

Fourlaws Forest Plan 2017



North England Forest District



Planning and District Context

The Strategic Plan for the Public Forest Estate in England outlines the delivery of forest policy at a national level. At a regional level there are six Forest Districts covering the country that directly oversee the implementation of policy actions in local public forest estate woodlands. Forest Enterprise England is the organisation responsible for managing the English public forest estate.

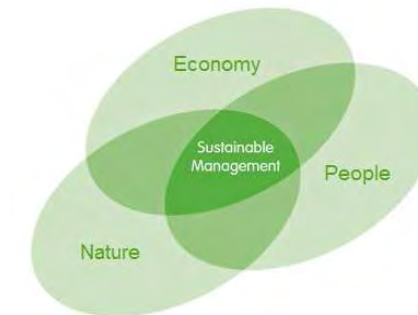
North England Forest District (NEFD) is the management unit that manages the public forest estate in Northern England. This is an extensive area encompassing 9 county or unitary authority areas from the Scottish border to Durham and Lancashire.



Our task is to realise the potential of each of the forests in our care for sustainable business opportunities, wildlife and nature conservation, and the enjoyment and well-being of local people and visitors. Each of our forests supports the economy through local jobs, sustainable timber production and the provision of recreation and tourism opportunities. All are funded by revenue from timber sales and recreation provision.

The woodlands of the district are currently arranged in 62 management areas, and their management is covered by individual ten year Forest Plans that identify local issues and the broad silvicultural management of the woods. Forest Plans are reviewed every five years.

Individual Forest Plans aim to deliver a range of public benefits with achievable objectives that deliver the three drivers of sustainable land management outlined in the North England Forest District Strategy.



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These key drivers are supported by the following Forest District Policy;

- we will optimise the financial return from timber production compatible with achievement of other forest district objectives while complying with the UK Forestry Standard and meeting the requirements of the UK Woodland Assurance Scheme
- we will provide public access to all our forests and woodlands where there are no legal or safety restrictions. We will encourage and permit a wide range of recreational activities from walking and quiet enjoyment to more specialised activities including orienteering, horse riding and motor sports
- we will ensure that rare and threatened habitats are protected and managed to maintain or enhance their conservation value

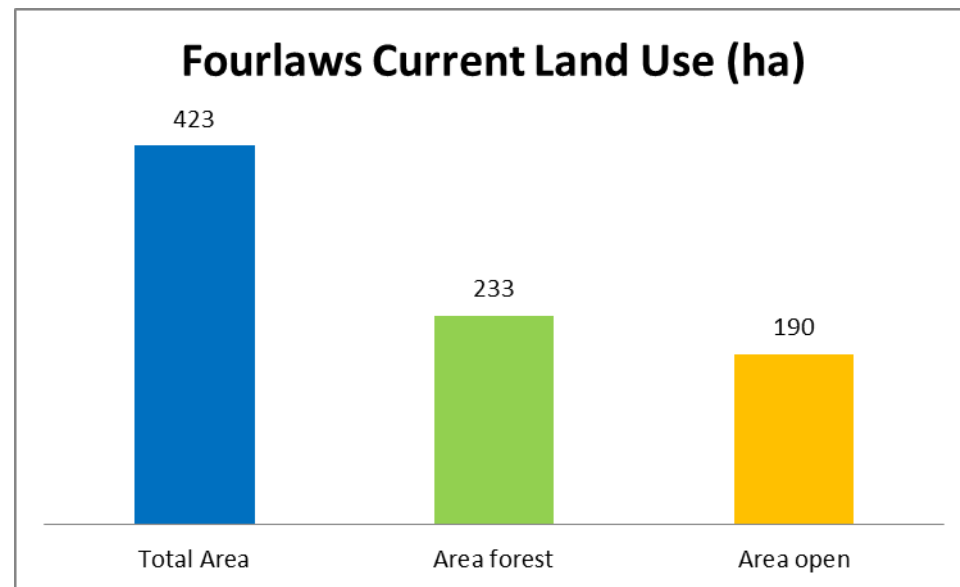
Fourlaws Forest Plan

This is the third revision for the Fourlaws Forest Plan first approved in 2001 and revised in 2007. There are no significant changes to the previous plan but brings it up to date in terms of ongoing restructuring and implementation of the management objectives. Some areas of planted native broadleaved woodland and an area of open Scots pine woodland have been designated as Natural Reserves and some areas of Long Term Retention have been identified.

Part 1 Background Information

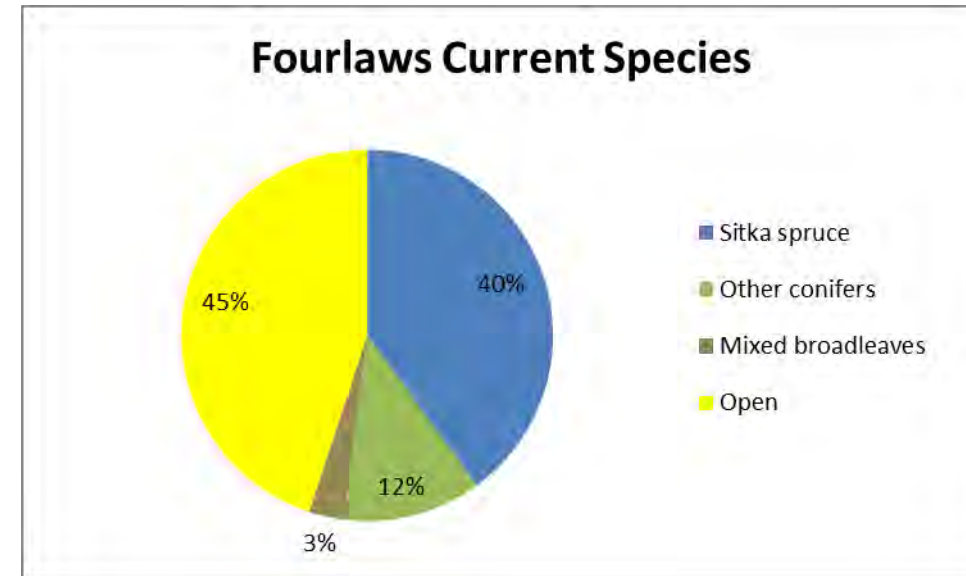
Introduction

Located to the east of Kielder Forest, Fourlaws Forest is a relatively isolated forest block covering a total area of 423 hectares, and is owned freehold. 190 hectares are open space encompassing the Aid and Wanney Craggs and the remaining open section of Aid Moss blanket bog.



Current Woodland composition, species and timber potential

The forest area was originally established in three main phases in 1957, and 1966/67 when the majority of the plantation was planted, and more recent planting from 2001 to the present date as the forest has undergone significant restructuring. The remaining original planting is pure conifer, a mixture of Sitka spruce, Lodgepole pine and Scots pine. The new planting presents a more balanced and diverse species structure in terms of the inclusion of broadleaf species and alternative conifer species shown below:



The forest is typified by unstable site types both in terms of exposure, and soils (peat and gleyed soils) and all of the area has been classified as wind hazard class 5. As with many upland forests within Great Britain managing the risk of wind throw is a major constraint when allocating felling dates to crops. Economic felling age within these crops is therefore limited to the age at which they are expected to achieve terminal height (the height at which major wind blow can be expected). Options on the timing of clearfelling and opportunities to thin or utilise continuous cover silvicultural systems are therefore limited. The productive capacity of the area is moderate and commercial plantations typically achieve Yield Class in the range 12 to 16. The forest has undergone significant restructuring since 2001 and little remains of the original first rotation crops.

Designated areas

There are no formal designations within the forest.

Conservation and Heritage

The main features of biological conservation interest is the blanket bog forming Aid moss, and the Aid and Wanney crags which form part of the Wanneys SNCI, designated for geological interest, but also providing nesting sites for raptor species. No other designated features are contained within the area. Though a significant area of Aid moss is currently open, it has been partially drained and afforested. In order to assess both the current status of the moss and what area should be reinstated, an ecological consultant was previously commissioned to survey the area, the result of which has been to propose an extension to the open area of the moss when the current tree crops are removed. Progress has been

made through the period of the previous plan with just one remaining felling coupe to the south of Aid Moss due to be harvested. Once this area has been felled a more accurate assessment of the southern boundary of the mire and future restocking boundary will be possible.

Felling and restocking of the initial first rotation crops commenced in 2001. These now well-established parts of restructured forest include several areas of planted native mixed broadleaved woodland which are categorised as Natural Reserves. They are predominantly wooded permanent areas which are of current or potential high conservation value and managed by minimum intervention. As the process of restructuring continues other planted native broadleaved areas may also be eligible for Natural Reserve designation once they become successfully established.

No scheduled sites of archaeological interest are present within the forest, though a Scheduled Ancient Monument, a Pre Roman Iron Aged Hill Fort on Wanney Crag borders the forest. A number of unscheduled sites are present within the forest mostly boundary features which are currently within open areas and will remain unplanted through future rotations. Any additional sites that are discovered as clearfelling takes place will be recorded and added to the records.

Landscape and Topography

Fourlaws is located on the rolling fell of Chesterhope Common within the Cheviot Fringe National Landscape Character Area (NCA). The area is a tranquil, undulating landscape, framed by the Cheviots NCA to the west and the Northumberland Sandstone Hills NCA to the east. The importance of glacial processes in shaping this landscape is shown by the extensive array of glacial lake and fan deposits, sinuous ridges, eskers, kames and kettle holes. Conifer blocks and shelterbelts are prominent in the landscape with broadleaved woodland predominantly along watercourses. Due to the rolling nature of the landscape the forest does not dominate the view from any major viewpoints. The main structural features within the forest are formed by the open crags which will be maintained as open space through subsequent rotations.



Communities and recreation

Access to the forest in the North West corner was improved in 2009 as part of an initiative with the local community providing access through the farmers' field to allow locals to access the forest without going onto the busy A68 road. An interpretation panel was designed by the community group and local children planted the broadleaves along the A68 woodland edge. A simple circular path exists with some sculptures along the route.

No other formal provision for recreation is made within the forest; however the public rights of way are regularly used, especially as a means for climbers to access Wanney crags, which are a popular rock climbing venue within Northumberland. All rights of way within the plan area will be left unplanted with the width of the unplanted land along rights of way varied, but never less than 3 metres. Trees planted adjacent to public rights of way will be pruned as required to maintain free access. No further formal recreational provision is envisaged at the present time.

Pests and diseases

Though owned freehold the sporting rights within the forest were retained by the previous owner, and are exercised. Roe deer are present in the forest and currently the lessor does the deer control with the F.C. having concurrent rights should it be necessary because of excessive deer damage. Larch is under threat from the disease *Phytophthora ramorum* and consequently there will be no restocking of larch for the foreseeable future.

Access and roading

There are two main access points from the public highway into the woodland. The entrance most commonly used is at the southern end of the wood. Internally forest operations are adequately served by a network of forest road and tracks and there are no plans for further development or extension.

Part 2 Analysis and Concept

The factors outlined in Part 1 present various opportunities and issues. These are summarised below:

Factor	Opportunities	Issues
Management type	Some potential for LTR of more open grown areas of pine and MB	High WHC and soils dictates clearfelling system
Biodiversity and heritage	High conservation value of Aid Moss blanket mire and habitat associated with the open areas around crags Heritage features located within open areas and therefore at low risk from future operations	Natural regeneration onto the blanket mire
Access/Roading	Adequate internal network of forest roads	
Harvesting	One remaining coupe of viable timber from the first rotation is due for felling	Much of the forest will not produce timber again until beyond 2050
Pests and disease		Sporting rights are retained by the lessee
Future Species/ Climate change	Species diversification with an introduction of alternative conifers such as NS, OMS, SP and native MB. SS viable through at least one more rotation based on climate change projections	Need to maintain economic viability of the forest through the next rotation
Current species	Diversification of species composition is being achieved with the inclusion of MB and other conifer species. SS remains the primary economic species for timber production through the next rotation	Predominantly young even aged forest with limited structural diversity due to the impact of a high wind hazard classification
Public access	Limited use of the forest is adequately served by the access available to the public. Freehold	Maintaining PROW's with routes clear of obstruction and encroachment of trees

Part 3 Objectives and Proposals

The following objectives have been identified based on FEE National Policy and NEFD Strategic Plan

Forest District Strategic Goal	How Forest Plan delivers
<p>ECONOMIC</p> <p><u>Wood Production</u> –</p> <p><i>'we will optimise the financial return from timber production compatible with the achievement of other district objectives whilst complying with the UK Forestry Standard and meeting the requirements of the UK Woodland Assurance Scheme'</i></p>	Harvest 22ha in the period 2017-2021 generating approx. 8,200m ³ of timber
<p>NATURE and HERITAGE</p> <p><i>'we will continue to diversify the age class structure of our even-aged woodlands and increase the value of all our woodlands and forest for wildlife'</i></p> <p><i>'we will ensure that rare and threatened habitats are protected and managed to maintain or enhance their conservation value'</i></p>	<p>Continued restructuring of the forest through felling and restocking with a variety of conifer and broadleaved species</p> <p>Seek to extend Aid Moss blanket mire following harvesting of the coupe to the south, the exact boundary for restocking to be determined post felling</p> <p>Long term retention of remaining original plantations to enhance structural diversity</p>
<p>PEOPLE</p> <p><i>'we will provide public access to all our forests and woodlands where there are no legal or safety restrictions...'</i></p>	Maintain the network of public rights of way to a good standard to facilitate public access.

Part 4 Monitoring plan

The objectives identified in section 3 will be monitored in the following ways;

Objective	Criteria for success	Assessment
<p>ECONOMIC</p> <p>Wood production</p> <p>Sustainable economic regeneration</p>	<p>Marketable parcels of timber on offer to the market</p> <p>Maintain timber harvesting access and infrastructure</p>	<p>Contract and sales records</p>
<p>NATURE and HERITAGE</p> <p>Nature conservation</p> <p>Historic features</p>	<p>Maintain open character of Aid Moss blanket mire and increase extent of this habitat as appropriate</p> <p>Protect and enhance features</p>	<p>Delivery of felling plan and assessment at five year review</p>
<p>PEOPLE</p> <p>Visual enhancement to visitors.</p>	<p>Ongoing restructuring of the woodland</p>	<p>Five year Forest Plan review</p>

Part 5 Forest Plan Maps

- Location – 1:75,000 scale showing location in context of other FEE woodland in the local area
- Current Species – species composition in 2017
- Age Class Distribution – planting year periods of the current species
- Landscape and Topography – indicating topography within the forest and local area
- Soils – indicating soil composition across the forest
- Wind Hazard – windiness of the site based on Wind Hazard Classification
- Yield Class – indicating the productivity of the current species
- Conservation and Heritage – statutory and non-statutory conservation and heritage features
- Access and Services - formal public rights of way, FC access and local services
- Design Concepts – broad concepts of future management
- Operations Proposals – showing felling proposals and areas of Natural Reserve and Long Term Retention
- Future Species – representing the long term vision for future species composition





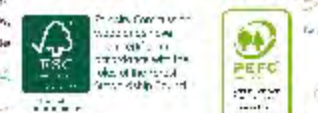
Forestry Commission
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Fourlaws Location



1:75,000

 Fourlaws
 Other FC Woodland





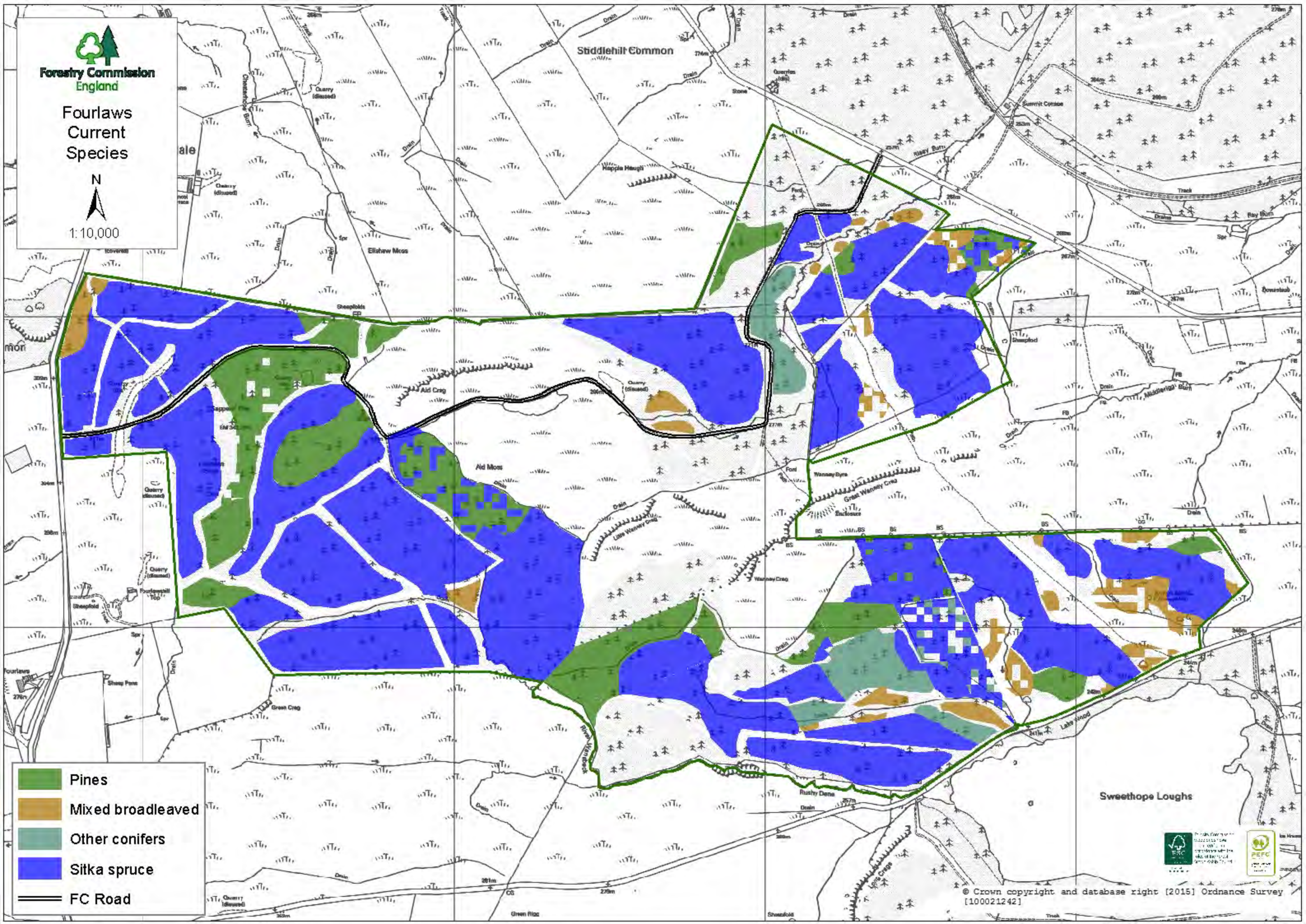
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Fourlaws Current Species



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- Pines
- Mixed broadleaved
- Other conifers
- Sitka spruce
- FC Road

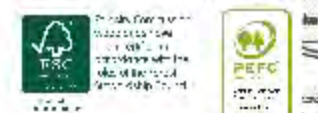
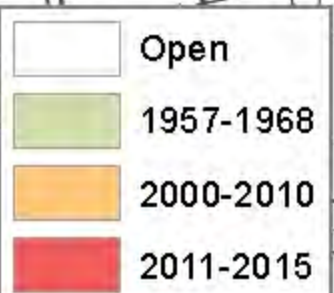
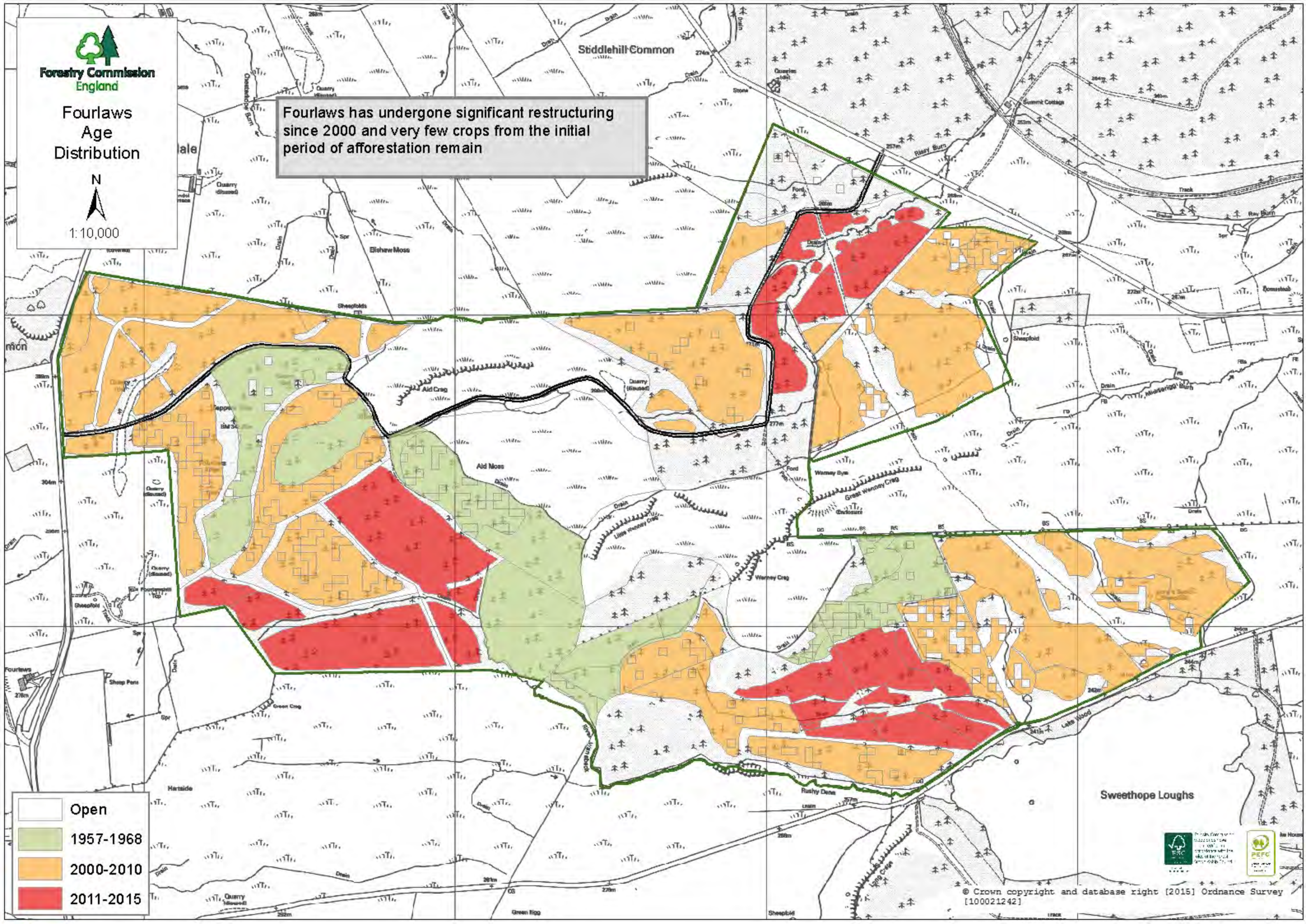


Fourlaws Age Distribution

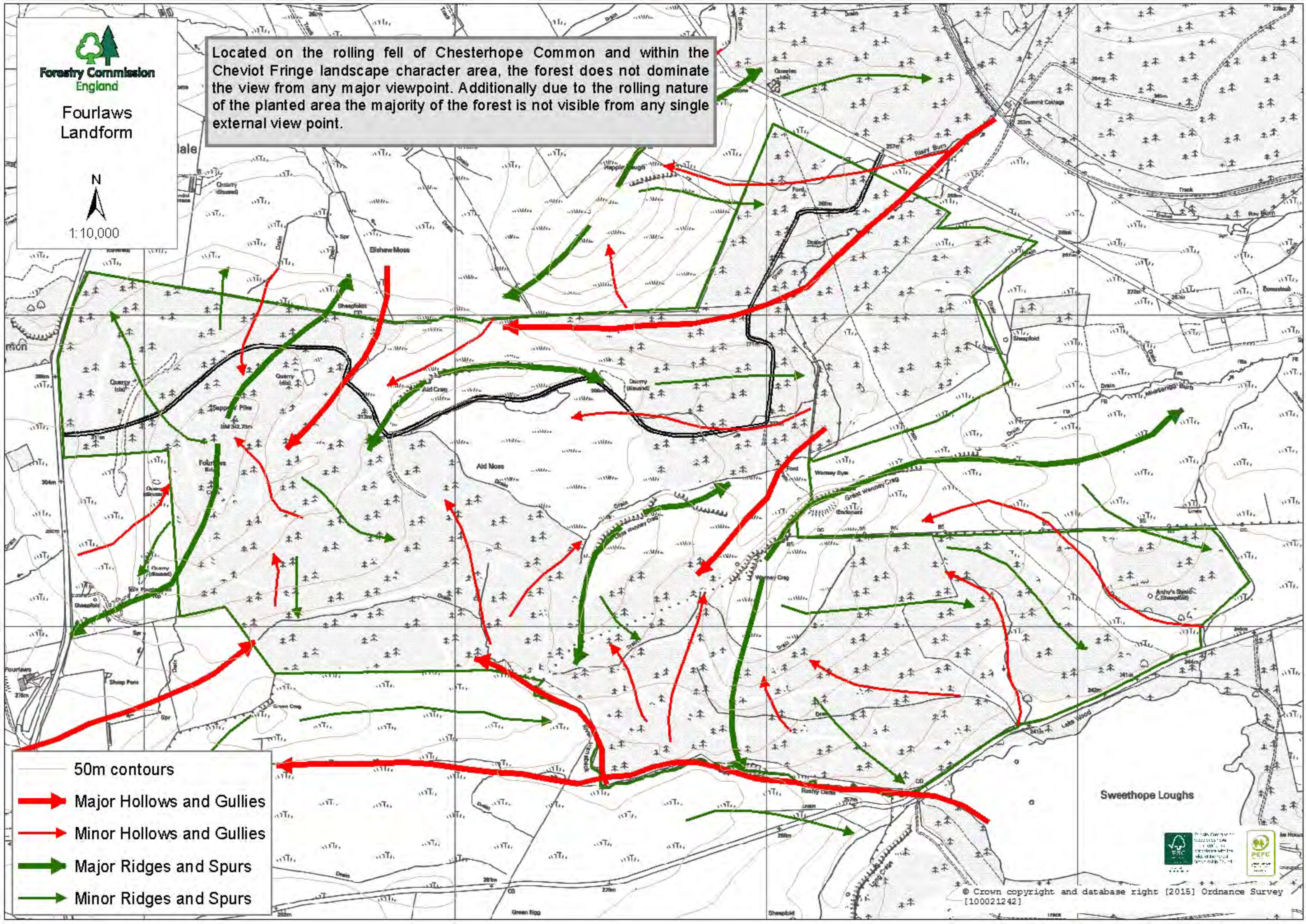


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Fourlaws has undergone significant restructuring since 2000 and very few crops from the initial period of afforestation remain



Located on the rolling fell of Chesterhope Common and within the Cheviot Fringe landscape character area, the forest does not dominate the view from any major viewpoint. Additionally due to the rolling nature of the planted area the majority of the forest is not visible from any single external view point.



50m contours

Major Hollows and Gullies

Minor Hollows and Gullies

Major Ridges and Spurs

Minor Ridges and Spurs

Sweethope Loughs





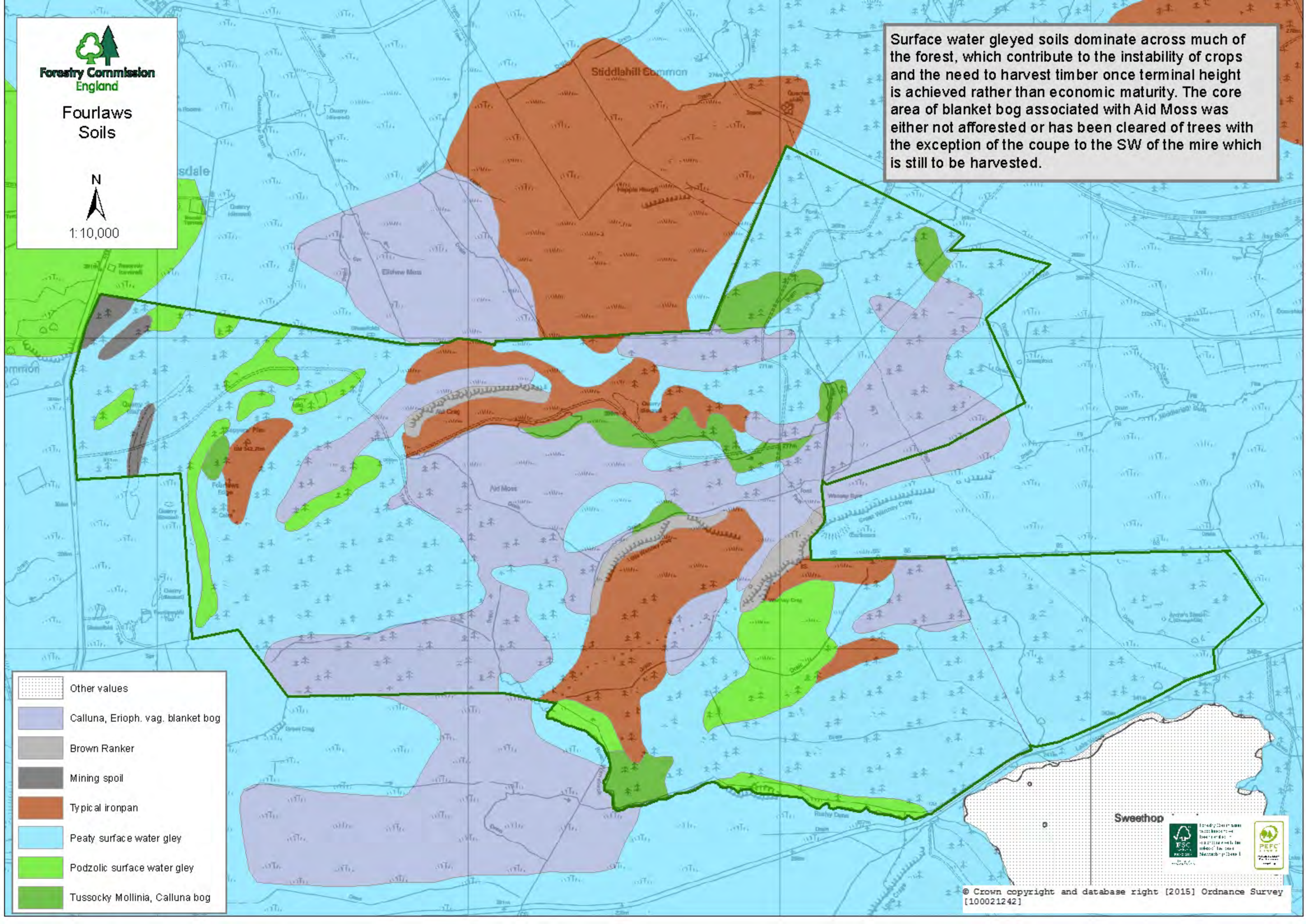
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Fourlaws Soils



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Surface water gleyed soils dominate across much of the forest, which contribute to the instability of crops and the need to harvest timber once terminal height is achieved rather than economic maturity. The core area of blanket bog associated with Aid Moss was either not afforested or has been cleared of trees with the exception of the coupe to the SW of the mire which is still to be harvested.



-  Other values
-  Calluna, Erioph. vag. blanket bog
-  Brown Ranker
-  Mining spoil
-  Typical ironpan
-  Peaty surface water gley
-  Podzolic surface water gley
-  Tussocky Mollinia, Calluna bog

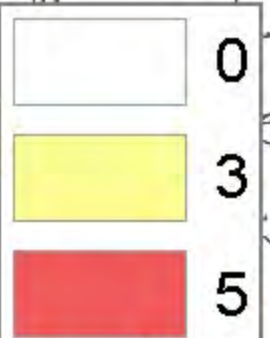
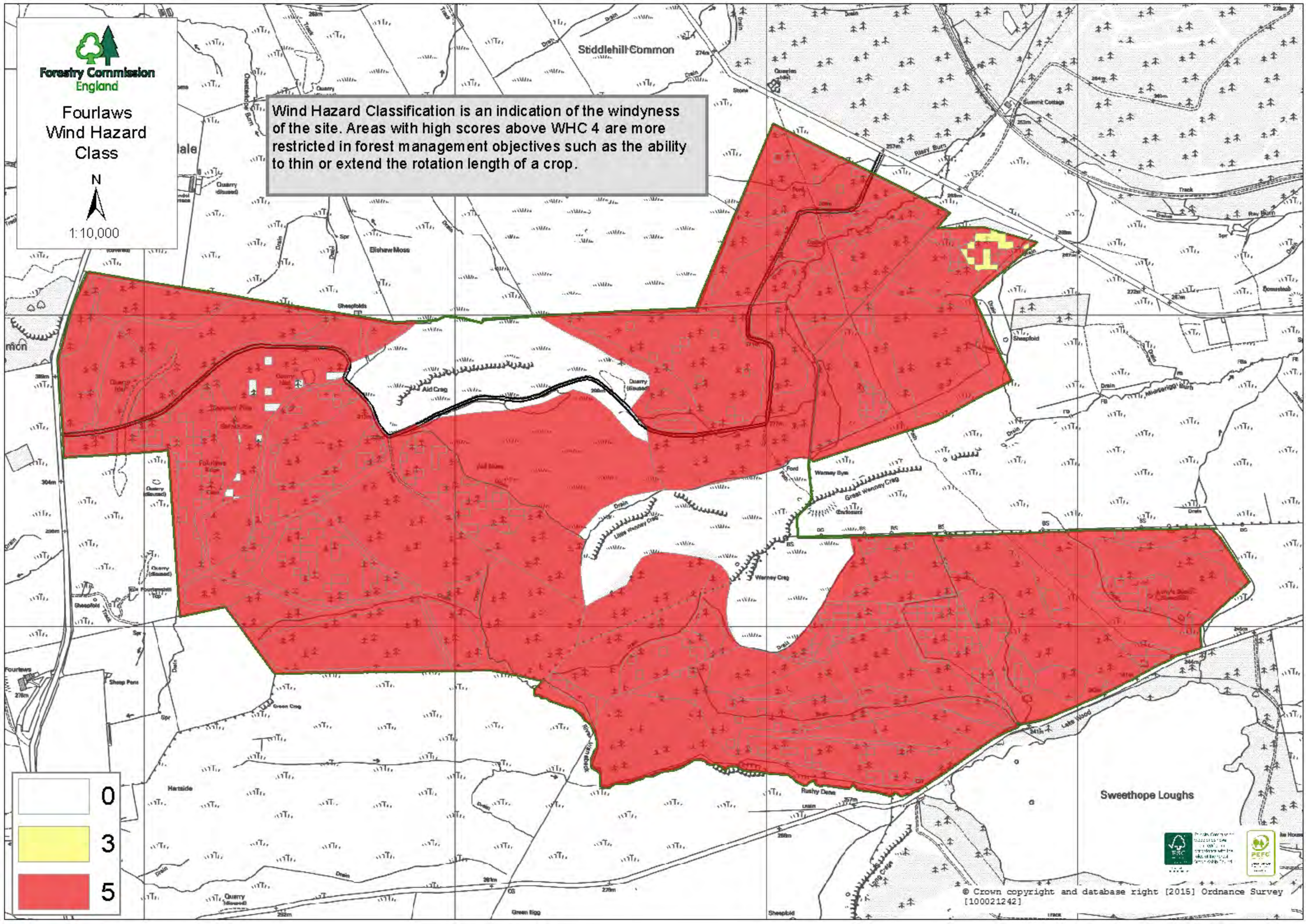


Fourlaws
Wind Hazard
Class



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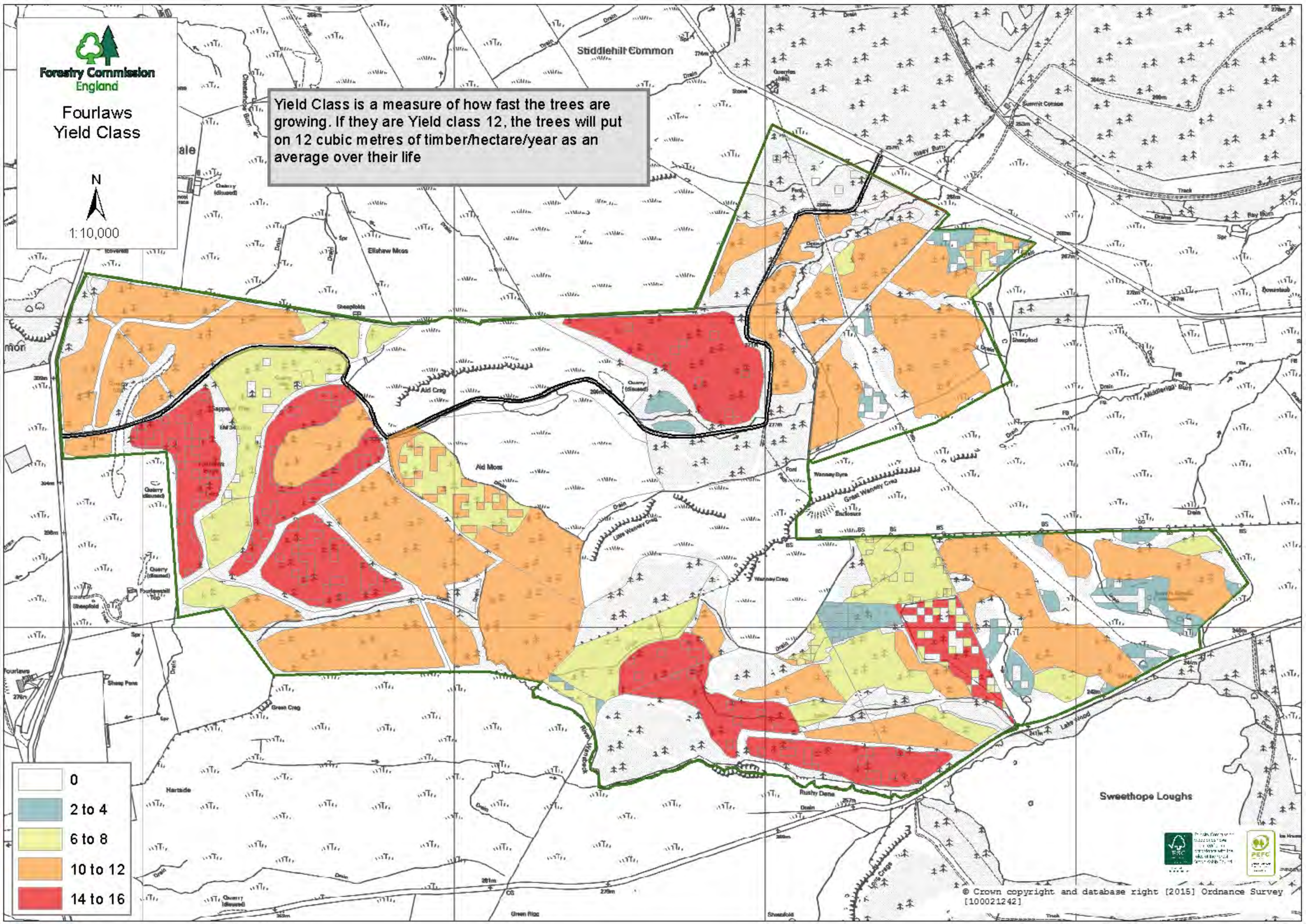
Wind Hazard Classification is an indication of the windyness of the site. Areas with high scores above WHC 4 are more restricted in forest management objectives such as the ability to thin or extend the rotation length of a crop.



Fourlaws Yield Class

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Yield Class is a measure of how fast the trees are growing. If they are Yield class 12, the trees will put on 12 cubic metres of timber/hectare/year as an average over their life

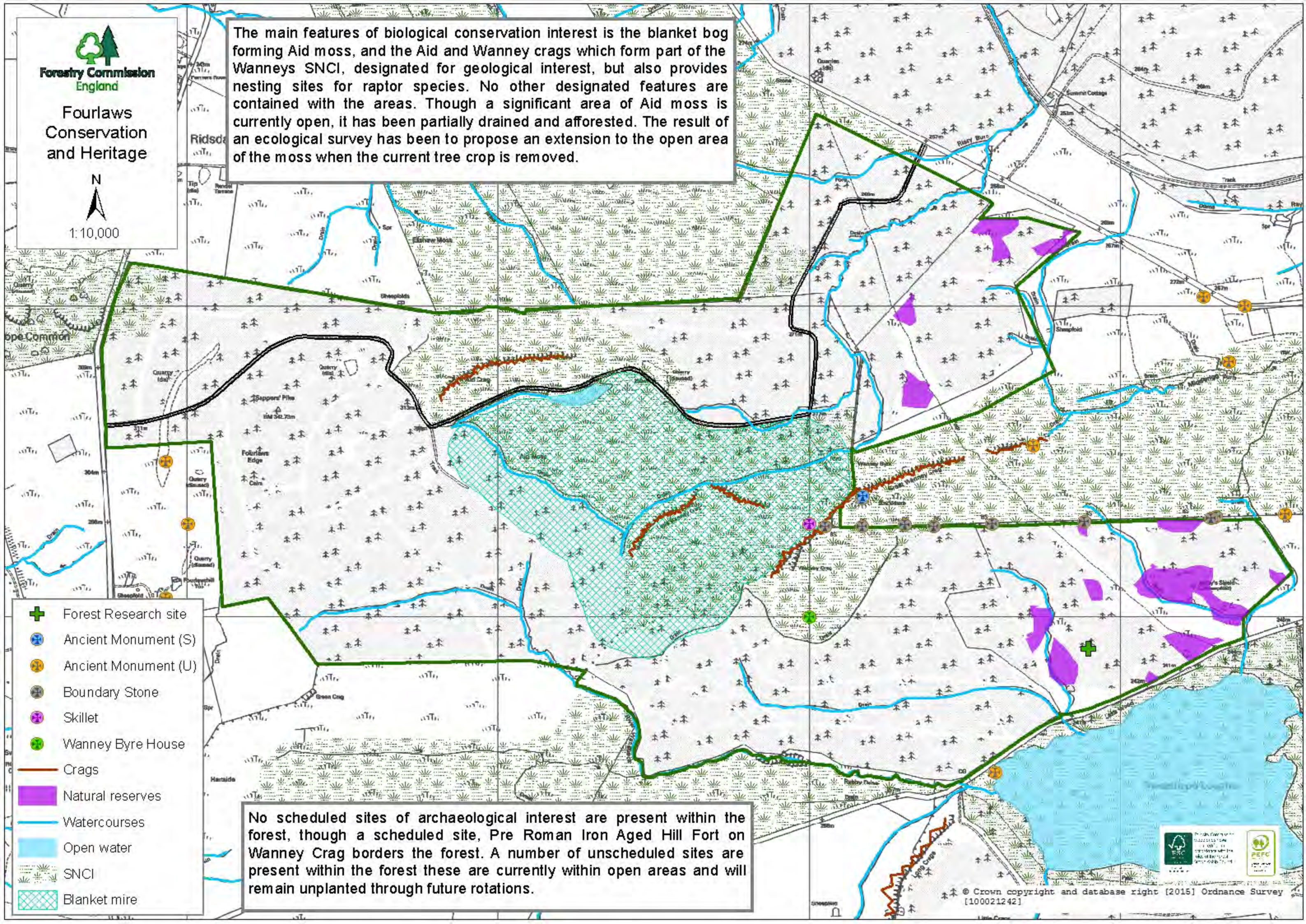


0
2 to 4
6 to 8
10 to 12
14 to 16



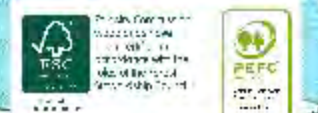
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The main features of biological conservation interest is the blanket bog forming Aid moss, and the Aid and Wanney crags which form part of the Wanneys SNCI, designated for geological interest, but also provides nesting sites for raptor species. No other designated features are contained within the areas. Though a significant area of Aid moss is currently open, it has been partially drained and afforested. The result of an ecological survey has been to propose an extension to the open area of the moss when the current tree crop is removed.



- Forest Research site
- Ancient Monument (S)
- Ancient Monument (U)
- Boundary Stone
- Skillet
- Wanney Byre House
- Crags
- Natural reserves
- Watercourses
- Open water
- SNCI
- Blanket mire

No scheduled sites of archaeological interest are present within the forest, though a scheduled site, Pre Roman Iron Aged Hill Fort on Wanney Crag borders the forest. A number of unscheduled sites are present within the forest these are currently within open areas and will remain unplanted through future rotations.

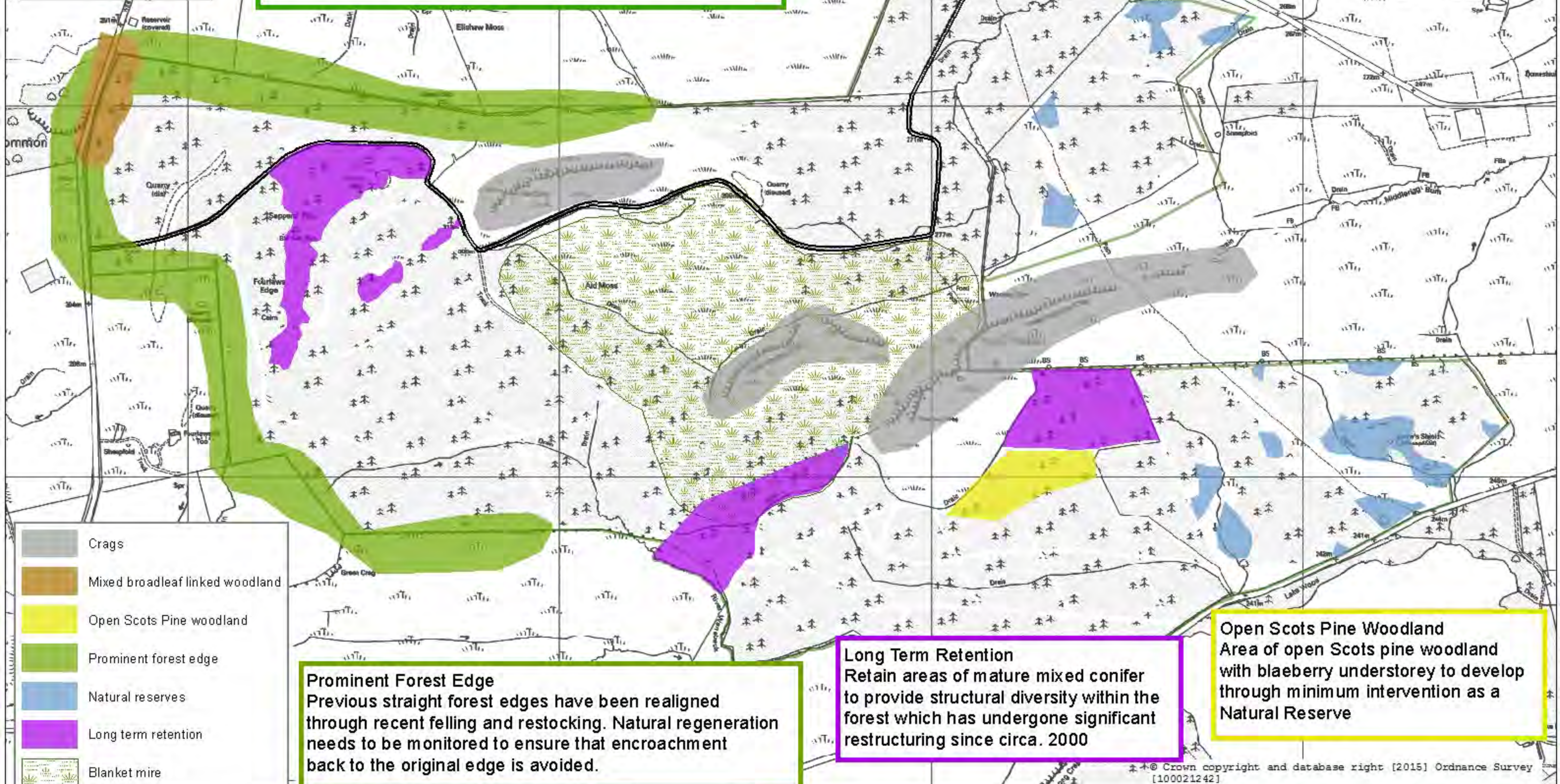


Link Broadleaf woodland
Retain fringe of recently established and semi mature broadleaf trees along roadside to link with open broadleaved woodland west of the A68

Natural Reserves
Areas of native broadleaved woodland planted in 2001 are designated as Natural Reserve to be maintained and managed through minimum intervention.

Blanket Mire
Although not designated Aid Moss blanket mire provides an important habitat within the forest and the open character should be maintained by control of natural regeneration. Expand the mire to the south, the exact boundary to be determined after felling of the conifer plantation in 2017-2021.

Crags
The crags form a distinctive structural feature and provide a significant habitat and recreation resource. Maintain features within open space.



- Crags
- Mixed broadleaf linked woodland
- Open Scots Pine woodland
- Prominent forest edge
- Natural reserves
- Long term retention
- Blanket mire

Prominent Forest Edge
Previous straight forest edges have been realigned through recent felling and restocking. Natural regeneration needs to be monitored to ensure that encroachment back to the original edge is avoided.

Long Term Retention
Retain areas of mature mixed conifer to provide structural diversity within the forest which has undergone significant restructuring since circa. 2000

Open Scots Pine Woodland
Area of open Scots pine woodland with blaeberry understorey to develop through minimum intervention as a Natural Reserve



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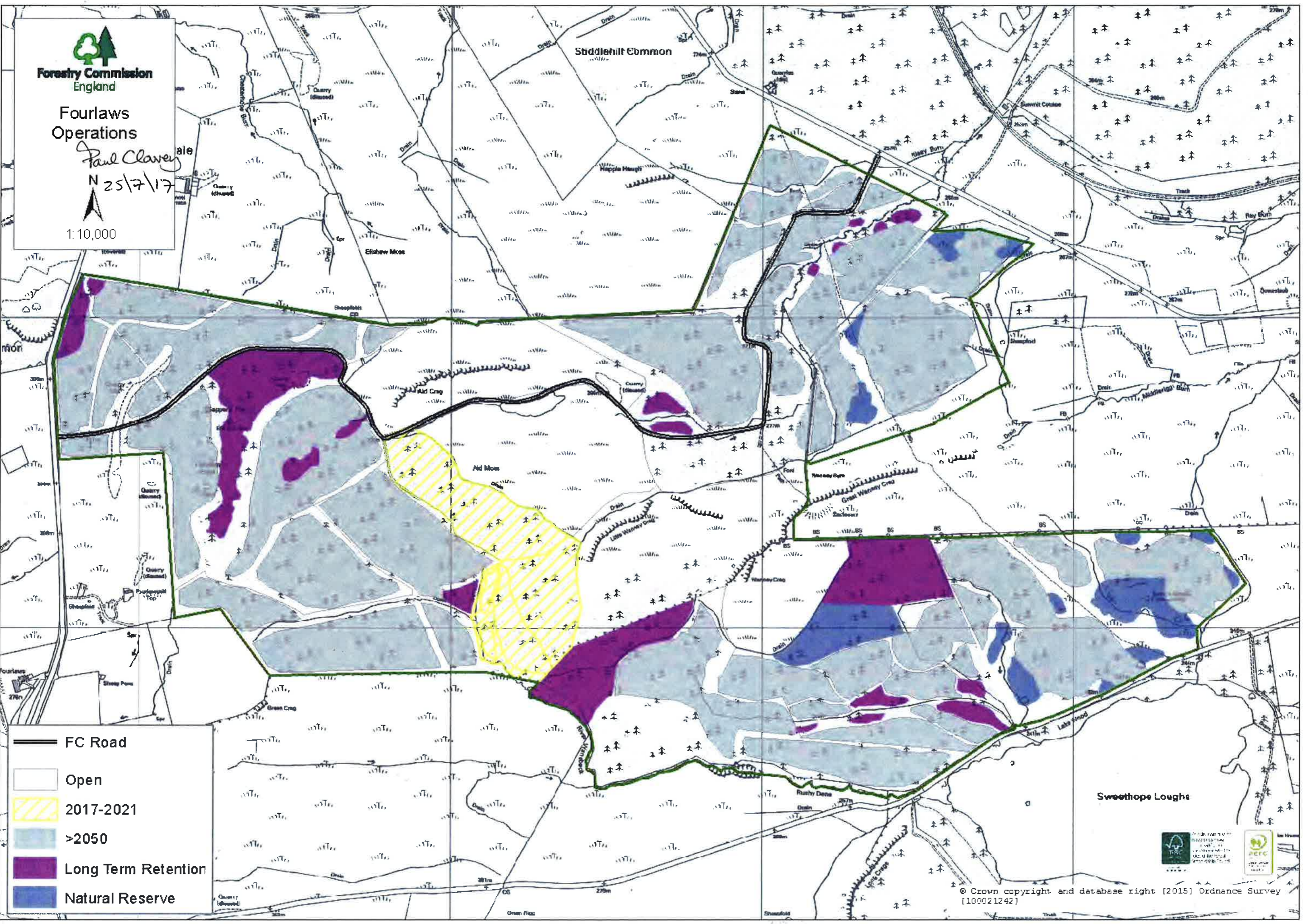
Fourlaws
Operations



Paul Clavey

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-  FC Road
-  Open
-  2017-2021
-  >2050
-  Long Term Retention
-  Natural Reserve





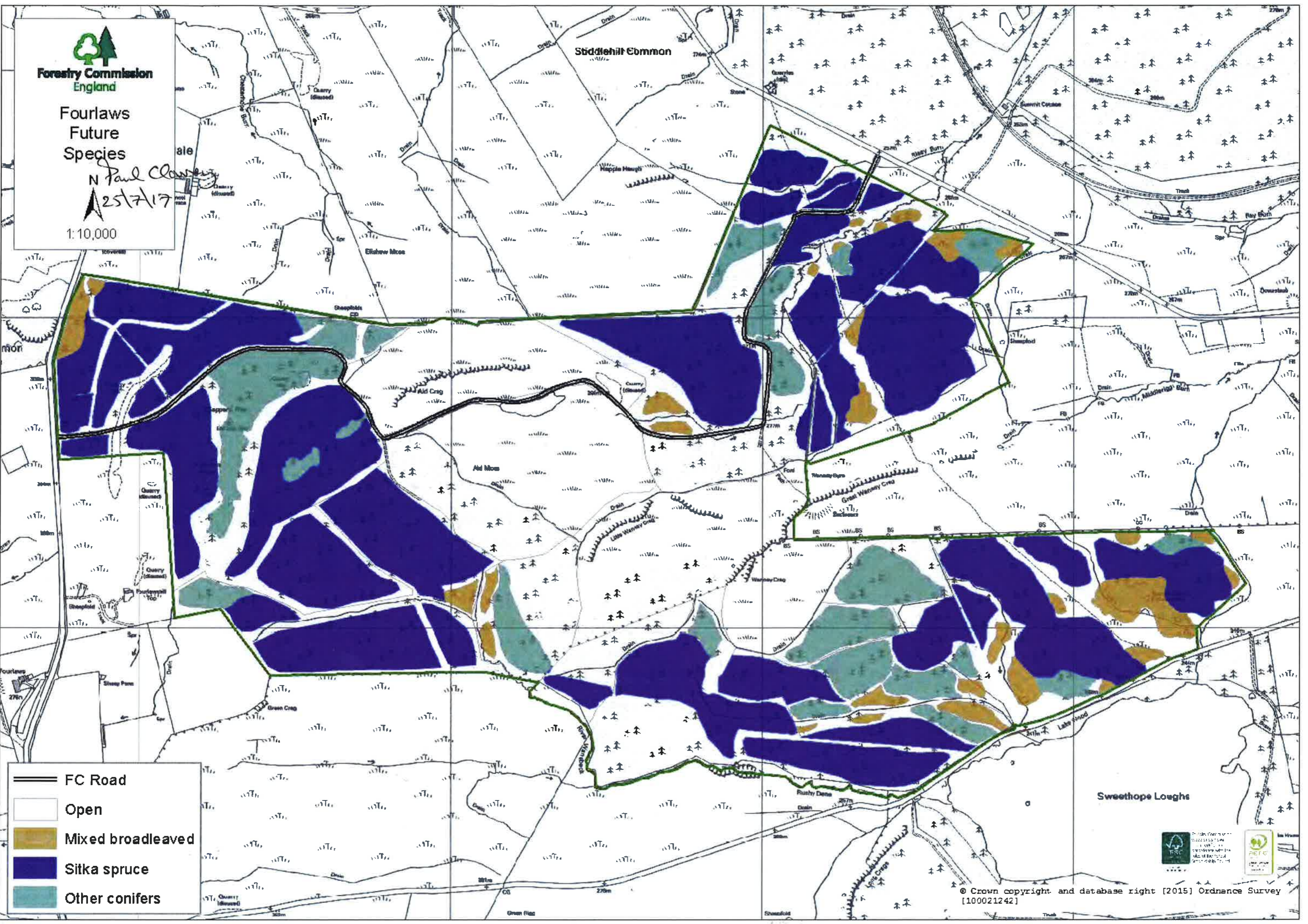
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Fourlaws Future Species

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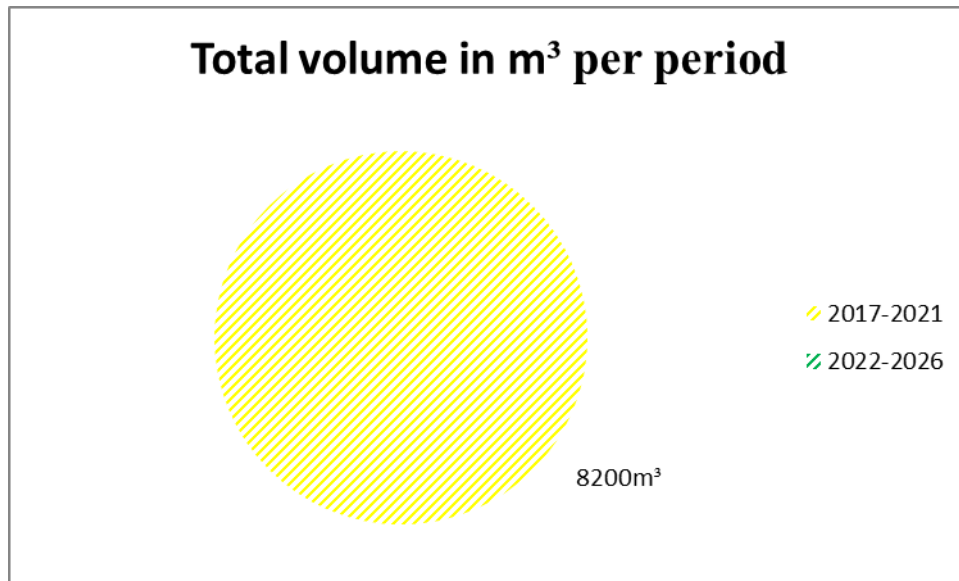


-  FC Road
-  Open
-  Mixed broadleaved
-  Sitka spruce
-  Other conifers



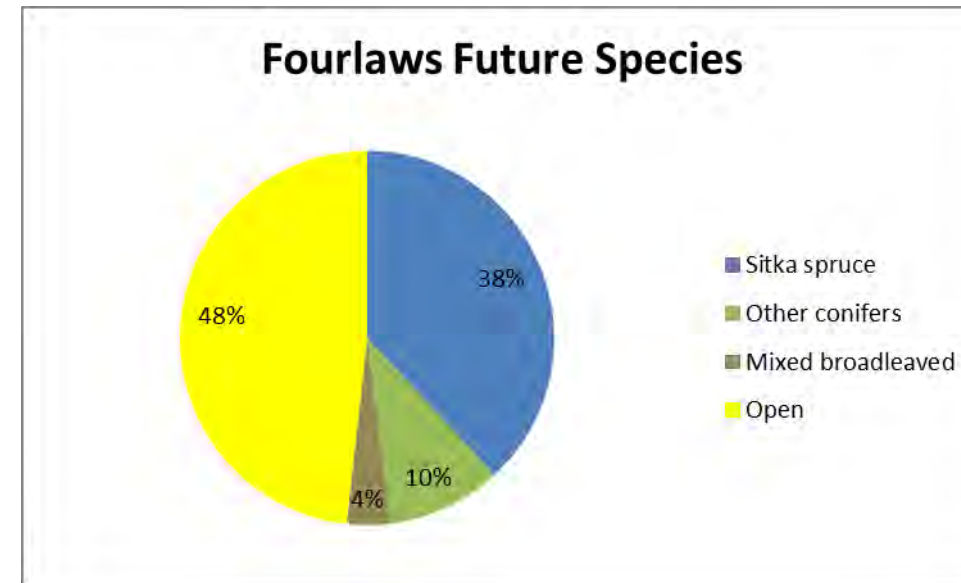
Timber production

Average timber production per period is shown below. Over the 10 year approval of the plan we will harvest approximately 8,200m³ of timber. This represents the last remaining coupe of harvestable timber from the first rotation crop.

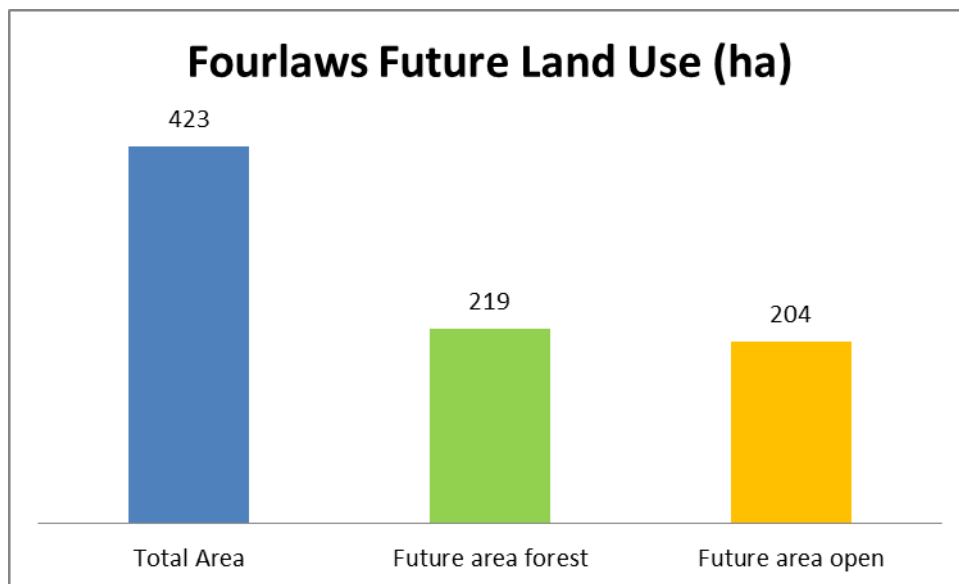


Future Species

The combined percentages of future species composition shown below comply with the requirements for UKFS and UKWAS (65% primary species (Sitka spruce), 20% secondary species (Other conifers) and 5% mixed broadleaves).



Future Area and Land Use



Productivity

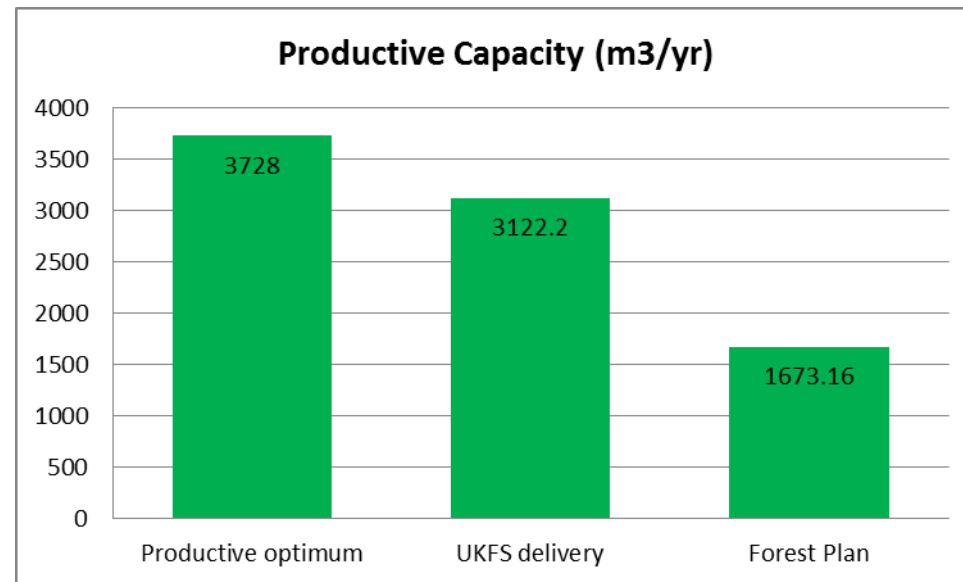
The productive potential of the forest is optimised principally through timber production achieved through delivery of the harvesting plan but also includes delivery of ecosystem services and other non-market benefits included in biodiversity, climate change mitigation, water, people and landscape. This is represented in the Productive Capacity Analysis below:

The graph shows the relative productive capacity (m³/year) of the forest based on average yield class as a comparison between the following scenarios;

1. Productive optimum – productive capacity assuming that the total productive area (233ha) is planted completely with the optimum commercial species suited to the site (i.e. Sitka spruce YC 16).
2. UKFS delivery – productive capacity achievable through minimum compliance with a species percentage mix comprising 65% primary species (SS YC 16), 20% secondary species (MC YC 14), 5% broadleaved (YC 4) and 10% open space.

3. Forest Plan – productive capacity based on the percentage species mix and open land from this plan.

Note: The difference between UKFS delivery and Forest Plan is principally due to the conversion of afforested land to open blanket mire habitat associated with Aid Moss.



Landscape Appraisal

The previous forest plan included a detailed 3D landscape assessment from a number of viewpoints indicating that much of the forest is not particularly visible from any major viewpoints due to the rolling nature of the landform. As there are no significant alterations from the previous plan and much of the mitigation associated with straight forest boundaries has been implemented by the ongoing harvesting and restocking program, no further landscape assessment is included at this time.

The United Kingdom Forest Standard (UKFS)

The UKFS is the reference standard for sustainable forest management in the UK. The UKFS is supported by a series of guidelines which outline the context for forestry in the UK, defines standards and requirements and provides a basis for regulation and monitoring. These include General Forestry Practice, Forests and Biodiversity; Climate Change, Historic Environment, Landscape, People, Soil and Water.

Fourlaws Forest Plan is able to demonstrate that relevant aspects of sustainable forest management have been considered and the stated objectives in Part 3 and outcomes in Part 6 show how sustainable forest management will be achieved. The plan provides a clear means to communicate the proposals and to engage with interested parties and serves as an agreed statement of intent against which implementation can be checked and monitored.

In addition to conforming to general sustainable forest management principles UKFS is demonstrated in the following key areas:

Productivity	The productive potential is dictated by timber production achieved through delivery of the harvesting plan and delivery of ecosystem services and other non-market benefits included in biodiversity, climate change mitigation, water, people and landscape. This is represented in the Productive Capacity Analysis graph.
Structure	Future species composition; 38% Sitka spruce, 10% other conifers and 4% mixed broadleaved and 48% open space, complies with UKFS requirements. Long term structure will improve through linking of permanent broadleaved and open habitats.
Silvicultural	A combination of clearfell and restocking will be continued with Long Term Retention of areas of mixed conifer woodland. This will improve age class diversity.
Biodiversity	Habitats and species are considered during the planning phase. Ecological connectivity achieved by extending and linking areas of broadleaved woodland and open space will ensure that the area is managed with conservation and biodiversity as an ongoing objective.
Climate change	Long Term Retention areas will minimise soil disturbance. Forest resilience will be enhanced over time through greater species diversity, particularly establishment of alternative conifer

species, with age and stand structure diversification to help mitigate climate change and disease/pest outbreaks. Ecological Site Classification will be used to identify the most appropriate species at the time of restocking.

Landscape	The planning process refers to the Local Landscape Character to inform the forest design. Visual sensitivity and consideration to visibility and the importance and nature of views of the woodland from several key viewpoints is used to inform shape, landform and scale. Particular emphasis is made on mitigating geometric shapes, symmetry and distinct parallel lines in the landscape through species choice, forest edge and coupe design.
Historic	Historic features are recognised and their safeguard will be routinely incorporated into operational management.
People	The Forest Plan is consulted with individuals, the local community and organisations with an interest in the management of the forest.
Water	Quality will be protected through adherence to Forest and Water guidelines as a minimum during harvesting and forest management operations.

Longer term management proposals

The proposals in this plan will lead to a more diverse and resilient woodland, with a greater range of species and habitats. Substantial areas of alternative conifer species will have been established, and the range of broadleaved species will have been extended.

Timber production remains a priority and will continue through a clearfell/restock regime with the focus on Sitka spruce but with a much broader range of conifer species and broadleaves too. This strategy will also contribute toward climate change mitigation and long term forest resilience.

The high conservation value of Aid Moss blanket mire is safeguarded and public use of the forest will continue to be made available with ongoing maintenance of permissive and public routes as appropriate.