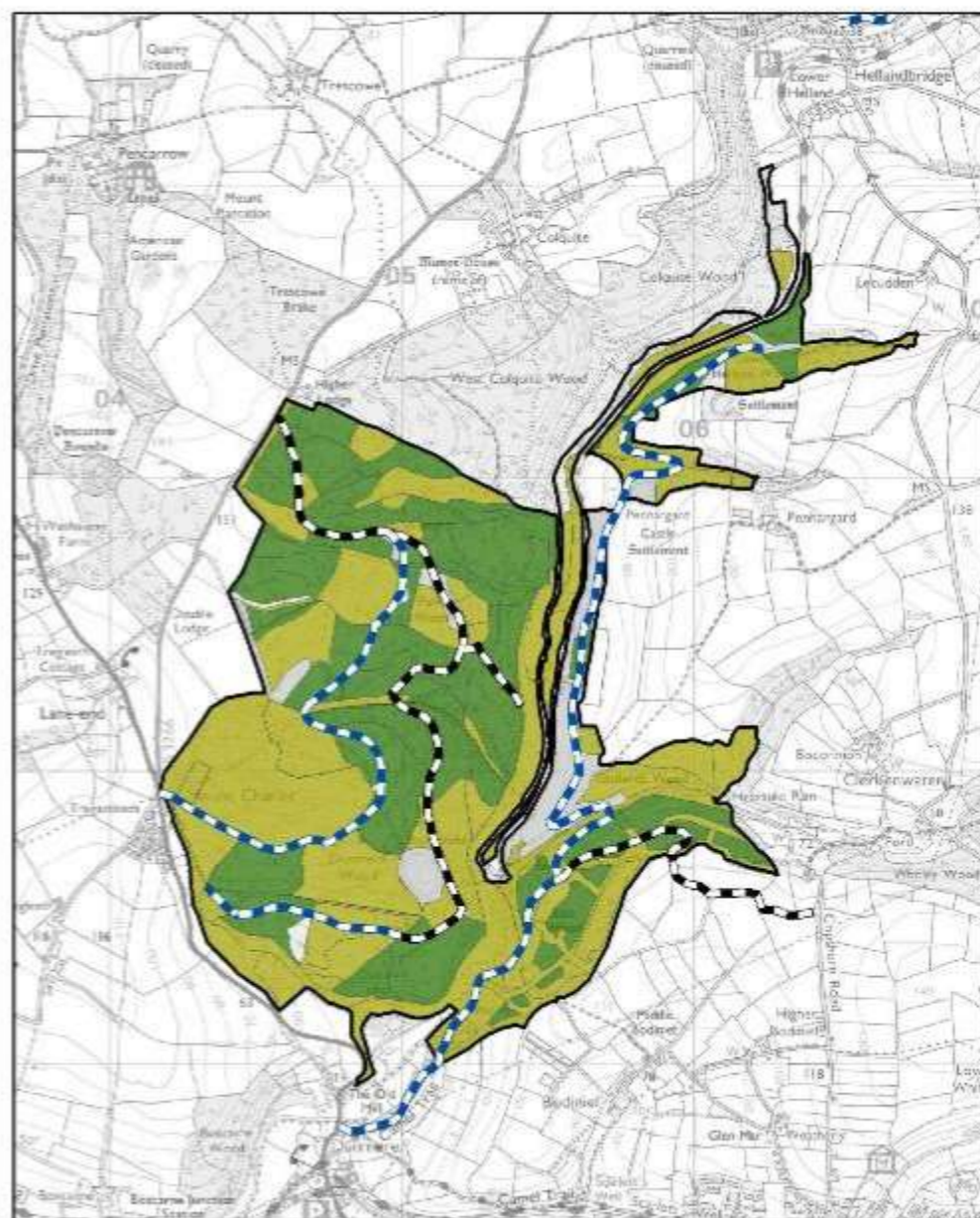
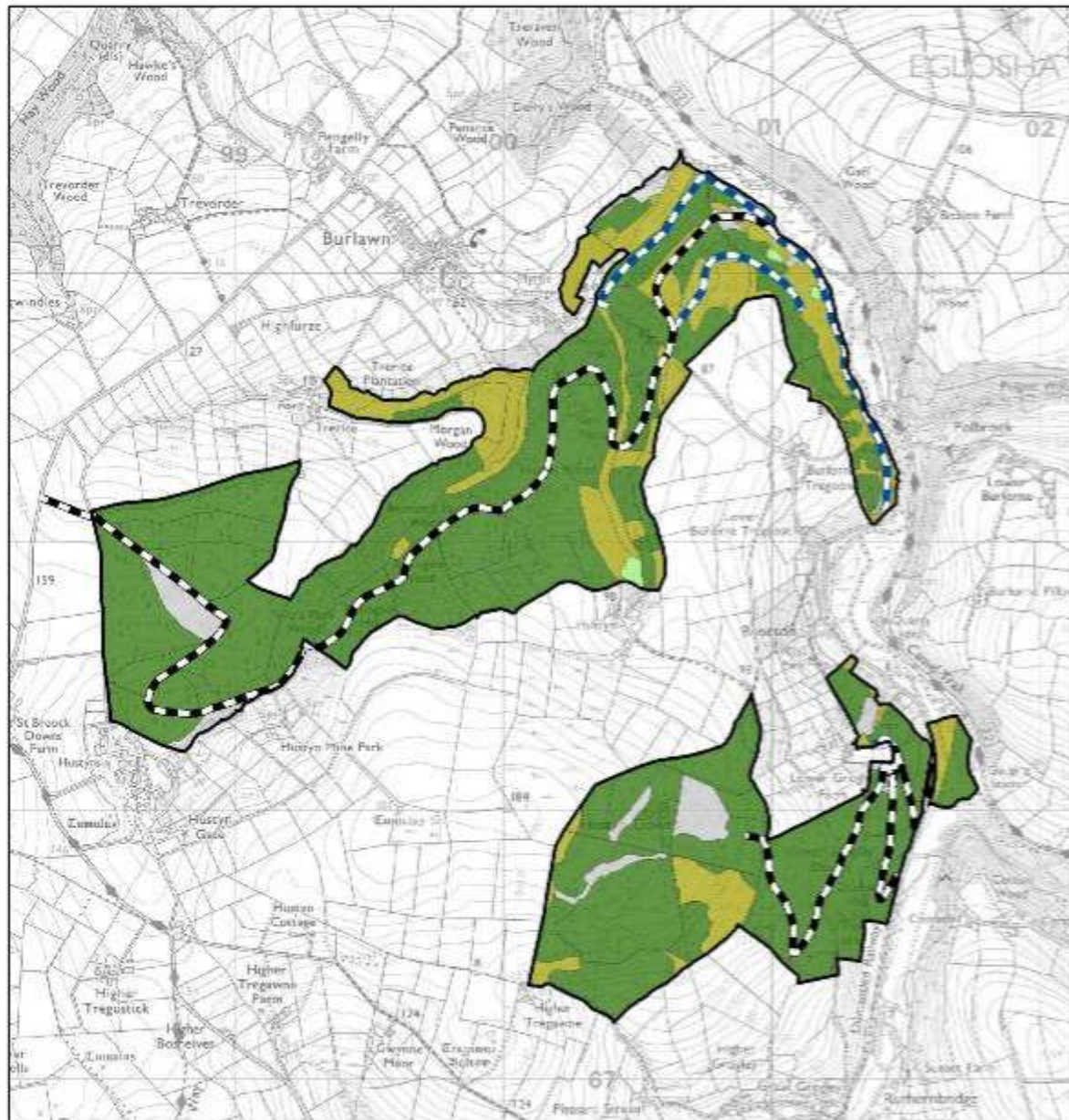


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**Indicative Future Species
2028**

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.



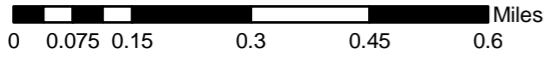


Declaration by FC as an Operator.

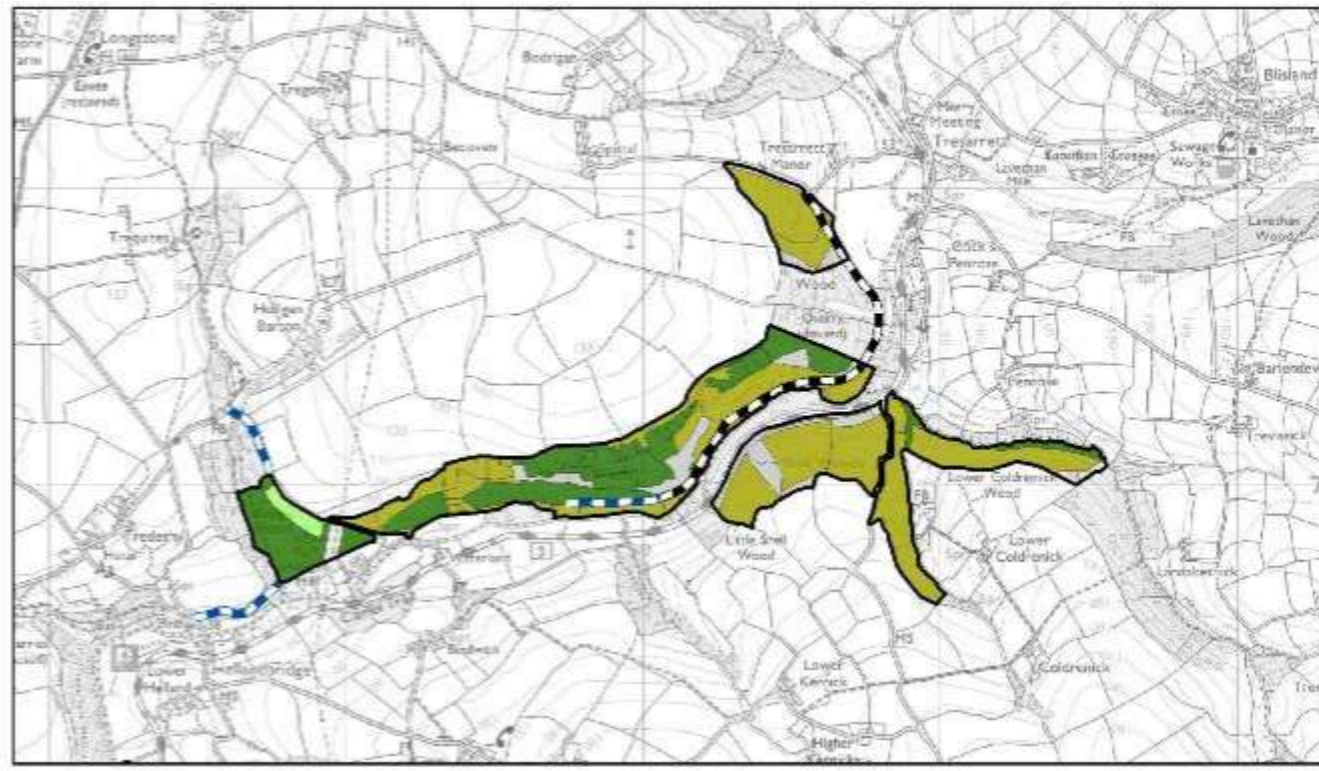
All timber arising from the Forest Enterprise estate represents a negligible risk under EUTR (No 995/210)

Legend

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

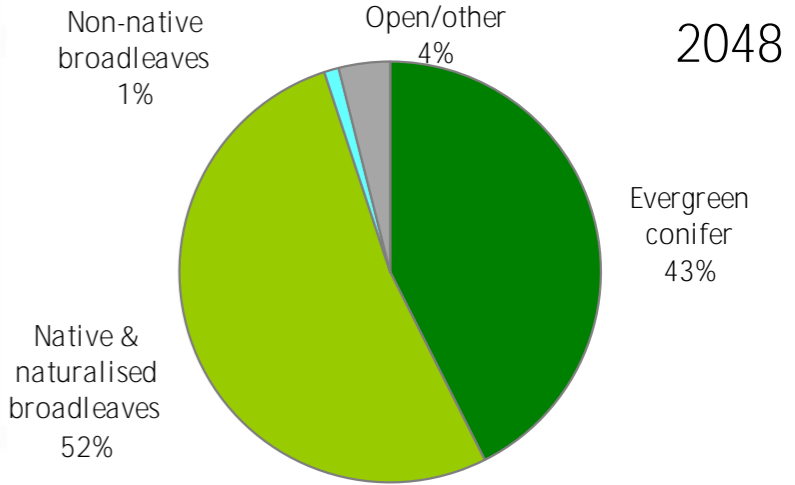
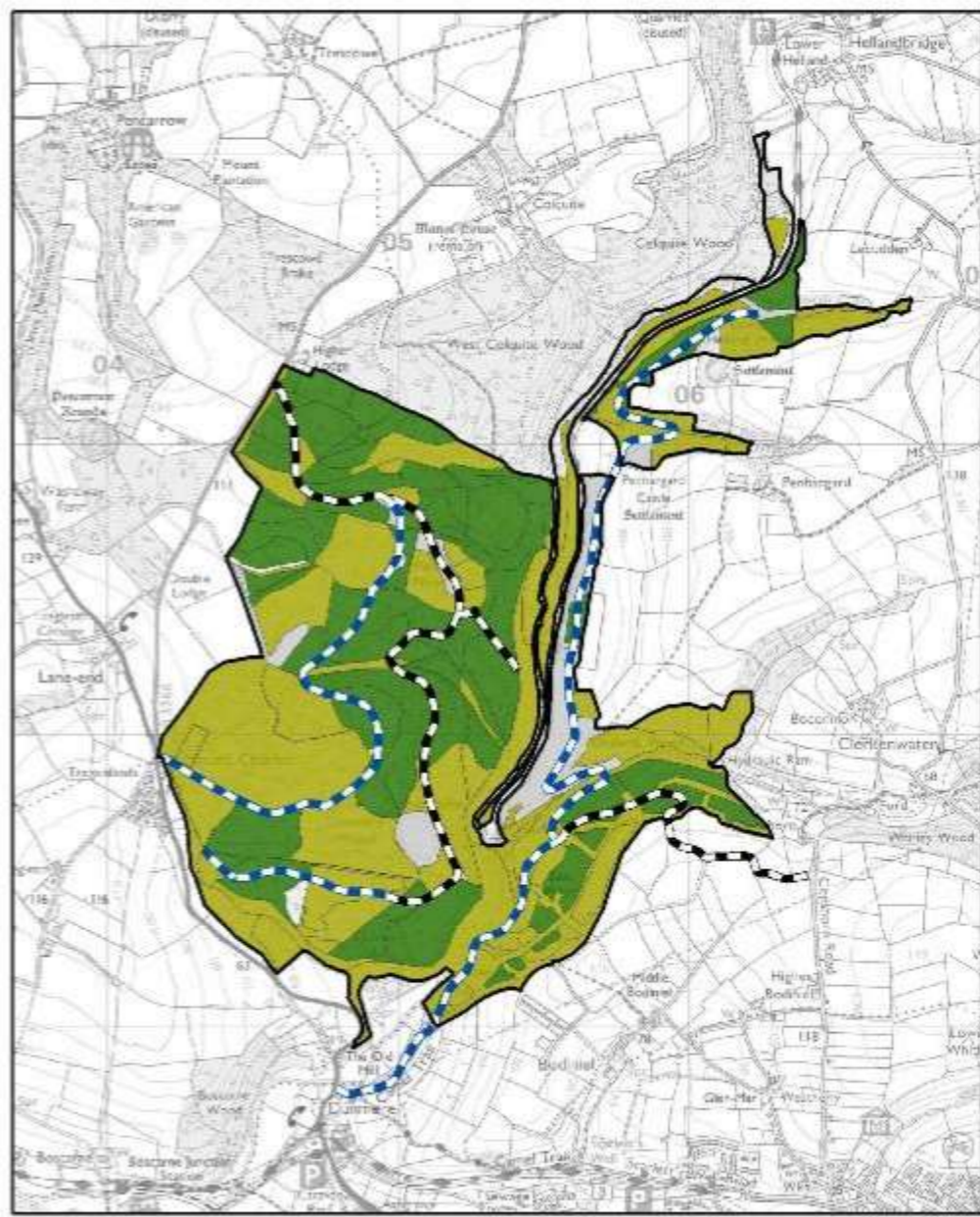
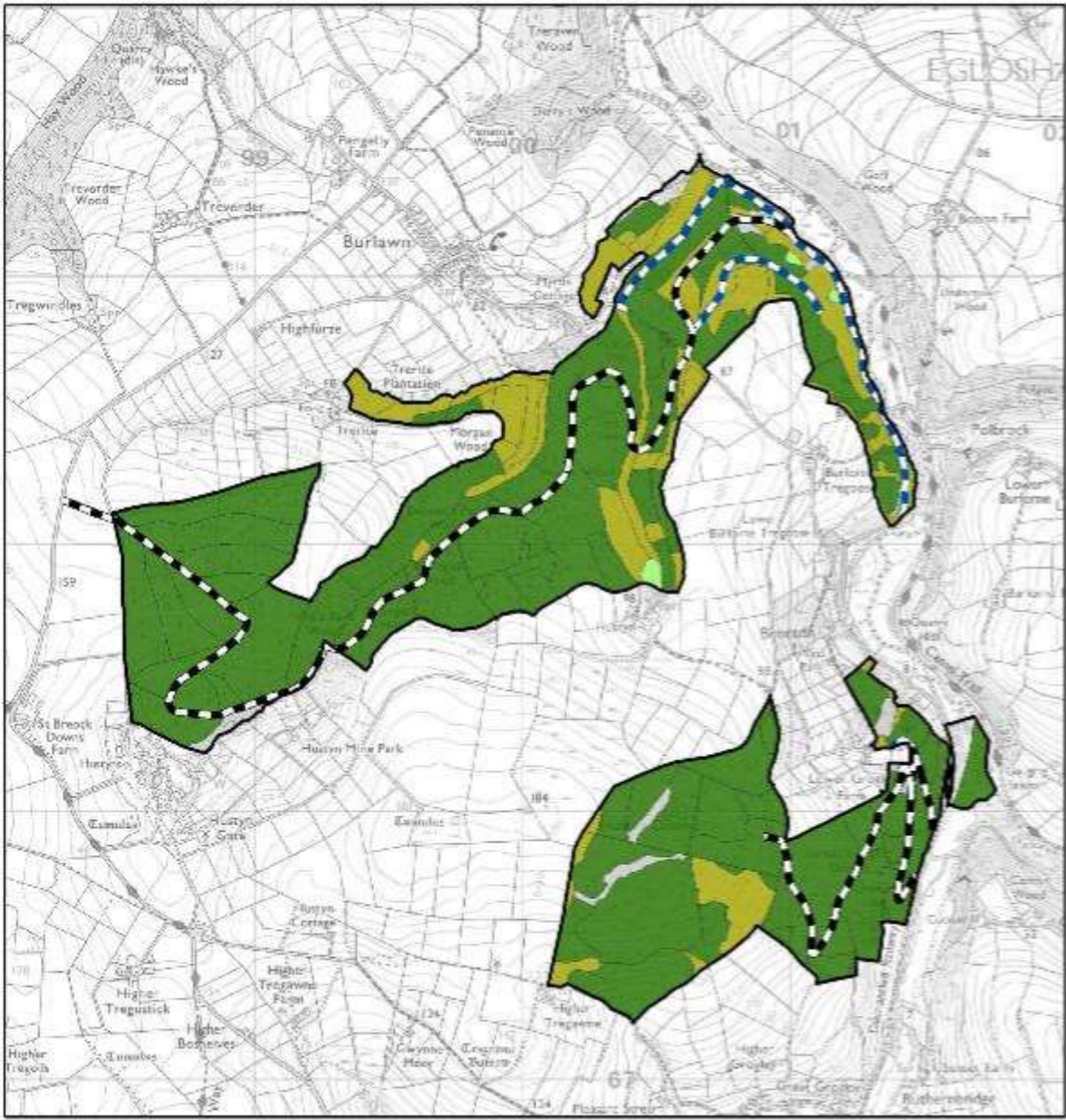


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Indicative Future Species 2048

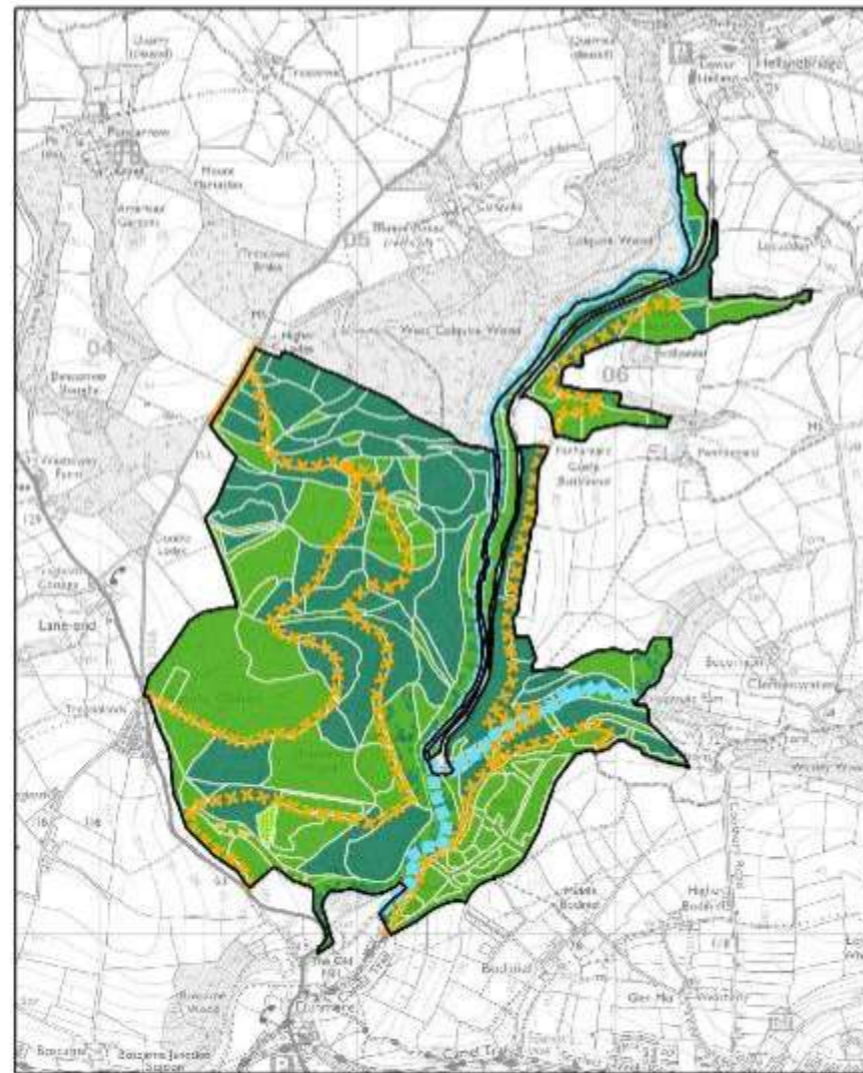
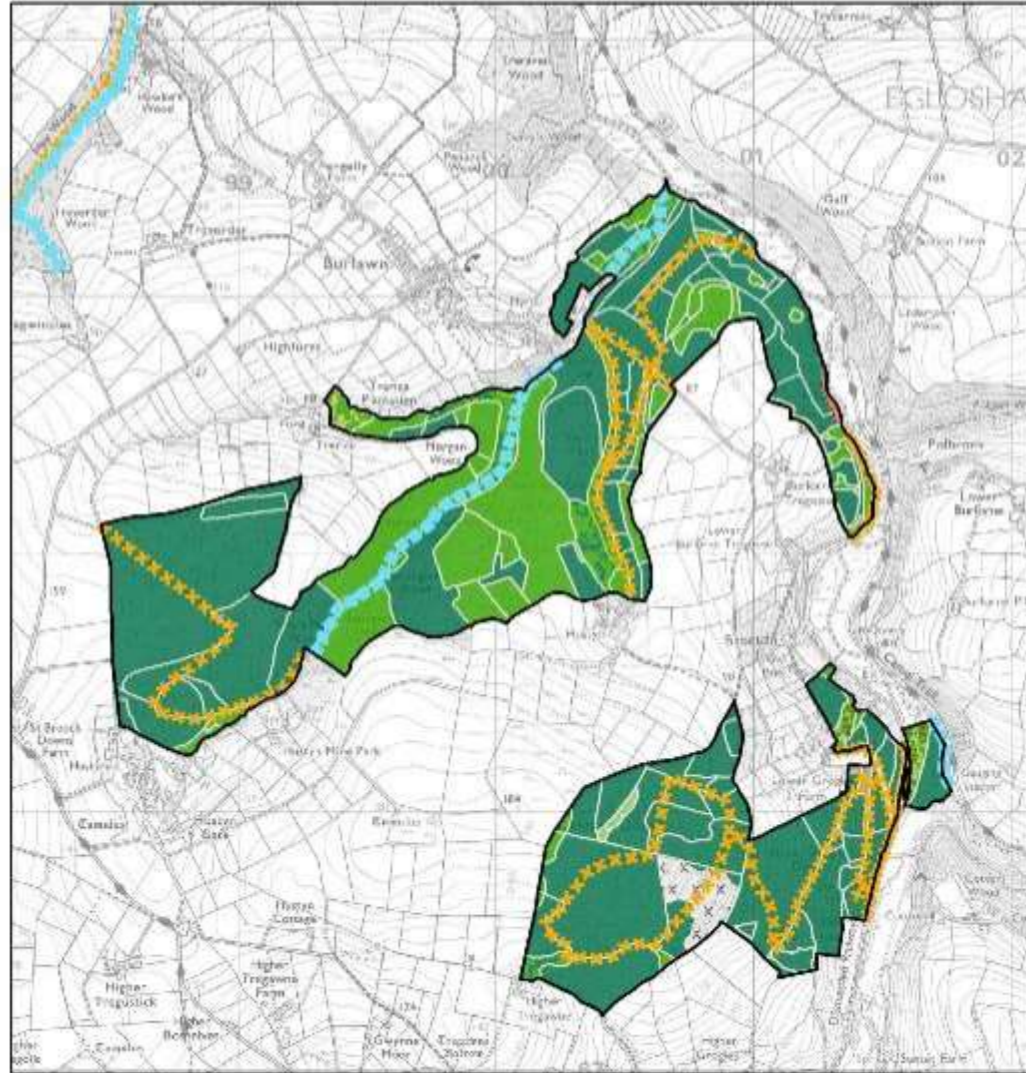
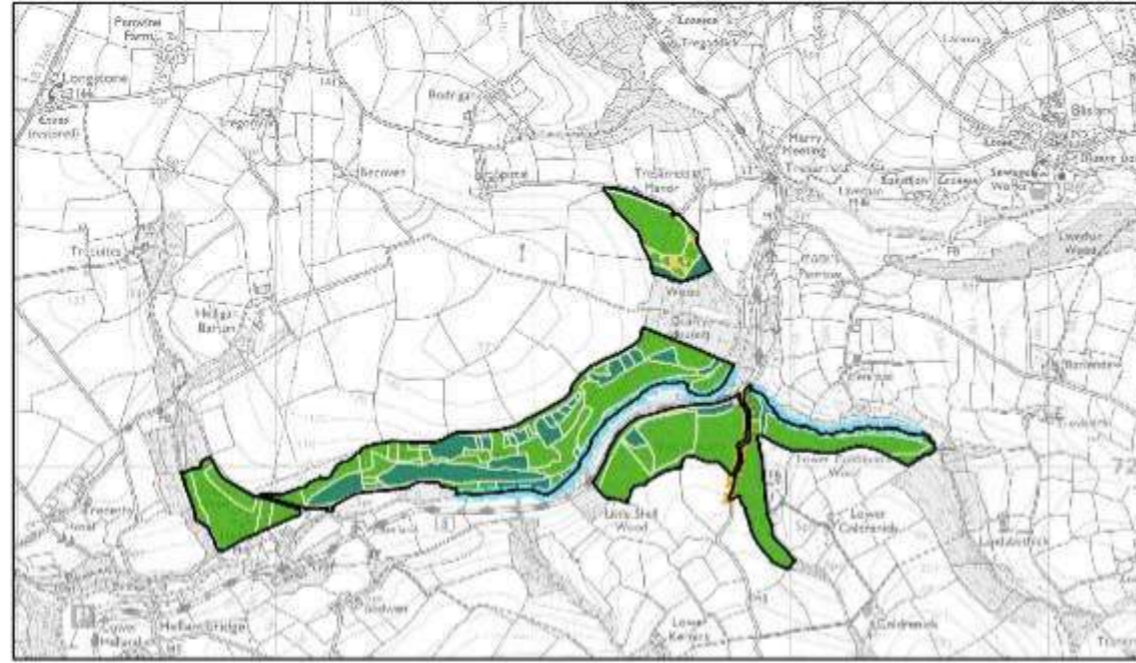
The projections made are indicative of species composition in thirty years time. They do not constitute a guarantee and merely act as an indicator of how the vision for the Plan area will be delivered over time.





Legend

- BROADLEAVED; MIXED/YEW WOODLANDS
- CONIFEROUS WOODLANDS
- BOUNDARY & LINEAR FEATURES
- IMPROVED GRASSLAND
- NEUTRAL GRASSLAND
- Upland mixed ashwoods
- Wet woodland
- Lowland mixed deciduous woodland
- Moorland & Heathland
- Streamsides
- Tree hedges, belts & groups
- Forest & Public Roads & Utility Wayleaves
- Windfirm & Graded Edges



Conservation - Habitats

Wet Woodland Habitats

The streamsides and wet woodland found at the bottom of hollows and small valleys remain predominantly alder and 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 of crop edges through felling and unstocking of edges following felling operations to create a mixed transient open and scrubby habitat for a multitude of warmth loving species including butterflies, day flying moths and adders. In practice this means that regenerating vegetation on road sides will be regularly cut where access is easiest to create a dynamic edge habitat. 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 develop in senescent habitats. A variety of deadwood will be retained according to the level of ecological value and in line with Guidance, i.e. PPG 8 and Humphrey & Bailey, 2012. Retaining decaying snags and logs as well as senescent trees throughout the forest will create suitable deadwood habitat for numerous associated species including bats, raptor and saproxylic invertebrates.

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 and pedunculated 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. This will be achieved partially through thinning, which 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 conifer will ensure that this habitat is maintained and used as a building block for future native broadleaf restoration.



Conservation – Natural and Cultural Heritage 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.

Raptor - particularly buzzard and sparrowhawk, are known to roost and hunt within the forest areas. Many of the species choose to rest in high well branched conifer trees and then feed over open ground, making the forests ideal raptor habitat in an otherwise minimally treed landscape. The management of appropriate large or potentially large trees for long retentions will ensure that habitat provision is maintained.

Otter - are known to use the full length of the River Camel and its tributaries and is widespread across most rivers in Devon and Cornwall. This protected species experienced a decline in previous decades but has recovered well in the south west of England. They inhabit streamside and wetland areas and the riparian woodland habitats found within the Plan area are ideal for nesting otter. The management of riparian wet woodland where a light touch intervention will be employed will ensure that a lush diversity of open space, scrub and high forest will ensure otter habitat is preserved to support this species.



Source: Forestry Commission

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) as well as a number of specimen wild service 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).

Salmon and Bullhead - are found in the rivers that dissect the woodlands. They are incredibly water temperature sensitive and therefore the management of shade in riparian zones will ensure that streamside are not over-exposed to light. Removal of heavy shade casting non-native conifers will deliver transient areas of shade and open clearing streamside and thus enhance the ecosystem functioning of the riparian zone.



Source: Environment Agency

Nightjar - is a nationally rare bird and the Camel Valley forests support a contingent of the south west England population. The bird nests in freshly cleared areas, most notably clearfell sites. The provision of both permanent and transient open space through rotation clearfelling and scrubby open space creation will continue to support this important species into the future.



Source: Forestry Commission

Heritage features - are found across the Plan area, demonstrating its rich cultural significance. Camel Valley contains a significant collection Bronze Age barrows around Hustyn Downs. Scheduled hillforts at Dunmere and Penhargard are also indicators of the rich heritage landscape.

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. All unscheduled monuments** will be identified and treated sympathetically at the time of operation in consultation with the County Archaeology team.

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).



Source: Forestry Commission



Water & Riparian Management

Riparian Management

All watercourses and riverine areas will be managed 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 an 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.

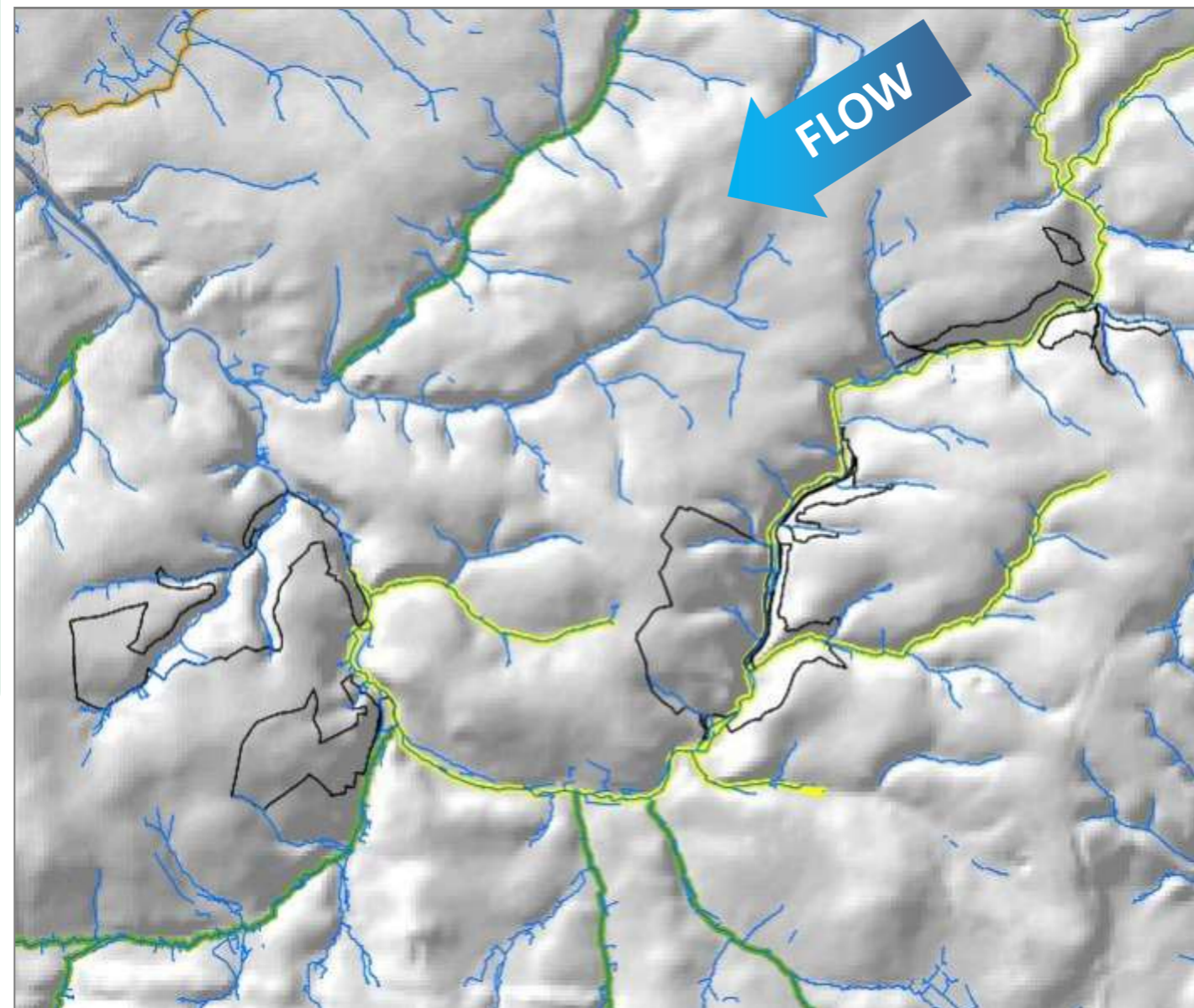
The Camel Valley Plan area is a component of the Camel catchment therefore soil stabilisation and surface runoff, retaining forest cover and a move towards continuous cover systems together with maintained drains and water storage will ensure this continues to slow down peak flows into the future.

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
- High
- Good
- Moderate
- Bad
- Poor

Environment Agency Grading

North Cornwall, Seaton, Looe and Fowey Basin

This catchment is characterised by its spectacular rocky coastline and rural character, ranging from open moorland to intensive horticultural use. Major towns include Bodmin, Newquay, Wadebridge and Bude. Bodmin and Newquay have been identified as potential growth points with Newquay recently receiving new growth point funding.

This area is the focus for much of Cornwall's tourist industry. A number of fishing ports still exist here, but the pleasure boat industry has become more significant in recent years. The River Camel is an ecologically important river designated as a Special Area of Conservation. There is no heavy industry in the catchment, but there is a legacy of historic mining activity.

There are 99 river water bodies in the catchment, with a combined length of almost 600 km, and four lakes. Currently, 36 per cent of these waters (219 km or 37 per cent of river length, but none of the lakes) achieve good or better ecological status/potential. Rivers at good status include the upper Fowey and large parts of the River Camel. 58 per cent of surface waters assessed for biology are at good or high biological status now. The main reasons for less than good status are, in order, impacted fish communities, physical modifications, and high levels of copper, phosphate and zinc.

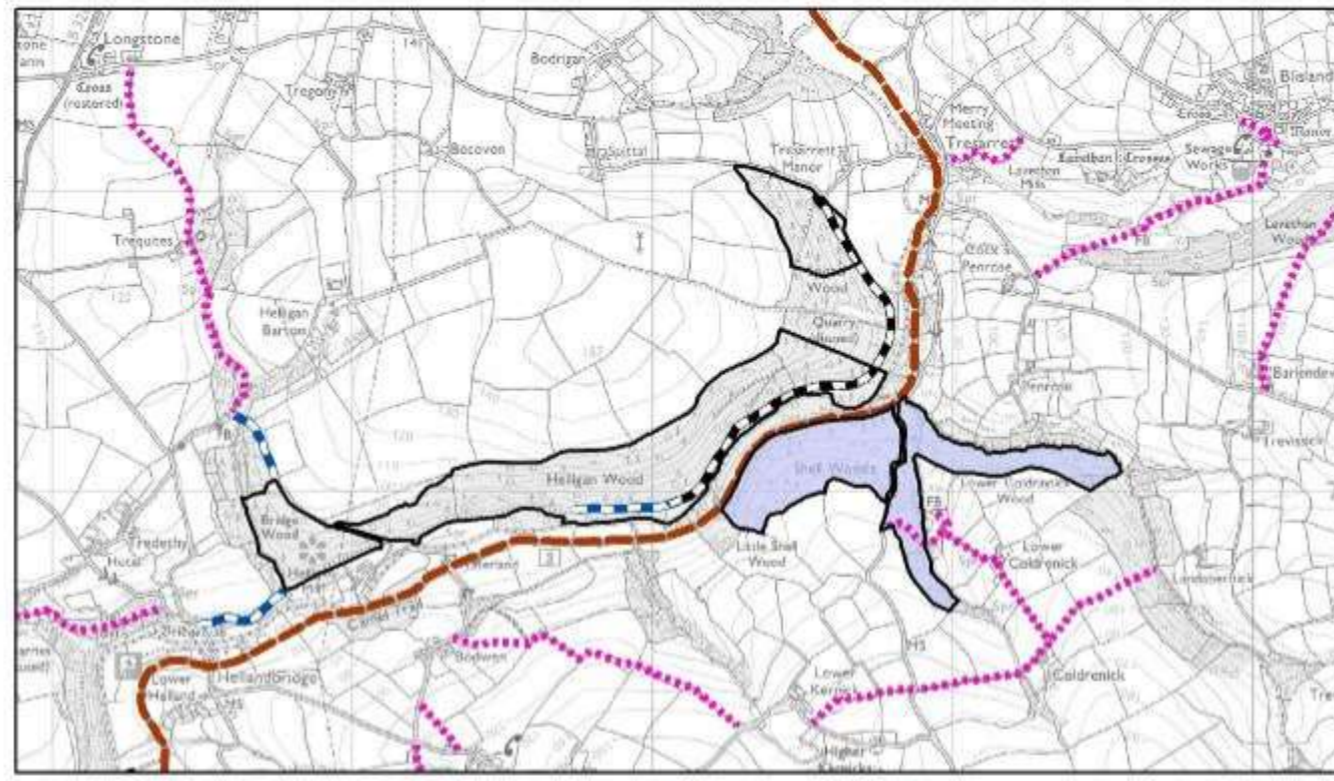
By 2015, 16 per cent of surface waters in this catchment will improve for at least one element of good status. Nine river water bodies will improve to good status, including six that currently fail because of impacts on the fish population. These are the River Neet (Middle) and Week St Mary Stream, Jacob Stream, Upper River Amble, Issey Brook (Camel) and the Warleggan River. As a result of these improvements, 44 per cent of surface water bodies will achieve good ecological status by 2015, an increase of 9 per cent.



Legend

- Open Access
 - Footpath
 - Bridleway
 - Byway
 - Camel Trail
 - Class A/B Roads
 - Class C Roads
- Miles
0 0.075 0.15 0.3 0.45 0.6

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Recreation and Access

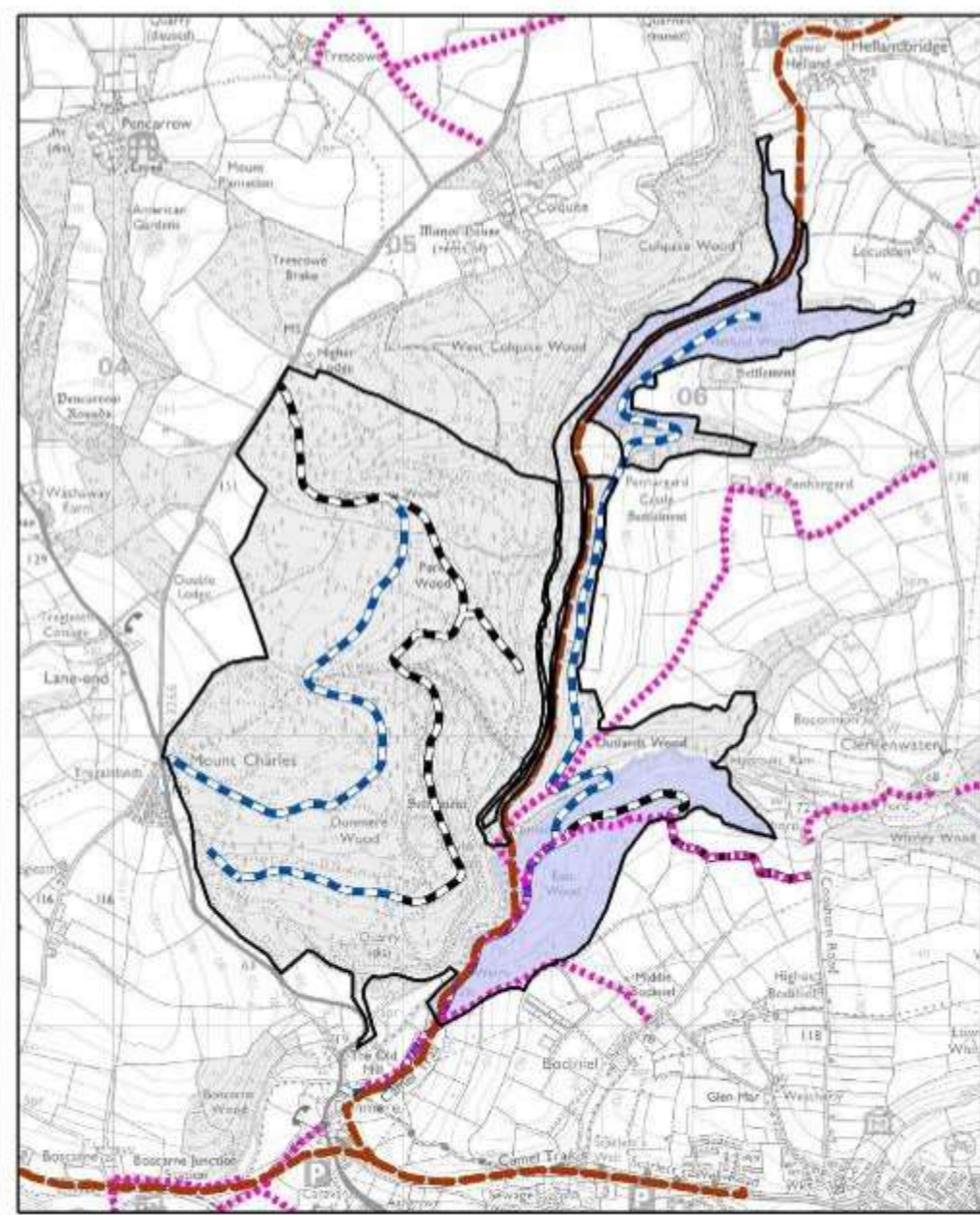
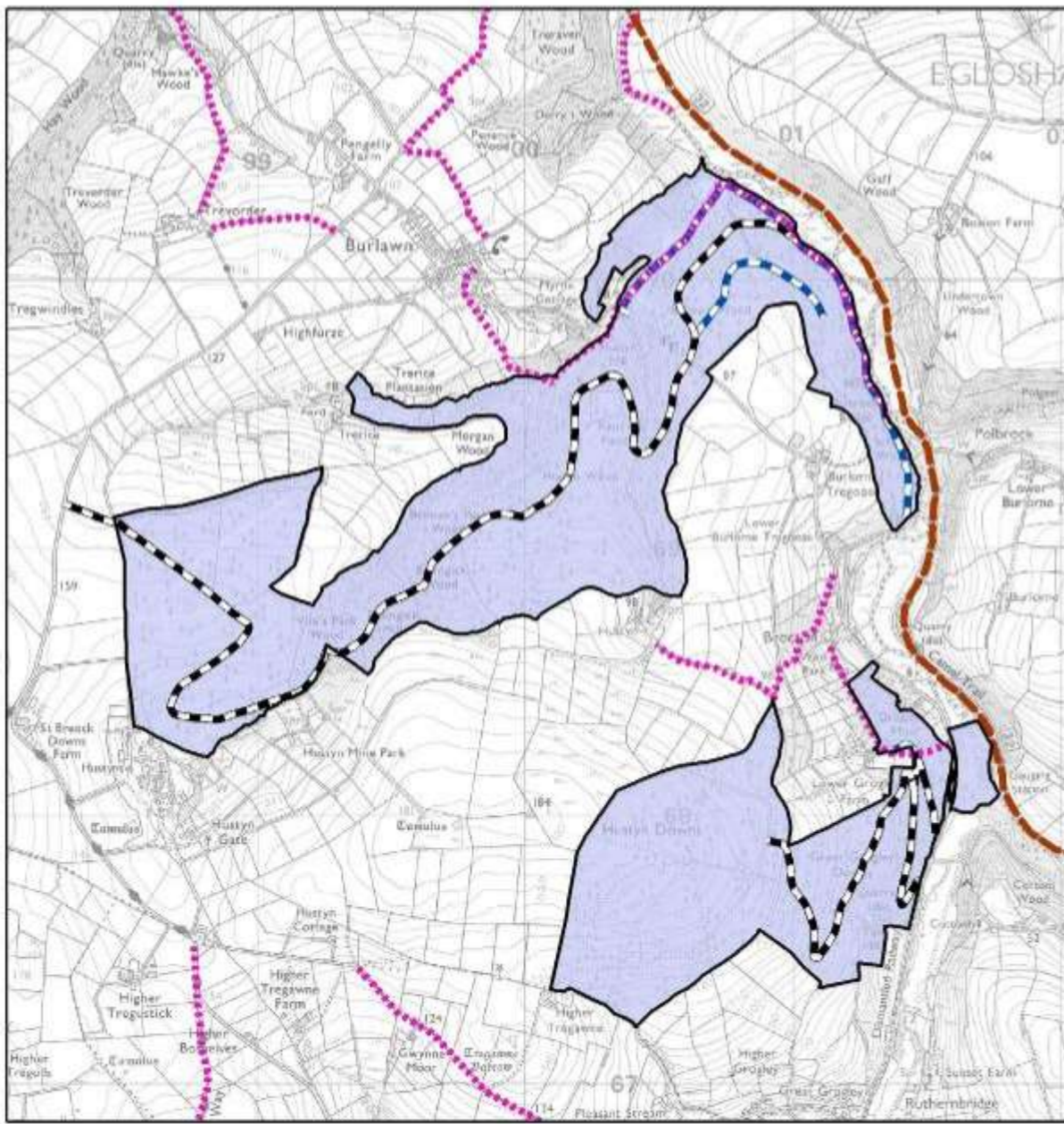
Camel Valley Forest Plan area experiences a high level of low-key recreational usage. The entirety of **Bishop's Woods, Hustyns, Eastwood, Shell** and parts of Lower Helland. This is confirmed by the Countryside Rights of Way Act. The use of the Plan area by local individuals as well as numerous visitors 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 Shell Wood with a number of additional laybys to enable parking.

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.

The Camel Trail is a very a popular and cycling walking route through north Cornwall from Wenford Bridge to Padstow and traverses the Plan Area.

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



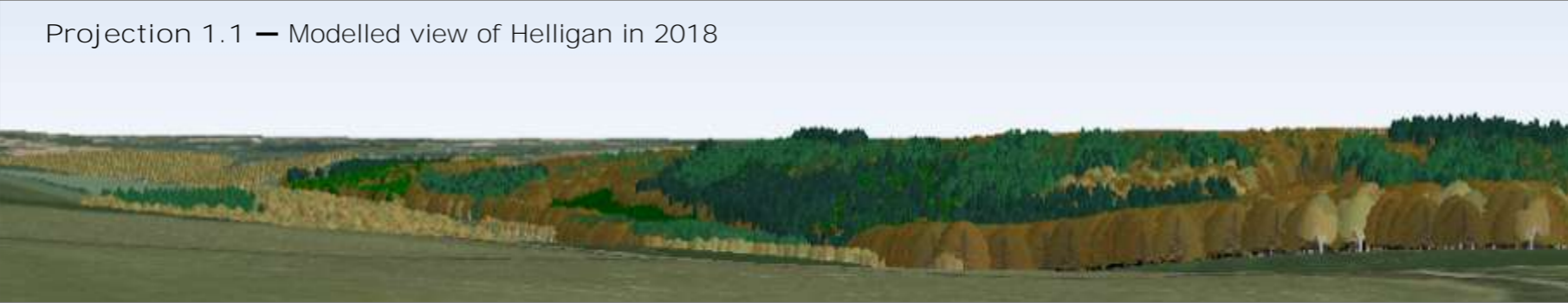
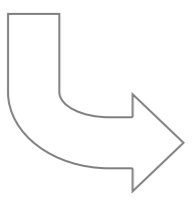


Landscape Analysis

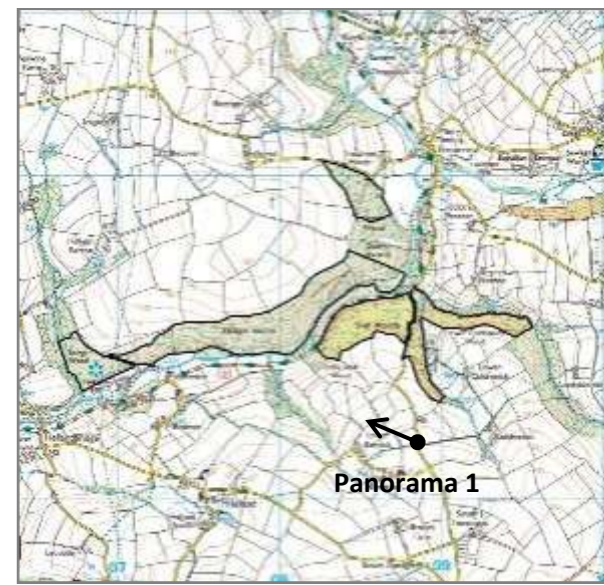
The proposed felling and restocking of coupes has been analysed from a number of significant viewpoints. These viewpoints have been identified because of the amount of foot and vehicle traffic they experience and the influence the forest has at these locations. Given the nature of the landscape around 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.



Panorama 1 — Current view of Helligan from south in 2018



Projection 1.1 — Modelled view of Helligan in 2018



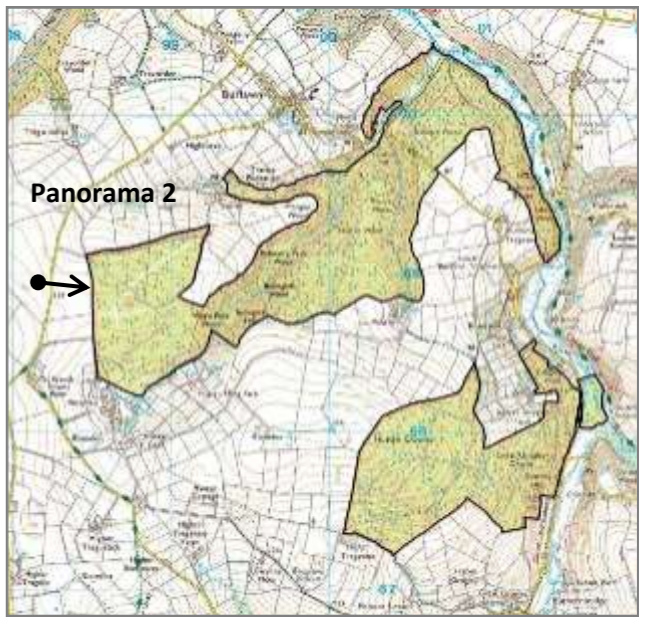
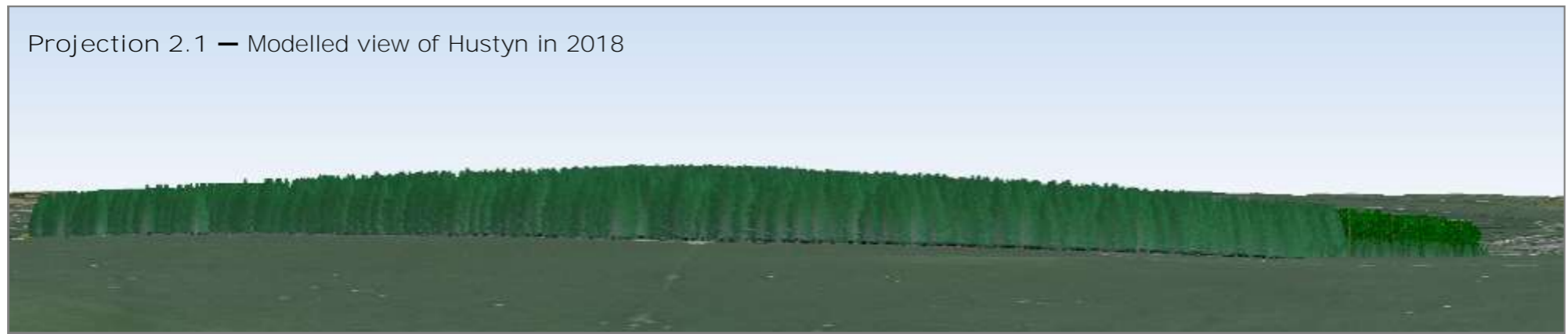
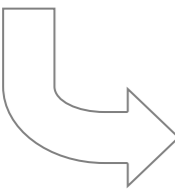
Projection 1.2 — Projected model view of Helligan in 2028 following felling of Coupes 93020 and 93001



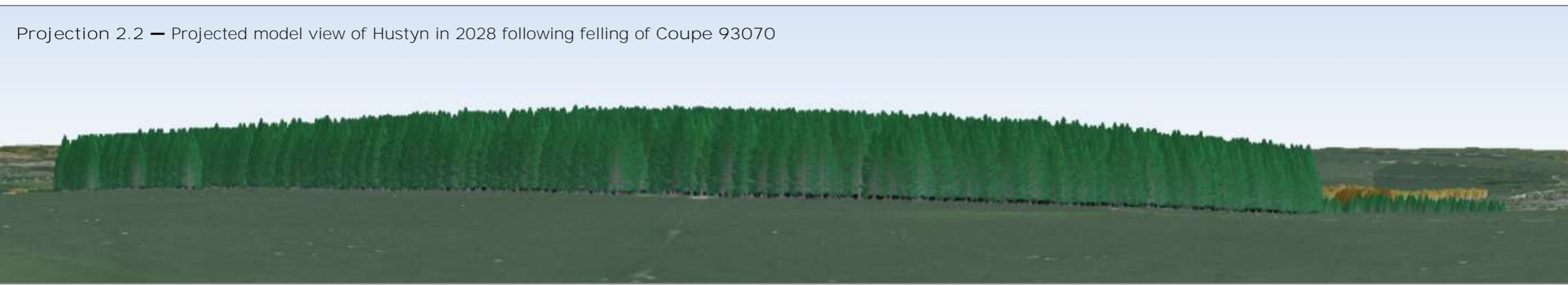
Panorama 2 — Current view of Hustyns from west in 2018



Projection 2.1 — Modelled view of Hustyn in 2018



Projection 2.2 — Projected model view of Hustyn in 2028 following felling of Coupe 93070

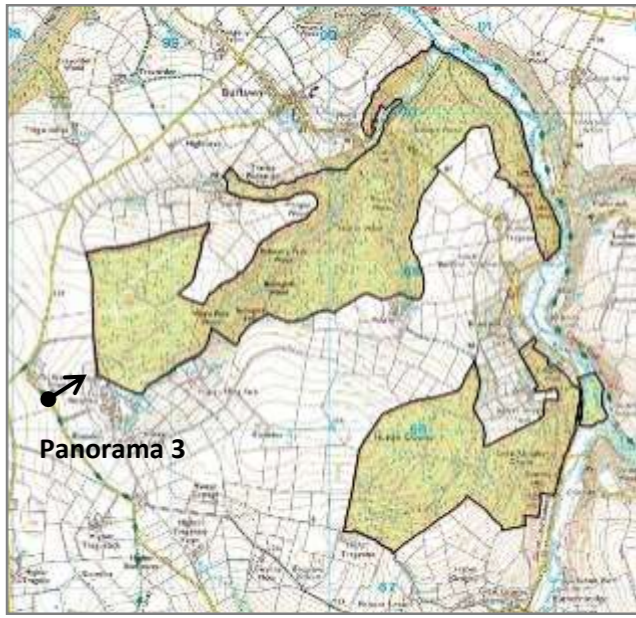
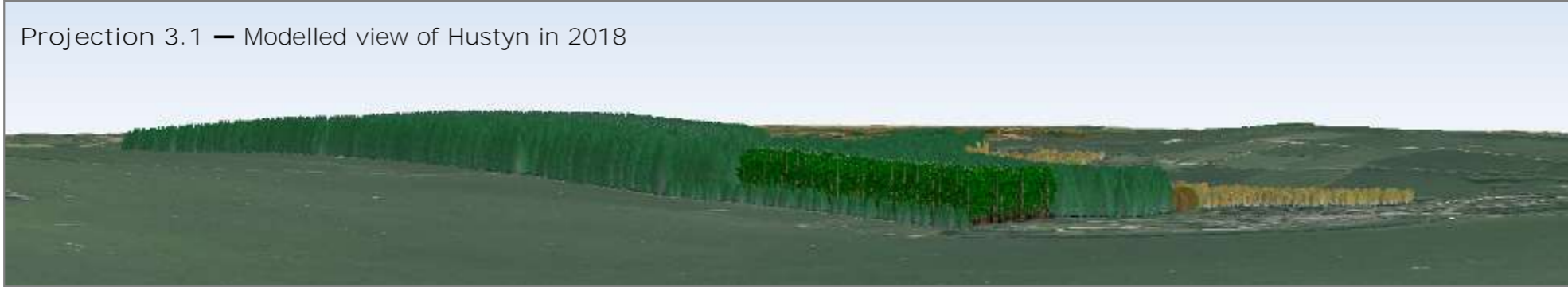




Panorama 3 — Current view of Hustyns from south in 2018




Projection 3.1 — Modelled view of Hustyn in 2018




Projection 3.2 — Projected model view of Hustyn in 2028 following felling of Coupe 93070



 Fell 2017 - 2021

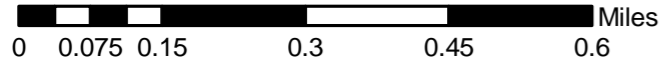
 Fell 2022 - 2026

 Fell 2027 - 2028

Coupe Prescriptions

Detailed coupe prescriptions as a result of felling and restocking 2018-28 as outlined on pages 21-24.

	Coupe	Area (ha)	Existing Crop	Rationale/Prescription	Restock	Area (ha)	Restock Proportion	Rationale/Prescription
Helligan	93020	2.57	p.53 SS p.62 SS	Stand is within the SSSI and casting heavy shade onto riparian wet woodland. Crop is mature and ready for felling.	93020a	2.57	80% N. broadleaf 20% Open	Site should be allowed to naturally regenerate to create locally sourced native woodland with a high open component. If regeneration does not present in ten years, plant with oak at 1,100 stems/ha.
	93001	4.67	p.53 SP p.53 DF	Crop has now reach economic maturity. Conversion through CCF, with continued thinning is not appropriate given significant scrub regrowth and limited access.	93001a	3.88	90% E. conifer 10% Open	Site is rich, wet and sheltered . Consider Scots & Radiata pine, Wellingtonia, aspen and Douglas fir.
Dunmere & Eastwood	93901	1.43	p.60 NF P.60 SS	The mature stands here are showing signs of incremental windblow. Clearfelling to a windfirm edge will mitigate against the risk of catastrophic windthrow.	93901a	1.43	80% N. broadleaf 20% Open	Restocking should use NVC type and site indicators as a guide. Native woodland restoration should be pursued through a mixture of planting and natural regeneration. Consider planting oak, wild service and hornbeam.
	93003	4.53	p.60 NS	Stand is within the SSSI and casting heavy shade onto riparian wet woodland. Crop is mature and ready for felling.	93003a	4.53	80% N. broadleaf 20% Open	Site should be allowed to naturally regenerate to create locally sourced native woodland with a high open component. If regeneration does not present in ten years, plant with oak at 1,100 stems/ha.
	93004	4.04	p.54 GF p.54 WH	Stand is immediately adjacent to the SSSI and casting heavy shade onto riparian wet woodland. Given the size and nature of the crop this is having a significant impact on riparian microclimates.	93004a	4.04	80% N. broadleaf 20% Open	Restocking should use NVC type and site indicators as a guide. Native woodland restoration should be pursued through a mixture of planting and natural regeneration. Consider planting oak, wild service and hornbeam.
	93005	5.20	p.59 WH	Crop is mature and seeding freely into ancient woodland, compromising the ancient woodland condition. Continued thinning will only exacerbate the issue therefore clearfelling is most appropriate retaining mature and young oak growth.	93005a	5.20	80% N. broadleaf 20% Open	Restocking should use NVC type and site indicators as a guide. Native woodland restoration should be pursued through a mixture of planting and natural regeneration. Consider planting oak, cherry and field maple.
Grogley	93002	4.57	p.77 SS p.57 LC	The mature stands here are showing signs of incremental windblow. Clearfelling to a windfirm edge will mitigate against the risk of catastrophic windthrow.	93002a	4.57	90% E. conifer 10% Open	Site is poor, wet and exposed so restock design will need to be robust to enable efficient access and production but sympathetic to the sites complexities and high landscape profile. Consider Scots pine, Leyland cypress, aspen and Sitka spruce.
	93008	2.58	p.67 NS	Site would normally be left for minimum intervention given significant access issues however River Camel SSSI Restoration Strategy is looking to utilise the site to re-naturalise the hydrology. Some conifer to be retained for heronry. If Restoration Strategy does not go ahead, do not fell, instead treat as a minimum intervention.	93008a	2.58	60% N. broadleaf 40% Open	Site should be allowed to naturally regenerate with native species to reflect and enhance the restoration works carried out as part of the Camel SSSI Restoration Strategy.
	93007	2.86	p.67 SS	Crop has now reach economic maturity. Conversion through CCF, with continued thinning is not appropriate given lack of regeneration.	93007a	2.86	90% E. conifer 10% Open	Site is rich, wet and sheltered with continued conifer production the main objective. Consider Douglas fir, Coast redwood and Sitka spruce, with birch and oak along the roadside.
Bishop's Wood & Hustyn	93914	3.60	p.78 SS p.84 SS	Crop is now reaching economic maturity, high wind hazard class and poor soils depth and nutrient availability means that clearfell restock is appropriate.	93914a	3.60	90% E. conifer 10% Open	Site is poor, wet and exposed so restock design will need to be robust. Consider Scots pine, Leyland cypress, aspen and Sitka spruce.
	93031	8.16	p.62 SS p.62 LP	Crop has now reached economic maturity, high wind hazard class and poor soils depth and nutrient availability means that strip clearfell restock is appropriate.	93031a	8.16	90% E. conifer 10% Open	Site is poor, wet. Utilise natural regeneration where evident then enrich. Consider Scots pine, Leyland cypress, aspen and Sitka spruce.
	93070	6.32	p.62 RAP p.67-70 SS	The mature stands here are showing signs of incremental windblow. Clearfelling to a windfirm edge will mitigate against the risk of catastrophic windthrow.	93070a	6.32	90% E. conifer 10% Open	Site is poor, wet. Utilise natural regeneration where evident then enrich. Consider Scots pine, Leyland cypress, aspen and Sitka spruce.
	93032	6.23	p.62 SS	Crop has now reached economic maturity, high wind hazard class and poor soils depth and nutrient availability means that strip clearfell restock is appropriate.	93032a	6.23	90% E. conifer 10% Open	Site is poor, wet. Utilise natural regeneration where evident then enrich. Consider Scots pine, Leyland cypress, aspen and Sitka spruce.
	93083	3.66	p.62 SS	Crop has now reached economic maturity, high wind hazard class and poor soils depth and nutrient availability means that strip clearfell restock is appropriate.	93083a	3.66	90% E. conifer 10% Open	Site is poor, wet. Utilise natural regeneration where evident then enrich. Consider Scots pine, Leyland cypress, aspen and Sitka spruce.
	93089	2.54	p.59 LC	Crop is mature and seeding freely into ancient woodland, compromising the ancient woodland condition. Continued thinning will only exacerbate the issue therefore clearfelling is most appropriate retaining mature and young oak growth.	93089a	2.54	80% N. broadleaf 20% Open	Restocking should use NVC type and site indicators as a guide. Native woodland restoration should be pursued through a mixture of planting and natural regeneration. Consider planting oak, wild service and field maple.
	93101	0.98	p.33 LC	Crop is mature and seeding freely into ancient woodland, compromising the ancient woodland condition. Continued thinning will only exacerbate the issue therefore clearfelling is most appropriate retaining mature and young oak growth.	93101a	0.98	80% N. broadleaf 20% Open	Site should be allowed to naturally regenerate to create locally sourced native woodland with a high open component. If regeneration does not present in ten years, plant with oak at 1,100 stems/ha.
	93105	1.39	p.35 DF p.48 NS	Stand is within the SSSI and casting heavy shade onto riparian wet woodland. Crop is mature and ready for felling.	93105a	1.39	80% N. broadleaf 20% Open	Site should be allowed to naturally regenerate to create locally sourced native woodland with a high open component. If regeneration does not present in ten years, plant with oak at 1,100 stems/ha.

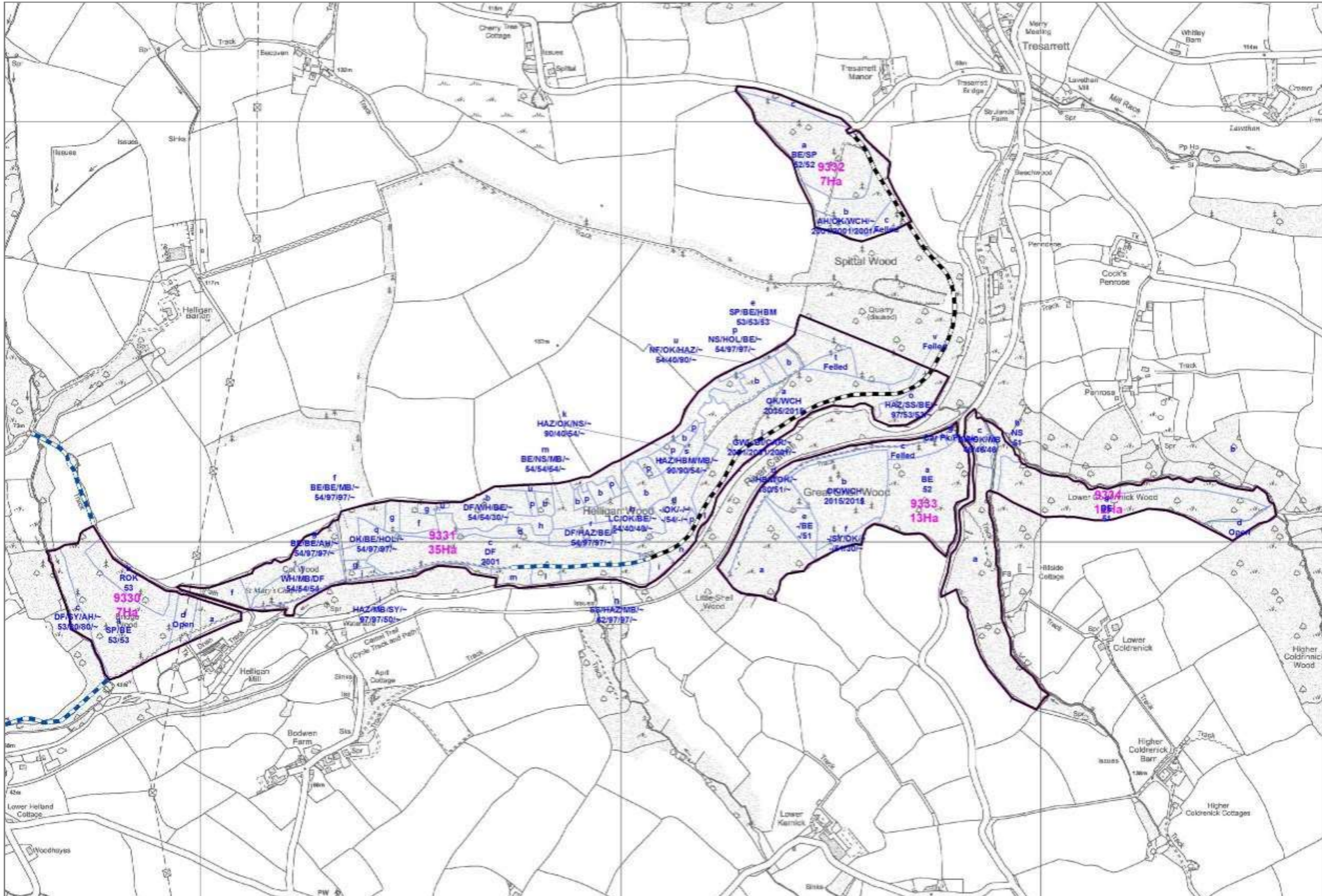


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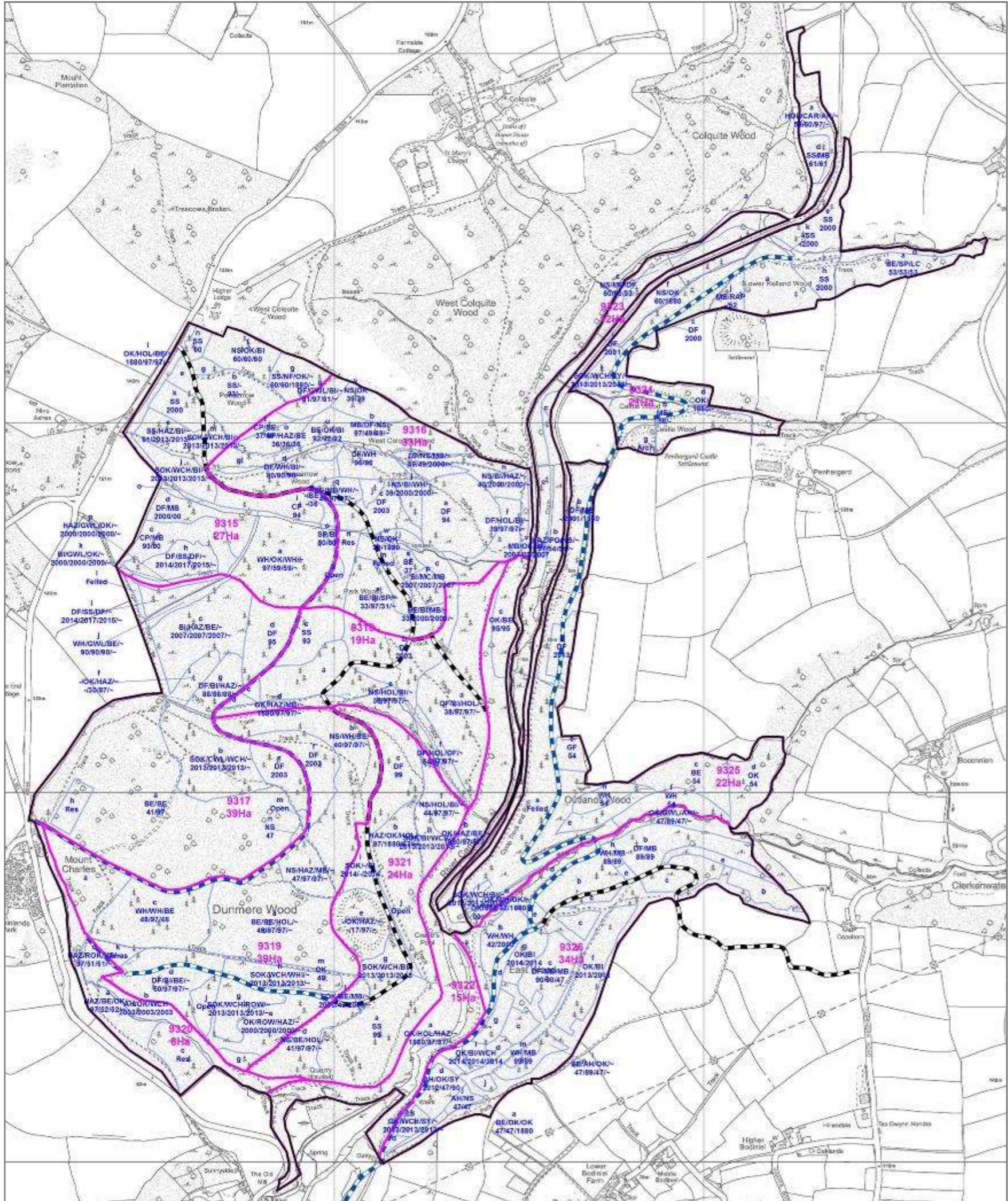
Stock Data 2018

Helligan and Shell



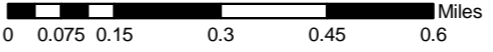


Stock Data 2018 Dunmere and Eastwood

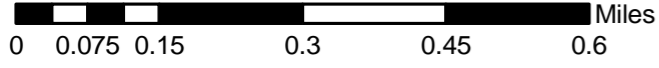


Legend

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



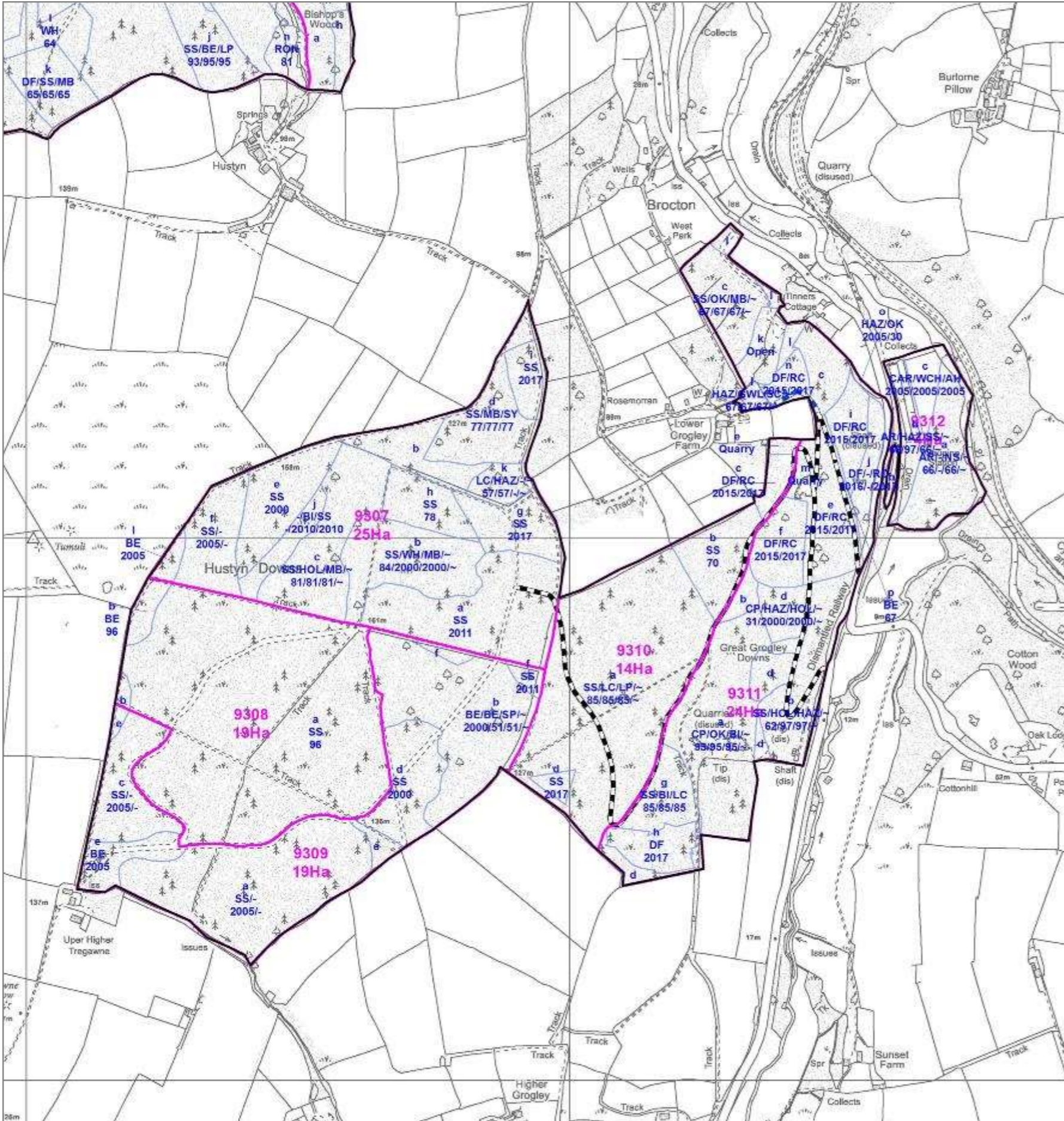
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Stock Data 2018 Grogley

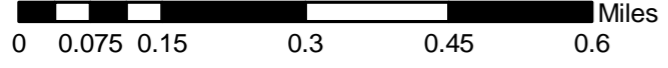


Legend

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

Stock Data 2018

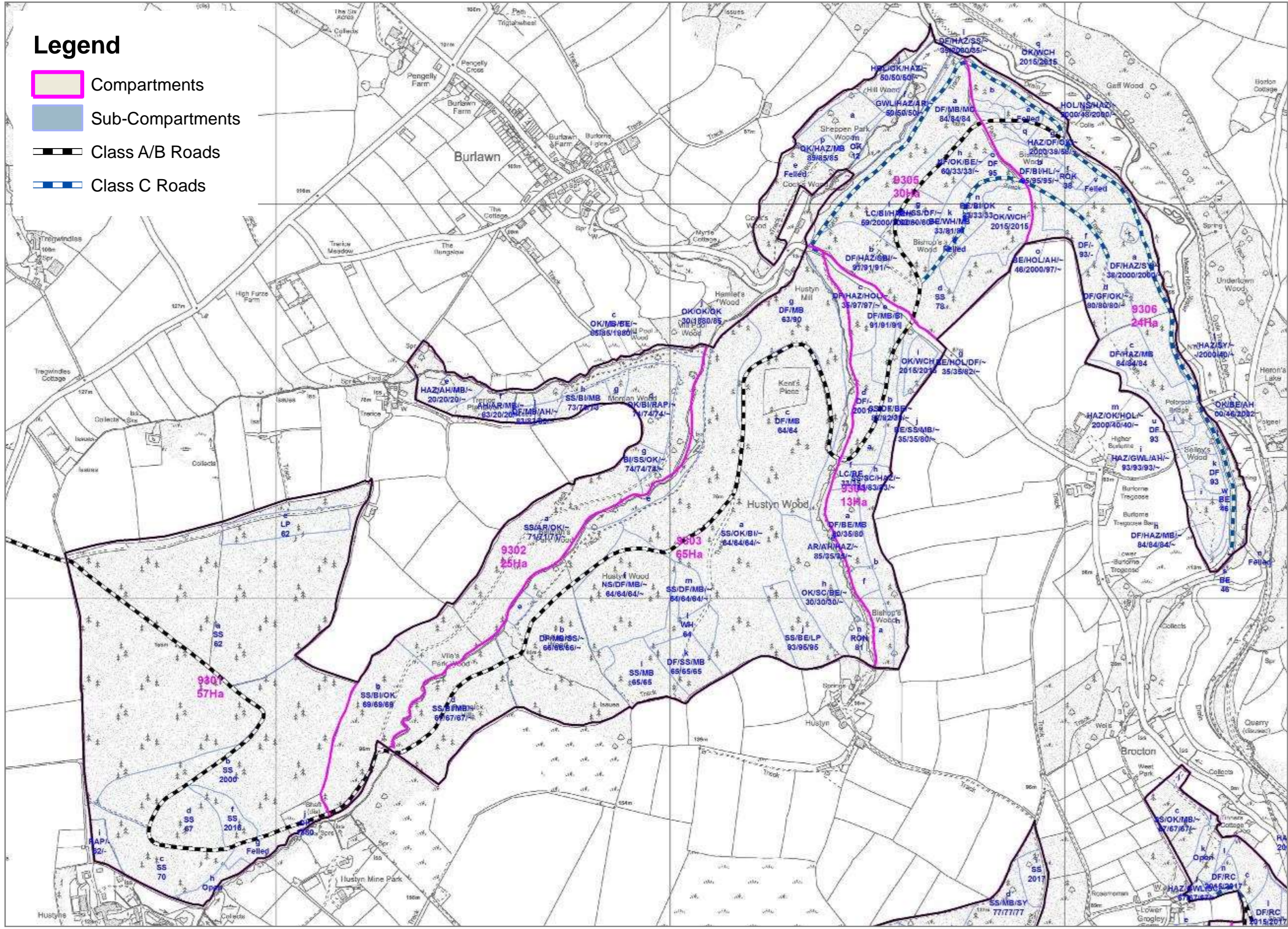
Bishop's Wood and Hustyn



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Legend

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





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		<p>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.</p> <p>*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.</p> <p>"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.</p>
Shelterwood		<p>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"</p> <p>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.</p>
Silviculture		<p>A term coined during late 19th century from the Latin <i>silva</i> meaning 'wood' and the French <i>culture</i> 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.</p>
Stand		<p>A group or area of trees that are more or less homogeneous with regard to species composition, density, size, and sometimes habitat.</p>
Thin	TH	<p>Selective removal of trees from a wooded area, giving remaining trees more space to grow into larger trees. Thinning is done to:</p> <ul style="list-style-type: none"> 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. <p>NOTE: This list is not in any order of priority and will vary depending on management objectives.</p>
Yield Class	YC	<p>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.</p>



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APPENDIX 4 - Consultation Record

Consultation conducted via Citizen Space between 23rd April and 29th May

Consultee Name	Consultee Comment	FC Response
STATUTORY		
Cornwall CC	No Response	N/A
Natural England	<p>Thank you for inviting us to comment on the Forest Plan. Apologies for the delay in responding. I have no major comments to make as I think it reflects well the various discussions we have had about the management of the SSSI sections covered by the plan. We welcome the commitment to felling the various areas of non-native conifers within the SSSI and associated riparian corridors where they are creating heavy shade, to maintain the network of small open areas and flushes which are a key part of the woodland mosaic within the SSSI, and to manage invasive weeds within the river corridor. Natural regeneration of oaks seems to be sparse in many areas and therefore the selective reduction of sycamore and beech in the understorey to favour the regeneration of oaks, and deer control is also welcomed.</p> <p>We would like to emphasise the threat posed by <i>Tolmiea menziesii</i> (Piggyback plant) which is becoming increasingly widespread in the catchment, particularly in wetter areas, at Grogley, Dunmere and Helland. It is highly invasive, outcompeting native ground flora, and difficult to control. Newquay College have recently run some control trials for us to try and determine the best way of controlling the species and I will share this information with you, once I receive their report. I attach a brief literature review they have produced for your information. This together with widespread Himalayan Balsam and Monbretia are a significant threat to the condition of the SSSI woodland.</p> <p>One other thing to mention is that although the SSSI citation refers to the fact that the woods are dominated by sessile oak <i>Quercus petraea</i>, an NVC survey carried out in 2014, noted that the majority of oaks appeared in the surveyor's view to be common oaks <i>Q. robur</i> or in some cases possibly hybrids. I would be interested in your views on this and the selection of oak species used for re-stocking within SSSI areas (currently specified as sessile oak).</p> <p>We agree that leaving SSSI areas to naturally regenerate following removal of conifers is a good approach, but suggest that any regeneration be monitored and managed to try and maximise the extent of notified woodland communities (listed below) as appropriate to the local conditions. This may require for example some sycamore and beech control in regenerating areas, particularly as both species can create heavy shade in riparian areas. In addition, the prescription for 1,100 oak stems/ha (if regeneration is not successful) may not be appropriate in wetter areas, where a mix with wet woodland species is likely to be preferable, and it would be good if the prescription (both species and stocking rate) could be left flexible to allow this.</p>	<p>Acknowledged</p> <p>SSSI Management on Page 17 prescribes mapping in Year 1 of invasive species and then following monitoring and treatment on an annual basis.</p> <p>Natural regeneration of local predominantly sessile oak will be favoured as future forest source. Where planting is required sessile oak will be preferred over Pedunculate. This will be dependant on site suitability, with provenances minded of climate change.</p> <p>Prescriptions remain flexible to allow site conditions to allow specific and dynamic management.</p>
Environment Agency	No Response	N/A
Historic England	No Response	N/A
Blisland Parish Council	No Response	N/A
Egloshayle Parish Council	No Response	N/A
Helland Parish Council	No Response	N/A
Lanivet Parish Council	No Response	N/A
St. Breock Parish Council	No Response	N/A
St. Mabyn Parish Council	No Response	N/A

Consultee Name	Consultee Comment	FC Response
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OTHERS

Bodmin Anglers Association	No Response	N/A
Colquite Estate	No Response	N/A
Pencarrow Estate	No Response	N/A
Helligan Estate	No Response	N/A
Member of Public	<p>Outlands House in Eastwood called into the depot just now. He had seen our signs regarding the Camel Valley forest plan. He had a couple of concerns/ comments. There is a leat that comes down through are wood and into his property. It used to drive a waterwheel powering a corn mill. He plans at some stage to reinstate the waterwheel. Therefore he requested we keep the leat clear of debris during any felling works. Apparently we have blocked it previously. He also wanted to remind us of his water extraction on our land. Obviously concerned that our plans and work do not damage this in anyway. As an aside, he also mentioned that he used to have notice from the Camel Valley Motor Club of the</p>	<p>Comments and notes to be held on file and then input into Operational Plan and Permissions Schedules to ensure points are considered.</p>
Member of Public	<p>There has been a huge drop in wildlife numbers across the UK over the past 40 years, particularly pollinating insects as well as other invertebrates, and the birds and other species which feed on them, and that whereas current farming practices are responsible for this situation, Forestry Commission woodlands offer a mainly pesticide-free habitat that is becoming less dominated by introduced conifers. I feel this positive contribution could be made even better by aiming for even more tree diversity, particularly encouraging tree species beneficial to pollinating insects. For this reason I am glad to see willows and sycamores are already present in large numbers, but it would be good to see more limes (Tilia), wild cherry, wild crab-apple, rowan, and wild service-tree, for instance. Secondly, if global warming continues as expected, then despite the fact we are waking up to the dangers of introducing trees willy-nilly from around the world, I believe it would be a sensible precaution for the Forestry Commission to think about very careful trials of trees from closely-related habitats further south, i.e. species which already coexist with mixed oak/ash/beech (etc) woodlands in France and cooler parts of Spain – a precautionary diversity, in case another major tree disease or two leaves UK woodlands bereft</p>	<p>Comments noted. Species choice is made as appropriate to the SSSI designation and NVC classification. However the need to provision for resilient forests is recognised and referenced within the Plan. Provenance of native planting stock is considered when sourcing stock with southern Europe origins being favoured when consented by Natural England within the SSSI.</p>

1. Agreement and Consent

District West England Forest District
 Name of SSSI River Camel Valley and Tributaries SSSI
 OS Grid reference SX061708
 Period of Plan May 2018 – May 2028

Clare Fitzgibbon
 Land Management and Conservation Adviser
 Cornwall Team

Date: 13th July 2018

Kevin Stannard:
 Forest Management Director
 West England Forest District

Date: 27/6/2018

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 Cornwall
 Site Name River Camel Valley and Tributaries 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
 Special Area for Conservation (SAC) notified under the Conservation of Habitats and Species Regulations 2010 as amended ('the Habitats Regulations') and Article 6(3) of the European Habitats Directive
 Local Planning Authority Cornwall County Council
 National Grid Reference SX 060707
 Area 621.17ha
 Ordnance Survey Sheet 1:50,000: 200 and 201
 1:10,000: SW 96 NW, SW 96 SE, SW 96 NE, SX 06 NW, SX 06 NE, SX 07 SW, SX 07 NW, SX 07 SE, SX 07 NE, SX 08 SE, SX 17 SW, SX 17 NW, SX 17 NE, SX 18 SW, SX 18 NW, SX 18 SE

Date Notified (Under 1981 Act): 22 January 1998

The Forestry Commission managed unit of the SSSI is in Unfavourable Recovering condition



3. Potentially Damaging Operations

Ref. No.	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. Important Evaluation Criteria

Diversity

The Camel Valley is holds a hugely diverse range of habitats from which otter and other species can benefit. These range from the upland headwaters of the De Lank to lowland reaches of varying sizes, flow rates and cover and include small side streams. The lower reaches of the Camel and Allen are tidal providing added diversity. Otters require high water quality, good fish stocks and areas of undisturbed riparian vegetation, all resources available in the site.

Naturalness

The system is particularly important for otters *Lutra lutra* which benefit from the unspoilt river corridors with extensive woods, excellent bankside cover and little disturbance. The rivers are also of great value for fish such as the Atlantic salmon *Salmo salar*, bullhead *Cottus gobio*, and sea lamprey *Petromyzon marinus*.

Rarity

Some of the largest remaining ancient semi-natural woodlands in Cornwall are found alongside the Camel. They are often sessile oak *Quercus petraea* dominated but the system also supports significant areas of more recent wet grey willow *Salix cinerea* and alder *Alnus glutinosa* woodland for which Cornwall is particularly notable.

5. Factors Influencing Management

Public Pressure

Situated on close to Bodmin and Wadebridge, with good public access, provided by the Camel Trail and other less formal footpaths, River Camel Valley and Tributaries SSSI receives a high number of recreational visits. Managing deer and squirrels is difficult due to the risk to public safety and has implications for the natural regeneration of native species.

The high usage of the Trail also limits the number and duration of interventions to complete improvement and restoration works.

Difficult access

Although access to the site is possible at certain times of the year the topography of the site makes it difficult to manage. Any management on the higher sloping ground would need to take place using motor manual methods and due to the relatively small parcel sizes available, management of this woodland is not economically viable.

