

Setmurthy Forest Design Plan.

August 2012



Planning context

This plan sets out the Forestry Commission’s plans for Setmurthy Wood near Cockermouth. It replaces the previous plan approved in December 2002 and covers the period 2012 to 2021 in detail, and the following 25 years in outline. The previous plan also included another block, Big Wood, which has now been sold.

The plan proposes a series of management operations over a 35 year period. Forest Authority approval for felling and restocking extends to the first ten years of the plan, after which time the plan will be reassessed, amended as necessary and resubmitted for a further period of approval. There will be an interim review of the plan after five years in 2017.

Introduction

Setmurthy Wood is 158 ha in size and is located on either side of a low ridge 4 km to the east of Cockermouth, close to the northern end of Bassenthwaite Lake. It lies just inside the boundary of the Lake District National Park. Tenure is a mixture of freehold and leasehold, from Higham Estate and others.

The land was initially acquired and planted between 1928 and 1938. There has been an active programme of felling and restocking and a variety of age classes are now present.

Analysis of previous plan

The previous plan included five main objectives. These are summarised in the table below, together with an assessment of how well these objectives were achieved..

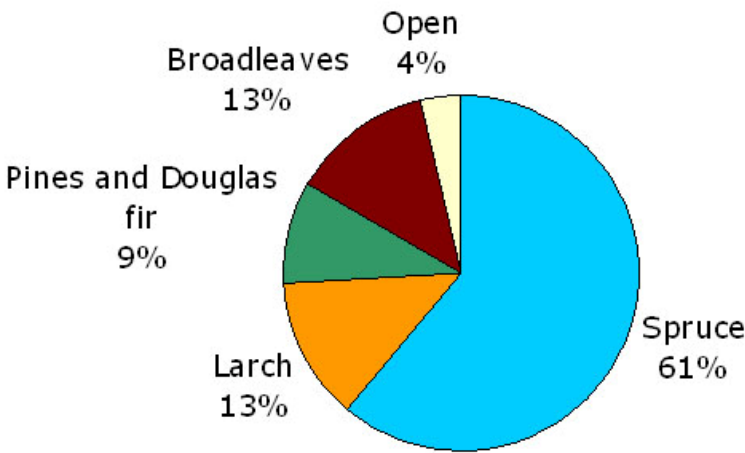
Objective	Achieved?	Comment
Complete all work in accordance with the UKWAS, the England Forestry Strategy and the Forest District Strategic Plan	Yes	Harvesting and restocking have taken place in the last 5 years in accordance with the strategies and in accordance with UKWAS
Manage forest operations in sympathy with the environment with harvesting and restocking proposals, which improve the diversity of the woodland and reflect the scale and shape of the landform.	Yes	Achieved, recent clearfells and restock have been sympathetic to the wider environment and species diversity improved by planting Douglas fir
Investigate opportunities for discussing the management of the forest with the local community. Adopt partnership approaches and provide information as required.	Partially	Local user groups have been consulted with regard to recreation provision within the woodland, with limited success.
Improve the conservation value of the forest by widening out rides and watercourses and accepting a mosaic of natural regeneration of birch and other native broadleaves along with open space.	Yes	Ongoing work continues to achieve this objective
Bring to the market all the parcels of timber identified in the felling plan. Manage the areas of continuous cover so as to promote species diversity and natural regeneration. Maximise all opportunities for thinning in conjunction with the District strategy for thinning.	Partially	Two of the planned coupes for the 2007 – 2011 period were not felled. One of these was decided not to be a practical proposition in its current form, and the other, composed of mature Scots pine, was felt to be of high conservation and landscape benefit and its felling year was deferred.

Of the two felling coupes that did take place, one was restocked with Sitka spruce and broadleaves, as indicated in the approved restocking plan. The other, initially due to be restocked with larch was planted with Douglas fir, due to concerns about *Phytophthora ramorum*.

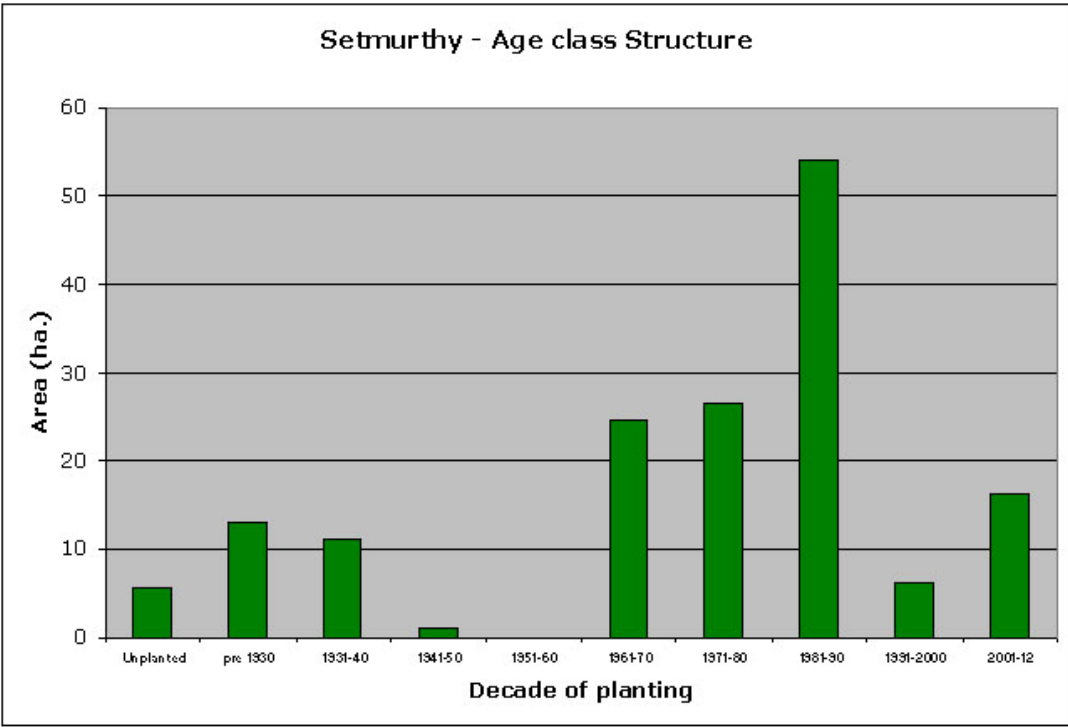
Part 1. Background Information

Current Woodland composition

Setmurthy - Current species composition



The main species in the woodland is Sitka spruce (58%), with 24% other conifers and 13% broadleaves, mainly beech and sycamore of plantation origin.



There is a reasonable spread of age classes, reflecting the ongoing history of felling and replanting. The 24.6 ha planted in the 1960s is now mature and ready for felling and most of the older stands have been retained for landscape or conservation objectives. The large percentage of the wood planted in the 1980s reflects a major programme of felling the first rotation forest in that decade.

Landscape

Setmurthy is not prominent in the landscape from any major viewpoint. As it occupies two sides of a low ridge, there is no point from where the whole forest can be seen, and all views are either partial or distant. The most obvious landscape issues are the external boundaries which are very angular. The surrounding landscape, however, is very diverse, with a patchwork of dry stone walls, grazing land and small woodlands the forest fits into this mix of land uses without causing a major landscape problem. Previous felling and restocking programmes have created a diversity of textures and shapes within the forest boundary including small patches of broadleaves and long term retentions of mature larch and Scots pine. The mature strip of Scots pine, European larch, beech and locally native broadleaves along the roadside is an important landscape feature.

In the consultation for the 2002 review, the skyline ridge was identified as a potential landscape issue. Since then, some felling has taken place in this area, with the restocking including more open space and more diversity of species.

Internal views from forest roads and paths are probably more important than the external views. The diverse age class structure, history of thinning, and species diversity make this an attractive woodland, with views changing and vistas opening up as the forest is walked through.

Biodiversity

The forest was surveyed for conservation interest in 1991 and 1995. At that time, no important sites or species were identified, with most of the biodiversity values coming from the regular cycle of felling and restocking; the diversity of tree species; the presence of small broadleaved patches and shrub species and the warm sunny rides. At that time a small wildlife pond had just been created, and this is now well established.

There are no major water-courses, although a series of small drains in the northern part of the wood flow into the river Isel which is part of the River Derwent and its tributaries SSSI and SAC. This river system is designated for the overall importance of its aquatic environments and specifically the presence of Atlantic salmon, lampreys (Sea, River and Brook), Marsh Fritillary butterflies and otters. A slightly bigger watercourse, part of the Bitter Beck runs through the roadside strip on the southern edge of the plantation and this, too, joins the Derwent in Cockermouth.

The forest has a population of red squirrels and there is an active programme of grey squirrel control.

Communities and recreation

The forest is well used, mainly by local people from Cockermouth and the surrounding area. There are two main user groups, walkers and mountain bikers. The walkers, including many dog-walkers, value the wood as a quiet low-key alternative to some of the better known and busier forests in the area, notably Whinlatter. The mountain bikers have developed an increasing number of informal and unauthorised downhill routes, including obstacles, jumps and banked turns. The Forestry Commission has had a policy of trying to engage with this group, to limit the amount of new route construction and to monitor the activity, principally to ensure the health and safety both of the bikers and other forest users.

Heritage

There are no known archaeological sites in Setmurthy.

Timber potential

The site grows good timber, with yield classes ranging from 12 to 20 for Sitka spruce. The fertile brown earth soils over much of the site are suited to growing a wide range of conifer species, including Douglas fir and larch, whilst the poorer gleyed soils to the north and west make these areas more suitable to Sitka spruce. The terrain presents few problems for harvesting, making this site a prime location for continued production of timber

Access and roading

Access to the forest is excellent, with no restrictions on vehicle size. A good road capable of taking timber wagons gives access to most areas, and this is supplemented by a network of internal rides and tracks.

Part 2. Analysis and Concept

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

Factor	Opportunities	Issues
Soils	Good potential for species diversity on brown earth sites	There is more limited potential for species diversity on surface water gley sites
Age class structure	Over most of the area, previous felling coupes have led the way to a succession of phased felling coupes over time.	The large area planted in the 1980s forms one single age class – opportunities for dividing this into a number of coupes are severely limited by the risk of windthrow.
Current species	The forest is already very diverse, with a good range of species, generally well suited to the site	
Windthrow hazard	Much of the forest falls into WHC 2 and 3, making thinning a practical proposition	Approximately half of the forest is in WHC 4, making thinning more difficult to manage without putting the crop at risk.
Infrastructure	The forest is well roaded, with good access, making timber production relatively straightforward	
Public use	Continued thinning, felling and restocking operations will maintain the diversity of internal views that are a feature of this forest. Following felling, there are opportunities to extend the path network.	Good liaison will be needed when harvesting operations begin in areas that include unauthorised mountain bike routes
Biodiversity	There are opportunities for extending the network of broadleaved trees, shrubs and open space following felling operations.	
Landscape	Well designed felling coupes that reduce the risk of windthrow will enhance the internal landscape. The roadside strip offers opportunities for either continuous cover management or conversion to native woodland.	The straight external boundaries remain the most obtrusive landscape element, but there is little or no opportunity for amelioration. In restocking, greater attention should be paid to creating diversity along the skyline ridge.

The analysis of the current structure shows a forest that is already very diverse and well advanced in the restructuring process. The previous plans, submitted in 1996 and 2002 have been adhered to quite closely, and the focus of this resubmission is on the felling coupes that are now at or approaching maturity. The previous plans included coupe shapes and a felling sequence that now require considerable revision if the threat of windblow is to be avoided. To this end, some of the coupe shapes proposed in the earlier plans have been simplified, some have been merged and the felling sequence has been re-addressed. The landscape implications of this are not considered to be great, because of the limited visibility of the wood, and the considerable diversity already present. As the internal views have been assessed as being of at least equal importance to the external ones, the benefit of reduced windthrow risk is considered to outweigh the landscape implications of simpler coupe shapes.

Part 3. Objectives

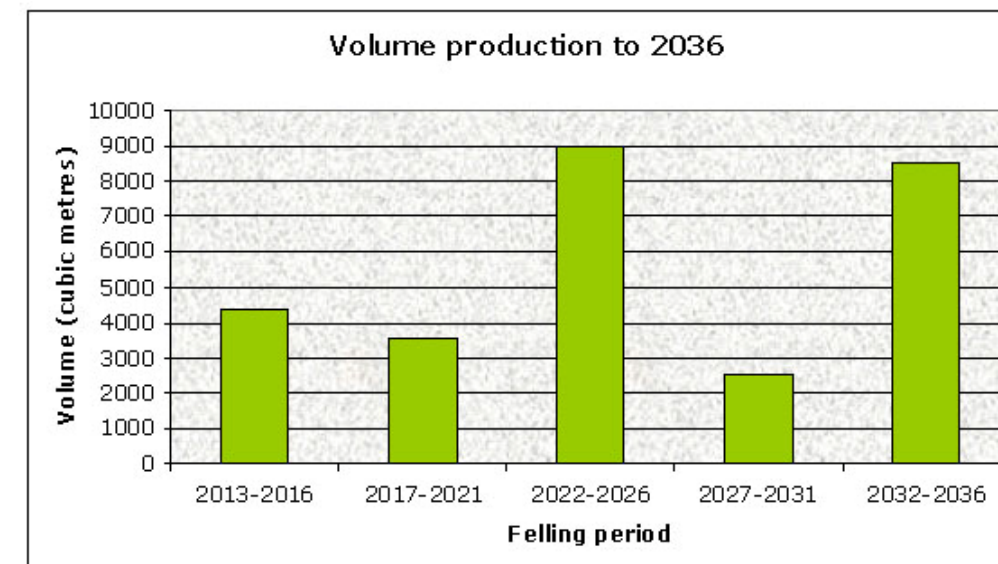
The following broad objectives have been identified for Setmurthy.

1. Commercial production of good quality timber, primarily of coniferous species
2. Provision of facilities for quiet informal enjoyment of the countryside
3. Enhancement of semi-natural features, particularly around the watercourses and existing patches of native woodland
4. Maintenance of the current diversity of age classes through a programme of phased felling and restocking
5. Diversification of the commercial species, matching species to site
6. Improvement of the landscape by diversifying the skyline ridge

Part 4. Proposals

Felling

Locations of the proposed felling are shown on the management map. The pattern of volume production over the next twenty-five years is shown below. This level of production is broadly similar to that of recent years, and is sustainable in the long term.



Two felling coupes, 6.5 ha and 6.4 ha in size are proposed for the first four years of the plan, one on either side of the central ridge. In the second phase, two further coupes of 12.2 and 10.4 ha are proposed.

Thinning

There will be a presumption in favour of thinning all areas of the wood unless there is evidence that windthrow is likely to occur. Areas of windthrow hazard class 4 will be carefully assessed for their thinning potential but not necessarily excluded from the thinning programme.

The areas marked as continuous cover along the southern boundary will be managed on a group shelter-wood basis, to encourage regeneration. The objective will be to gradually replace the conifer over-storey with a stand of native broadleaves whilst maintaining continuous tree cover.

Long term retentions

Two areas on the southern slope have been identified as long term retentions. These are a stand of mature Scots pine and a stand of beech and larch. They are being retained beyond their commercial felling age, primarily for their value to the internal landscape of the forest, but also for the biodiversity benefits associated with older trees. They have been selected to give a continuity of woodland cover in the most heavily used part of the forest, and to break up the expanse of young crops that result from clear-felling.

Minimal intervention

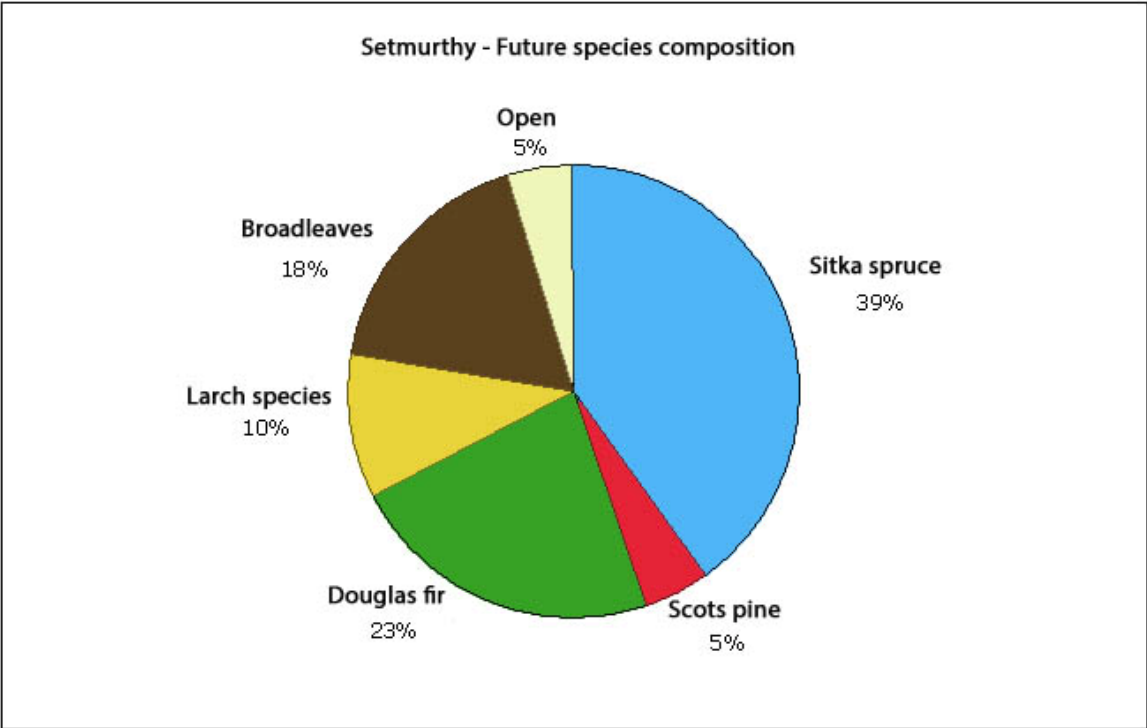
Some small sections have been designated as minimal intervention. This means that, as far as possible, no operations will take place here within the life of the plan, providing a continuity of undisturbed habitat.

Restocking

Restocking proposals can be seen on the future habitats map. The overall aims of the restocking proposals are as follows:

- To maintain the commercial coniferous element of the forest
- To diversify the range of productive conifers, where site conditions allow
- To extend existing areas of native broadleaved woodland, providing a network of wildlife habitat throughout the wood
- To design a sequence of wind-firm coupes that can be harvested sustainably over the following rotation without undue risk of windthrow.
- To break up the skyline ridge by introducing more open space, Scots pine and broadleaves, to replace the current straight edge of spruce

The chart below shows the long term intentions for Setmurthy, after all existing stands have been felled and restocked.



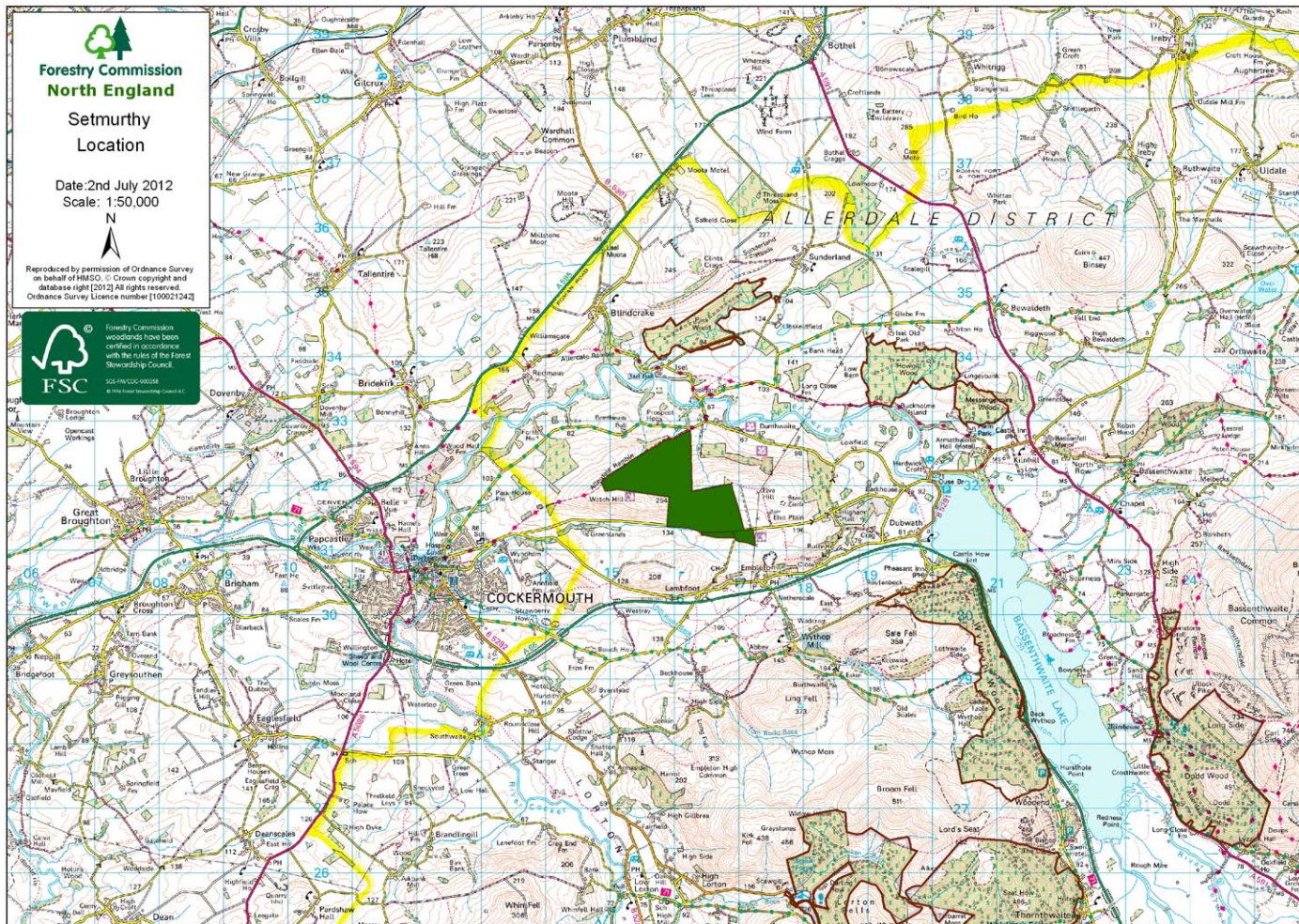
Points to note are:

- Continued presence of commercial conifers, at 77% of the area
- Small increase in the broadleaved area, from 13% to 15%
- Greater diversity of conifer species, with pine and Douglas fir up from 9% to 28%
- A corresponding reduction in the area of Sitka spruce

Part 5. Monitoring plan

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

Objective	Criteria for success	Assessment
Commercial production of good quality timber, primarily of coniferous species	Coupes are successfully planned, harvested and marketed. Thinning programme is successfully implemented	5 and 10 year reviews will show whether coupes have been felled in accordance with plan and whether thinning programme has been implemented
Provision of facilities for quiet informal enjoyment of the countryside	The forest continues to be used and enjoyed by walkers, runners, cyclists etc.	Site observations, conversations with forest users, feedback from local groups.
Enhancement of semi-natural features, particularly around the watercourses and existing patches of native woodland	Opportunities are taken following clear felling to widen rides, protect water-courses and expand semi-natural areas. Harvesting operations are managed so as to prevent physical damage and sedimentation of the small watercourses	Comparison of the sub-compartment database before and after restocking should show that this is taking place. Internal consultation on site plans provides a monitoring opportunity.
Maintenance of the current diversity of age classes through a programme of phased felling and restocking	Coupes are brought forward for felling and restocking at the right time. Restocking is carried out to the required standard, and protected from damage	5 and 10 year reviews. FMM4 surveys of restock sites
Diversification of the commercial species, matching species to site	Restocking is broadly in line with the approved map, and restocking contains a greater mix of commercial species including Douglas fir, Scots pine and larch species	Internal consultation on detailed restocking plans takes place, which provides an opportunity to monitor progress against these two objectives, as do the 5 and 10 year reviews.
Improvement of the landscape by diversifying the skyline ridge	Restocking of the upper margin consists of Scots pine, broadleaves and open space, rather than spruce	





**Forestry Commission
North England**

Setmurthy

Soil Types

Date: 2nd July 2012

Scale: 1:10,000

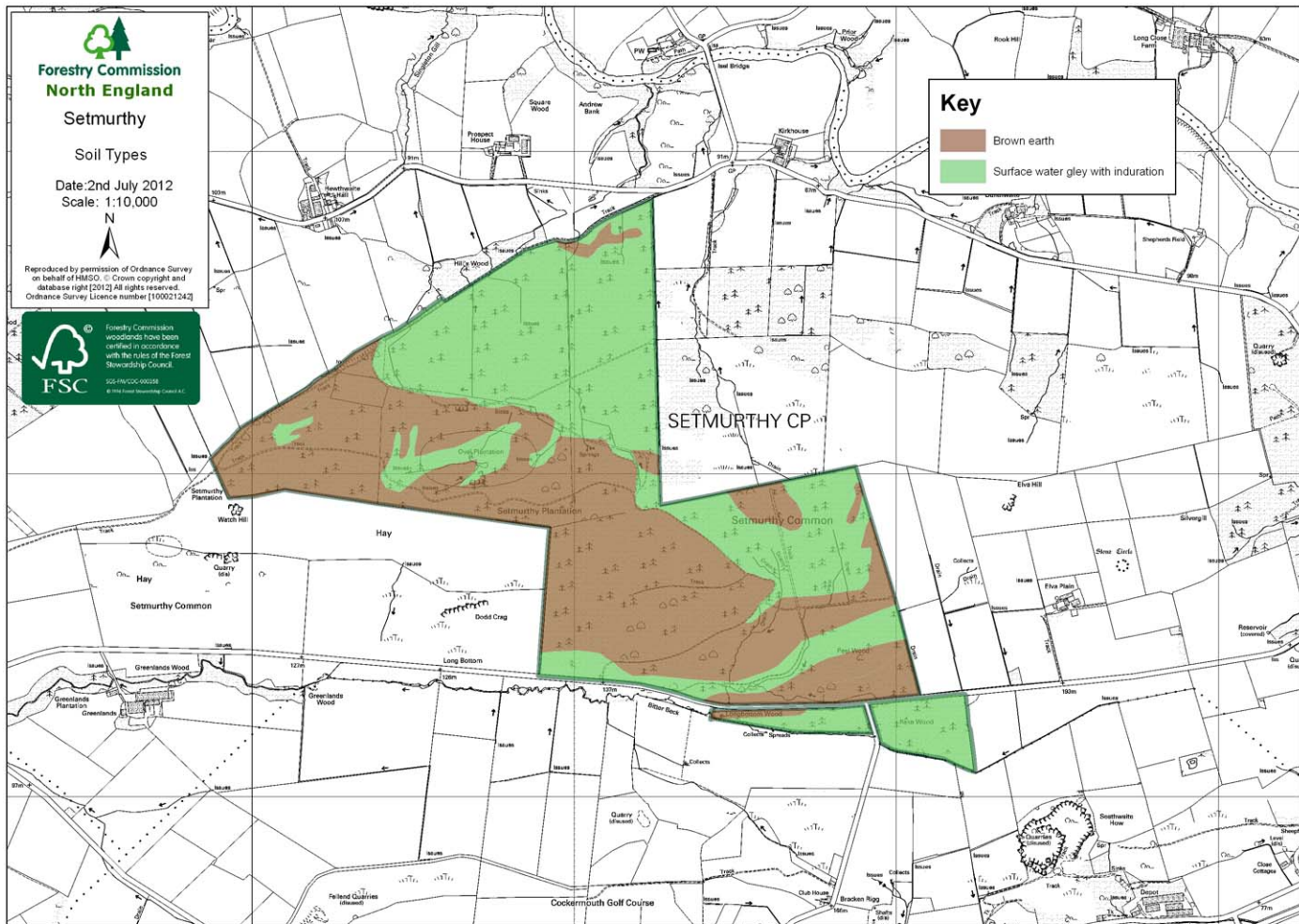


Reproduced by permission of Ordnance Survey
on behalf of HMSO. © Crown copyright and
database right [2012] All rights reserved.
Ordnance Survey Licence number [100021242]



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

SGS-FSC-COC-000358
© 1994 Forest Stewardship Council A.C.





Forestry Commission
North England

Setmurthy
Present Species

Date: 2nd July 2012

Scale: 1:10,000



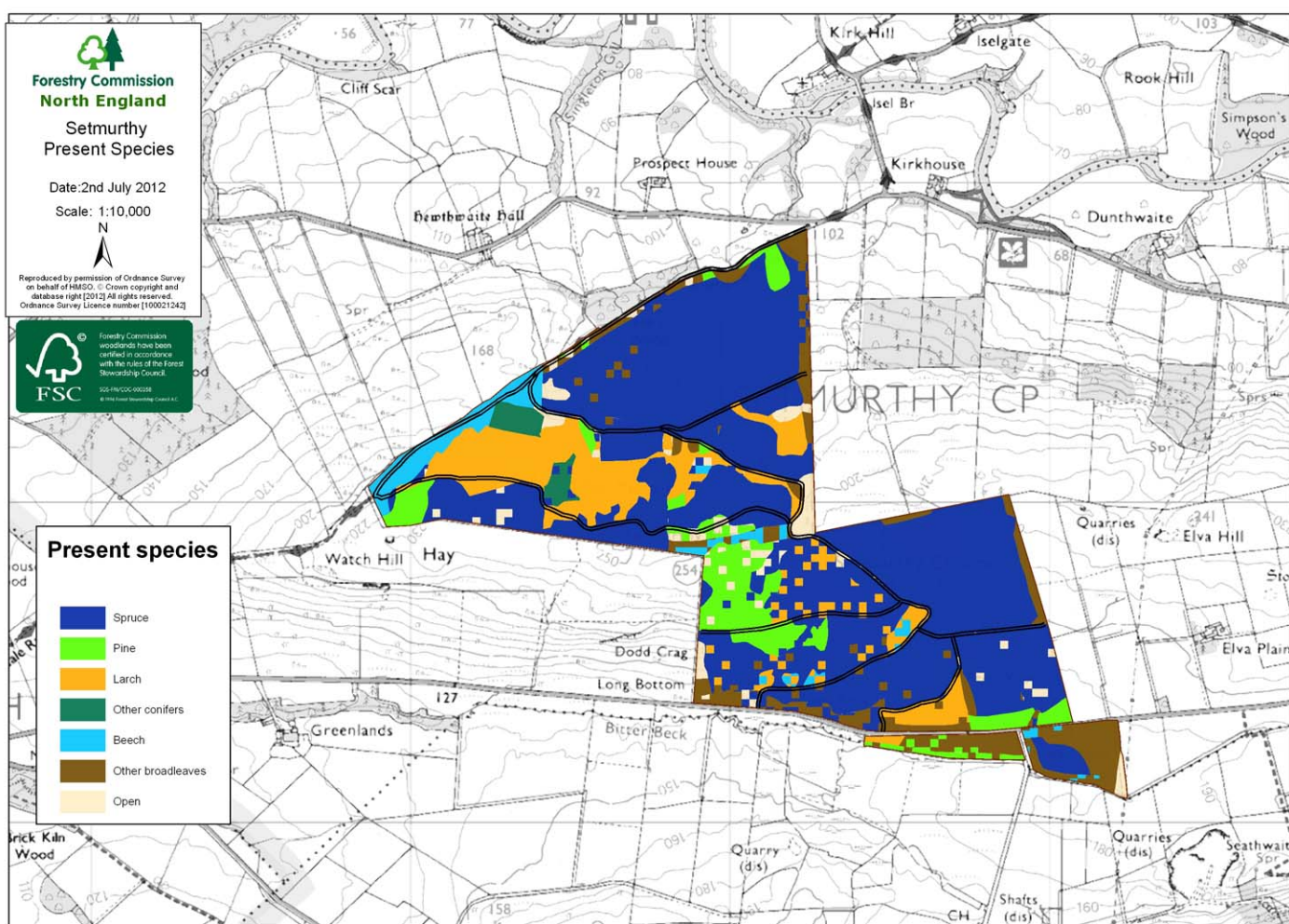
Reproduced by permission of Ordnance Survey
on behalf of HMRSO. © Crown copyright and
database right [2012]. All rights reserved.
Ordnance Survey Licence number [100021242]



Forestry Commission
woodlands have been
certified in accordance
with the rules of the Forest
Stewardship Council.
FSC COC-000000
© 1996 Forest Stewardship Council A.C.

Present species

- Spruce
- Pine
- Larch
- Other conifers
- Beech
- Other broadleaves
- Open



**Setmurthy
DAMS scores**

Date: 2nd July 2012

Scale: 1:10,000



Reproduced by permission of Ordnance Survey
on behalf of HMSO. © Crown copyright and
database right [2012] All rights reserved.
Ordnance Survey Licence number [100021242]



Forestry Commission
woodlands have been
certified in accordance
with the rules of the Forest
Stewardship Council.
SOS-PM/000-00000
© 1996 Forest Stewardship Council Ltd.

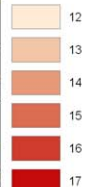
Note.

DAMS (Detailed Aspect Method) scores are an expression
of the windiness of a site. Areas with high DAMS scores
are more restricted in the type of management possible.

Key

Contours

DAMS scores



SETMURTHY CP

Higher DAMS scores in this area are also associated
with poorer, wetter soils, increasing the risk of windthrow



Forestry Commission
North England

Setmurthy

Roads and access

Date: 2nd July 2012

Scale: 1:10,000

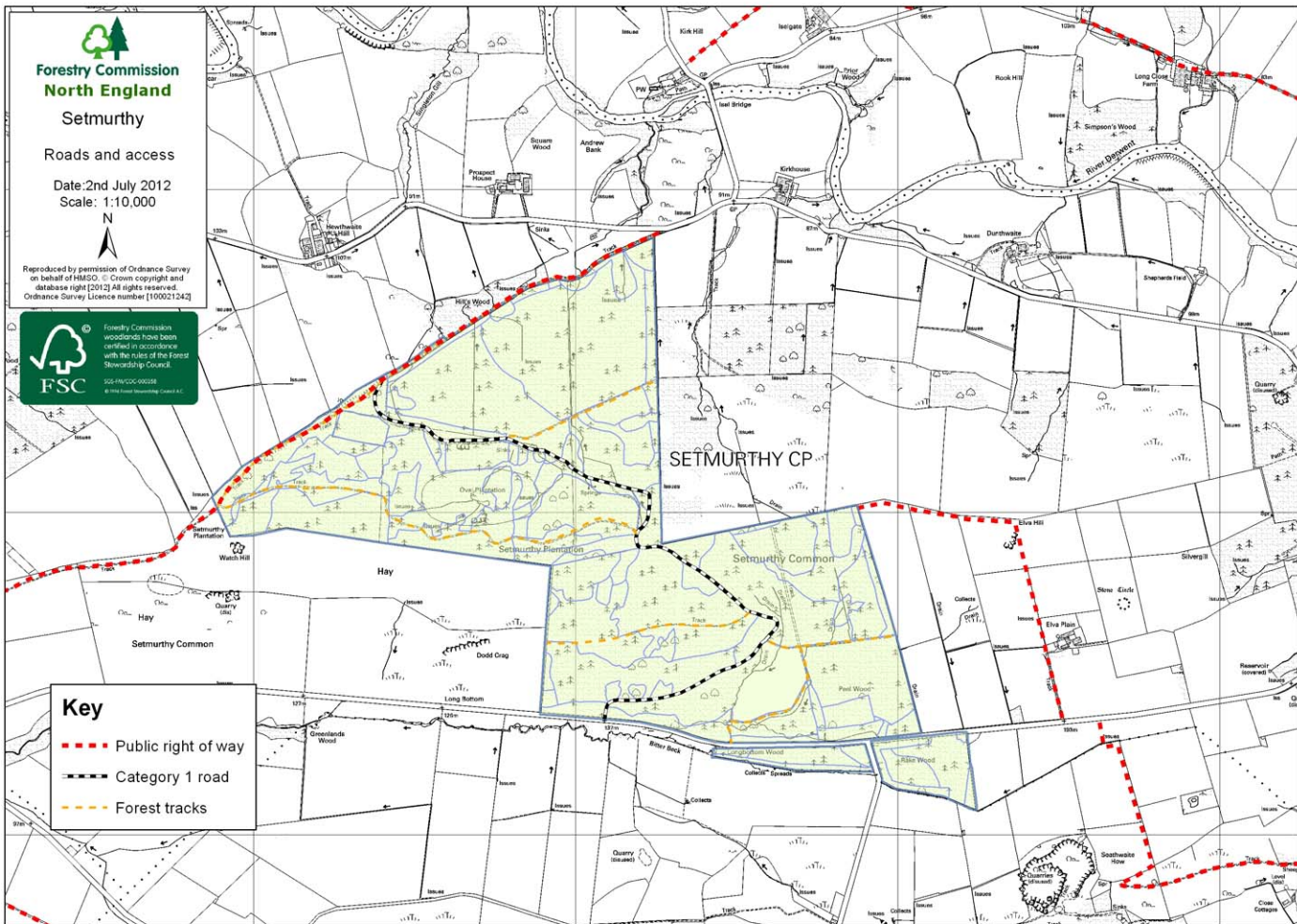


Reproduced by permission of Ordnance Survey
on behalf of HMRSO. © Crown copyright and
database right [2012] All rights reserved.
Ordnance Survey Licence number [100021242]



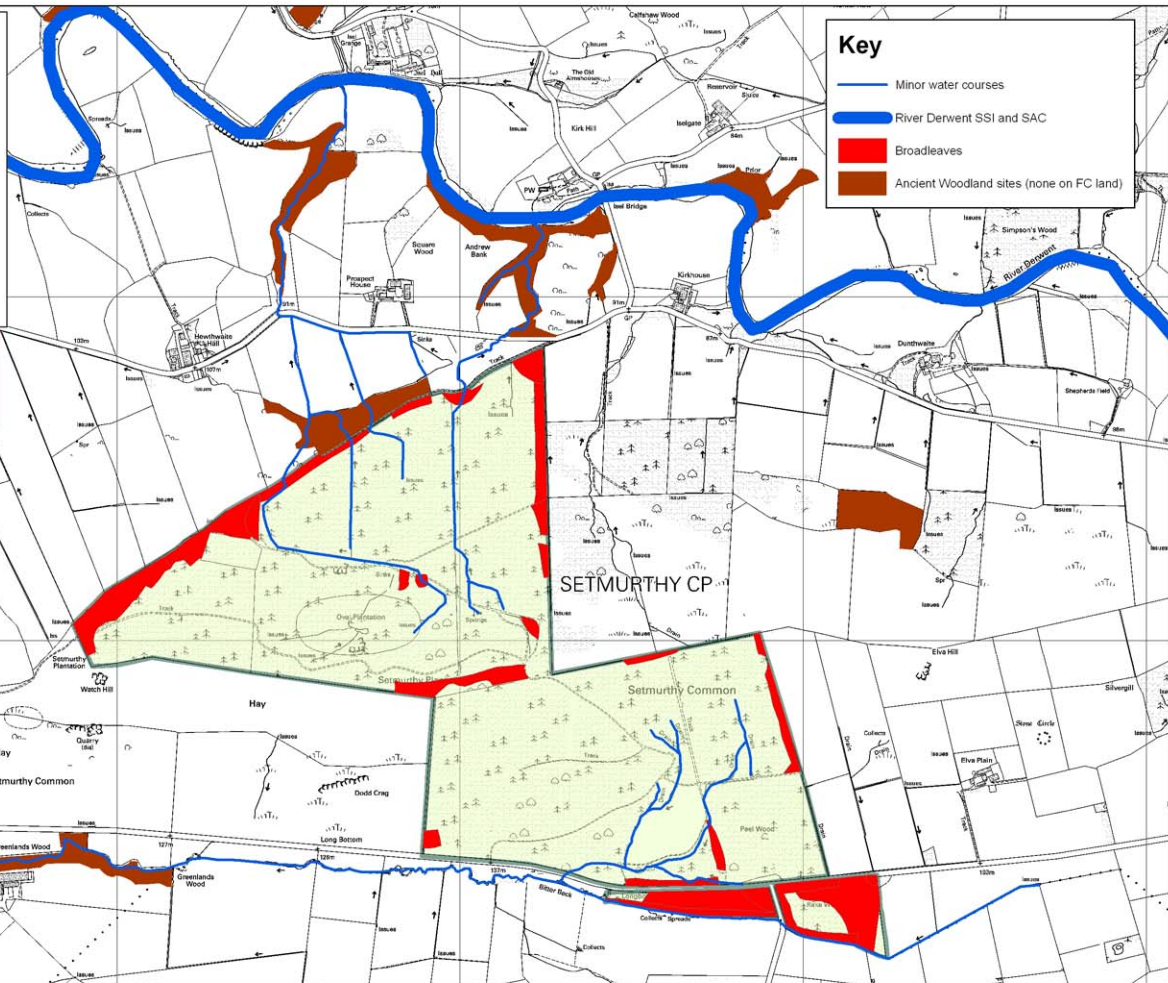
Forestry Commission
woodlands have been
certified in accordance
with the rules of the Forest
Stewardship Council.

SCS-FSC-000000
© 1996 Forest Stewardship Council A.C.



Key

- Public right of way
- Category 1 road
- Forest tracks





Forestry Commission
North England
Setmurthy
Aerial photograph

Date: 2nd July 2012

Scale: 1:7,000



Reproduced by permission of Ordnance Survey
on behalf of HMSO. © Crown copyright and
database right [2012] All rights reserved.
Ordnance Survey Licence number [100021242]



Forestry Commission
woodlands have been
certified in accordance
with the rules of the Forest
Stewardship Council.
SOS-PLC-000-000000
© 1996 Forest Stewardship Council Ltd.



Setmurthy

Concept map

Date: 2nd July 2012

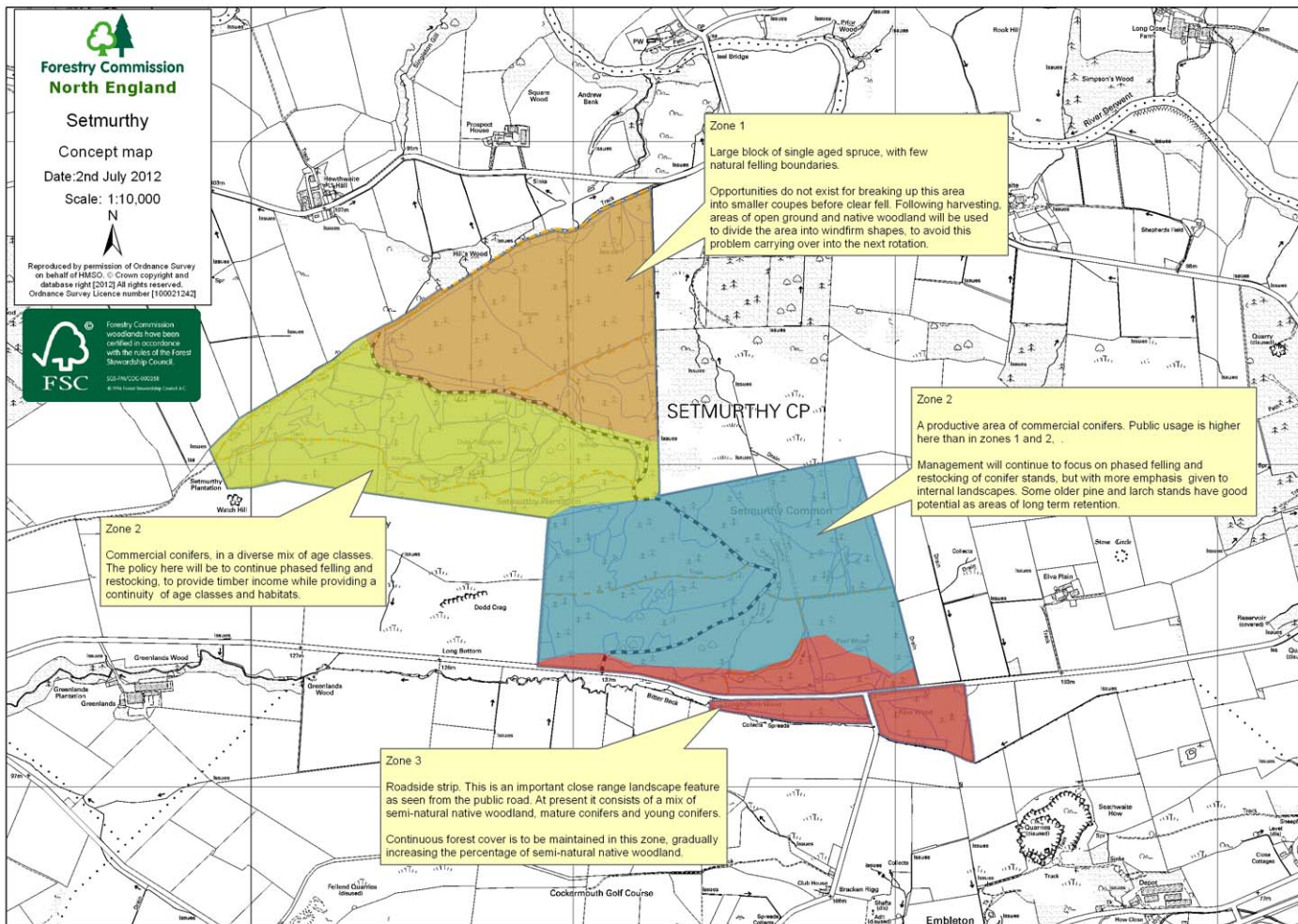
Scale: 1:10,000



Reproduced by permission of Ordnance Survey
on behalf of HMSO. © Crown copyright and
database right [2012] All rights reserved.
Ordnance Survey Licence number [100021243]



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

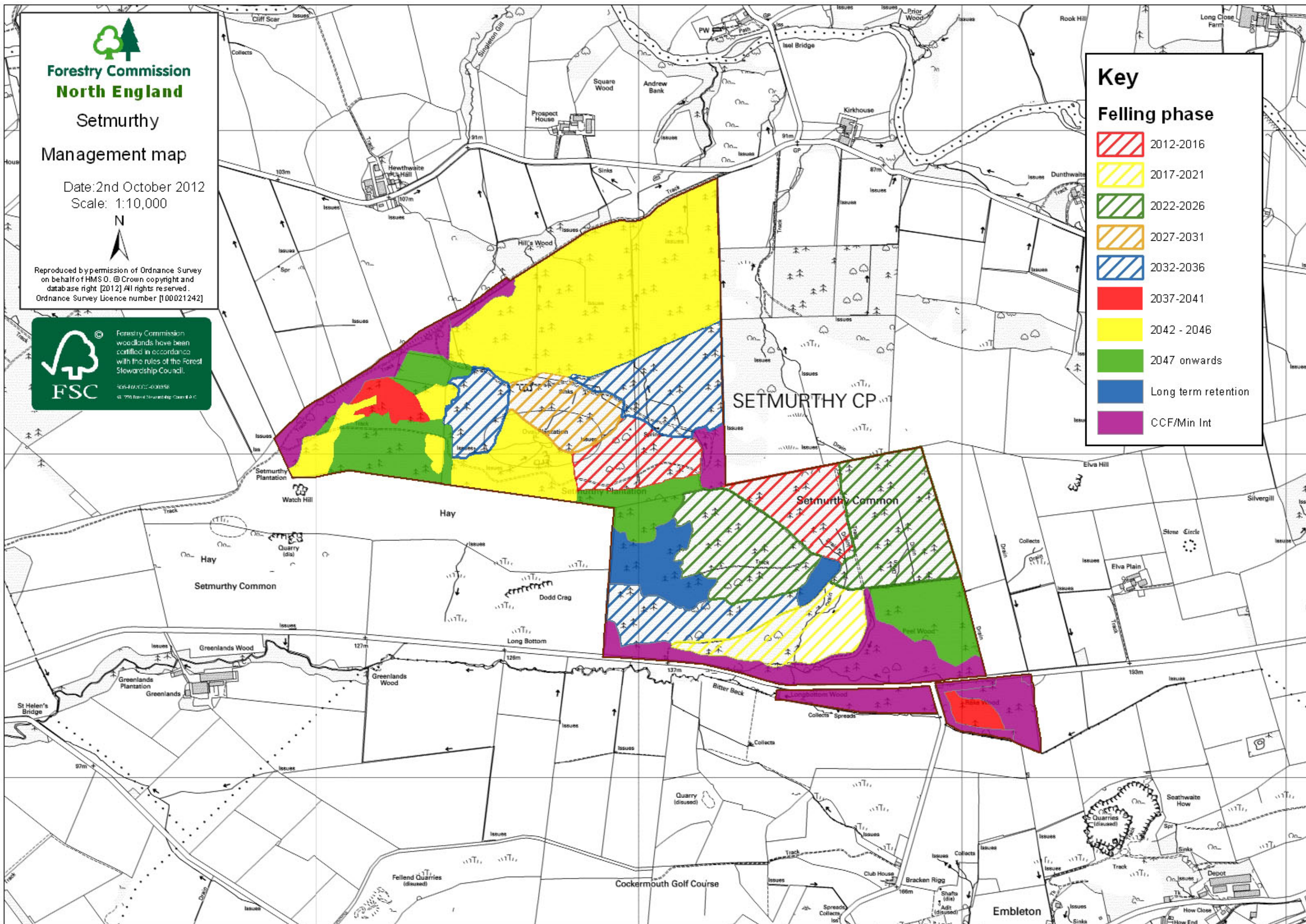
<http://dx.doi.org/10.1016/j.jmb.2009.08.008>



Key

Felling phase

- 2012-2016
- 2017-2021
- 2022-2026
- 2027-2031
- 2032-2036
- 2037-2041
- 2042 - 2046
- 2047 onwards
- Long term retention
- CCF/Min Int



Setmurthy

Future habitats

Date: 2nd July 2012

Scale: 1:10,000



Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right [2012] All rights reserved.
Ordnance Survey Licence number [100021242]



Existing beech belt maintained and regenerated

Hybrid larch on better soils, to maintain diversity of species.
Dependant on spread of phytophthora, other conifer species may have to be substituted.

Other conifers on lower slopes. Site conditions are good for Douglas fir

Large single aged block of spruce broken up by areas of broadleaves and open space after clear felling, creating a network of semi-natural habitat and reducing the need for large clear felling in the next rotation.

Sitka spruce on areas of higher elevation and poorer soils

Scots pine to provide diversity on upper margins. Potential future long term retentions

Sitka spruce on areas of higher elevation and poorer soils

Broadleaves along roadside and at entrance to forest

Other conifers on lower slopes. Site conditions are good for Douglas fir

Key

- Sitka spruce
- Other conifer
- Scots pine
- Hybrid larch
- Broadleaves

Note.
The map shows main species in broad outline only. Site specific restocking plans will be developed following harvesting operations, and these will include proportions of other species to reflect local site conditions.

Consultation Record, Setmurthy Forest Design Plan Resubmission, 2012

Consultee	How and when consulted	Comments	FD response and action
Marina Ramsden, Lake District National Park	Email, with PDF version of plan 16 th August 2012 Requested confirmation of receipt 23 rd August 2012	Confirmed receipt	
Jack Ellerby, Friends of the Lake District	Email, with PDF version of plan 16 th August 2012	<p>Mike</p> <p>The Plan looks fine. Adrian showed us around last year so I know the wood reasonably well. In 2002 Ian Brodie, who led on Forestry for FLD before myself, made the following comment in 2002:</p> <p><i>"We would like to see the design of the summit ridge given more attention. We would suggest that the ridge be left clear of trees whilst avoiding a straight top edge. This could be largely achieved based on no planting above the 230m contour."</i></p> <p>I'm not suggesting you follow this to the letter but it does highlight us thinking about the upper ridge from external views as the forest develops. Many thanks for consulting us.</p> <p>Best wishes.</p> <p>Jack</p>	<p>Agreed to look at this, to see how far this suggestion could be accommodated in the plan.</p> <p>The following text was added:</p> <p><u>Part 1.</u> " In the consultation for the 2002 review, the skyline ridge was identified as a potential landscape issue. Since then, some felling has taken place in this area, with the restocking including more open space and more diversity of species."</p> <p><u>Objectives:</u> Improvement of the landscape by diversifying the skyline ridge</p> <p><u>Part 4 (restocking):</u> To break up the skyline ridge by introducing more open space, Scots pine and broadleaves, to replace the current straight edge of spruce</p>
John Garner, Natural England	Email, with PDF version of plan. 17 th August 2012	<p>Hi Mike</p> <p>Many thanks for that. I may be at too early a stage but the only comment I'd make is that it could be good to mention something regarding the prevention of physical damage and/or sedimentation in the small watercourses. Please feel free to shoot me down!</p> <p>Cheers, John</p>	<p>Agreed to add this into the plan.</p> <p>The following text was added to the criteria for success in Part 5:</p> <p>"Harvesting operations are managed so as to prevent physical damage and sedimentation of the small watercourses"</p>
Sheila Brown, Cockermouth Town Council	Email, with PDF version of plan 16 th August 2012	Confirmed receipt	
D Smith, Embleton & District Parish Council	Email, with PDF version of plan 16 th August 2012	No response	