Slaley Forest Plan 2015





North England Forest District





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



Planning and District Context

The Strategic Plan for the Public Forest Estate in England outlines the delivery of forest policy on the public forest estate at a national level. At a more local 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 design plans are reviewed every five years.

These plans and their associated forest operations ensure that produce from the woodlands is endorsed by the Forest Stewardship Council® (FSC) and the Programme for the Endorsement of Forest Certification® (PEFC) as being produced from woodlands under good management that meet the requirements of the UK Woodland Assurance Standard and the UK Forest Standard.

Individual FDP's 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.

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

- we will maximise 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. ٠ 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

Slaley Forest Design Plan

This plan is the full 10 year revision of the one submitted and approved in March 2005.



Part 1 Background Information

Introduction

Slaley Forest is within the Hamsterley Beat of North England Forest District. The forest occupies an area of 508ha to the south of the village of Slaley in Northumberland. The freehold of the forest was purchased by the Forestry Commission in 1930 with the exception of the mineral rights which were retained by the previous owner. Currently 14ha is leased to Ladycross Quarry.

The forest comprises predominantly conifer plantation with a combination of first and second rotation crops. The process of restructuring was initiated through the period of the previous plan and 38 ha have been restocked with conifers and 11 ha planted with open broadleaved woodland since 2005.

Current Woodland composition

Of the total area 427 ha is woodland of which 401ha has a tree cover and 26 ha is felled, either awaiting restocking or stocked through natural regeneration. 50ha is open land, 10ha quarry and 16ha agricultural.

Species

The current species composition is mostly pure conifer, a mixture of spruce, pine and larch, with Sitka spruce dominant reflecting the initial primary aim of producing a timber resource. The previous plan has incorporated the introduction of greater species diversity and native broadleaf planting within the restocking.

Of the tree covered area, 95% is conifer, predominantly Sitka spruce and 5% is broadleaved.



Age class

The majority of first rotation conifers were planted in the 1930's and more extensively from the mid 1980's. The initial felling of the first rotation crops from the 80's commenced in 2003 and 83 ha was felled during the 10 year period of the previous plan. Subsequently 49 ha have since been restocked.



Soils and Topography

The altitude over the site varies from 240m to 370m above sea level. No detailed soil map for the area has been produced, though they can generally be typified by podzols in the west of the forest changing to peaty and gleyed soils in the east, with areas of skeletal soil associated with Ladycross quarry. Site stability generally reflects changes in altitude and soils. The wind hazard class varies from 3 to 5 with the stable sites being associated with the freer draining and stable soil types.

Landscape

The European Landscape Convention (ELC) of March 2004 is aimed at the protection, management and planning of all landscapes, and includes a requirement to assess landscapes, and to integrate landscape into regional and town planning policies.

National character areas (NCA) are broad, well-established and generally recognisable geographic areas. At a more local level Landscape character is the distinct, recognisable and consistent pattern of elements that makes one area of landscape different from another. Variations in geology, soils, landform, land use, vegetation, field boundaries, settlement patterns and building styles all help give rise to different landscapes, each with its own distinctive character and 'sense of place'. These differences are the product of both natural and human influences.

Landscape character assessment (LCA) involves mapping, classifying and describing these variations in landscape character. The resulting classification of the landscape can be used as a basis for making judgements about the character and condition of the landscape, to identify how landscape character can be maintained.

Natural England's NCA (2013) classifies the Slaley area within NCA Profile 10: North Pennines with a LCA type 22b Dipton Wood and Slaley and represents an upland fringe landscape between the North Tyne and Derwentdale

This is not a remote landscape although it has a strong visual relationship with the less inhabited uplands to the north and west. The landscape is modified by farming and commercial forestry, but the presence of extensive native woodlands, estate plantings and stone buildings gives the type a rural, naturalistic, and traditionally managed character. Although relatively elevated and close to the Tyne valley, views from this area mainly look southward to the fringes of the moorland.

The historical dimension of this landscape is represented by the Saxon and medieval villages of Juniper, Whitley Chapel and Slaley. Field enclosure patterns range from relicts of medieval cultivation, semi-regular 16th and 17th century enclosures of common fields around villages to small areas of more regular field systems on upper slopes, dating from the enclosure of manorial wastes in the 18th century. There is a network of rights of way, but little tourist infrastructure.

The NCA identifies the introduction of large conifer plantations on the moorland fringes to the north and east and their value in supporting local populations of red squirrel and nightjar and providing ecosystem services in the form of timber production. Conifer plantations occupy 3% of the NCA.

Key opportunities identified in the NCA relevant to Slaley include:

- To protect and enhance the contrasts between the remote moorlands, moorland fringes and the more settled and enclosed pastoral dales, with their historic settlement patterns of small villages and dispersed farmsteads.
- To create open woodlands and scrub (using native broadleaved species) in gills and on the moorland fringes, in particular to support the black grouse population.
- To encouraging further restructuring of conifer forests, taking opportunities to improve the outline and shape of plantations so that they respond better to the local landform and are less obtrusive in the landscape. Improve the range of habitats by increasing open spaces and the proportion of native broadleaved species.
- Encouraging access to and quiet recreational uses of forests and woodlands and extending access into new areas where appropriate.

The North England District Strategic Plan describes the local landscape character of the area as a combination of low-lying land between the upland Pennines, a mix of pasture and arable agriculture, with conifer and broadleaf woodland along the valley sides.

Within Slaley forest the ridgeline running east to west is the main feature of the area, with the wood situated on the northern slope. With an altitudinal range on 130m the forest occupies the zone of transition from lowland pastoral in the north to the more windswept landscape of Blanchland moor to the south. The main views of the forest are from Slaley and the B6306 to the north, the patchwork of clearfelling therefore reflects the field structure from the viewer standpoint.

Biodiversity

No statutory sites of conservation interest are present within the forest (either biological or archaeological), though the Muggleswick, Stanhope & Edmundbyers commons & Blanchland moors SSSI borders the forest to the South. The forest itself though has a significant conservation interest associated with it, and specific sites of conservation interest are identified on the maps contained within this plan. The wood is notable as a breeding site for Nightjars (*Caprimulgus europaeus*) which utilise the open areas associated with clearfelling. The mosaic of habitats created by the clearfelling program is therefore critical to the long-term presence of Nightjars within the forest. Red squirrels are present within the forest and local area and Slaley is one of the 17 red squirrel reserves in England. However, grey squirrels are also present so the long-term viability of the Red squirrel within Slaley is dependant on effective control of grey squirrels. As a means to protect the Red Squirrel population a control program for grey squirrels funded by Red Squirrels Northern England (RSNE) is ongoing within Slaley to which North England Forest District is fully supportive.

Communities and recreation

It is Forestry Commission general policy to promote quiet, informal recreation such as walking, cycling, picnicking, and studying wildlife. We also seek to provide opportunities for more specialist users and for events when this is compatible with site conditions and other management objectives.

Though there is little formal provision for recreation, there are several rights of way running through the forest, and it is open to public access on foot, horse and bicycle and as such a popular resource for residents of the surrounding area. A short sculpture trail begins at the eastern entrance to the forest.

Heritage

There are no Scheduled Ancient Monuments within the forest, however, a significant number of unscheduled sites exist within the area of the plan. These are a mixture of boundary and standing stones and are shown on the plan. As felling progresses any newly discovered sites will be recorded and notified to the county archaeologist.

Timber potential

The trees are generally growing well, where Sitka spruce is planted an average yield class of 14 and above is obtainable, other species generally grow more slowly. However the soil types do lend themselves to more diverse planting mixtures than pure Sitka spruce and climate change projections indicate that Sitka spruce could be marginal beyond 2080. Restructuring of the first rotation crop is now well progressed, and the majority of the remaining first rotation crop are now at or beyond what would be considered their economic rotation age.

Pests and diseases

Roe deer are resident in the area and there is potential for damage to both tree crops and other habitat types through browsing and grazing. An annual cull is taken by Forestry Commission rangers; however, evidence of successful broadleaved regeneration would suggest it is impractical to grow broadleaves without protection in the form of tubes or deer fencing.

Rabbits are prevalent and conifer restocking of any species requires fencing to ensure establishment.

Grey squirrels are well established in the area.

Larch is under threat from the disease Phytophthora ramorum and consequently larch will no longer be planted in future restocking.

Access and roading

The forest is well served by internal roads and there are no significant restrictions on access to the public road network.

Water Catchment

Several small streams in the northern part of the forest form tributaries to March Burn. To the south a tributary to Acton Burn rises in the Foxhole's area of the forest which flows directly into Derwent Reservoir a few kilometres to the south east. The reservoir is a key part of the water supply network in north east England (which is owned and managed by Northumbrian Water) as it is the principal water source for the Tyne and Wear metropolitan area.

Part 2 Analysis and Concept

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

Frater	Our entry ities		Wood Production –
Soils	The soils over most areas are well suited to commercial conifers and there is more potential for diversity.	ISSUES	'we will maximise the financial return from timber production compatible with the achievement of other district objectives whilst complying with the UK
Landscape	Further opportunities exist for landscape improvement through diversification of the age class structure, incorporation of broadleaves into conifer woodland and integration of forest boundaries with neighbouring woodland and open moorland. CCF management in the northern part of the forest provides opportunity to enhance the sensitive landscape viewed from Slaley village.	Internal and external boundaries will only be improved at the restocking stage. Southern edge of the woodland will need to be managed sensitively with regard to CCF, thinning intensity and wind hazard classification.	Forestry Standard and meeting the requirements of the UK Woodland Assurance Scheme'
Biodiversity	The clearfelling system provides suitable habitat for successful nightjar breeding. Red squirrel habitat can be enhanced through an increase in the areas managed under CCF.	There is a potential conflict between open clearfell areas suitable for nightjar and the retention of standing timber for red squirrels.	NATURE <i>'we will continue to diversify the age class structure of our even-aged class structure of our diverged the set of all the set of a</i>
Recreation	Good road and public right of way network		our woodlands and forest for wildlife'
Current species	Sitka spruce is well suited to the site conditions but there is opportunity to expand the range of conifer species.	Larch is no longer desirable due to the threat of Phytophthora ramorum. Some Sitka spruce restocking has been prone to heather check.	
Windthrow hazard	Areas of CCF identified in previous plan seem to be remaining stable	Medium to high WHC scores suggests the need for sensitivity with regard to thinning intensity in areas managed under CCF.	
Phytophthora ramorum		Although there have not been any cases of P.Ramorum in the vicinity larch will no longer be used in future restocking.	'we will ensure that rare and threatened habitats are protected and managed to
Climate change	Increased diversity through introduction of wider range of mixed conifer species. Increased resilience of the woodland.	Sitka spruce may not be suited to the site beyond 2080.	maintain or enhance their conservation value'

Part 3 Objectives and Proposals

Forest District Strategic Goal

ECONOMIC

The following key objectives have been identified for Slaley Forest based on FC England National Policy and the North England Forest District Strategic Plan

How Staley FDP delivers	Plan Objectives
now statey r Dr denvers	Than Objectives
Optimise economic value of recent clearfelling and existing conifer plantations through implementation of the harvesting and restocking plan.	Over next 15 year period aim to fell 147 ha. A review of the felling dates for the coupes has taken place to allow coupe separation, balance the clearfelling area between periods (to maintain Nightjar breeding sites), and allocate coupes to felling periods that more
Management under Continuous Cover Forestry principles.	reflect a period within which they can be harvested economically. Increase the area of CCF from 47ha to 64ha utilising natural regeneration for future restocking.
The most extensive environmental improvements will be delivered through forest restructuring achieved through forest planning, felling, and restocking and open space management. The NCA states: There has been some significant re-structuring of coniferous plantations in recent years involving both restoration of moorland habitats and restocking with broadleaved species, notably in upper Weardale and on the public forest estate at Hamsterley and Slaley.	The major driver for the felling and restocking proposals has been to maintain a habitat that is suitable for the continued breeding of Nightjars within the forest ensuring that there is sufficient felling to provide suitable nesting sites within each felling period. Future species mixtures will be composed of species suited to the site and the predicted changes to climate.
Expansion of native mixed broadleaved woodland to link and buffer the existing native woodland and riparian corridors. Of the woodland moorland edge an increase in the provision of transitional habitat has been made.	Broadleaved woodland will increase from 19ha to 31ha (24% increase) throughout the next rotation of the forest plan. Of the first 200 m of the forest abutting the moor it is proposed to include 40%

		open space and 28% open woodland and broadleaf planting to provide a significant edge habitat for the scale of the forest.
we will protect and enhance the habitats of rare and threatened species with the aim of ensuring their survival within the lands woods and forests we manage	Breeding nightjar population.	Clearfelling plan will optimise suitable bare ground habitat through the period of the plan and beyond.
ianas, woods and joresis we manage	Retention of mature conifer (CCF) to optimise red squirrel habitat.	Increase the area of the forest managed under CCF principles to 64ha. Though not critical to the viability of the current Red Squirrel population no large seeded broadleaf species will be planted during the first period of the plan.
		Soil carbon is also high under areas of woodland, and carbon storage and sequestering will be improved under CCF.
we will ensure that sites of cultural heritage are protected and managed sympathetically	Identified in the plan and mostly heritage associated with boundary features	Maintain areas of open or low density broadleaved woodland along forest edge. Protect features during forest operations.
PEOPLE		
'we will utilise the land and resources at our disposal to assist communities close to our forests to enhance their environments and hence their quality of life'	Improve the external attractiveness of the woodland through restructuring and choice of species and silvicultural systems.	Maintenance of long-term tree cover in the foreground of the wood facing Slaley village through employing CCF on the northern edge Ensuring that felling coupes break up the ridge edge rather than accentuating it.
improve the attractiveness and capacity of forests as visitor destinations in order to benefit the local and regional economies		The restocking proposals have been mainly adjusted to soften the forest margin to the south. It is expected that in the order of 15% of the area will be in the form of internal open space though the proposals also include 5% to be managed as low intervention.
'we will provide public access to all our forests and woodlands where there are no legal or safety restrictions'	Expanding the potential for plantation- type forestry to be managed to accommodate recreational interests, including improvements to the rights of way network, to allow public participation, understanding and enjoyment of the natural environment.	Consideration to public access during forest 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 as it moves into its next rotation. By the end of this rotation, it is anticipated that a substantial area of mixed conifer woodland will have been established and the range of conifer species will have been extended. The mosaic of open ground critical to the success of the breeding nightjar population will continue but there will also be a wider range of management options available. These will include a continuation of timber production from mixed stands but the presence of seed-bearing stands will also offer the possibility of further extension of continuous cover management.

Part 4 Monitoring plan

The objectives identified in Part 3 will be monitored in the following ways:

Objective	Criteria for success	Assessment
ECONOMIC		
Wood production	Marketable parcels of timber on offer to the trade. Improved timber harvesting access and infrastructure	Production forecast and sales records Harvesting facilitated according to the felling plan
Restocking	Successful establishment of next rotation	OGB4 assessment
NATURE		
Restructuring	Delivery of FDP felling and restocking proposals	Five yearly FDP review
Nightjar	Stable or increasing population	Baseline survey prior to 5 year review and again prior to 10 year revision.
Red Squirrel	Stable or increasing population. Control of grey squirrels	Sightings and grey squirrel cull records. RSNE's monitoring/survey program in Slaley every spring
PEOPLE		
Visual enhancement to visitors.	Establishment of new native woodland and ongoing restructuring of the plantations.	Five year FDP review.

Part 6 Forest Plan Outcomes

Future Land Use



Estimated area and volume for each felling period of the plan until 2031 is shown below:





Future Species Composition





Productive Capacity Analysis

The graph below shows the relative productive capacity (m³/year) of the forest as a comparison between the following four scenarios;

- 1. Productive optimum productive capacity assuming that the total productive area is planted with the optimum commercial species suited to the site (i.e. Sitka spruce).
- 2. UKWAS delivery productive capacity achievable through minimum UKWAS compliance with a species percentage mix comprising 65% primary species (SS), 20% secondary species (MC), 5% broadleaved and 10% open space.
- 3. Previous FDP productive capacity based on the percentage species mix and open land from the previous Forest Design Plan.
- 4. Current FDP productive capacity based on the percentage species mix and open land from this plan.

Note: The difference between UKWAS delivery and FDP includes requirements such as riparian corridors, landscape, ancient woodland, heritage etc. which require going beyond the minimum species composition and open space percentages to achieve UKFS.



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.

The Slaley Forest Plan is able to demonstrate that relevant aspects of sustainable forest management have been considered and the stated objectives in Part 3 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 optimised through 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 and landscape. This is represented in the Productive Capacity Analysis graph.

Structure Future species composition: 68% mixed conifer, 21% spruce, 9% mixed broadleaved, 2% pine and 30% open space meets UKFS minimum requirements. Long term structure will improve through linking of permanent broadleaved and open habitats and long term retention of areas managed under CCF principles.

Silvicultural Clearfelling is the principal system but continuous cover management has been increased together with long term retention of areas of mixed broadleaves. Implementation of harvesting and restocking plans will introduce further age class diversity. Access improvements for harvesting are within the scope of EIA Regulations.

Biodiversity Priority habitats and species are considered during the planning phase. Ecological connectivity ensuring that a minimum of 15% of the area is managed with conservation and biodiversity as a major objective.

Climate change Long term retention and continuous cover areas will minimise soil disturbance.

Landscape	The planning process refers to the national and the forest design. Visual sensitivity is analysed in visibility and the importance and nature of views landform and scale are considered with particular symmetry and distinct parallel lines in the lands design and natural regeneration density.
People	The Forest Plan has been consulted with individ

duals, the local community and organisations with an interest in the management of the forest.

will be enhanced by extending and linking areas of native broadleaved woodland and open space

local landscape character assessment to inform in the landscape appraisal with consideration to s of the woodland from key viewpoints. Shape, lar emphasis on mitigating geometric shapes, cape through species choice, upper forest edge























