Whinlatter Forest Plan 2018



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.

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 (UKWAS) and the UK Forest Standard (UKFS).

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.



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 Standard
- 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 guiet 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.

Whinlatter Forest Plan

This is the third revision for the Whinlatter Forest Plan. Changes to the previous plan include some re-scheduling of harvesting coupe periods, a re-assessment of silvicultural management around the core recreation area, changes to future species composition in response to larch disease and updated ancient woodland restoration and landscape sensitivity objectives.

Part 1 Background Information

Introduction

Whinlatter Forest is situated 5km west of Keswick, accessed from the B5292 Braithwaite to Lorton road which dissects the forest along Whinlatter pass. The landholding extends to 1217 hectares which includes approximately 200 hectares of open fell and sits in a complex landscape of valleys and mountains which is centred on Whinlatter Pass and includes the peaks of Grisedale Pike and Lords Seat. The forest is entirely freehold and includes some of the very first land to be planted by the Forestry Commission in 1919. Further acquisitions were made and new planting continued until 1965. In more recent years the size of the landholding has altered following boundary changes aimed at resolving external edge landscape issues.

Current Woodland composition, species and timber potential

The species present reflect the upland terrain, Sitka spruce being the dominant species overall, in particular on the higher slopes. A variety of species is present on the lower slopes with an emphasis on larch and Douglas fir on the more stable and deeper rooting soils. The broadleaved component, which is predominantly upland oak woodland, is associated with areas of ancient semi-natural woodland. The coniferous forest is managed silviculturally through a combination of clear-fell and Continuous Cover techniques and crops typically achieve a yield within the range 12-18m³/yr producing good quality timber that is important economically to both Forest Enterprise and in contributing to the rural economy.

The principal soil types are upland brown earth and intergrade iron pans which are suitable for the principal conifers. Windthrow hazard varies with the more stable lower classification found on the steeper eastern lower slopes. On the flatter upper plateau the classification is higher and thinning is not possible due to the risk of wind throw. The eastern slopes are steep with some localised landslip and stability risk and usually require skyline systems for harvesting. At higher elevations the terrain levels off and mechanised harvesting systems can be employed but the varied rocky and boggy terrain requires careful operational site planning.





Designated areas

Whinlatter is situated wholly within the Lake District National Park which in turn is within a World Heritage Site (UNESCO 2017 Outstanding Universal Value as a 'cultural landscape'). This designation provides the opportunity to demonstrate, at a practical level, how activities such as forestry, which have been prominent in shaping the landscape we see today, can create greater public benefits through sustainable land management delivering for people, the landscape, nature and the economy. This can be done for example by conserving and enhancing the landscape, scenic beauty and cultural heritage of the Lake District, whilst also providing wider ecosystem services to support communities' social and economic well-being in a sustainable way.

There are two Special Areas of Conservation (SACs) within and adjacent to Whinlatter recognising the species and habitats of European importance. These are the Lake District High Fells SAC, which includes the Buttermere Fells SSSI, for its contribution to European dry heaths; and The River Derwent & Bassenthwaite SAC, which includes the River Derwent and Tributaries, and Scawgill and Blaze Beck SSSIs, which have a variety of species and habitats associated with its ecosystem. Reference to the Conservation Objectives for the SACs can be found at: <u>http://publications.naturalengland.org.uk/category/4582026845880320</u>

As the competent authority the Forest Plan has been screened out for the purposes of appropriate assessment. The details of the screening are summarised in the table below:

SAC name	SSSI name	SAC key features	Comments	Appropriate Assessment required?
Lake District High Fells	Buttermere Fells	Dry heath	Management within the FC part of the SSSI (and SAC) will be as described in the SSSI management plan agreed with Natural England. The Forest Plan reflects the objectives and prescriptions which form part of the SSSI management plan UKFS guidelines to be followed as per standard	No
River Derwent and Bassenthwaite Lake	River Derwent And Tributaries - And - Scawgill and Blaze Beck	Clear water lakes Rivers with Water crowfoot, sea lamprey, brook lamprey, river lamprey and Atlantic salmon	Operational practiceManagement within theFC part of the SSSI (andSAC) will be as describedin the SSSI managementplan agreed with NaturalEngland.The Forest Plan reflectsthe objectives andprescriptions which formpart of the SSSImanagement planUKFS guidelines to befollowed as per standardoperational practice	No

The land within the Buttermere Fells SSSI (and Lake District High Fells SAC) at Black Crag and Hobcarton End is thought to be the best example of 'Atlantic Heath' in England. This is classified as 'dry heath' because it is on freely draining soil but it is a specialised type of this habitat that only occurs close to the Atlantic coast where rainfall is extremely high. It consists of large hummocks which are made of dwarf shrubs such as heather, bilberry, cowberry and crowberry with an extremely lush layer of mosses growing up through them almost to the height of the shrubs. This gives a remarkably spongy landscape, thought to be the most effective type of vegetation at slowing the flow of water on this type of fellside. This habitat is at its best here because Forestry Commission management has protected it from grazing. The management required for this land is continued exclusion of sheep grazing (i.e. maintenance of FC boundary fence) and removal of conifer regeneration that becomes established. There is currently an area of plantation on this SSSI and the proposals within this plan identify how we aim to further improve the condition of the SSSI through the removal of remaining conifer crops.

Adjacent to Whinlatter are Bassenthwaite Lake (SSSI, SAC, NNR) and the River Derwent and Tributaries (SSSI, SAC) and Barf and Thornthwaite (SSSI). The Derwent is recognised for its diverse botanical communities and important fish populations. The headwaters are dominated by bryophytes and there is a transition to important higher plants in the lower reaches. Sea, brook and river lamprey are found in the river systems, and there are extensive sea and river lamprey nursery grounds below Bassenthwaite Lake. Sediment and water management is important because a large part of the forest drains into Bassenthwaite Lake (SSSI and SAC) and the rest drains into the River Cocker (also SSSI and SAC).

The SSSI at Scawgill and Blaze Beck is also within the FC landholding to the west of Whinlatter pass which has geological interest. The site contains exposures of mudstones, siltstones and sandstones. The mudstones contain an assemblage of graptolites (planktonic fossils) representing a biozone of the Moridunian stage of the Lower Ordovician geological era. Each of the SSSI units represents different horizons within the biozone. A Local Geological Site (formerly known as RIGS) LGS 7/121 Comb Forest Trails is located in the forest shown on the Conservation and Heritage map. Another LGS site, Scawgill Bridge Quarry is also located adjacent to the forest boundary at Darling How.

Ancient Semi Natural Woodland (ASNW) is located on the lower eastern slopes and the ancient woodland status of this area dictates that there is a presumption for conversion to native species in line with our policy for Plantations on Ancient **Woodland Sites (PAW's). An Ancient Woodland Survey was undertaken in 2012.** The results of this survey, shown below will be used to formulate an intervention **plan for the PAW's restoration. The rate at which this conversion is achieved will be** dictated by the success of planting and regeneration of native species following felling and/or thinning interventions.



Management towards this objective has been ongoing through thinning and felling of non-native tree species through the period of the previous plan indicated below.



Environment and Conservation

Whinlatter is a diverse forest in terms of the range of species present, the age class distribution and site conditions which reflect the range in altitude from 140m asl to over 500m asl. At lower levels site fertility is high and the vegetation reflects this but higher up skeletal soils with heather moorland pre-dominates. The forest offers protection to fragile soils within the Bassenthwaite catchment extending up into Whinlatter along Aiken Beck as far as Spout Force. Sedimentation from soil erosion has been identified as a key factor in the ecological decline of Bassenthwaite Lake and tree cover can be an excellent land use in stabilising such erosion when combined with sustainable management that adheres to UKFS Forest and Water guidelines.

The area surrounding Seat Howe summit is categorised as an area of 'Natural Reserve' (NR), an internal designation that recognises valuable, predominantly wooded areas where the conservation of biodiversity is a prime objective. NR's provide the opportunity for natural dynamics to develop and management is focused on a minimum intervention approach. Seathow NR is a unique place with pine trees and other conifers that date back nearly a century. At its summit the trees fade out into heathland and rock with fantastic views across the northern fells and the trees, shaped by geology and stunted through many years of exposure have taken on a natural appearance. This unusual habitat has a spirit of place of "forest on the edge" and is possible to visit by those who are able to traverse the long and steep paths and cycle trails that pass through the area taking visitors to the summit.

In addition to the designated SSSI areas, Whinlatter has other expanses of heather fell which provide good heather habitat because they are stock fenced and not grazed. This is especially the case in the Ullister Hill and Lords Seat area which supports a population of grouse where the objective is to maintain as open fell and where appropriate integrate into surrounding areas at the time of restocking. As a long term aim scattered upland birch woodland with heather under storey would provide a diversity of habitat appropriate to this upland location through natural succession or widely spaced planting of appropriate species.

Whinlatter has a population of red squirrels and being of appropriate scale and habitat type has been designated as one of sixteen Red Squirrel Reserves in the North of England. The structured approach to felling and restocking helps to diversify the range and age of seed bearing conifer species which is important in order to sustain a continuous food supply. The forest and surrounding area is good habitat for birds of prey and is adjacent to woodland which hosts a breeding pair of ospreys. Maintaining and enhancing appropriate habitat and providing viewing opportunities for visitors at Whinlatter are a considerable focus of our management.

Watercourses and stream systems in Whinlatter are important; for example Aiken Beck and Hobcarton Gill which are important spawning streams and there are considerable opportunities for native woodland planting along the becks to help Natural Flood Management (NFM) objectives and to enhance the landscape of gills by softening the impact of even age conifers adjacent to watercourses. All Forest operations are managed in accordance with UKFS Forest and Water guidelines and opportunities are taken at the restocking stage to increase the amount of open space and incorporate native broadleaves through either planting or natural regeneration. The value of some of these watercourses in helping to alleviate downstream flooding is becoming increasingly recognised and opportunities to enhance NFM systems to help slow the flow of water during flood events are a consideration of management that we are investigating and a feasibility study is underway with Forest Research. NFM measures can often be good for both slowing the flow and holding back sediment but it will be equally important to ensure that both issues are explicitly considered during the implementation of any identified.

The forest also plays an important role in helping to regulate the impacts of high rainfall events by intercepting and slowing the rate of run-off and we have aspirations for areas of new woodland and scrub habitat that will contribute toward flood alleviation for communities in downstream catchments such as Braithwaite and Lorton. Transitional scrub areas would also be of very high biodiversity value particularly where native tree and shrub species such as eared willow, rowan, juniper and birch are used. One particular species that would benefit from transitional scrub habitat is the Ring Ousel which is on the UK Red List of birds with the highest conservation priority and a species needing urgent action. The Buttermere Fells SSSI is an English stronghold and the provision of berries (e.g. bilberry, rowan and juniper) is important so that they can fuel up before migrating back to Africa for the winter. Any proposals will be subject to appropriate consultation, planning and environmental impact assessment and although not currently within the scope of this forest plan potential areas are indicated on the Aspirations Plan in Part 5.

In addition to the areas **designated as PAW's** Whinlatter contains three areas of upland Oakwood (Masmill, Noble Knott and Comb Gill). Most of the work required is to protect and enhance the conservation status of these areas by the felling and removal of non-native conifer species from amongst the oaks. In the longer term, regeneration of these areas will need to be encouraged although some areas will be suited to non-intervention strategies. Conservation interest associated to these and the remnants of this habitat in other areas include features such as veteran trees, deadwood and riparian zones. These features of interest are safeguarded and enhanced during felling or thinning operations.

The Comb Forest Trail geological site is important for the Skiddaw Group rock structures in the Kirkstile Formation which are exposed in the sides of the forest tracks which roughly follows the Seat Howe Summit Trail. A new Rock Trail leaflet for public & school use at Whinlatter is in preparation by Cumbria GeoConservation, a voluntary geological conservation group working to record and protect important local geological sites. This will identify features throughout the forest such as vertical beds, flute casts, mining spoil, spoil creep, folded rocks, erratic boulders, and the former Thornthwaite Dam and reservoir at NY 214999 24869. This new Geotrail will contribute to the visitor experience on offer at Whinlatter.

Landscape and Topography

Section 62 of the 1995 Environment Act considers that in exercising or performing any functions in relation to land in a National Park bodies such as the FC are required to have regard to the dual purposes to conserve and enhance the natural beauty, wildlife and cultural heritage and to promote opportunities for the understanding and enjoyment of the special qualities of the national parks by the public. Whinlatter Forest is located within the 'Bassenthwaite Lake' Landscape Character Area (LDNPA 2008). The areas distinctive characteristics include the extensive ancient semi-natural woodland right down to lake shore, and wooded and open rocky outcrops on rising ground to both the east and west of the lake itself. The guidelines for managing landscape change refer to encouraging the sustainable management of broadleaved woodland and maintaining continuous cover. The guidelines also seek the conservation and enhancement of the strong sense of enclosure provided by broadleaved semi-natural woodland.

Of significance to recreational and tourist interests is the contribution the forest makes to the wider external landscape as well as how the forest and wider landscape look from within the forest. Whinlatter Forest is in a highly prominent position visible from the main Penrith to Keswick A66 trunk road and is overlooked by many popular walkers' vantage points including Grisedale Pike and Skiddaw. The high numbers of visitors and the presence of the B5292 Whinlatter pass which divides the forest means that internal landscape is also an important consideration. The forest is also prominent from much of its surroundings to the east and north east and forms a backdrop to many lower lying areas.

Whilst there has been a number of significant achievements over recent years in addressing external forest edge issues, for example at Darling How, there is scope for further enhancement. Examples include sky lined crops at Tarbarrel Moss above the visitor centre, the upper slopes of the Lorton fell coupes, some of the upper Hospital Plantation coupes on the southern side of the forest and the visual impact of conifers close to the road passing over Whinlatter pass toward Lorton. Proposals to reduce upper boundaries, soften the transition between plantations and open fell and incorporate more native broadleaves are represented in Part 5 on the Design Concepts, Aspiration and Future Species Plans which also indicate opportunities within the concept of an 'Upper Margin Landscape Sensitive Zone'.

Internally there is also the need to maintain and enhance external views from within the forest either through strategically managed permanent open space or in contrast through the ongoing transitional nature of changing views associated with the clear felling of coupes. Within the core recreational zone adjacent to the visitor centre enhancement focuses on maintaining where possible large, stable mature conifers which are of aesthetic value to visitors.

Heritage

Archaeological features are minimal possibly because the predominance of rocky outcrops and wetland will have severely limited land use in earlier periods. A number of non-designated heritage features are indicated on the Conservation and Heritage plan and include a smelt mill near Comb Beck and a wash house at Hobcarton End. These features are recorded on GIS and routinely protected during forest operations.

Communities and recreation

Current provision

The forest contributes significantly to recreation and tourism within Cumbria and as England's only true mountain forest is home to stunning views, fantastic walks, exhilarating mountain biking and adventure play. Whinlatter has become a high profile attraction that attracts visitors both locally and from further afield and the Visitor centre and its associated facilities provide a focus for visitor activity and an introduction to the forest experience. The centre is home to the Lake District Osprey Project which includes an indoor viewing area from April to September, as well as exhibition area, shop, café, bike hire, main car parking and toilet facilities. More adventurous visitors can enjoy the Go Ape high ropes course or access the wider forest using the extensive network of waymarked walks and cycle trails. Whinlatter is a popular mountain biking destination and there are two purpose built routes, the red graded 'Altura' and blue graded 'Quercus' single tracks. The forest trails provide a range of routes that can accommodate people of all ages and abilities from short multi user routes close to the centre to more challenging longer steep routes to the summits of Lords Seat, Barf and Grisedale Pike for more serious walkers. The open fell above the tree line and the spectacular view over Bassenthwaite Lake, Keswick and Derwent Water are popular features of the Whinlatter landscape that attract walkers and day visitors alike.

Future provision

Whinlatter Forest has grown over the past 30 years into a popular visitor attraction in the area, contributing significantly to the local visitor economy.

The Forestry Commission is keen to continue to evolve and develop its visitor offer **at Whinlatter, England's only** true mountain forest and expanding our current offer could support new, diverse and exciting experiences for a wide variety of visitors. The Aspirations Plan in Part 5 indicates some of the ideas we have for the future which will be subject to appropriate consultation, local engagement and planning/environmental impact assessment as appropriate.

Pests and diseases

The varied age structure and range of species provides ideal habitat for Roe deer. The population is monitored and managed by Forestry Commission rangers to an appropriate density in order that natural regeneration is possible. Grey squirrels are also present, often reported on the southern and western edges of the forest and pose a threat to the local population of native red squirrels and have the potential to cause damage to mature trees.

Larch is threatened by the disease Phytophthora ramorum and there have been several outbreaks within the forest in recent years. Our strategy is to respond swiftly and expediently to outbreaks through adherence to Statutory Plant Health Notices as issued and agreed with Forest Services to try to reduce the spread of the disease within the forest and to neighbouring woodland. Consequently there will be no future restocking of larch and there will need to be ongoing vigilance from staff in thinned areas of continuous cover where larch occurs as natural regeneration. Larch is an important species within the landscape providing seasonal changes in colour and texture across the forest. As part of our strategy to deal with the impact of the disease the Forestry Commission is actively exploring the use of alternative species choice which is a positive outcome in terms of increasing the opportunity for diversification and improved future resilience.

Access and roading

Internally forest operations are served by a good network of forest roads and tracks that require routine maintenance. A new section of forest road is needed at Aitken to enable the haulage of timber westward from the forest avoiding the need to exit past the visitor centre. The proposed section is indicated on the Operations Plan in Part 5 and will require Environmental Impact Assessment screening.

Part 2 Analysis and Concept

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

Factor	Issues	Opportunities		Coupe shapes NW of visitor centre impacted by route of Altura bike trail which will
Current species/coupe design	Some coupe shapes are still inappropriate and are landscape detractors which need some adjustment	Conifer species grow well in the right locations providing high natural capital value including recreation, biodiversity and quality timber.		impact on the ability to harvest timber without major disruption to the trail.
	Poor crop stability adjacent to highway at Masmill currently managed as CCF is not thinable	Clearfell and replace with native species adjacent to the highway		Landslip risk zone within PAW's area north of Seat Howe present issues of crop stability.
	Some windblown trees at the top of Whinlatter pass raise concerns re crop stability	Re-scheduling coupes in the operations plan to provide protection to trees around the visitor centre	Management type	Forest management in and around the core recreation area is currently under CCF. The timing and duration of thinning operations impacts on
	Thinning CCF in steep sided Blaze Beck not achievable due to terrain and poor access	Clearfell and convert to native broadleaved species		recreational use and revenue. Some areas have passed optimum time for thinning and have become unstable.
	and at risk from P. Ramorum. Some areas are highly visible in the landscape and managed as continuous cover for biodiversity and landscape.	with alternative conifer species and native broadleaves will contribute to species diversification and improve long term resilience of the forest.		At higher elevations felling coupes are dictated by existing windfirm boundaries.
	open habitats are infilling with sporadic conifer regeneration e.g. Tarbarrel Moss, Seat Howe	size to be removed.	Biodiversity	Experience from Seat How suggests that PAW's restoration along the front of Whinlatter overlooking Bassenthwaite is not
	Some coupes from the previous plan were not felled due to delays associated with P.	Re-scheduling of coupes in Operations plan.		economically or operationally viable through thinning under a CCF approach due to terrain

Re-design and schedule coupes to reduce impact on closures/diversions/reinstatement of cycle trail.

Ramorum. This may be a

recurring issue depending

on future outbreaks.

Move away from large conifers to more open woodland type dominated by native broadleaves.

Identify which coupes need to be felled due to stability to optimise their economic value but plan timing to limit the impact to visitors and recreation infrastructure.

Small coupe felling will open up the internal landscape and create opportunity for a wider choice of species and possible re-alignment of existing trails.

Away from core recreational area fell and restock management is appropriate, adopting a combination of clearfelling and ATC with CCF in areas of lower wind hazard classification. Long term retention of native MB. Re-design coupe shapes and timing using 3D analysis to work within landscape constraints. Elsewhere the protection of features associated with ASNW, such as veteran/feature trees or ground flora provide opportunity to target thinning operations for greatest benefit.

	PAW's dataset updated from NE with a reduced PAW's area from previous plan.	Re-map PAW's boundary and consider future management options for areas outside the boundary to optimise their economic potential or help mitigate landscape issues as appropriate.	Future Species/ Climate change	Larch is not a viable future species choice due to disease risk. Restocking of clear fells is limited to light demanding species i.e. pines which will limit diversity and impact on the landscape.
	Conifer crop at 'Black Crag' on northern extreme of the Buttermere Fells SSSI. Non-native conifer regeneration occurs on SSSI land.	Fell coupe within plan period. Remove conifer natural regeneration.	Public access/recreation	Existing plan may not necessarily accommodate current or future aspirational developments for example due to coupe design_silvicultural regimes
	Harsh upper boundary in places between forest edge and open fell habitat.	Establish transitional scrub in areas of upper margin landscape sensitive zone using native tree and shrub species such as eared		and species choice.
		willow, rowan, juniper and birch. This habitat will provide habitat for a wide variety of species including the nationally declining red data book species Ring Ousel. A potential joint project with the National Trust is indicated on the Aspirations map.	Landscape	Some remaining landscape detractors including upper boundaries with straight lines and harsh transition from plantation to open fell For example Hospital Plantation, forest edge above Ladstock and below Lorton Fell and Whinlatter pass.
Access/Roading for operations	Haulage east of Aitken currently has to pass through visitor centre due to unsuitable section of forest road.	New section of forest road would facilitate timber haulage north of the visitor centre to exit at Darling Howe thus avoiding the visitor centre. New rock exposures created along forest roads allow valuable insights into the nature of the underlying rock.		
Pests and disease	Deer present challenges to natural regeneration and restocking. Grey squirrels impact on red squirrel populations. Phytophthora ramorum and Chalara tree disease risks	Utilising alternative species in the future will contribute toward diversification and resilience		

Proactively thin areas of wind firm larch and under plant with a wider range of shade tolerant species. PAW's restoration and establishment of transitional scrub habitat and native broadleaves will enhance integration with neighbouring woodland and open fell. The plan revision provides the opportunity to incorporate aspirational ideas to enable the FC to potentially develop its visitor offer at Whinlatter. Expanding the current offer could support new, diverse and exciting experiences and contribute to the health and well-being for a wide variety of visitors. On-going improvement through implementation of operations plan and establishment of low density open woodland on fringes where appropriate. Scheduled coupe felling and restocking will give the opportunity to re-align upper forest boundaries and incorporate more appropriate species choice over time as these areas are restocked. Establish native broadleaved woodland along Whinlatter pass to improve roadside views. Expand native broadleaved woodland beyond the PAW's boundary to enhance landscape and habitat linkage along the lower eastern flank of the forest above Ladstock. This will also promote more appropriate species composition and structure within the landslip risk zone.

Appraisal of Opportunities and Constraints

There are landscape concerns regarding the potential impact that Phytophthora Ramorum could have on the visible stands of larch which are currently managed under CCF. However, through carefully planned felling and thinning and underplanting of these crops there is an opportunity for species diversification or native broadleaved conversion which will improve the future resilience of the forest.

The difficulty of managing Continuous cover forestry techniques, which requires frequent thinning of crops, in areas close to the visitor centre needs to be addressed as some of the crops are becoming unstable due to lack of active management. The implementation of a small coupe felling regime will ensure silvicultural management of the crops progresses whilst keeping the duration of operations to a minimum with the added benefits of opening up the internal landscape and creating new views from within the forest. This proposal will also create the opportunity for species diversification and crop boundary alteration at restocking and trail maintenance or re-alignment where needed.

In the PAW's area along the eastern front of Whinlatter the long term approach of gradual restoration to ASNW by thinning is not viable due to the steep terrain, landslip risk and poor access. Conversion to native species will only be achieved through clearfelling and restocking with the desired species. Careful planning using 3D simulations to ensure there is limited landscape impact will be required; however, the recent harvesting at Seat Howe indicates that this is possible.

A number of landscape detractors associated with current coupe shapes remain, for example Hospital plantation, below Lorton Fell and along the Whinlatter pass. Mitigation is possible through re-alignment of forest boundaries post harvesting, conversion to native broadleaved habitat and by developing an upper edge transitional habitat zone that incorporates appropriate native species and widely spaced conifer. Progress toward these objectives will take time as the forest is restructured in the future.

Part 3 Objectives and Proposals

Forest District Strategic Goal	
ECONOMIC <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 Standard'</i>	Har sus futi will Cor at 7 the
NATURE, HERITAGE and LANDSCAPE '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'	One fell cre brc fore
<i>`we will ensure that rare and threatened habitats are protected and managed to maintain or enhance their conservation value'</i>	Lar ent pas cor of I But 20 ⁻¹ ren reg SSS of s
	Est tra pla Hol
	PA in t to / pla
	Cor red

How Forest Plan delivers

rvesting plan provides a stainable yield of timber into the ure. Over the next 10 years we I aim to harvest 80,000m³. nstruct new section of forest road Aitken to avoid haulage through e visitor centre.

going restructuring through the ling and restocking proposals to eate linkage of open, conifer and badleaved habitat across the rest to maximise connectivity.

ndscape and biological hancement; native broadleaved tablishment along Whinlatter ss, felling and native broadleaved nversion at Scawgill and removal Black Crag coupe on the attermere Fells SSSI in the period 17-2021 with a commitment to move non-native conifer generation where this occurs on SSI land and continued exclusion sheep.

tablishment of upper edge ansitional habitat adjacent to anned or recently felled areas at obcarton and Graystones.

W's restoration - fell two coupes the period of the plan to convert ASNW. Re-survey of ASNW is anned for 2022.

ntinue to manage the forest with d squirrels and other protected

	species and habitats as a priority.
PEOPLE	Manage Whinlatter as a first class
<i>`we will utilise the land and resources at</i>	visitor attraction providing an offer
our disposal to assist communities close	that includes an inspiring range of
to our forests to enhance their	facilities and opportunities that
environments and hence their quality of	makes Whinlatter enjoyable to all.
life'	
`we will provide public access to all our	Effective strategic and operational
forests and woodlands where there are no	planning to ensure the forest fits
legal or safety restrictions'	well in the landscape and is resilient
	to accommodate change.
	Consult and engage fully with local
	communities and visitors regarding
	any proposed developments of the
	forest or visitor centre.
	Investigate the potential for Natural
	Flood Management opportunities in
	Whinlatter to benefit downstream
	communities such as Lorton and
	Braithwaite.

The stated objectives and proposals above represent our intentions over the 10 year approval period of the plan. Landscape and ecological enhancement opportunities identified in the plan beyond this period, and represented on the Operations and Future Species maps include;

- Adjusting the coupe boundary adjacent to Tarbarrel Moss (2032-2036) to mitigate the present sky lined crops and increase open habitat adjacent to the fell.
- Re-aligning the forest edge below Lorton Fell post harvesting (2027-2031) with the opportunity to incorporate transitional habitat adjacent to the open fell. Further re-alignment of upper forest edges, for example Hospital Plantation following future coupe felling and restocking.
- Further establishment of native broadleaves along Whinlatter pass as coupes are felled and restructured.
- Expanding native broadleaved woodland beyond the southern boundary of **the PAW's** to include the area above Ladstock wood. This will provide landscape and native woodland continuity along the eastern flank of Whinlatter.

Part 4 Monitoring plan

Objective	Criteria for success	Assessment
ECONOMIC		
Wood production	Marketable parcels of timber on offer to the market	Contract and sales records
Sustainable economic regeneration	Maintain timber harvesting access and infrastructure	
NATURE, HERITAGE and LANDSCAPE		
Restructuring	Delivery of Forest Plan felling/thinning proposals	Five yearly Forest Plan review
PAW's/ASNW	Enhance ASNW condition	Re- survey 2022
Landscape	Enhancement achieved through contribution to the LCA guidelines for managing landscape change	Five yearly Forest Plan review
PEOPLE		
Access, communities, health and well- being	Continue to promote opportunities for the understanding and enjoyment of the special qualities of the forest within the Lake District National Park	Five year Forest Plan review.

Part 5 Forest Plan Maps

- Location 1:50,000 scale showing location in context of other woodland in the local area
- Current Species species composition in 2018
- > Landform indicating topography of the woodland and local area
- Soils and Geology indicating soil composition and underlying geology across the forest
- > <u>Yield Class</u> indicating the productivity of the timber crops
- ➢ Wind Hazard Classification indicating the windiness across the site
- Conservation and Heritage statutory and non-statutory conservation and heritage features
- PAW's Intervention Plan indicating proposals to restore native woodland within area of designated plantation on ancient woodland site.
- Recreation, Access and Services recreational provision, formal public rights of way, FC access and local services
- > <u>Hazards and Constraints</u> operational hazards and constraints
- Design Concepts broad concepts and zoning of management
- Aspirations Plan Showing aspirational ideas for ecological, landscape, community and recreational enhancement
- Operations Proposals showing felling proposals, areas of Long Term Retention, Minimum Intervention and Continuous Cover and proposed new roading
- <u>Future Species</u> representing the long term vision for future species composition





Broom Fell Widow Hause Todd Fet Pit (dis) Forestry Commission England Lord's Seat Graystone Pile of Stones Pits Whinlatter Kirk Fell Landform Ullister Kirkfel Hoúse Hill Aiken Quarry Mound Plantation 1:18.000 High (disused) Darling How 75 Gates (82 Lorton Park 134/ Contours nbeck Tarbarrel Mos Watercourses Scales Brown Lonton Fells Hoy Knotts 22 High Mille Blaze B Whinlatter High Whitbeck Darling How Whinlatter Top Bridge Birkett Comb Plantation Whinlatter Pas eh Swinside The North Western Fells occupy the area between the rivers Derwent and Cocker, a broadly oval swathe of hilly country, elongated on a north-south axis. Whinlatter is in Hobcarton Plantation the most northerly sector, rising either side between Black Crag Whinlatter Pass and the Vale of Embleton. Swinside Plancatio Revelin The hub of this group of fells is Lord's Seat, the highest Moss point north of Whinlatter Pass. The main line of high Cairo ground runs east to west, taking in Barf, Lord's Seat, Broom Fell and Graystones, before petering out in the Hobcarton direction of Cockermouth. Lord's Seat however sends out End a substantial additional ridge which starts southward, Sheeplo curves west and finally turns back north. This is Cairi Whinlatter Fell, and the valley enclosed between it and Hobcarton the main ridge is that of Aiken Beck. The descending ridge from Lord's Seat has a number of tops along its length. First is Ullister Hill (1,722 ft) before it narrows at Tarbarrel Moss (1,617 ft), before rising again Bield as it turns westward to arrive at Whinlatter Top. A final top, Brown How (1,696 ft) stands above the terminal Ladyside descent to Aiken Beck. Pike Grisedale Pike The southern boundary of the fell is formed by the Whinlatter Pass road. The summit of the pass lies south east of Whinlatter Top, marking the line of the Derwent-Cocker watershed. Aiken Beck and Whinlatter Gill combine to form Blaze Beck, a sizeable stream flowing into the Hopegill/Head Cocker at Low Lorton. South of Whinlatter Pass the peak Mine of Grisedale Pike is dominant with a northerly spur Id sused extending to Hobcarton End above the treeline.

Cairn.

























Landscape Appraisal

Whinlatter is in a prominent position particularly within the wider landscape viewed from the direction of Keswick and Bassenthwaite. The forest also nestles within the surrounding mountainous landscape and views from several fell top routes including Grisedale Pike, Skiddaw, Barf and Lords Seat are seen by many walkers. The internal landscape is equally important as the forest provides the backdrop for views out of the forest for the many visitors using the forests popular trails.

In conjunction with the provision of wider sustainable ecosystem services the conservation and enhancement of the landscape, scenic beauty and cultural heritage of the Lake District is a fundamental objective and opportunities for further landscape improvement, such as reducing upper forest boundaries, incorporating more native broadleaves and upper edge transitional habitat are included in the plan.

Particular proposals in the forest plan that have the potential to impact on these landscape qualities include:

- > Felling coupe shape and design on the North east slopes overlooking Bassenthwaite to achieve native woodland restoration.
- > The introduction of a coupe felling regime within the core recreation zone previously managed as Continuous cover.
- > Harsh upper boundaries between plantation and open fell.

1. PAW's restoration along the north east facing slopes overlooking Bassenthwaite.

A gradual conversion to a native mixed broadleaved woodland type utilising continuous cover techniques would be the preferred management technique both in terms of landscape impact and ecological benefit. However, the steep terrain and very unstable fragile soils limits operations to a clearfell and restock scenario utilising high lead or skylining techniques. These techniques limit the risk of soil erosion but have a more dramatic impact on the landscape. However, through thoughtful design and choice of coupe boundaries it is possible to reduce the impact, as demonstrated by the recent clearfelling at Seat Howe in response to a Statutory Plant Health Notice to fell infected larch.

The images below demonstrate how the operational proposals to clear fell two further coupes within the 10 year approval period of the plan will look in the wider landscape viewed from Dodd Wood across Bassenthwaite.

Note: the 3D representations show only FC woodland, other woodland and trees in the landscape are not represented.



Present view 2018, the Seat Howe clearfell in the centre



First coupe felled 2018-2021, Seat Howe restocking developing. Interlocking boundaries above the felled coupe help to break the visual impact by avoiding a boundary along the contour.



Second coupe felled 2022-2026. Seat Howe now restocked for circa. 8 years. The benefit of adjoining woodland and trees in the wider landscape is important.



End of plan approval period 2028. Native broadleaved woodland developing.



Longer term view showing restoration of native woodland with interlocking coupes of conifer above.

2. Demonstration of the impact of coupe felling within core recreation zone adjacent to visitor centre.



Present view from south section of the Altura bike trail 2018. Visitor centre approximately located in the low mid area of the image.



2018-2021 - small coupes felled have minimal impact on the view.



2022-2026



End of plan approval 2028



Longer term view showing the mosaic of felled and replanted areas adding to species and age diversification. Upper skylined coupes are enhanced for example adjacent to Tarbarrel Moss.

3. Upper forest transition from plantation to open fell using the example of Darling Howe in the North West of the forest. This coupe was felled in 2016 with the previous first rotation crop of Sitka spruce planted up to the forest boundary.



Present view prior to restocking in 2021



View at end of approval period in 2028 showing restocking with spruce and other conifers.



Longer term representation in 2040 showing the open transitional habitat feathering out to the open fell.

Part 6 Forest Plan Outcomes

Future Area and Land Use



The slight reduction in open area, compared to the previous plan is a reflection of our proposals to create low density transitional scrub habitat on the upper edges of the forest to help mitigate the harsh boundary between forest plantation and open fell. No reduction of permanent open space within the forest is proposed.

Future Species



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

Timber production

Average timber production, including thinnings, per five year period is shown below. Over the 10 year approval of the plan we will harvest approximately 71,000m³ of timber from approximately 112ha.





Productivity

The productive potential of the forest is optimised through timber production achieved through delivery of the harvesting plan. This is represented in the Productive Capacity Analysis below which 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 (10% open) is planted with the optimum commercial species suited to the site (i.e. Sitka spruce YC 16).
- 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. Previous Plan productive capacity based on the proposed percentage species mix from the previous plan with 33% open.
- 4. This Forest Plan productive capacity based on the percentage species mix from this plan with 27% open.



Natural Capital and Ecosystem Services

The productivity analysis refers to timber production and gives a general indication of the productive capacity of the forest. However, timber represents only part of the picture and Natural Capital refers to the stock of all natural assets upon which the economy and society is built. Natural capital produces value for people in the **form of 'goods' such as timber or minerals and 'services' such as climate regulation** and air purification. To realise the benefits of some natural assets, humans need to intervene (e.g. harvesting timber) but in other instances natural capital produces value through natural processes (e.g. trees reducing flooding). Forest Enterprise England (FEE) published its third organisational Natural Capital Account (NCA) in 2018 as a transparent way of quantifying the value of natural assets beyond what is seen in a typical financial accounts, the NCA also recognises values for natural services, such as the well-being our woods bring to people, and the atmospheric carbon our trees are storing, thereby providing a more representative picture.

A key feature of a natural capital approach is that it is looking at the asset value rather than the value of the services provided now, i.e. it takes the value of the services that will be provided into perpetuity (and whether they are going to increase or decline) and assigns a current 'net present value' to give a total asset value. FEE's NCA looks at the whole of the public forest estate (PFE) and calculates the value of all the natural capital FEE is custodian of in a 'top down' way. This is useful for the organisation to understand whether it is strategically delivering its mission, and to evidence the value of the work we do to others. However it is at such a large scale that it doesn't provide practical information that can help individual decisions within the organisation. FEE is exploring whether using a natural capital approach could help decision making for land use choices for specific sites and forest design planning and is in the process of developing and testing a natural capital tool to do this. The Whinlatter forest plan delivers ecosystem services and other non-market benefits included in biodiversity, climate change mitigation, water, people and landscape including public health and well-being, productivity through increased carbon sequestration, species diversification and climate change resilience, landscape enhancement and increased native woodland and priority habitats. In the future we hope to be able to access these non-financial benefits using this tool to provide a breakdown of the natural capital costs and benefits associated with the plan to support the decision making process.

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 Whinlatter 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; 49% Sitka spruce, 35% other conifers and 16% mixed broadleaved and 27% open space, exceeds 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 Continuous Cover of areas of mixed conifer and broadleaved woodland at lower elevations.
- 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

	Site Classification will be used species at the time of restocking
Landscape	The planning process refers to inform the forest design. Visual visibility and the importance at from key viewpoints is used to Particular emphasis is made or symmetry and distinct parallel species choice, forest edge and
Historic	Historic features are recognise routinely incorporated into ope
People	The Forest Plan is consulted w community and organisations management of the forest.
Water	Quality will be protected throu guidelines as a minimum durin management operations.

mitigate climate change and disease/pest outbreaks. Ecological Site Classification will be used to identify the most appropriate species at the time of restocking.

b the Local Landscape Character to al sensitivity and consideration to and nature of views of the woodland o inform shape, landform and scale. on mitigating geometric shapes, el lines in the landscape through nd coupe design.

ed and their safeguard will be perational management.

vith individuals, the local with an interest in the

ugh adherence to Forest and Water ng harvesting and forest

Longer term management proposals

Forest management in the UK is facing many challenges both now and for the future with issues and threats associated with climate change, disease and **economic uncertainty. As custodians of the nation's public forest estat**e for 100 years Forest Enterprise have sustainable forest management at its core with the aim of delivering wide ranging objectives for people, nature, landscape and the economy. Within the setting of the Lake District National Park and World Heritage Site the proposals in this plan will lead to a more diverse and resilient woodland, with a greater range of species and habitats and future design that recognises the scenic beauty and cultural heritage of the area. Substantial areas of alternative conifer species will have been established, and the range of broadleaved species and more diverse open habitat will have been extended particularly on the transitional boundary between forest and open fell.

Timber production of home grown quality timber remains a priority and will continue through a combination of clearfelling and continuous cover silvicultural techniques with the focus on maintaining and possibly expanding productive woodland with species best suited to site conditions including a wider range of conifers and broadleaves at the lower elevations. This strategy will also contribute toward climate change mitigation, flood alleviation and long term forest resilience.

Public recreational use of the forest will remain a major focus of our management for the future and by continuing to evolve and adapt our offer we will continue to provide a high quality experience for the enjoyment, health and well-being of all our visitors for the next 100 years.