Forestry England

# Swannacott & Bradridge Forest Plan

## 2020 - 2030

## West England Forest District

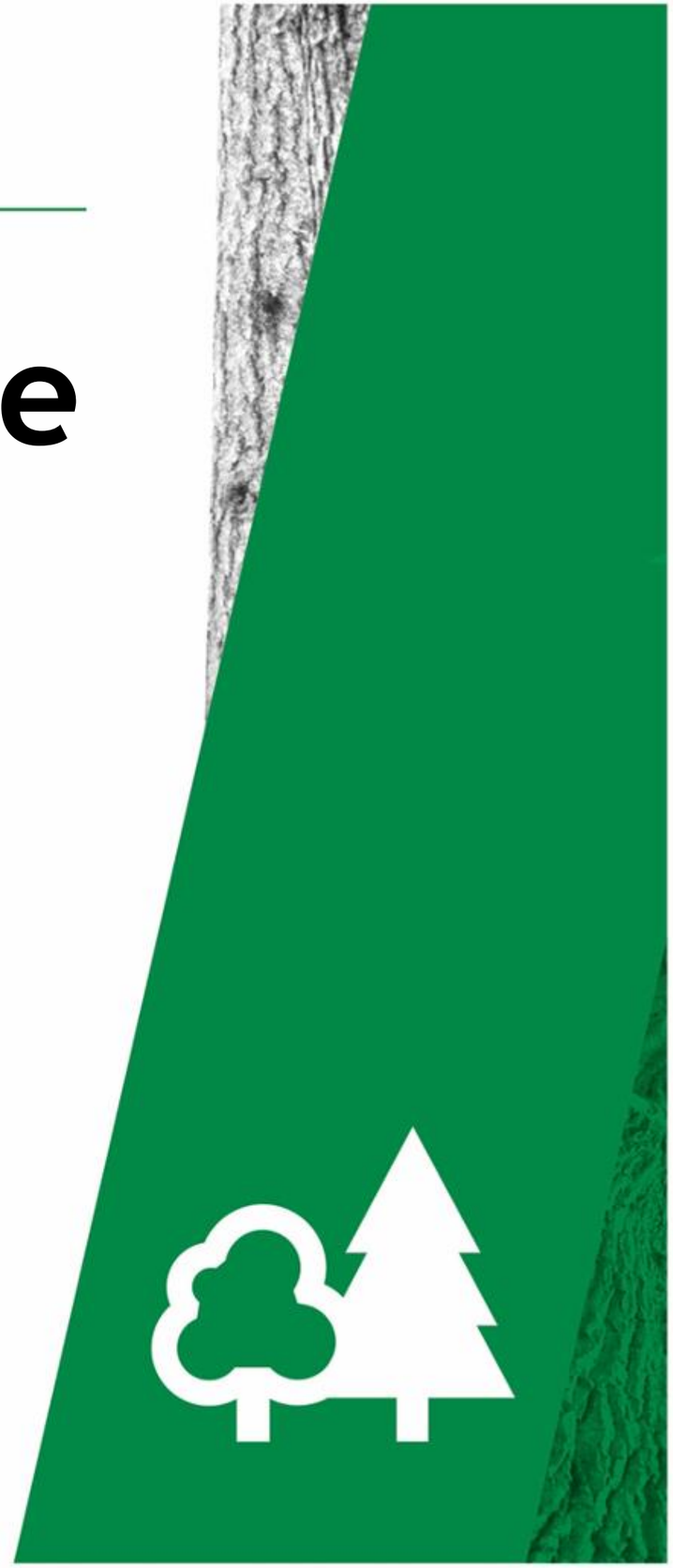
Ben Robinson

FE File Ref: OP10/98

OLD Ref: PE02/ & PE02/2







Forestry England

# Application for Forest Plan Approval

| | | |
|---|---|---|
| Forest District: | West England FD | |
| Woodland or property name | Swannacott & Bradridge | |
| Nearest town, village or locality: | Launceston | |
| OS Grid reference: | SX 2598 9772 | Swannacott Access |
| Local Authority District/Unitary Authority: | Cornwall County Council | |

| | |
|---|---|
| Plan Area: | 159.6ha |
| Conifer Felling: | 9.85ha |
| 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 FE 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 28/9/2020

Signed .....
Area Director

Date of approval 19/5/2021

Date approval ends 19/05/2031

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

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

# List of Contents

# Summary

## About

The Swannacott and Bradridge Forest Plan area is made up of two woodlands, Swannacott and Bradridge which are mainly on the edge of mudstone, shale and sandstone plateaus in the upper reaches of the River Neet (Swannacott) which flows north into the Bristol Channel and the River Tamar (Bradridge) which flows south into the English Channel.

The Swannacott and Bradridge woodlands are situated on the border between Cornwall and Devon to the north of Launceston in the parishes of Boyton, North Tamerton, Week St Mary and Whitstone. The local authority is Cornwall County Council.

In earlier times the woods would have been managed as traditional oak coppice with standards to produce charcoal and building materials for local use or as grazed agricultural land. Acquired by the Forestry Commission in the late 1950s and cleared of the much of the broadleaves they were planted with conifers (Douglas fir, Sitka spruce and Japanese larch).

Most of the Nation's forests here are 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 quality fir and spruce log which makes up the majority of the tree cover supplemented primarily with beech and larch. Areas of remnant ancient semi-natural woodland do remain and are made up of oak and birch with ash. Most of the areas are actively managed to provide timber for local and national businesses, and to improve the quality of the remaining trees.

The Plan area is ecologically valuable with habitat  such as Priority Lowland Mixed Deciduous Woodland used by bats and raptor as well as other important flora and fauna species.

All of the Plan area is freehold and has been designated Open Access, confirmed by the Countryside and Rights of Way Act. The woodlands are quietly popular with local walkers and riders.

## Objectives

The core aim of the Plan is to begin to progress the 50 Year Vision by producing woodlands which continue to sustainably produce timber whilst providing a forest rich in wildlife, attractive to people and increasingly resilient to climate change, pests and diseases.

The social, economic and environmental objectives of management are:

- The continued production of sustainable and marketable woodland products.
- Protect and enhance 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 provision and maintenance of recreation facilities.
- Deliver well-designed forests that both protect and enhance the internal and external landscape in keeping with the local landscape character.
- To conserve, maintain and enhance cultural and heritage assets.

The current plan outlines management proposals including felling and restocking over several decades, with felling licence approval for operations up until 2030.

The Plan makes provision to develop the complex and dynamic plantation compositions of quality fir and spruce shelterwood forest. Areas identified as Plantation on Ancient Woodland Sites will be managed as mixed woodland to maximise their productive potential, with the aim of a gradual return to native woodland.

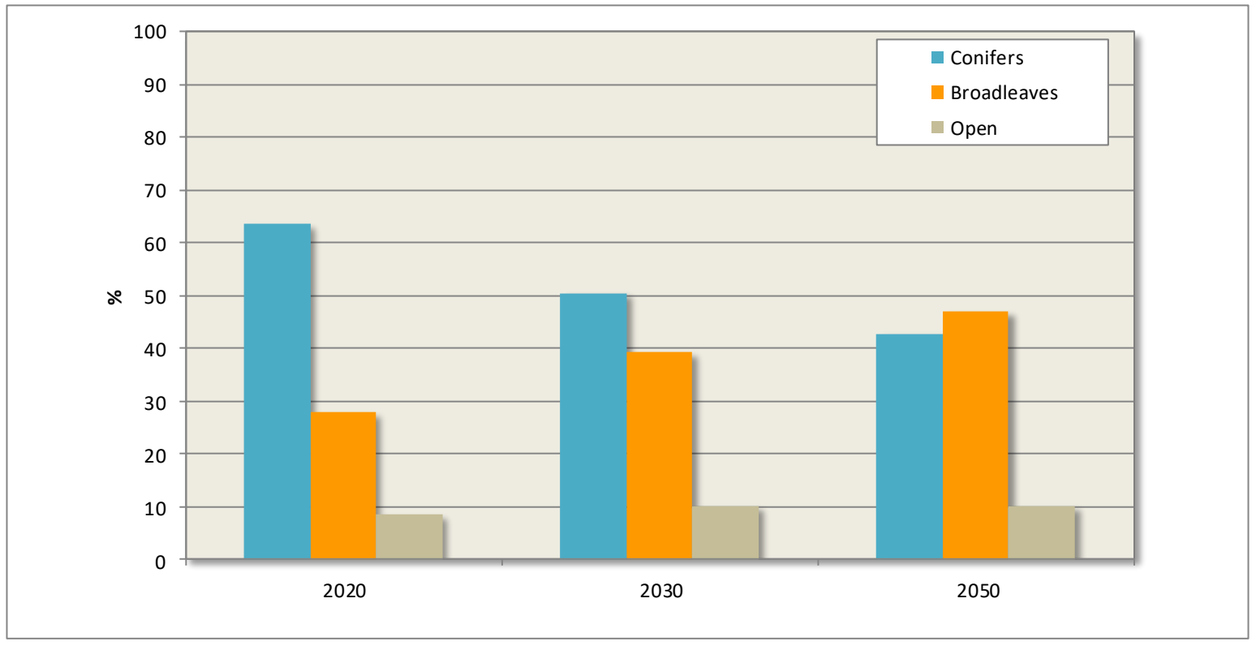
The Plan makes provision to ensure proposals are in keeping with the enclosed farmed and wooded landscape. Implementation and maintenance of  environmentally minded corridor will continue to increase diversity of habitat and internal landscaping.

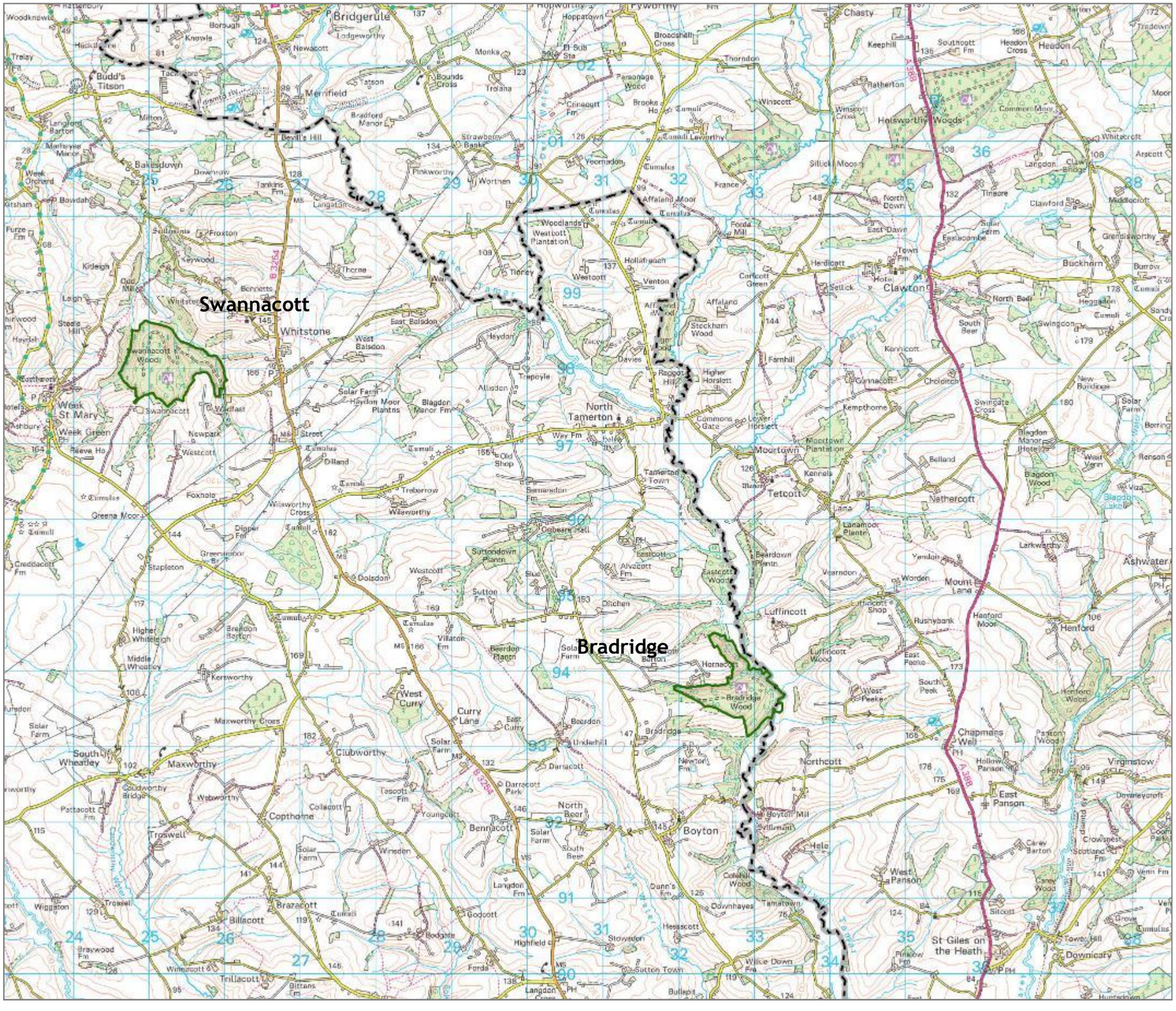
The planned areas of clearfelling, restocking and permanent open space creation during the ten years to 2030 are summarised in the chart below.

| HECTARES | Conifers | Broadleaves | Open space |
|---|---|---|---|
| Clearfelling | 9.85 | - | - |
| Restocking/Regeneration/ Creation | - | 7.29 | 2.56 |

In addition to these defined operations, ongoing thinning and selective felling of both conifers and broadleaves will be carried out across 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.






© Crown copyright and database right [2020]
Ordnance Survey [100021242]

0 1 2 4 6 8 Miles

## Location

The Swannacott and Bradridge woodlands are situated on the border between Cornwall and Devon to the north of Launceston in the parishes of Boyton, North Tamerton, Week St Mary and Whitstone. The local authority is Cornwall County Council.

The Swannacott and Bradridge Forest Plan area is made up of two woodlands, Swannacott and Bradridge which are mainly on the edge of mudstone, shale and sandstone plateaus in the upper reaches of the River Neet (Swannacott) which flows north into the Bristol Channel and the River Tamar (Bradridge) which flows south into the English Channel.

The majority of the land is at 70-120 metres above sea level and is undulating to steep in places. The climate is warm and moist with an average annual rainfall of 1100—1400mm, a soil moisture deficit of around 100mm, and an accumulated temperature over 5˚C of 1400˚C.

The soils across the Swannacott and Bradridge Plan Area are primarily medium, moist and reasonably deep typical brown earths with an element of gleying.

## A 50 Year Vision

The Vision for the future of the Plan area is bold but in keeping with the Forestry Commission's key strategic goals and the local and national value which is placed on the area. Set against the backdrop of the Landscape Character, whereby extensive woodland areas of predominantly mixed broadleaves with occasional conifer blocks often cloak the steep valley sides of the upper reaches, this Vision looks to achieve an area which is a haven for wildlife, fun and commerce. A key 'Guideline' of the Landscape Character Area (Cornwall County Council, 2008) is to manage ancient woodlands and plant new woodlands; and to conserve and enhance the field pattern with Cornish hedges and trees, broadleaved ancient woodland, mixed valley side woodlands and valley floor wetlands, while ensuring the sympathetic development of historic settlements. In 50 years time this Plan have delivered a rich mosaic of robust habitats which supports a multitude of rare and common flora and fauna species as well as contributing to a low-carbon economy.

The conifer dominated forest will mainly be managed through continuous cover forestry and low impact silvicultural systems contributing to a vibrant woodland economy. Much of this will be restored over time to native woodland to better reflect the historical cultural landscape. Rare and protected species, such as goshawk, and all three species of woodpecker will continue to call the forest home. The forest will also be a popular and safe place to 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 will be of increasing importance as climate change continues to take effect. A diverse structure of young, thicket and maturing stands across the area will provide suitable continuous habitat over time.

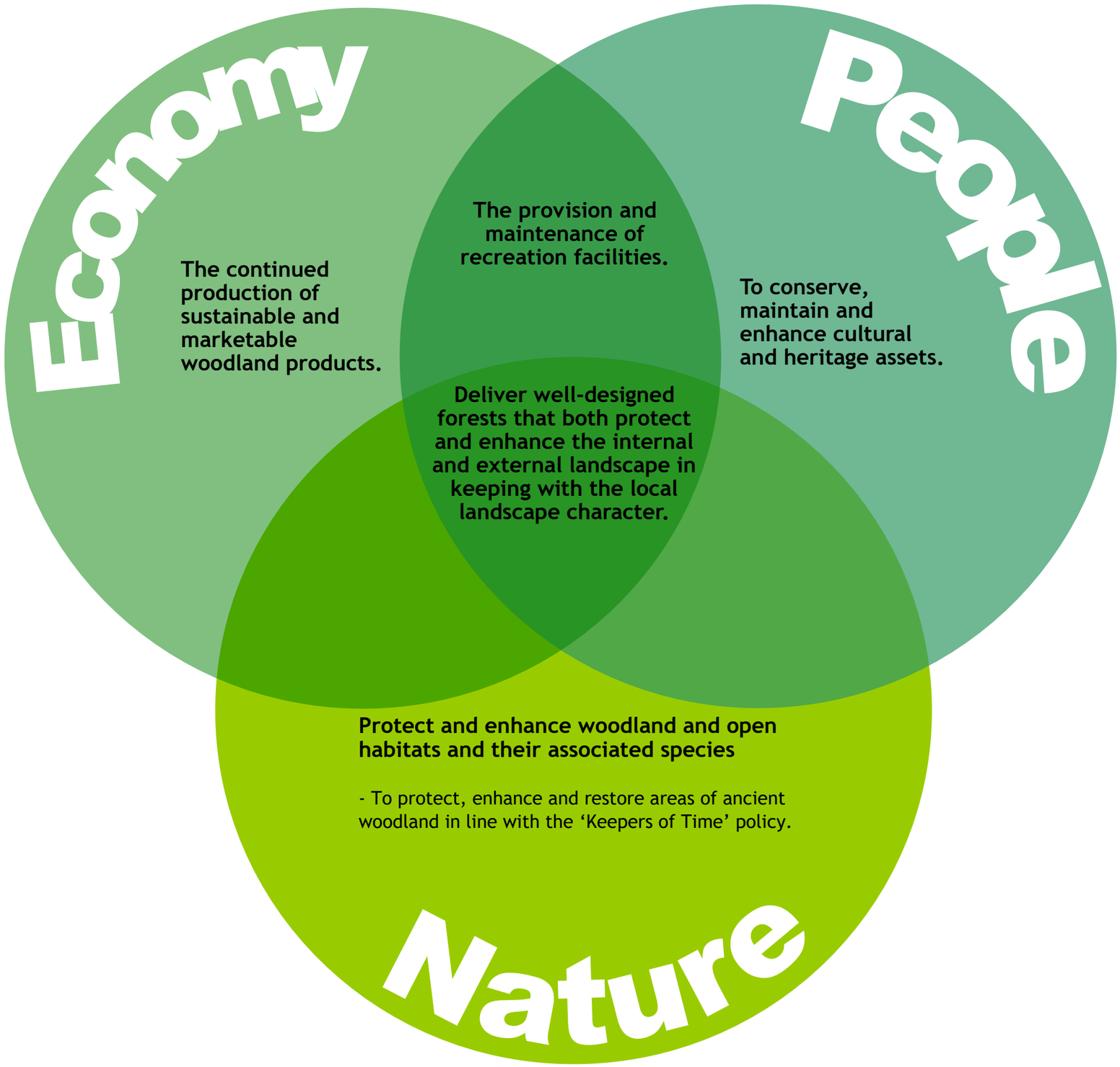
Broadleaf woodland will grow in size and improve in condition as restoration to native cover takes effect in certain areas. Managed sensitively but still with productivity in mind through thinning or coppicing, these more secluded areas will become a haven for a multitude of micro habitats, species and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

Ancient and native woodland, a key part of the Landscape Character, will feature more significantly in the area's makeup. Areas will be gradually restored to oak dominated forest cover 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 nightjar, raptor and butterflies.

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 8 and 9 with the proposal and prescriptions following.

# Management Objectives




## WEST ENGLAND FOREST DISTRICT

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

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

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

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

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

**Declaration by Forestry England as an Operator.**

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

# Meeting Objectives

Forestry England

## National Vision and Overall Goal:

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

### District Strategy

**Economy**

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

Improve the economic resilience of our woods and forests.

Encourage and support business activity on the Estate

**Nature**

Improve the resilience of the natural environment of the Estate under our stewardship.

Realise the potential of the Public Forest Estate for nature and wildlife.

Maintain and improve the cultural and heritage value of the Estate.

**People**

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

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

| Forest Plan Objective | Meeting Objective | Monitoring |
|---|---|---|
| **The continued production of sustainable and marketable woodland products.** | The majority of the Plan area will remain productive through thinning yield.<br><br>Some clearfell timber production of mature stands will occur, majority from the conifers. | Comparison of total production forecast yield 2,500m$^3$ (2020-2021) and 5,000$^3$ (2020- 2030) with actual production at the Forest Plan (FP) five and ten-year review. |
| **Protect and enhance woodland and open habitats and their associated species.**<br><br>- To protect, enhance and restore areas of ancient woodland in line with the 'Keepers of Time' policy. | Appropriate reinstatement works will be carried out once operations have been concluded.<br><br>Protection and enhancement of water supplies and soil quality through sensitive implementation of operations and improved restocking practices.<br><br>Restoration of ancient woodland through a gradual thinning process<br><br>Raptor numbers will be maintained. | Operational site planning of harvesting and restocking operations will help monitor the effect of management.<br><br>Ongoing monitoring of soil and water quality pre and post harvesting with input from outside stakeholders.<br><br>Analysis of naturalness scores at Review stage<br><br>Measured at Review stage through analysis of ongoing surveys and records. |
| **The provision and maintenance of recreation facilities.** | Visitor numbers will be maintained.<br><br>Road and ride corridor and car park aesthetics enhanced and maintained.<br><br>Felling together with a delayed restock program will continue to diversify stand and age structure.<br><br>Viewpoints enhanced and maintained at time of intervention, where possible. | Visitor feedback comments, to be included in Review where appropriate. |
| **Deliver well-designed forests that both protect and enhance the internal and external landscape in keeping with the local landscape character .** | Implementation of proposals will soften and better integrate the woodland with the surrounding landscape | Operational site planning of harvesting and restocking operations will help monitor the effect of management. |
| **To conserve, maintain and enhance cultural and heritage assets.** | Protect and enhance unscheduled sites at the time of intervention. | Operational site planning of harvesting and restocking operations will help monitor the effect of management.<br><br>Feature condition monitored through Review process and records updated. |

# Analysis & Concept

## Swannacott

Swanncott wood is located in the upper reaches of the River Leet and has a series of watercourses which run through it. It is situated in a reasonably wooded and undulating landscape where mixed, native and conifer woodlands are prevalent often connected by a series of hedgerows and copses. In the valley bottoms the soils are deep and medium, wet predominantly loamy brown earths whilst on the higher plateau soils are poorer, more acidic and not so free draining with evidence of bilberry and heather as ground flora. The climate is mild, wet and sheltered creating the ideal conditions for growing productive tree plantations. Almost all of the woodland is registered as Plantation on Ancient Woodland.

Swannacott is freehold and is quietly enjoyed by local walkers and riders. The objective in these woodlands is to protect, maintain and enhance native tree cover and associated ecosystem functioning whilst continuing to deliver timber and a welcoming place to visit. This will be done using a number of silvicultural methods, specifically addressing threats and long term sustainability concerns first such as invasive trees and shrubs. Restoration will focus on using wet woodland and broadleaf remnants as building blocks to build on and create more connected native woodland habitats.

**Analysis:** This area is sub-divided into small plots dating from pre 1800. Each plot has a name as given on the tithe map and were mostly pasture within the flood plain. These areas now are scrub with some plantation as well.

**Concept:** Proposals will outline a plan of restoration to native species cover in line with policy. This will be achieved through a process of group felling of the conifer to favour native and wet woodland features.

**Analysis:** An ironage hillfort is situated on high ground within the woodland, and is free to tree cover

**Concept:** Proposals will maintain and enhance the cultural significance of this feature and its setting.

**Analysis:** A series of old hedgebanks and tracks dissect the woodland and suggest a cultural history of division and possibly fortification.

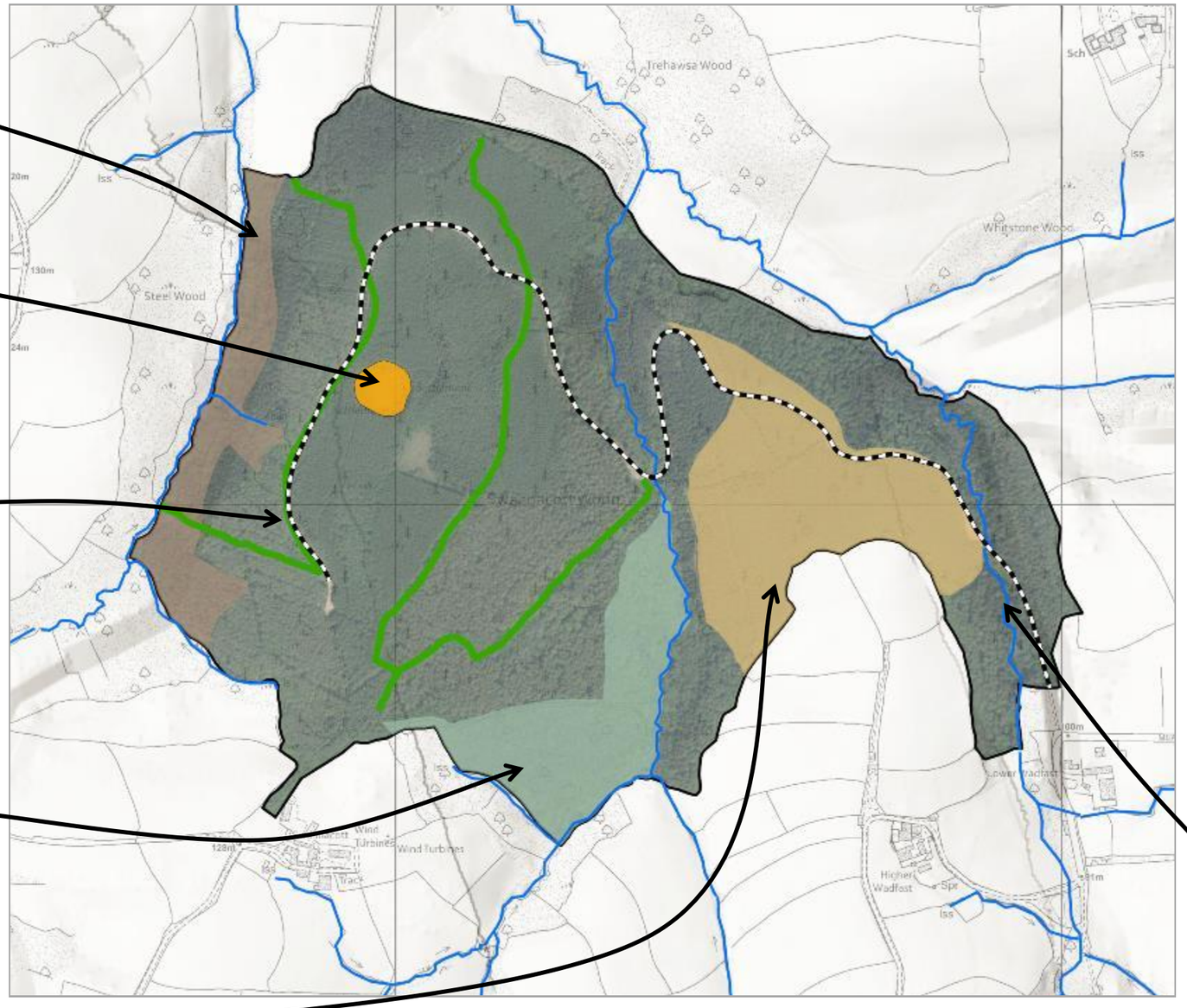
**Concept:** These will be protected when working in the area and gradually opened up to create habitat corridors.

**Analysis:** Mature oak and ash broadleaved woodland is located in the southern section of the woodland having not been coniferised. This habitat is a fair reflection of what the woodland looked like prior to conifer planting

**Concept:** Proposals will protect and maintain this area. The ash intrusion and likely dieback is will not be of such significances that it cannot be replaced with natural regeneration

**Analysis:** A large area of the woodland is recently planted, unthinned Japanese larch, which is highly susceptible to *Phytophthora ramorum* and if infected would require compulsory felling.

**Concept:** This area will not be pre-emptively felled but instead should be thinned hard at the first intervention, both to increase air flow between the trees and encourage natural regeneration of other, preferable native species to create an abundant understorey.




**Analysis:** The woodland is defined and focused around the watercourses which traverse them. Much of woodland has been coniferised in the past. These areas are fresh to wet and rich in places and feed into the River Neet.

**Concept:** Prescriptions will be sensitive to the important part the forests play in water management as well as starting points for ancient woodland restoration. This will be through targeted removal of some overly shade bearing conifers and management towards 50% open 50% dappled shade, provided by regenerated broadleaves.

© Crown copyright and database right [2020]
Ordnance Survey [100021242]

# Analysis & Concept

## Bradridge

Bradridge wood is located in the upper reaches of the River Tamar and has a series of watercourses which run through the woodland and then into the main river. It is situated in a reasonably wooded and undulating landscape where mixed, native and conifer woodlands are prevalent often connected by a series of hedgerows and copses. In the valley bottoms the soils are deep and medium, wet predominantly loamy brown earths whilst on the higher plateau soils are poorer. The climate is mild, wet and sheltered creating the ideal conditions for growing productive tree plantations. Almost all of the woodland is registered as Plantation on Ancient Woodland.

Bradridge is freehold and is quietly enjoyed by local walkers and riders. The objective in these woodlands is to protect, maintain and enhance native tree cover and associated ecosystem functioning whilst continuing to deliver timber and a welcoming place to visit. This will be done using a number of silvicultural methods, specifically addressing threats and long term sustainability concerns first.

© Crown copyright and database right [2020]
Ordnance Survey [100021242]

**Analysis:** Areas of recently felled larch which had significant broadleaf intrusion are found at the heart of the woodland. Some of these are now only native cover whereas others have linear blocks of conifer remaining.

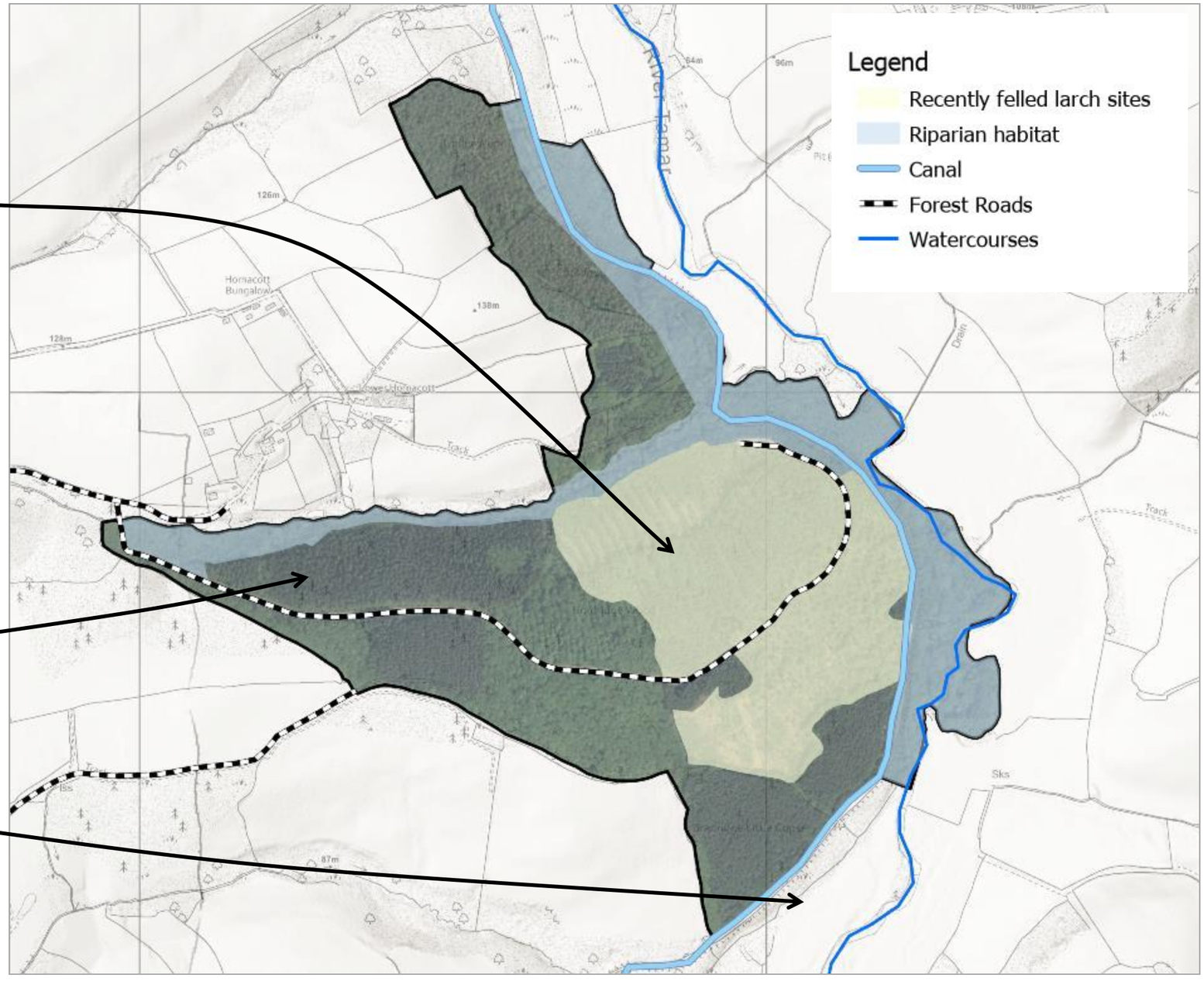
**Concept:** These areas will be considered holistically and enhanced by building on areas of broadleaf as seed sources. Group felling of conifer will be used to fully restore the remaining coniferised areas, with removal of profusely seeding hemlock a priority.

**Analysis:** Extensive areas of wet woodland are found around the edges of the woodland which is rich habitat for a variety of rare and common flora and fauna.

**Concept:** Proposals will look to enhance and extend these areas at the time of intervention through the delivery of the corridors work programme where patchy open and broadleaf cover is created.

**Analysis:** A disused canal runs adjacent to the River Tamar. This was likely used to transport cargo from the coast.

**Concept:** This will be protected at the time of intervention and gradually opened up to create habitat corridors.

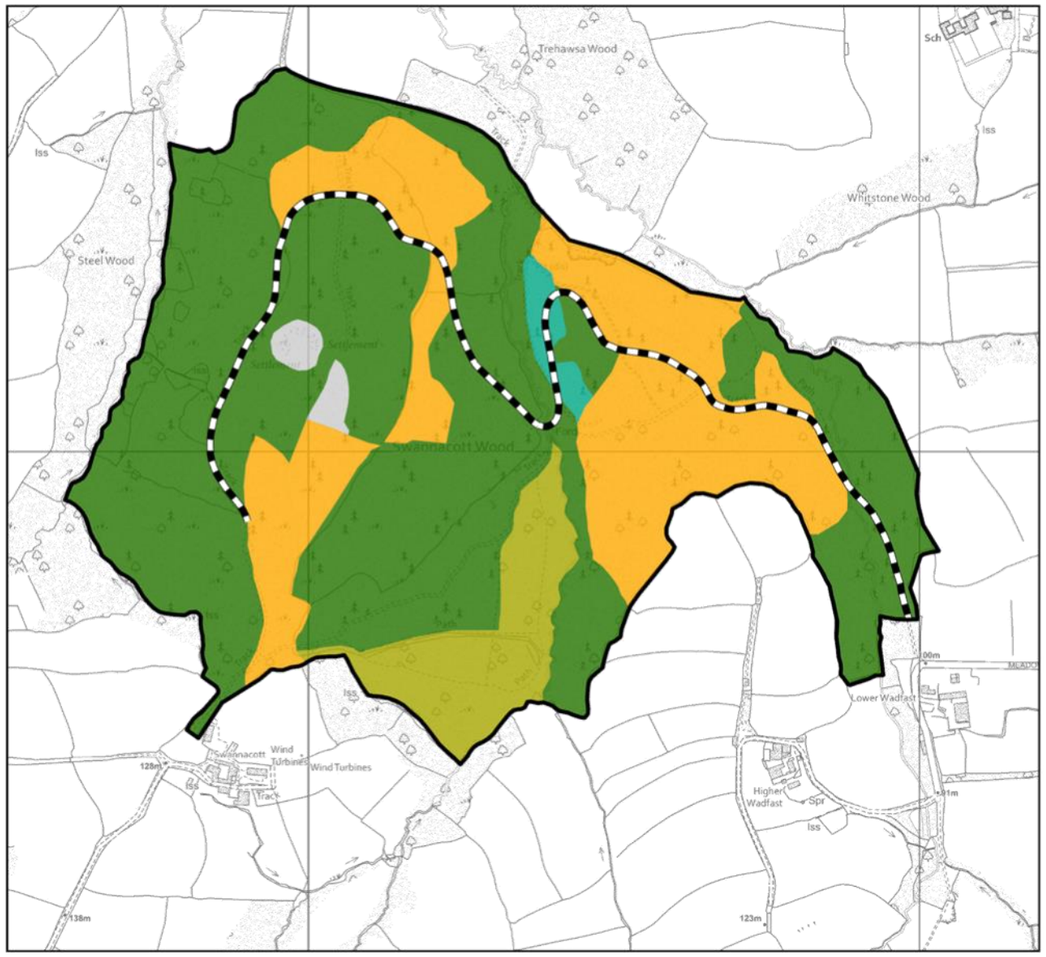


# Woodland Composition

The Plan area is dominated by a mixture of planted conifers and native and naturalised broadleaves with some ancient semi-natural remnants and regenerating broadleaf components. The majority of conifer component is made up of quality Sitka spruce, Douglas fir and larch.

The broadleaf components of the Plan area comprise a mixture of ancient semi-natural oak and ash assemblages as well as beech plantation and intruded elements and edges to the conifer plantations. The overall broadleaf composition is predominantly made up of beech and oak, with birch, hazel and ash evident as pioneer species. Broadleaf stands vary in age with significant planting and regeneration establishment occurring in the 1940s and 1950s. The majority of stands are diverse, with good understory development evident particularly along the wetter reaches. Recent extensive felling of larch in Bradridge woods has significantly altered the structure and composition of mixed stands, with broadleaved components now regenerating freely in these areas.

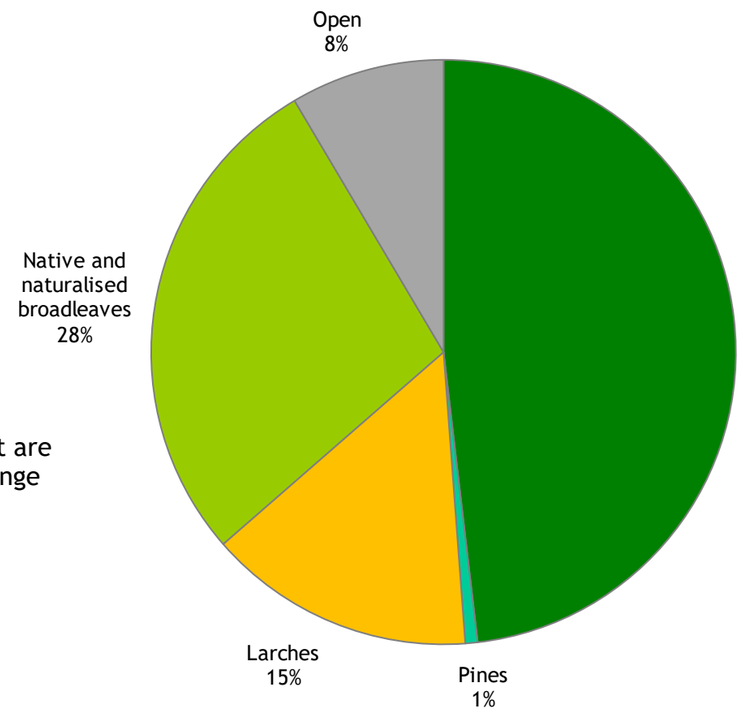
The age of conifer plantations is somewhat limited with the majority of age classes concentrated into two periods with considerable planting having occurred in the 1960s and 1990s to 2000s. The extensive thinning and weeding of conifer plantations has meant that in some stands understorey development is limited.

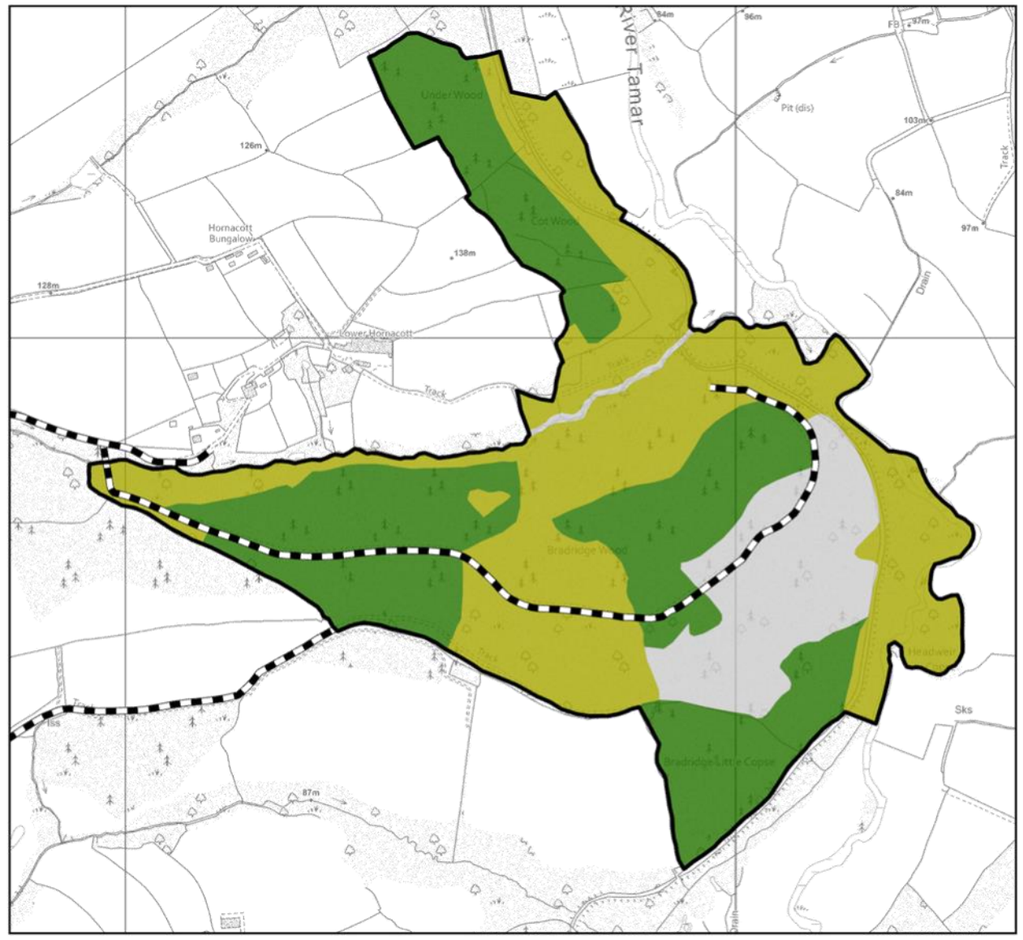



## Legend

- 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’




© Crown copyright and database right [2020]
Ordnance Survey [100021242]

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

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

**Class 3** – Plantation Wood-land

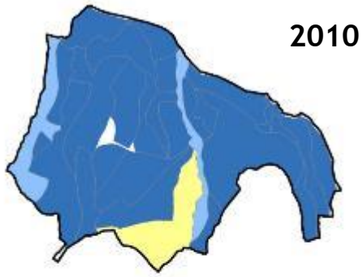
**Class 4** – Plantation Wood-land

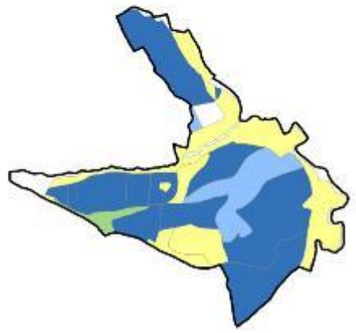
# Naturalness on Ancient Woodland

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.

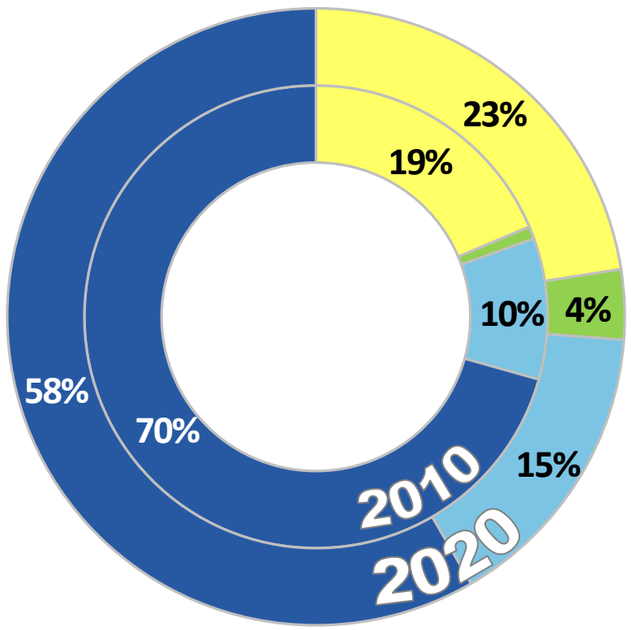
Classes 2, 3 and 4 are classified as Plantations on Ancient Woodland Sites. Areas of Semi-Natural Woodland (Class 1 - > 80% site native species) are mostly found towards the bottom of valleys, in wetter riparian areas where the soils are richer.

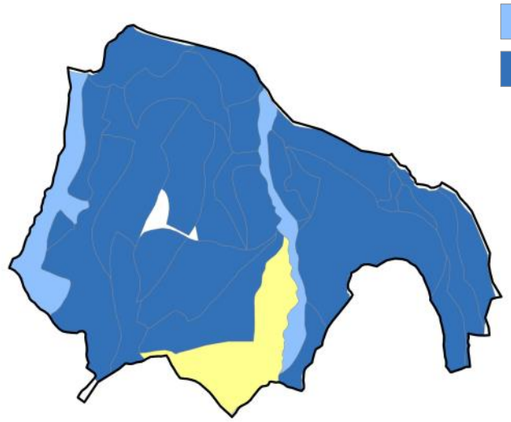
The transformation of Classes 2, 3 and 4 AWS towards Class 1 is a key objective of this Plan and is in line with Forestry England, *Keepers of Time* Policy (Forestry Commission, 2005).



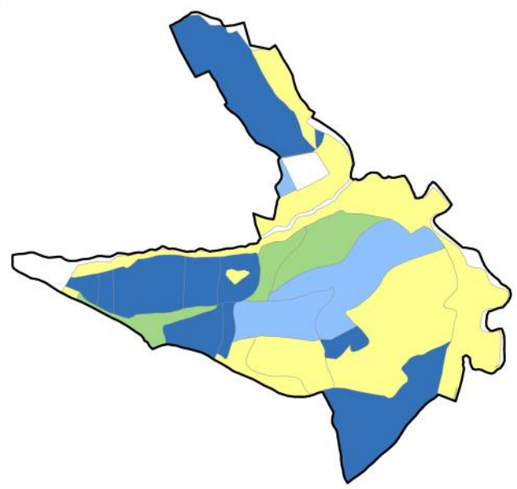




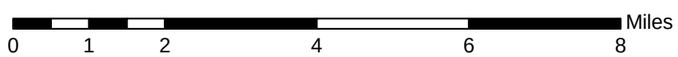




## Legend

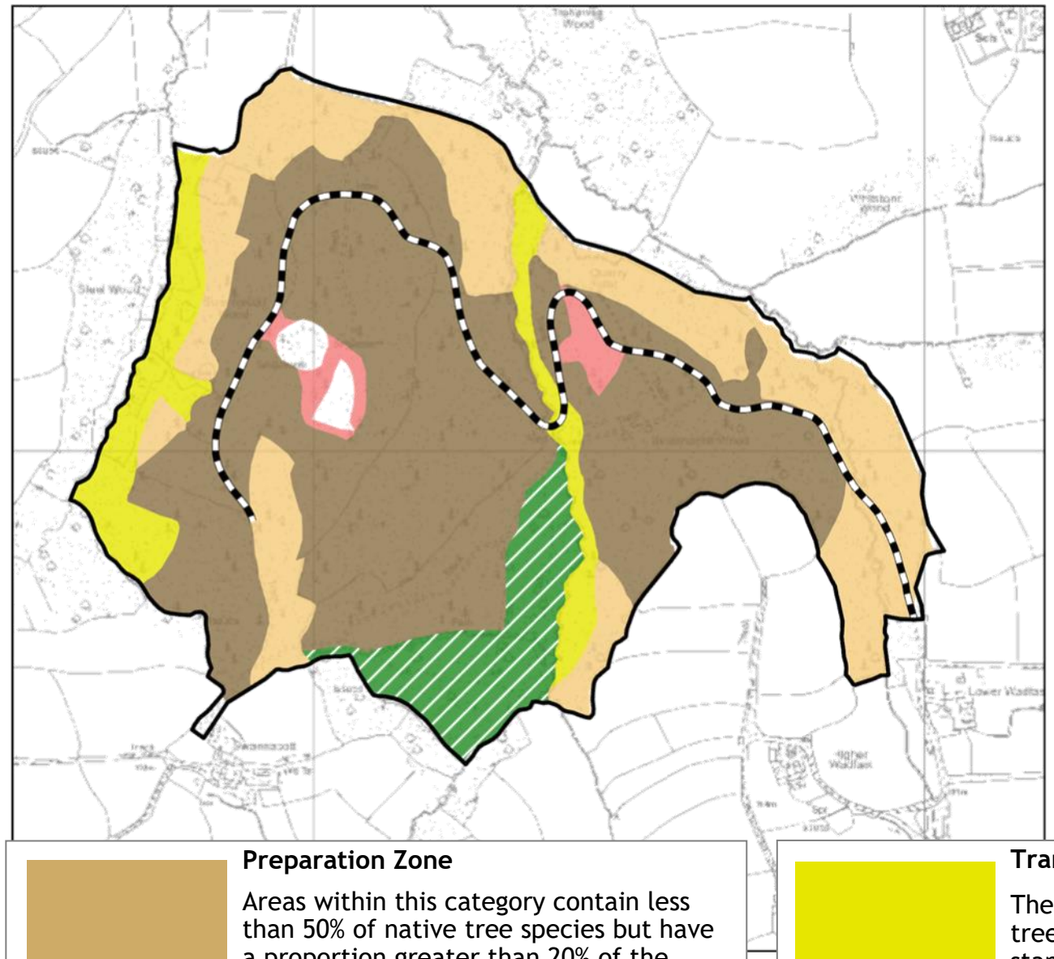
- Class 1 - > 80% Site Native Species
- Class 2 - 50-80% Site Native Species
- Class 3 - 20-50% Site Native Species
- Class 4 - <20% Site Native Species



© Crown copyright and database right [2020]
Ordnance Survey [100021242]



# Plantations on Ancient Woodland Site Management



Restoration of Plantations on Ancient Woodland Sites has already begun and the continued restoration of ancient woodland will take a considerable amount of time and resource because of the limited native remnants from which sites can regenerate.

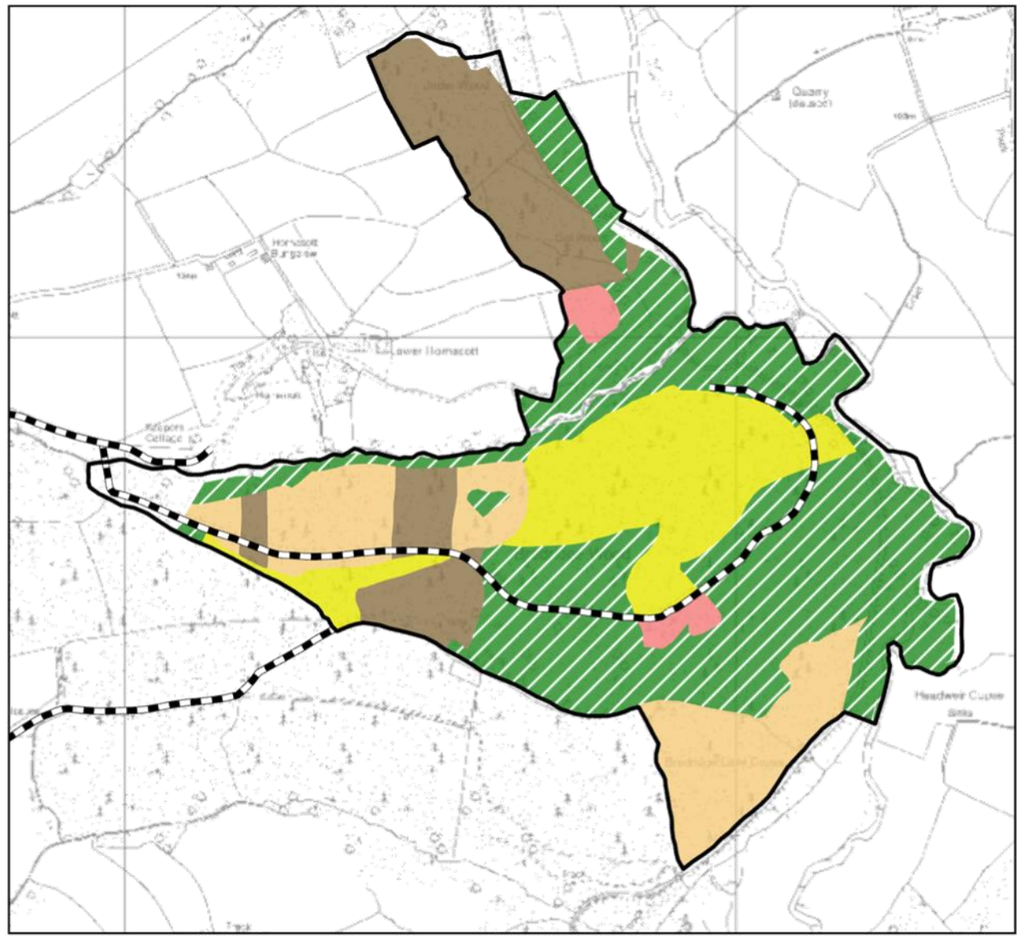
Therefore a proactive yet realistic approach will be used to transform these sites over a period of time. The aim of the transitional period to woodland containing 80% or more of native species should be to achieve:

- 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 stands.
- restoration of beech and sweet chestnut stands will not be prioritised as these species are naturalised and offer greater broadleaf diversity and therefore resilience.

If adequate regeneration is not evident in the 'Transition' and 'Preparation' zones after 10 years a reappraisal of the prescription will be needed.

**Legend**

- Building Block
- Transition Zone
- Preparation Zone
- Non-native Zone



### Preparation Zone

Areas within this category contain less than 50% of native tree species but have a proportion greater than 20% of the plantation, 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 into the non-native plantation.

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 plantation.

### Transition Zone

The indicative proportion of native tree species is 50% or more of the stand. 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, dependent on successful regeneration and establishment, although may be sooner depending on the level of conifer needing to be removed. Scattered individual conifers or small groups may remain.

### Non-native Zone

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

### Clearfell Zone

Four clearfells will be used to convert Plantations on Ancient Woodland Sites which is within this Plan period. This felling of the heaviest shade casting areas are due to threatening nature of seeding overstorey. These areas will be restocked with site suitable native species.

© Crown copyright and database right [2020]
Ordnance Survey [100021242]

# Silviculture

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

**Long term retentions** are in place where the coniferous elements are to be retained in perpetuity for cultural/landscaper or environmental purpose.

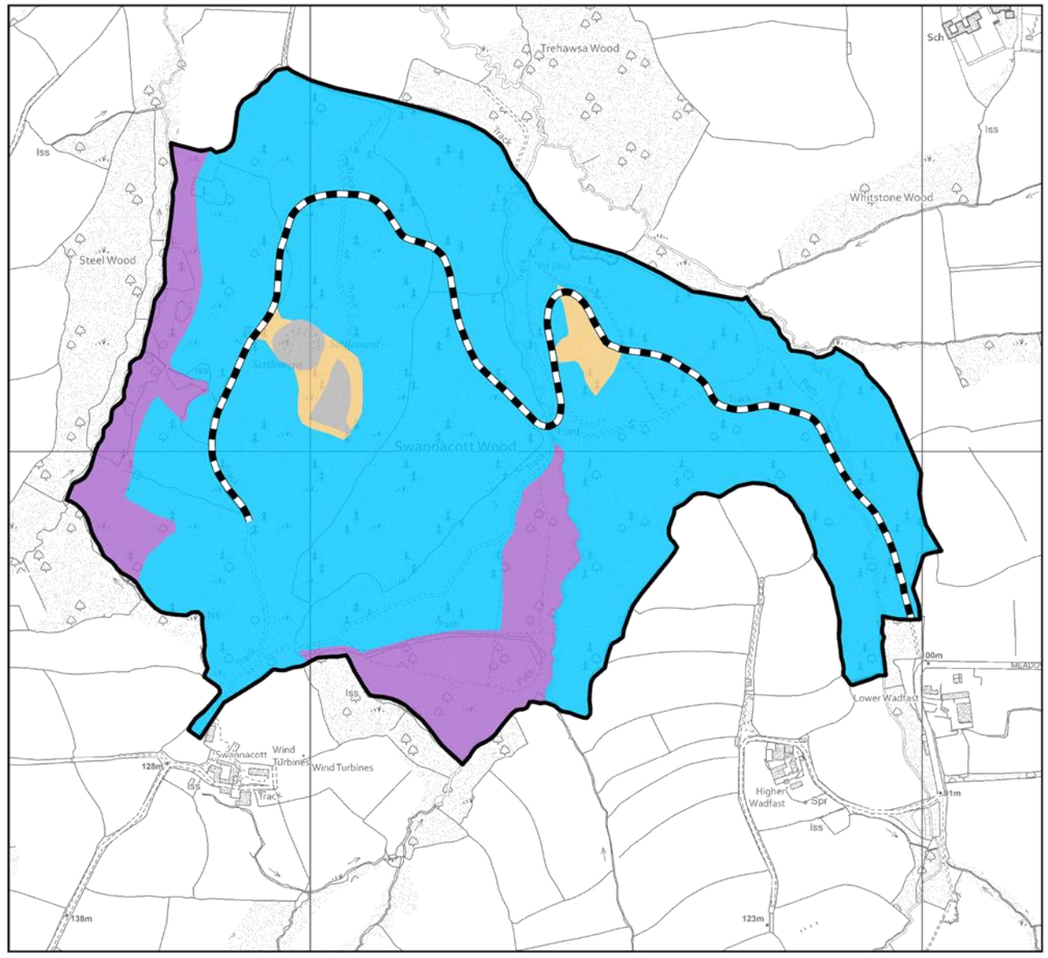
**Uniform shelterwoods** are predominately broadleaved dominated and Ancient Semi Natural Woodland sites which will be managed using seeding fellings with possible under planting of site suitable species to control light levels and develop good timber quality. Small coppice coupes of less that 0.25ha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

**Irregular shelterwoods** will look to develop a complex Low Impact Silvicultural System structure through the identification and thinning towards quality final crop trees for the future.

**Group selections** are used on windfirm, accessible stands to proactively diversify the woodland structure and composition, through creating gaps in the canopy and the possible use of enrichment replanting.

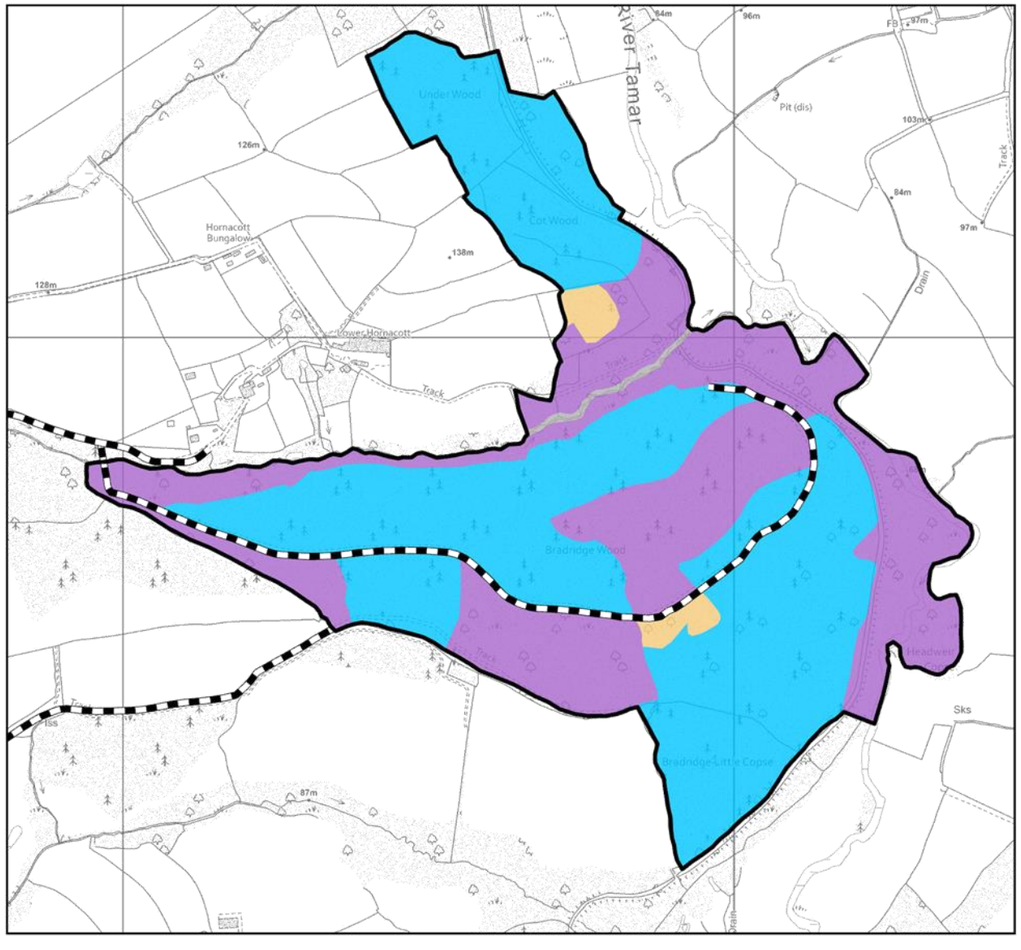
**Minimum Interventions** are predominantly inaccessible or ecologically valuable areas where management will only occur to protect and ensure the future succession of key habitats and species.

**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.




Legend

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




## 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 stands 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. Light levels will also impact on 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 stand stability.

0 0.075 0.15 0.3 0.45 0.6 Miles

© Crown copyright and database right [2020]
Ordnance Survey [100021242]

# Felling and Restocking

Swannacott
2020 - 2030

**Coupe 98008** (4.91ha)
Group fell up to a total of 2.0ha of Sitka spruce

**Restock 98008a** (4.91ha)
80% Native broadleaves
20% Open

Proposed species
80% Mixed broadleaves (nat. regen)
>1,100 stems/ha

**Coupe 98014** (0.91ha)
Fell western hemlock
2027-2030

**Restock 98014a** (0.091ha)
80% Native broadleaves
20% Open

Proposed species
40% Pedunculate oak (planted)
>2,500 stems/ha
40% Mixed broadleaves (nat. regen)
>1,100 stems/ha

**Coupe 98012** (0.99ha)
Fell Sitka spruce
2022-2026

**Restock 98012a** (0.99ha)
80% Open
20% Native broadleaves

Proposed species
20% Mixed broadleaves (nat. regen)
>1,100 stems/ha

## Legend

- Fell 2020-2021
- Fell 2022-2026
- Fell 2027-2030
- Mature Broadleaf Habitat
- Group Selection
- Minimum Intervention
- Natural Reserve
- Other/Open land

NB. Whilst 'Restock Proportion' is often prescribed at 100-90% Evergreen Conifer the use of suitable broadleaves to build in resilience and utilise site conditions is anticipated and in places is proposed.

© Crown copyright and database right [2020]
Ordnance Survey [100021242]

0 0.075 0.15 0.3 0.45 0.6 Miles

# Felling and Restocking

Bradridge
2020 - 2030

**Coupe 98010** (6.06ha)
Group fell a total of
4.6ha of western hemlock

**Restock 98010a** (6.06ha)
80% Native broadleaves
20% Open

Proposed species
80% Mixed broadleaves (nat. regen)
>1,100 stems/ha

**Coupe 98011** (0.65ha)
Fell Sitka spruce
2022-2026

**Restock 98011a** (0.65ha)
80% Native broadleaves
20% Open

Proposed species
40% Pedunculate oak (planted)
>2,500 stems/ha
40% Mixed broadleaves (nat. regen)
>1,100 stems/ha

**Coupe 98019** (0.7ha)
Fell western hemlock
2027-2030

**Restock 98019a** (0.07ha)
80% Native broadleaves
20% Open

Proposed species
40% Pedunculate oak (planted)
>2,500 stems/ha
40% Mixed broadleaves (nat. regen)
>1,100 stems/ha

## Legend

- Fell 2020-2021
- Fell 2022-2026
- Fell 2027-2030
- Mature Broadleaf Habitat
- Group Selection
- Minimum Intervention
- Natural Reserve
- Other/Open land

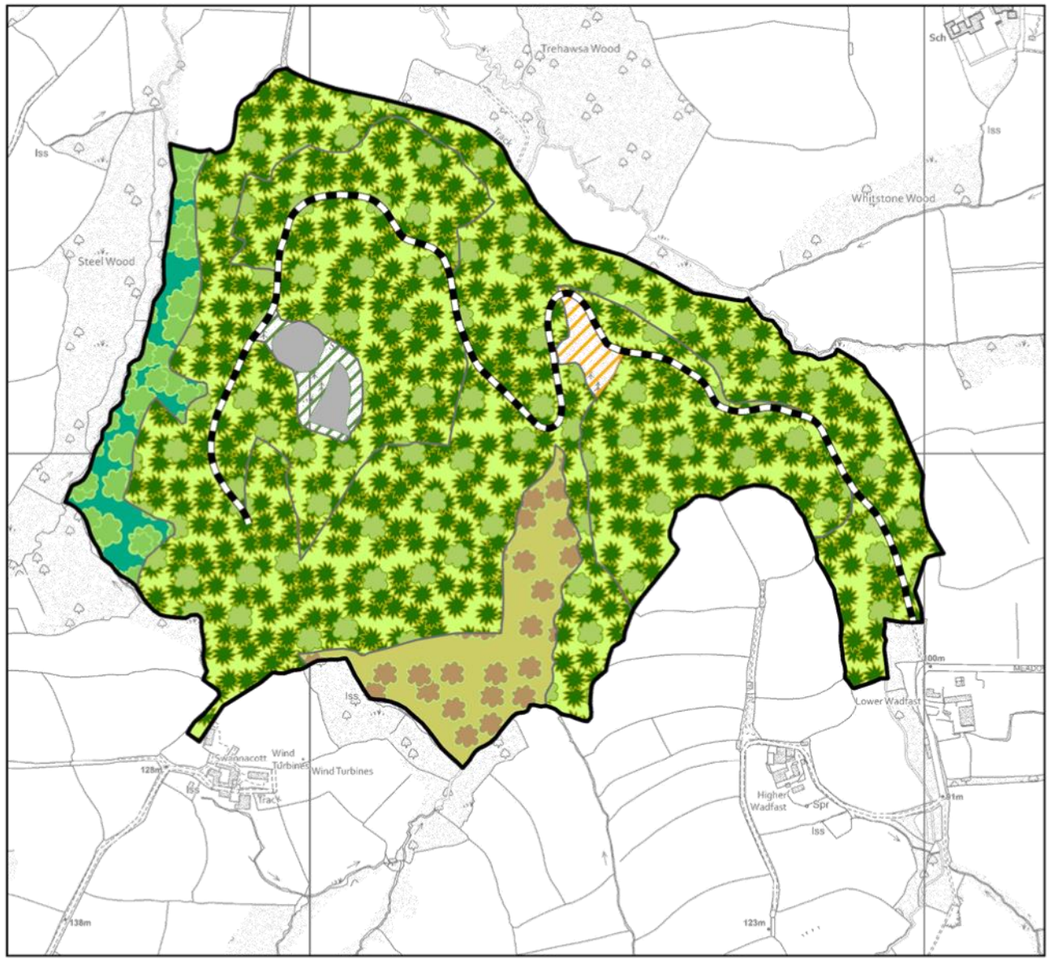
NB. Whilst 'Restock Proportion' is often prescribed at 100-90% Evergreen Conifer the use of suitable broadleaves to build in resilience and utilise site conditions is anticipated and in places is proposed.

© Crown copyright and database right [2020]
Ordnance Survey [100021242]

0 0.075 0.15 0.3 0.45 0.6 Miles

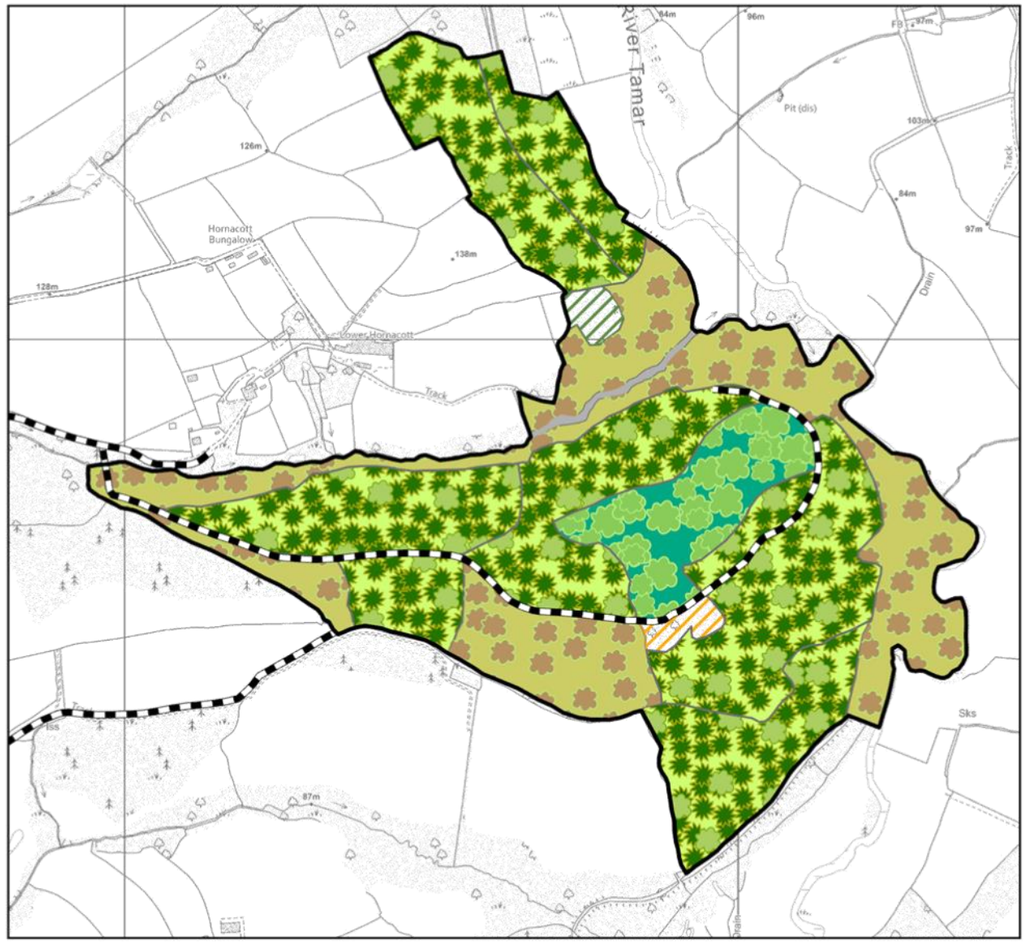
# Management Prescriptions
## 2020 - 2051

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



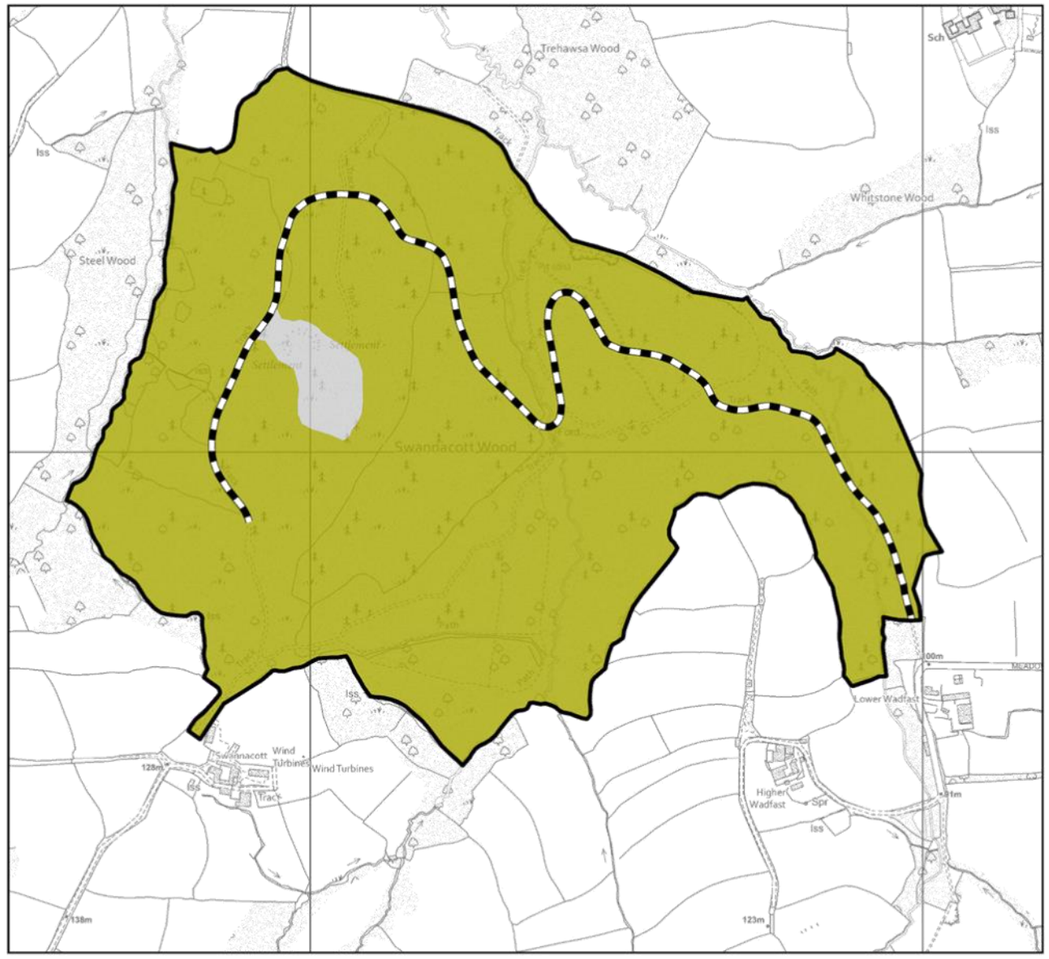

## Legend

- Fell 2017-2021
- Fell 2022-2026
- Fell 2027-2031
- Fell 2032-2036
- Fell 2037-2041
- Fell 2042-2046
- Fell 2047-2051
- Fell beyond 2051
- Conifer Retention
- Mature Broadleaf Habitat
- LISS
- Group Selection
- Coppice
- Wood Pasture
- Minimum Intervention
- Natural Reserve
- Other / Open land




© Crown copyright and database right [2020]
Ordnance Survey [100021242]

0 0.075 0.15 0.3 0.45 0.6 Miles

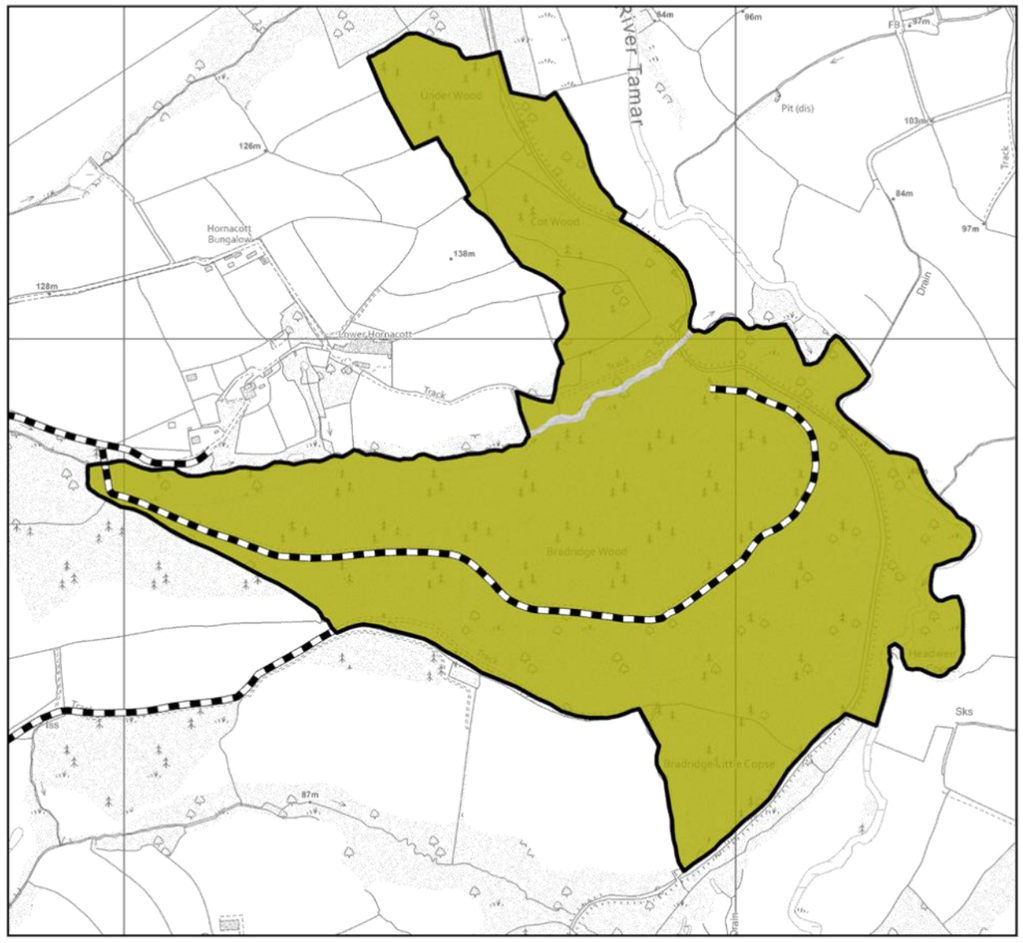



## Legend

- Conifer dominant forest
- Broadleaf dominated forest
- Open/other dominated forest

# Restock Prescriptions

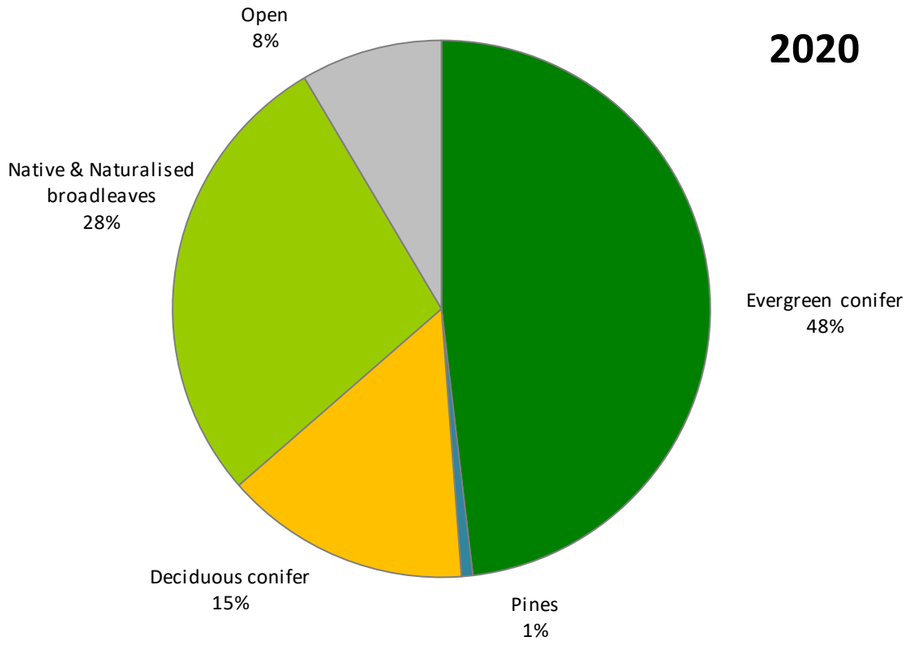
An outline of the intended restocking prescriptions through planting or natural regeneration for the next rotation, following the removal of the current stock.



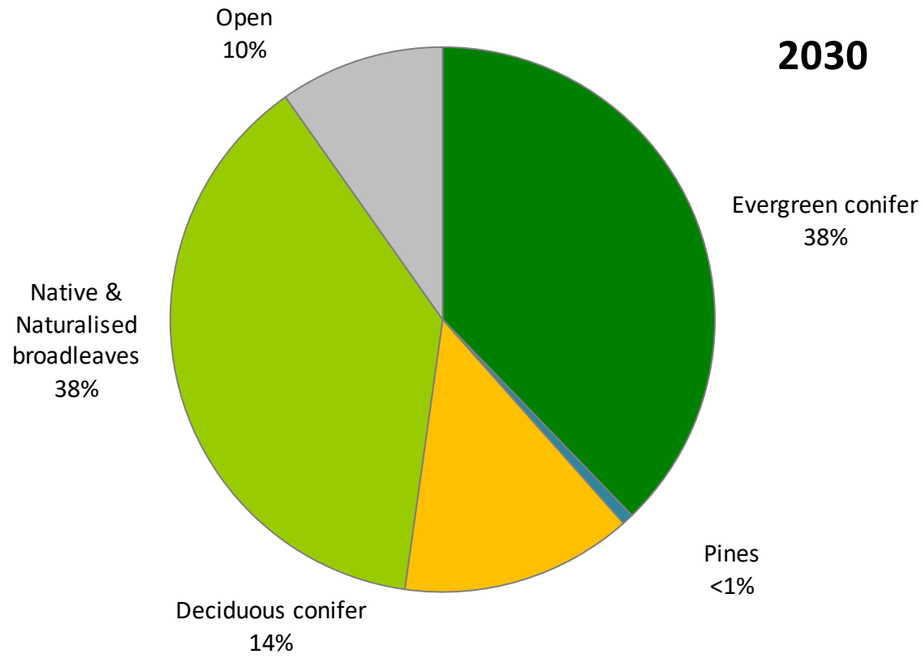

© Crown copyright and database right [2020]
Ordnance Survey [100021242]

0 0.075 0.15 0.3 0.45 0.6 Miles

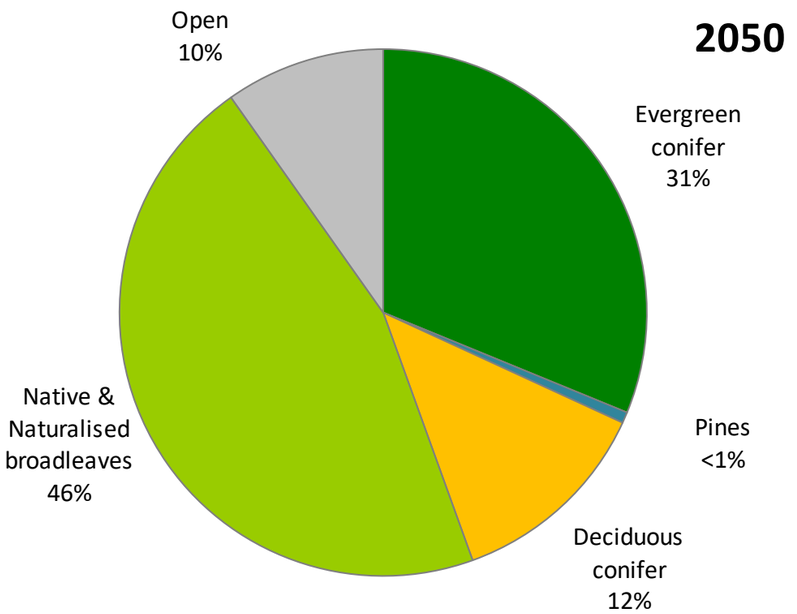
## 2020




## 2030




## 2050




## Indicative Future Species

The projections made are indicative of species composition in ten and 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.

# Stock Data 2020
Swannacott

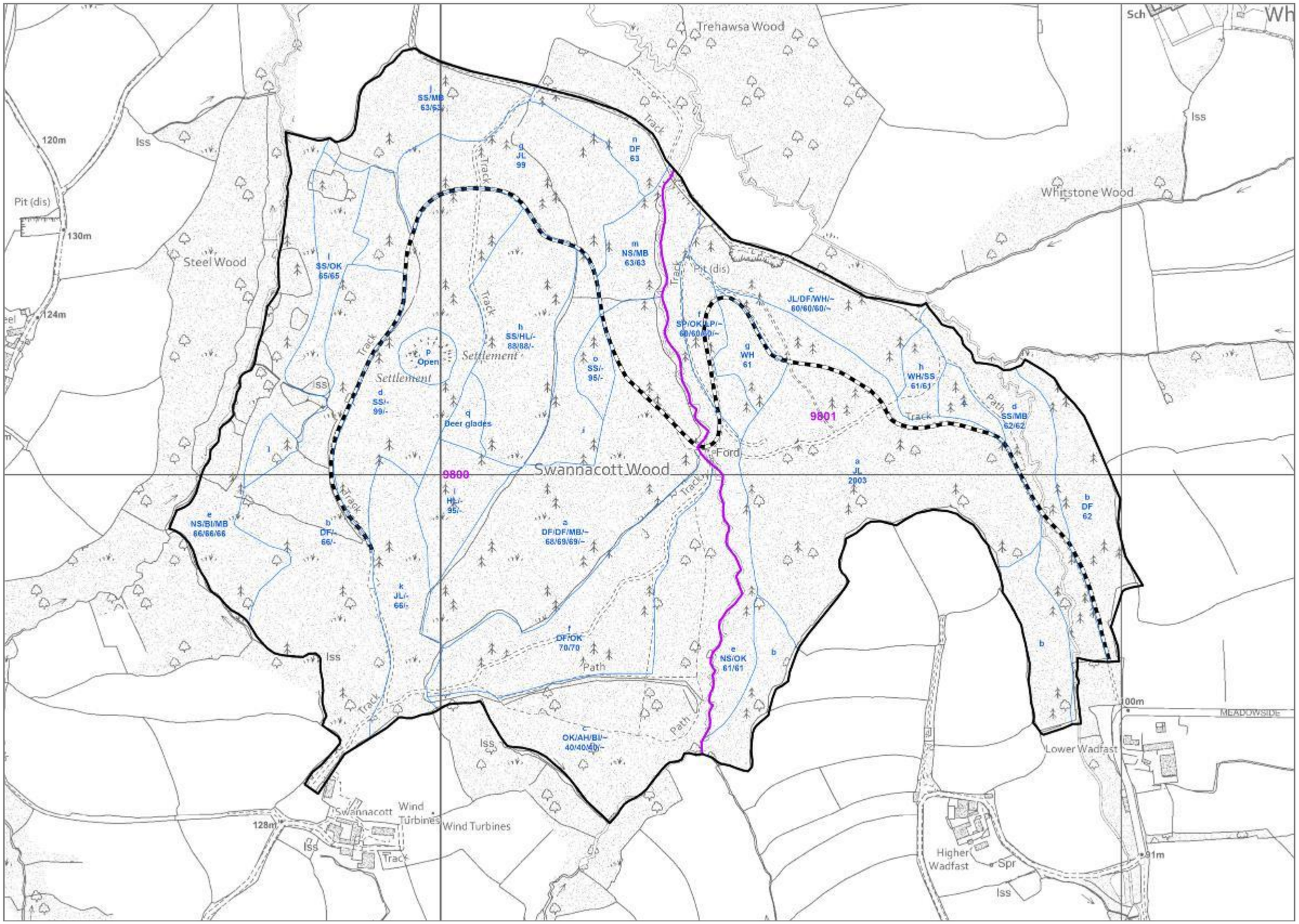
## Legend

Compartments

Sub-Compartments

0 0.075 0.15 0.3 0.45 0.6 Miles

© Crown copyright and database right [2020]
Ordnance Survey [100021242]



## Legend

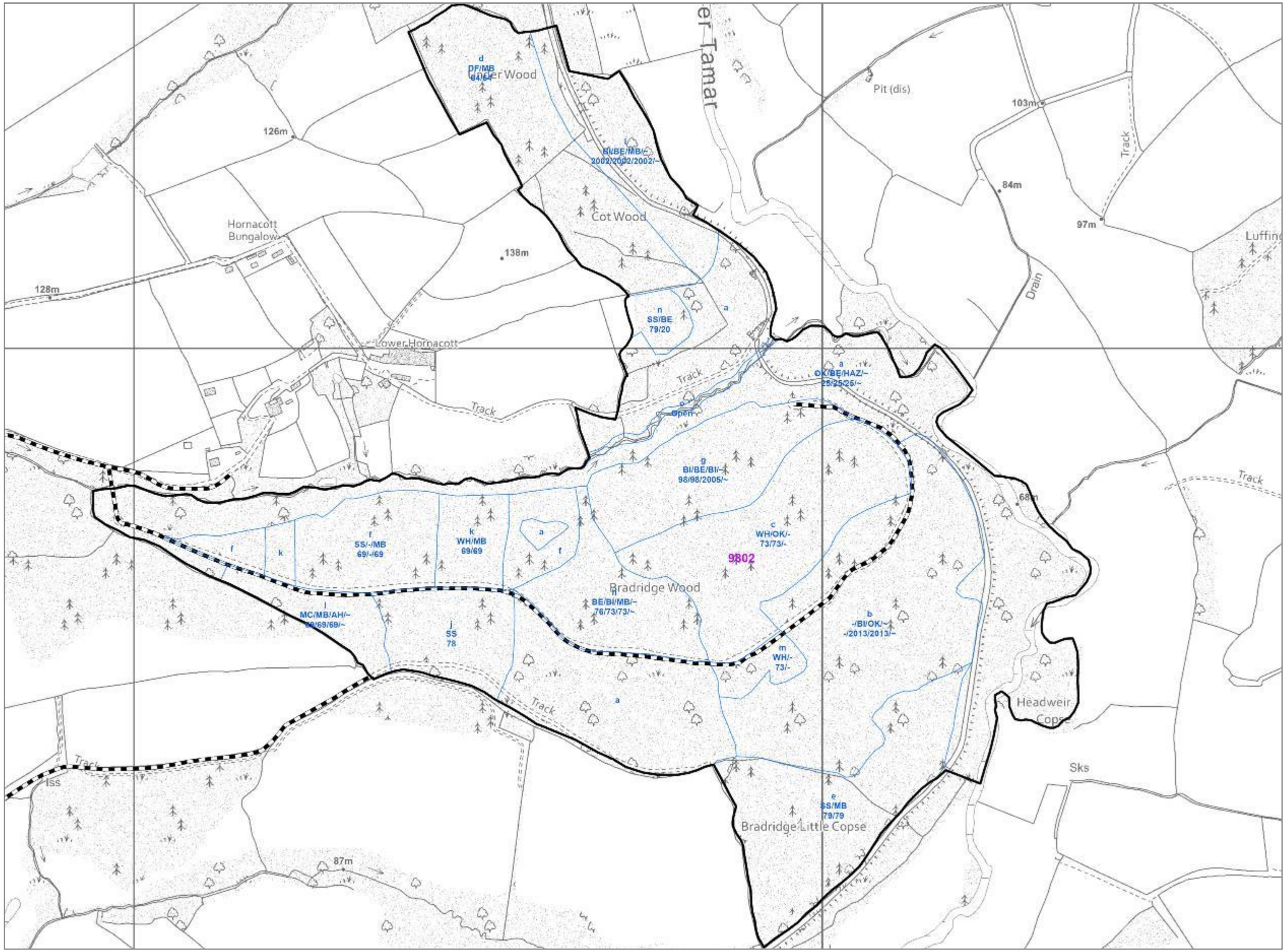
Compartments

Sub-Compartments

0 0.075 0.15 0.3 0.45 0.6 Miles

© Crown copyright and database right [2020]
Ordnance Survey [100021242]

# Stock Data 2020
## Bradridge



**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 stand 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.<br>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.<br>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.<br>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.<br>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.<br>Usually done in small groups or in strips this system can allow a varied woodland structure to develop over time.<br>Protection from competing plant species and mammal browsing might be required in the early stages by fencing or using tree shelters. |

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

# References

Cornwall County Council, 2008, *CORNWALL AND ISLES OF SCILLY LANDSCAPE CHARACTER STUDY* - Cornwall CC, Bodmin

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

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

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

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

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

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

Natural England, 2012, *152 Cornish Killas National Character Assessment Profile*, Natural England, York

UKWAS, 2017, *United Kingdom Woodland Assurance Standard*, UKWAS, Edinburgh