Forestry and Land Scotland
Coilltearachd agus Fearann Alba

Kinharvie and Southwick Land Management Plan 2024 - 2034

V1.0

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Our land management plans bring together key information, enable us to evaluate options and plan responsibly for the future. We welcome comments on these plans at any time.

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Applicant's details	
Applicant:	Forestry and Land Scotland
Address:	55-57 Moffat Road, Dumfries DG1 1NP
Agent's name:	Melissa Viguier
Agent's position:	Forest Planner
Agent's contact number:	07340455731
Agent's email:	Melissa.viguier@forestryandland.gov.uk

I hereby apply for a permission to fell the trees described in this application and I certify that:

I have notified all stakeholders that may be affected by the felling in this application and sought their views prior to submitting this application;

I am authorised to sign legal contracts on behalf of Forestry and Land Scotland;

Any necessary consents from any other person(s) if required, have been obtained;

I have made the necessary checks with the local planning authorities regarding Tree Preservation Orders and Conservation Areas;

I hereby acknowledge that Scottish Ministers may process any of my personal data contained in or relating to this application in accordance with the terms of Scottish Forestry's Privacy Notice, a copy of which is available at www.forestry.gov.scot;

Where applicable and appropriate I have submitted an EIA screening opinion form for operations contained within this application under the Forestry (Environmental Impact Assessment) (Scotland) Regulations 2017.

I have read and understand this application fully and, to the best of my knowledge and belief, the information given in this application is complete, true, and accurate;

I accept that any false or misleading information provided in this application constitutes an offence and may result in any felling permission based on this application being revoked at any time;

I have read and understand Scottish Forestry's Privacy Notice, a copy of which is available at https://forestry.gov.scot/privacy-complaints-freedom-of-information-and-requests-for-information.

Signed, Pp Regional Manager		Signed, Pp Conservator	
FLS Region	South	SF Conservancy	
Date	07.03.2025	Date of Approval	
		Date Approval Ends	
		Plan Ref. No.	

A. Description of Woodlands

A.1 Property Details

Property (LMP) Name:	**Kinharvie and Southwick**
Grid Reference (main entrance):	NX 9373 6633 Kinharvie Solway fishery entrance NX 9375 5769 Southwick entrance
Nearest town or locality:	New Abbey (nearest settlement to Kinharvie) Caulkerbush (nearest settlement to Southwick)
Local Authority:	Dumfries and Galloway

A.2 Location and Background

The Land Management Unit (LMU) covers 1949ha of forested land and 490ha of open unforested hill ground. The LMU is made up of 2 adjacent forest blocks, Kinharvie (1940 ha) and Southwick (498 ha). Located in Dumfries and Galloway, Kinharvie is approximately 1.4 km west of the village of New Abbey, and Southwick approximately 1km north-east of the village of Caulkerbush. The two adjacent forest blocks form part of FLS South Region. The composite forest is 14km south-west of Dumfries, and is surrounded by private woodland creation, open hill farmland, small settlements and is adjacent to the Nith Estuary and East Stewartry Coast, National Scenic Areas (NSA). It is part of Scotland's national forests and land, owned by Scottish Ministers on behalf of the people of Scotland, and managed by Forestry and Land Scotland (FLS).

See **Map 1.**

A.3 Existing Schemes and Permissions

Type: Existing LMP expiries 28/08/2024
Ref. No: 220
Details: Kinharvie Composite LMP, included Kinharvie, Southwick, Plascow and Southwick Station forest blocks. Southwick Station has been sold and Plascow now falls under LMP (ref 295).

Type: EIA screening opinion request 05/10/2021. Screening opinion request for the construction of a 470m forest road, using stone from Kinharvie quarry to provide access to coupe 27025 (formerly 27000). This road has now been built and is operational 14/03/23.

A.4 Stakeholder Engagement

Summary of the main points raised by stakeholders during Scoping (and where they are addressed in the plan). The full consultation record can be found in Appendix I.

1. **Heritage** (Section C.2.10) There are three Scheduled Monuments in Southwick (2 Slewcairns and Slewcairn hut circle) plus a further nine unscheduled heritage sites across this composite forest block.
2. **Landscape** (Section C.2.9) There is high landscape sensitivity in these blocks; Southwick is within the East Stewartry Coast National Scenic Area (NSA), and Kinharvie is within the Nith Estuary NSA.
3. **Conservation** (Section C.2.11) Schedule 1 bird species are present. There are also historical records of Black Grouse (Capercaillie) leks on hill tops within these blocks (National Biodiversity Network (NBN) atlas).
4. **Peat** (Section C.2.5) Type 14 peat is present in Kinharvie on Tannoch Hill and Cuil Hill.

A.5 Long Term Vision and Management Objectives

Vision

The Kinharvie and Southwick block will continue to provide a valuable, sustainably managed forest using clearfell and alternative to clearfell systems where appropriate. Management coupe felling years will be adjusted to improve the age structure in areas where the forest structure comprises large areas of same age first rotation crops.

The use of low impact (LISS) and minimal intervention (MI) silvicultural systems will maintain canopy cover reducing the fallow ground, these two benefits will improve the way the forest looks from the NSA. These management practices will also improve age diversity, which coupled with increased species diversity through restocking, will deliver greater biodiversity value whilst maintaining timber production.

Management Objectives

Objective 1: Manage the woodland under appropriate silvicultural systems to produce quality saw logs and other timber products.

Indicator of objective being met: Continued provision of sustainable timber to market over the term of the plan (and into phase 3 and 4) producing a range of timber products.

Objective 2: Ensure landscape design is sympathetic to surrounding landform with particular focus on areas around the Nith Estuary, National Scenic Area and East Stewarty Coast National Scenic Area.

Indicator of objective being met: Maintenance of coupes already under LISS management and introduction of alternative management prescriptions for some new coupes will achieve prolonged benefit of landscape views. Introducing more appropriate coupe shapes and forest design to achieve a more natural visual fit of the forest to the landscape.

Objective 3: Maintain and enhance the species richness of the woodland and open habitats to benefit biodiversity.

Indicator of objective being met: Increased retention of mature crop linking to other habitats along riparian zones (where appropriate or feasible). Efforts towards reduction of high-density conifer regeneration within the open areas on hilltops, including UK BAP priority habitats, during the plan term and creation/improvement of broadleaf corridors in accessible riparian areas.

A.6 General Site Description

A.6.1 Topography and Landscape

Elevation range – 50m to 420m

Kinharvie and Southwick forests are part of a large area of high ground west of Criffel Hill, forming a distinctive back drop to farmland, and are visible from the coastal road (A710) and the Solway Firth.

Within the forest there are seven exposed hill tops with peatland habitats, from here the ground slopes down to wooded valley bottoms and gullies. The forest is a visual back drop to the New Abbey settlement and surrounding public roads, the Waterloo Tower in the north-east of the forest is a distinctive local landmark.

National Scenic Areas:

- Nith Estuary (30)
- East Stewartry Coast (32)

NatureScot Landscape Character Types (LCT) relevant to Kinharvie and Southwick:
Coastal Uplands – LCT 179

Local Landscape Area:
Regional Scenic Area – Dumfries and Galloway Local Authority– Solway Coast

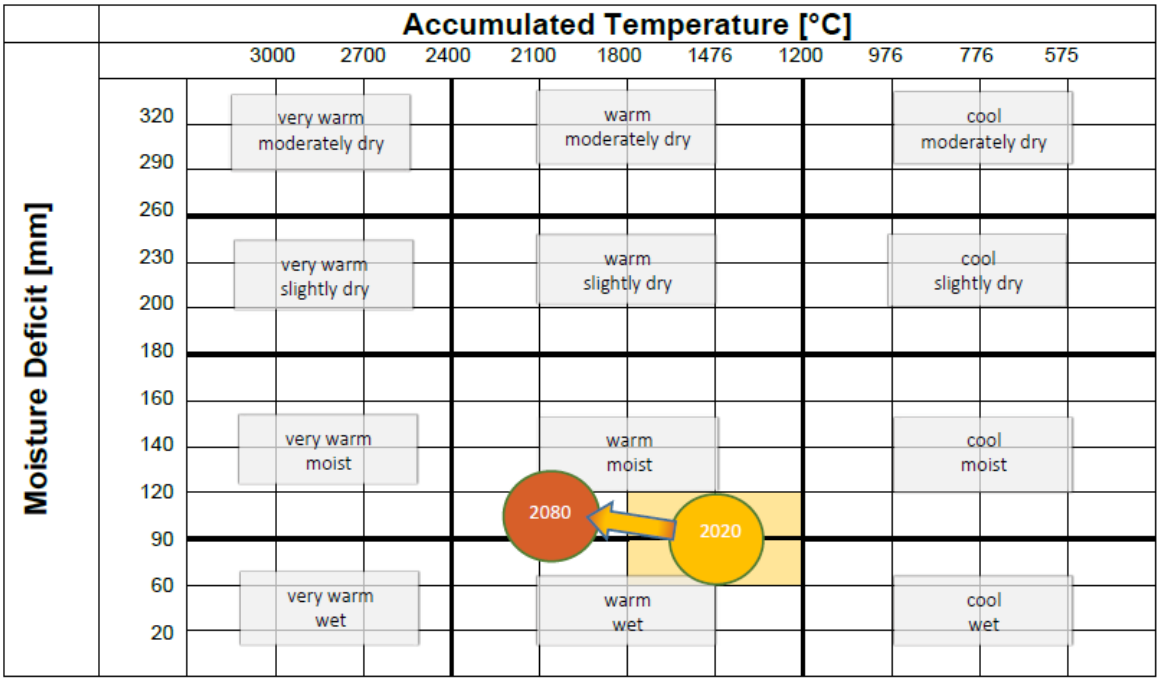
A.6.2 Geology and Soils

Geology is composed of igneous bedrock formed during the Devonian and Silurian periods. There are some superficial deposits across the block with a concentration in the more prominent gullies. These are all sedimentary deposits, peat, diamicton and alluvium (Langholm Till) in nature, formed during the Quaternary period.

Soil types within the forest block are shown on Map 8. In Southwick the soils mainly consist of surface water gleys, with ironpans and brown earth soils in the designated landscape area. In Kinharvie there are large areas of blanket bog on the open hill. Peat soils within the plantation are heavily modified. The lower slopes to the north-east of the block fall away from mainly surface water gleys to a more complex mosaic that includes ironpans and brown earths.

A.6.3 Climate

'Climatic Zones' grid showing current climate type in yellow.



In Southwest Scotland the accumulated temperature is expected to rise becoming warmer, moisture deficit is likely to fall, causing drier summers, wetter winters with more extreme weather events and resulting in more waterlogged soils. This could reduce productive tree growth through the rise in anaerobic conditions in some areas and increase areas of crop susceptible to windblow.

A.6.4 Hydrology

Map 2 shows all watercourses and open water. The forest sits in the Solway-Tweed river basin district.

Water quality:
Bodies of surface waters (as identified by SEPA's Water Hub) in the plan area:
Name: New Abbey Pow/Glensone Burn (ID: 10598)
Overall Condition: Poor
Name: Glen Burn (Sheep Burn) (ID: 10597)

Overall Condition: Moderate
Impacted condition / Responsible pressures (Responsible activity):
Access to fish migration, no weirs are recorded on our dataset for this LMP.

Water supplies:
See Confidential Private Water Supply Appendix IV

There are no Drinking Water Protected Areas (DWPA) within the plan boundary.

A.6.5 Windthrow

This forest block has been susceptible to windthrow; however, this appear to have been along brown edges left exposed after clear felling. Analysis of the forest looked for opportunities to establish management coupe boundaries along green edges to strengthen future coupe stability. Consideration was given to the DAMS score (8 in the sheltered lower elevations to 21 on high ground), prevailing wind direction (south-west) and age of the crop and soil type.

Well-time thinning can improve stand resilience to windthrow and has been utilised in some parts of the forest. Nine coupes have been selected for potential thinning in phase 1 and one coupe in phase 2, some of these coupes are managed under LISS, and others are clearfell coupes (see map 5).

A.6.6 Adjacent Land Use

The adjacent land use mainly consists of open hill tops, agricultural grazing and privately owned woodland. The residents of New Abbey and Caulkerbush commonly use the forest for informal access. Kinharvie block is adjacent to Plascow forest, however the forests are serviced by separate entrances and can only be accessed from each other by foot. Southwick and Kinharvie are joined by forest roads.

A.6.7 Access

There is a network of unsigned Public Rights of Way (PRoW) and a core path (that uses the main forest road) within the Kinharvie and Southwick forest blocks. See map 10.

A.6.8 Historic Environment

See Map 9 and Appendix II – Historic Environment Records.

There are 3 designated Scheduled Monuments, 2 slewcairns and 1 hut circle (SM1045, SM3341), within Southwick. Undesignated historic environment features include mainly old farmsteads, cairns and field boundaries. The Waterloo Monument (45m tall Listed Building and important local landmark) sits within Kinharvie Forest but is located on privately owned land. Nevertheless, the monument is an integral part of the landscape and so considered in this plan.

A.6.9 Biodiversity

- Ancient Woodland sites
  Long-Established (of plantation origin):
  Kinharvie Plantation 80.4ha
  Cullendeugh Plantation 12.78ha
  Hill Wood 12.39ha

- Plantation on Ancient Woodland Site:
  Tannoch Wood 2.15 ha

- Priority Species:
  Black Grouse *Lyrurus tetrix (historic)*
  Nightjar *Caprimulgus europaeus* (historic)
  Red squirrel *Sciurus vulgaris*
  Otter *Lutra lutra*
  Badgers *Meles meles*
  Birds - Various raptors, are present within the LMP area.
  Adders (*Vipera beru*)

- Priority Open Habitats (UK Biodiversity Action Plan):
  Blanket bog
  Upland heathland

A.6.10 Invasive Species

In Kinharvie slow-growing conifer regeneration is encroaching on some areas of the open hill ground. In Southwick, within the NSA, rhododendron is present. However, neither is extensive; they will be monitored and dealt with as appropriate when resources allow. Feral pigs are present in low numbers in Kinharvie and Southwick and their management is covered in the Deer Management Plan (DMP).

A.7 Woodland Description

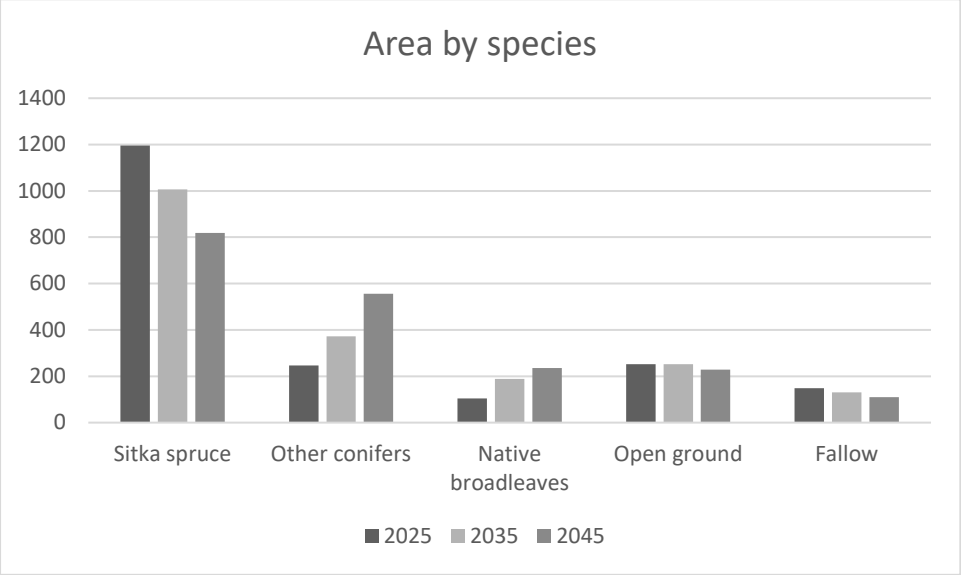
See Map 2 which shows the current tree species composition and pattern.

The forest is currently 74% conifer, and much of this is single species Sitka spruce coupes of a similar age. There are some areas of long-established broadleaves on the northern edge of the forest. Larch removal for *Phytophthora ramorum* control has created lots of open areas in the forest.

Table 1: Area by species

Plan area by species						
Species	Current Area (ha)	%	Year 10 Area (ha)	%	Year 20 Area (ha)	%
Sitka spruce	1198	61	1007	52	819	42
Other conifers	247	13	372	19	556	29
Native broadleaves	105	5	188	10	235	12
Open ground	250	13	252	13	229	11
Fallow	149	8	130	6	110	6
Total*	1949	100%	1949	100%	1949	100%

Chart 1: Area by species



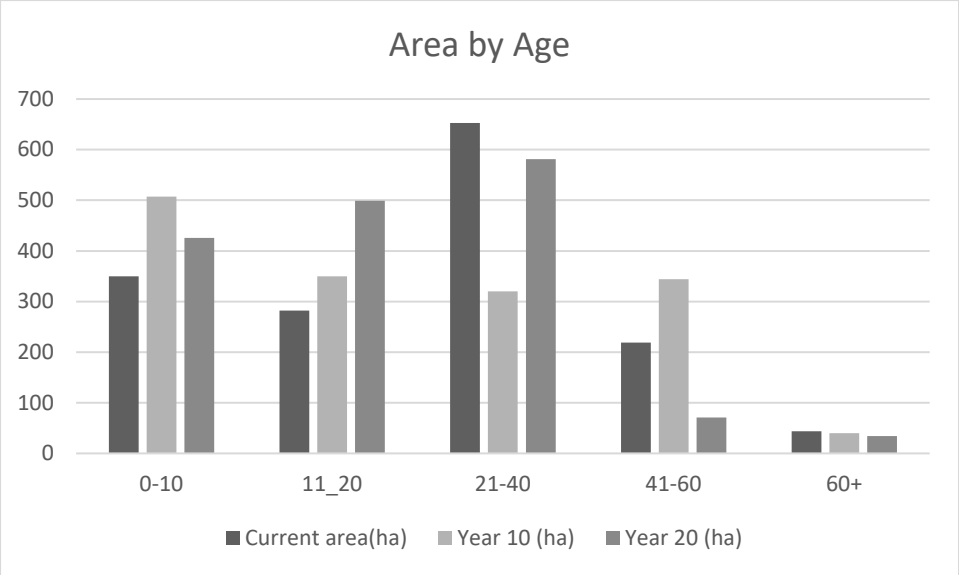
NB. There is 490 ha of open hilltop ground which was removed from all the calculations of the forest area.

Table 2: Area by age

Plan area by Age						
Age Class (years)	Current Area (ha)	%	Year 10 Area (ha)	%	Year 20 Area (ha)	%
0 – 10	350	23	507	32	426	26
11 – 20	284	18	350	22	499	31
21 – 40	653	42	320	21	581	36
41 – 60	219	14	344	22	71	5
60+	44	3	40	3	34	2
Total	1548	100	1561	100	1611	100

NB. There is 490 ha of open hilltop ground which was removed from all the calculations of the forest area.

Chart 2: Area by age



A.8 Plant Health

The major tree health issue affecting Kinharvie and Southwick is *Phytophthora-ramorum*. Removal of larch through the FLS Larch Strategy has had a large impact on the forest over the last ten-year period. Kinharvie and Southwick are in the Larch Risk Reduction Zone and so the remaining 69.5ha of larch is planned to be removed in phase 1.

As part of the district's chemical minimisation strategy, the *Hylobius* Management support system (HMSS) is used to measure *Hylobius* numbers on clearfell sites. This may suggest a fallow period between felling and re-stocking may result in restocking not taking place within two years of felling (see tolerance table in Appendix).

B. Analysis of Information

B.1 Constraints and Opportunities – and Concept

Constraints and Opportunities		
Factor	Constraints	Opportunities
Recreation	Need to maintain access but divert core paths when sites are being felled. Forest operations in the summer season need to be carefully planned and executed.	Recreation opportunities could be enhanced on this site through advertising, because there is already a good core path network in place.
Water catchments	Forestry activities have the potential to impact on the water quality of forest streams. In this block, there are many Private Water Supplies (PWS) using these watercourses. Forestry operations need to adhere to the Forest and water guidelines.	Contribute to the general improvement of water quality within relevant catchments.
Historic	There are three Scheduled Ancient Monuments within Southwick. Open ground must be maintained around these sites.	Improve visibility between these prehistoric monuments through forest design.
Timber transport	Kinharvie and Southwick blocks are accessed by TTR classed as 'Consultation Route'. This means that there will potentially be limitations on timber haulage subject to local authority approval.	We will work with neighbouring forest blocks (Plascow and Criffel) and the local authority to discuss TTR and timings. A range of coupe sizes will enable the timber extraction rate to be paced out.

Constraints and Opportunities		
Factor	Constraints	Opportunities
Utilities	There is an overhead powerline crossing the Kinharvie block entrance. All forestry operations will need to highlight this to operators.	There is a car park just before the overhead powerline, this is the ideal place to meet forestry operators for safety briefings, and to install safety signage.
Wildlife	There are protected wildlife species within the block. This means that forestry operations need to be managed out-with the breeding seasons, and regular surveys conducted.	Forestry operations can be planned around the wildlife species. The habitat can be enhanced through the forest design e.g.by creating broadleaf corridors in riparian zones.
Waterloo Tower	This is a listed building on Kinharvie Hill. It is an important landmark accessed by a core path. Forestry operations in this area should be planned outside the summer season where possible.	There is opportunity to improve the setting of the monument through forest design e.g. management type. There is also the opportunity to engage with the public at this location.
Water supplies	There are several private water supplies that are drawn from the forest block.	There is the opportunity to use forest design to maintain good quality water supply e.g. through broadleaf riparian zones, and management of forestry operations.
Landscape	This forest block is within two National Scenic Areas; Nith Estuary and East Stewarty Coast. It is also within the Solway Coast Local Landscape Area. The hill summit of Criffel is a popular destination for walkers and overlooks the eastern side of this forest.	Maintain the external forest views and general landscape harmony through forest design. Utilise alternative forest management types to clearfell to maintain tree cover throughout the year.

Constraints and Opportunities		
Factor	Constraints	Opportunities
Forest Management	Most coupes are managed through clearfell and restock, which means there are times when there is a lot of bare ground in the forest.	Opportunity to expand the LISS areas, particularly on the low slopes.
Ancient Woodland	In Kinharvie (at Glen Burn) there is 2.64ha of ancient woodland currently planted with mixed conifers. There are also 3 LEPO areas in Kinharvie, two of which have conifers established on them.	There is the opportunity to initiate ASNW restoration along the length of the Glen burn river and it will be restocked with native broadleaf species. The LEPO areas planted with conifers, will also be restocked with native trees.
Priority habitats	There are two types of priority habitat within the forest: Blanket bog and Upland Heathland. Conifer encroachment is an issue on the edges of these areas.	These habitats are on the hilltops and are providing lots of ecosystem services within the forest, including habitat and water retention. There is the opportunity to remove these conifers before they become established, this will help protect the integrity of these hilltop habitats.

LEPO = Long Established woodland of Plantation Origin

Concept

Map 3 illustrates how the plan concept incorporates the important constraints and opportunities into the management objectives.

Sustainable timber production is the priority in Kinharvie and Southwick; to achieve this the areas of same age conifer crops require restructuring. Coupe shapes and their felling order have been designed to create a mosaic structure; species diversity will increase through restocking, plus increased thinning will all help to create a more resilient forest.

This forest lies within two National Scenic Areas, making it an important part of the scenery and highly valued nationally. The plan aims to increase the use alternative to clearfell management systems within the NSA to produce improve the forests external views. Coupe shapes and sizes have been designed to be sympathetic to the landform.

Open habitats form approximately one fifth of this forest area, including BAP priority habitats which are to be protected. This will be supported by the creation of native peatland edge habitat on the peripheries of the open areas to replace productive conifers.

C. Management Proposals

C.1 Silvicultural Practice

C.2 Prescriptions

C.2.1 Felling

Sites proposed for clear felling in the plan period are identified as Phase 1 and Phase 2 management coupes on Map 4. Refer to Table 5 for scale of felling.

Stands adjoining felled areas will be retained until the restocking of the first coupe has reached a minimum height of 2m. Phase 1 and 2 clearfell coupes identified in this plan with known adjacency issues are listed below with the planned approach to achieving height separation. For any future clearfell coupes where adjacency is not possible, and there is no exemption under the Scottish Forestry Act, an amendment will be discussed and agreed with Scottish Forestry before the coupe is felled.

Table 3: Coupes with adjacency issues

Phase	Coupe No	Adjacency issues	Mitigation
1	36015	36007	Coupe 36007 was planted in 2017 and 2022. It is adjacent to Ph 1 Coupe 36015. Felling will be delayed until 2028 for adjacency.
1	36012	36046	Coupe 36046 was planted in 2023 and is adjacent to Ph 1 coupe 36012. Felling of 36012 will be delayed until 2028 for adjacency.

Phase	Coupe No	Adjacency issues	Mitigation
1	36036	36025 and 36029	Coupe 36036 will be felled at the beginning of Phase 1 in 2025 and is adjacent to two Ph 2 coupes (36025, 36029). Coupe 36036 will be restocked in 2027, and when it is 6 years old (in 2033) coupes 36025 and 36029 will be felled.
1	27018	27019	Coupe 27018 contains diseased larch and must be felled in phase 1 (2025/6). Coupe 27019 is being restocked in 2025/26 with SS. Coupe 27018 will be restocked in 27/28 with SP, PBI, SBI which will have different growth rates to SS, and so provide separation in height.

Any other planned tree felling (e.g. selective felling, felling of individual trees, or felling of coppice) is shown on Map 5.

Other tree felling in exceptional circumstances

FLS will normally seek to map and identify all planned tree felling in advance through the LMP process.

However, there are some circumstances requiring small scale tree felling where this may not be possible and where it may be impractical to apply for a separate felling permission due to the risks or impacts of delaying the felling.

Felling permission is therefore sought for the LMP approval period to cover the following circumstances:

Individual trees, rows of trees or small groups of trees that are impacting on important infrastructure (as defined below*), either because they are now encroaching on or have been destabilised or made unsafe by wind, physical damage, or impeded drainage.

*Infrastructure includes forest roads, footpaths, access (vehicle, cycle, horse walking) routes, buildings, utilities and services, and drains.

The maximum volume of felling in exceptional circumstances over the plan area covered by this approval is 75 cubic metres per calendar year.

A record of the volume felled in this way will be maintained and will be considered during the five-year Land Management Plan review.

[N.B. Trees may be felled without permission if they; are of less than 10 cm diameter at breast height (1.3 m); pose immediate danger to persons or property; are completely dead; or are part of Authorised Planning Permission works or wayleave agreements].

C.2.2 Thinning

Potential sites for thinning in the plan period are identified on Map 5. Table 6 indicates the potential area.

Thinning will normally be carried out at, or below, the level of marginal thinning intensity (i.e. removing no more than 70% of the maximum MAI, or YC, per year). Higher intensities (no more than 140 % of maximum MAI, or YC, per year) may be applied where thinning has been delayed, larger tree sizes are being sought or as part of a LISS prescription. In all cases work plans will define the detailed thinning prescription before work is carried out and operations will be monitored by checking pre and post thinning basal areas for the key crop components.

C.2.3 Low Impact Silvicultural Systems (LISS)

Areas identified for LISS management are shown on Map 4.

Kinharvie and Southwick has an established LISS programme in the sheltered perimeter areas of the north and south of the forest. Here there are brown earth soils that allow good root growth and the DAMS scores are lower. These areas are showing evidence of natural regeneration. Although, it should be noted that these areas are also affected by *Rhododendron ponticum*, which has capitalised on the lighter understorey of these stands. Thinning operations and *Rhododendron* control will therefore need to be synchronised to benefit the production of timber. LISS areas will be reviewed at each LMP renewal.

Table 4: Existing LISS coupes

Coupe no. (area)	Species/Planting year	Existing LISS	Management Prescription
36002 (25.13ha)	MB (3.81ha), 2010 SBI (0.67ha), 2008 NS (5.49ha), 2009 NS (4.65ha), 1954 NS (4.65ha), 2007 u SS (1.59ha), 1972 SBI (1.59ha), 1972 u MB (0.77ha) 1954, 1986, 1996 Felled (larch) 5.0ha MB(1.71ha), 1982	Group shelterwood	To maintain attractive forest views, and a mix of age classes. Management is to continue with thinning interventions, targeting removal of XL & SS.
36017 (16.19ha)	MB (16.19ha), 2003	Group Shelterwood	As above
36024 (3.75ha)	MB (3.75ha), 1959	Group Shelterwood	In this LMP this coupe is changing to minimum intervention, to help retain structural diversity in the forest.
36032 (20.51ha)	SS (17.13ha), 1993 MB/OG (1.0ha), 1992 Open (2.38ha)	Uniform shelterwood	As above
27005 (21.03ha)	LP/CP/SP (1.84ha), 1955 CP/SS (0.43ha), 1953 SS/DF/JL (2.4ha), 1953 DF (2.51ha), 1953 SP (1.41ha), 1924 MB (0.58ha), 2006 MB/SS/LP/DF (2.06ha), 2008 MB (1.05ha), 2006 SS (0.48ha), 1967 Felled larch (4.27ha) SS(0.59ha), 2006 MB (1.23ha), 2006 MB/MC/SS/JL (0.64ha), 1951 Open 1.31ha JL (0.32ha), 1953	Group selection – significant larch removal during the previous LMP changing the forest structure in this coupe.	This coupe won't be thinned in the duration of this LMP, because so much larch has been removed altering the forest structure, that no further thinning is required.

Coupe no. (area)	Species/Planting year	Existing LISS	Management Prescription
27003 (13.88ha)	MB (2.87ha), 1999 PBI (0.73ha), 1951 MB (0.61ha), 2003 NS/SP/JL (0.37ha), 2003 Open (0.29ha) MB (4.20ha), 1993 Felled larch (1.81ha) SS (2.31ha), 1993 SS (0.9ha), 2003	Group selection	As above

NB. Where the species planting year is followed by 'u' this denotes that it is the understorey Fof the species above with the same hectares.

NB2. Coupe 27005 isn't included for thinning map because the scale of larch removal means no further thinning is required during the plan period.

Minimum intervention coupes to be managed for biodiversity (and in some cases these also help protect Private water supplies) are: 27011, 36053, 36052, 27006, 36047, 36063, 36055, 36050, 36048, 36039, 36041, 36061. These coupes have a total area of 101.78ha (5.22%).

C.2.4 Long Term Retentions (LTR) / Natural Reserves

Stands identified as LTR and Natural Reserve are shown on Map 4.

In total there is 27.15 hectares (1.39%) of Long-Term Retention in Kinharvie. Coupe 36042 (12.3ha) is predominantly planted SS (p1989 and p1994) and open ground. Coupe 36011 (13.64ha) consists of p2006 NS and SS plus OG. Coupe 36021 is currently sitka spruce regen (p2006).

There are two Natural Reserve (NR) coupes in Southwick. Coupe 27023 is 4.11ha and comprises a mix of Lodgepole pine and Corsican pine planted in 1954. This coupe adds structural diversity to the forest and is an important wildlife habitat. Coupe 27022 (3.31ha) was planted in 1991 with mixed broadleaves, this is at a river confluence zone where the broadleaves help protect the soil on steep slopes and create habitat for biodiversity. In Kinharvie there is a further Natural reserve (coupe 36049, 0.37ha) at a river confluence zone. The total area of Natural reserve within the LMP area is 7.79ha (0.39%).

C.2.5 Restocking Proposals / Natural Regeneration

Planned restocking of felled areas, and proposals for the future habitats and tree species over the whole plan area are shown on Map 6. See Table 7 for areas, establishment, and mix proportions. Timing of restocking will comply with the plan tolerance table shown in section C.4.

Where required, the choice of ground cultivation technique will consider the short-term benefits for establishment against any long-term side effects on tree stability, access for future forest operations and the environment. There will be a preference for the least intensive technique.

Stocking densities will be at least 2500 stems per ha for conifers and 1600 sph for broadleaves unless justified elsewhere in this plan. If the restock or natural regeneration should fail to reach these levels the site will be beaten-up to the required planting density. This will be assessed at year 3 and year 5 after planting with beat-up by at least year 5.

There will be a preference for natural regeneration of native woodland areas. Any non-productive broadleaf planting will be native to the area and will complement existing naturally growing scrub and woodland to give the most ecological value.

The Restocking Strategy for Scotland's National Forest Estate explains that we will minimise chemical usage in restocking (insecticides and herbicides) by considering options at the site scale and using tactics such as delayed planting to achieve this.

In the area of type 14 (Shallow hagged eroded bog) in the west of Kinharvie, the condition of the peat is too poor to restore, and it will be restocked with low density peatland edge woodland.

Table 5: Felling

Scale of Proposed Felling Areas										
Total Plan Area			1949 ha							
Felling	Phase 1	%	Phase 2	%	Phase 3	%	Phase 4	%	LTR	%
Area (ha)	360	15	150	6	249	10	141	6	12.0	0.5

Table 5a Felling- Species breakdown

		Phase 1 (ha)	**Phase 2(ha)**
Conifers	Sitka Spruce	210	146
	Norway Spruce	25	2
	Scots pine	5	0
	Lodgepole pine	11	0
	Japanese Larch/Hybrid larch	58	0
	Douglas Fir	4	
Broadleaves		0	0
Streamsides		47	2
Total		360	150

Table 6: Thinning

Thinning over the first 10 years of the plan	
Total area where thinning may be undertaken during the plan period	211 ha

Table 6b. Thinning by phase

Thinning area by species (ha)	**Phase 1**	**Phase 2**
SS	136	3
SBI	2	0
PBI	0	0.73
NS	22	0.18
SP	0	0.18
MB	30	8
larch	7	2
Total by phase (ha)	**197**	**14**
Total by plan period (ha)	**211**	

Table 7: Restocking

Felling Phase	Map Identifier (coupe number)	Species to be planted - or established through natural regeneration (nr)	Area (ha)*	Total area (ha)
1	27018A	**SP/SBI/PBI/MB/NS**	11.8/9.4/2.3/7.1/12.2	42.85
1	27021	**SS/SP/PBI/SBI**	4.3/6.07	11.39
1	27020	**SS/LP/MB**	5.53/2.37/3.69	11.59
1	36028	**SS/LP/MB**	22.14/9.49/3.16	34.79
1	36012	**NS/SP/MB/SS**	17.91/0.69/1.24/1.72	21.73
1	36015	**SS/LP/GF/NS**	18.14/7.78/7.96/2.0	35.53
1	36019	**SS/SP/PBI/NBL/**open	30.5/6.25/4.98/2.92/15.59 (open)	60.24
1	36023	**SS/DF/NS/NBL**	9.46/4.44/8.01/7.84	29.74
1	36029	**SS/LP/NBL**	38.7/16.6/9.64	64.31
1	36036	**SS/SP/NBL**	9.6/2.49/5.58	17.67
1	36051	**NF/SP/SOK/MB/NBL**	28.34/6.73/2.88/6.26/12.21	56.42
1	36044	**SS/LP**	26.23/12.26	38.49
2	36025	**SS/LP/NBL**	34.44/14.76/4.35	58.81
2	36020	**NS/NBL**	32.35/0.69	32.98
Total Restocking Area (ha)				**516.54**

*net area to be planted excluding designed open ground

Species in **bold will be planted**, where natural regeneration is occurring in the right place, with the right species, this will be assessed and maybe kept in preference to planting.

C.2.6 Protection

Management of deer is an underpinning activity essential for the delivery of benefits from Scotland's National Estate. The aim is to manage healthy wild deer populations and manage deer impacts consistent with the carrying capacity of the land and successful delivery of FLS

land management objectives. Deer Management Plans direct the priorities for management and are available upon request.

Monitoring of browsing damage will identify if deer damage is too high for population control alone to protect crops. In such cases alternative measures such as biodegradable tree shelters may be used. If used, a plan for shelter removal and recycling (where necessary) will be put in place assuming trees are satisfactorily established and less susceptible to continued browsing pressure.

C.2.8 Road Operations

Map 7 shows the existing forest road network and any associated quarries, timber haulage egress points, and any local 'Agreed Timber Transport Routes'. Any planned new roads or quarry expansions in the plan period are also indicated on this map. The lengths of planned new roads are written on the map and are reflected in the EIA determination submitted with the plan.

C.2.9 Public Access

Visitors are welcome to explore FLS land and will only be asked to avoid routes while certain work is going on that will create serious or less obvious hazards for a period (e.g. tree felling). Scotland's outdoors provides great opportunities for open-air recreation and education, with great benefits for people's enjoyment, and their health and well-being. The Land Reform (Scotland) Act 2003 ensures everyone has statutory access rights to most of Scotland's outdoors, if these rights are exercised responsibly, with respect for people's privacy, safety and livelihoods, and for Scotland's environment. Equally, land managers must manage their land and water responsibly in relation to access rights, and FLS will only restrict public access where it is necessary and will keep disruption to a minimum.

There is one core path and five Public Rights of Way in the forest (see map 10). Two of these (DS0196 and DS0197) connect the forest with the popular local viewpoint of Criffel hill summit others pass through the forest; one connects New Battle village with the Waterloo monument (NEWA 103) and the second is the core path (COLV/171) that is on the main forest road and exits at Southwick.

Woodland Management in Visitor Zones

Visitor Zones have been identified in areas where FLS encourage and manage access or where the woodland managed by FLS interacts with popular visitor sites or access routes.

In these areas, single trees or small groups of trees will be removed when necessary to protect facilities, infrastructure and trails, or to enhance the setting of features, or to maintain existing views.

Woodland in these zones will also be thinned, or trees re-spaced, for safety reasons (including to increase visibility to ensure that sites are welcoming and feel safe) and where it is necessary to enhance the experience of the forest setting, through the development of large trees, or preferential removal of trees to favour a particular species.

C.2.10 Historic Environment

The Regional Historic Asset Management Plan includes conservation management intentions for designated historic assets on Scotland's National Forests and Land. Details of all known historic environment features are held in FLS's Heritage Dataset and included within work plans for specific operations to ensure damage is avoided. Significant historic environment features will be depicted on all relevant operational maps. Areas of historic environment interest will be checked both on FLS's records and with the Council's HER prior to the commencement of forestry activities. Any upstanding features will be clearly marked, both on the ground and on operational maps. Care will be taken to avoid any damage to surviving structural elements.

The FLS Regional Historic Asset Management Plan includes conservation management intentions for designated historic assets on Scotland's National Estate. Details of all known historic environment features are held in FLS's heritage dataset and included within work plans for specific operations to ensure damage is avoided. Significant historic environment features will be depicted on all relevant operational maps. Areas of historic environment interest will be checked both on FLS's records and also with the Council's HER prior to the commencement of forestry activities. Any upstanding features will be clearly marked both on the ground and on operational maps. Care will be taken to avoid damaging surviving structural elements.

Map 9 and Appendix II provide more information about the historic environment features within and adjacent to the plan area.

C.2.11 Biodiversity

UK Forestry Standard guidance is to manage a minimum of 15% of the forest management unit with conservation and the enhancement of biodiversity as a major objective. The figure by the end of this plan is 17%. This includes long-term retention, Natural reserve, Minimum intervention (Conifer or mixed broadleaves).

C.2.12 Tree Health

Tree health issues have affected the management of the forest. The major tree health concern is the fungal disease *Phytophthora ramorum.* Where practicable, remaining larch (69.5ha) will be removed in line with the FLS Larch Strategy.

Dothistroma septosporum (Dothistroma Needle Blight) fungal disease is present in the forest, and has been recorded in nine coupes, affecting SP and LP. However, these species occur in mixtures with SS, NS and WH which, although less susceptible to the fungus, may also become infected. The spread of this infection will be managed by thinning to promote air circulation in the canopy, and by increasing species diversity in restock.

The Hylobius Management Support System (HMSS) monitors *Hylobius abietis* (Pine weevil) which are controlled using a range of chemical and non-chemical methods.

C.2.13 Invasive Species

Rhododendron ponticum, an invasive non-native species (INNS), is growing within some of the deciduous coupes in this forest. There is 20.23ha of rhododendron in Kinharvie and 15.52ha in Southwick. FLS will endeavour to control rhododendron within the block in accordance with INNS and biosecurity policies.

Wildfire

FLS continues to work closely with Scottish Fire and Rescue Service (SFRS) to prevent and tackle wildfires that threaten Scotland's National Forests and Land. FLS support SFRS in their lead role for fire prevention and suppression through creating annual fire plans, maintaining a duty rota, and providing additional logistical support. FLS's primary objective is always to protect people's health, safety and wellbeing.

Soils

Brash mats (or alternative measures) will be used to protect soils. There should be minimal soil disturbance and machine movement on sites with clayey soils to reduce the risk of compaction or damage to the soil structure. Felling residue will usually be left on site to allow nutrient recycling, with consideration for the practicalities of restocking. Where required, the choice of ground cultivation technique will consider the short-term benefits for establishment against any long-term side effects on tree stability, access for future forest operations and the environment. There will be a preference for the least intensive method.

Landscape

Small sections of this forest are within two National Scenic Areas (NSA's), 158.1ha of the north-east corner of the forest is in the Nith Estuary NSA, and 113.1 ha of the southern tip of Southwick is within the East Stewarty Coast NSA (see map 10). This forest is also within the Solway Coast Local Landscape Area (LLA).

The forest design aims to be sympathetic to the wider landscape, enhancing the way the forest looks from local viewpoints such as Criffel summit, because we recognise that it forms an important part of the backdrop to the National Scenic Areas.

C.3 Environmental Impact Assessment (EIA) and Permitted Development Notifications

Table 8 – EIA projects

Total area (hectares) for each project type and details by sensitive or non-sensitive area.					
Type of Project	Sensitive Area		Non-sensitive Area		Total
Afforestation	%Con	%BL	%Con	%BL	ha
Deforestation	%Con	%BL	%Con	%BL	ha

Forest Roads	ha	2.91 km of road which = 0.291 ha	0.291ha
Quarries	ha	3.75 ha	3.75 ha
Provide further details on your project if required.			
Proposed 1.05 ha expansion of Kinharvie quarry, and the creation of three additional quarries, each measuring 0.9 ha and named Ball Fell quarry, Boreland quarry (this one has been worked at some time in the past), Meikle quarry.			

C.4 Tolerance Table

See Appendix III.

Appendices

Map 1 – Location
Map 2 – Current tree species
Map 3 – Concept
Map 4 – Management (Felling)
Map 5 – Thinning
Map 6 – Future habitats and species (Restock)
Map 7 – Timber haulage
Map 8 – Soils
Map 9 – Historic environment
Map 10- Recreation & Landscape

Appendix I – Consultation record
Appendix II – Historic environment records
Appendix III – Tolerance table
Appendix IV – CONFIDENTIAL Private Water Supplies

Appendix I: Consultation record

See section A.4 for a summary of the main points raised below by stakeholders and where they are addressed in the plan.

Issue	Raised by	Requirement / Recommendation / Concern / Aspiration
Research Plots	Forest Research	Forest Research would like to continue utilising the three long term research plots within Kinharvie forest.
Drinking water protected areas	Scottish Water	There are no Scottish Water drinking water catchments or water abstraction
No issues, only general recommendations	Scottish Environment Protection Agency (SEPA)	The LMP should maximise opportunities to improve riparian zones (Riverwoods initiative) Forestry operations should follow water guidelines, soil & carbon guidelines. PWS should have a min 50m buffer from forestry operations. Access tracks should avoid shallow and deep peat.
Three Scheduled Monuments (SAM) within Southwick forest.	Historic Environment Scotland (HES)	Monuments should be managed inline with the UK Forestry Standard (UKFS). A unplanted buffer zone should be created around the SAM's, a 20m buffer would improve the setting and protect the monument from falling trees. An area of open ground should be maintained to the east and south of SM3341, between the monument and mid burn. When the mature conifers between SM1045 and SM3341 are removed, any replanting should establish and maintain intervisibility between monuments.
There are 10 (unscheduled) heritage assets within the LMP area. 2 Non-inventory Designed Landscapes adjacent and the Long Cairn (Canmore 65491) is assessed as meeting the criteria of national significance.	Dumfries & Galloway Council Archaeology department	All assets should be ground checked to determine their survival and state of preservation.

Issue	Raised by	Requirement / Recommendation / Concern / Aspiration
High Landscape sensitivity in these forest blocks; Southwick is in the Esat Stewarty Coast National Scenic Area(NSA) and Kinharvie is with the Nith Estuary NSA.	Internal consultation with FLS Landscape Architecture team	Consider ways to improve the external views into the forest, especially from the key viewpoint of Criffel summit.
Two areas of Long established woodlands of plantation origin (LEPO) in Kinharvie, and one in Southwick. There are also two areas of Ancient woodland Inventory in Kinharvie.	Internal consultation with the FLS Environment team.	Consider silviculture methods such as LISS to reduce the impact on these Ancient woodland sites.
Schedule 1 Bird species are present. There are also historical records of black Grouse (Capercaille) leks on hill tops within this block.	Internal consultation with the FLS Environment team.	These historical records are all within priority habitats (Upland Heathland and Blanket Bog), protecting these spaces as open is important.
Type 14 peat is present on Tannoch Hill and Cuil Hill	Internal consultation with the FLS Peatland team.	A walk over peat survey to assess condition and depth at spot points should be conducted, this will inform decisions for how to manage the peatland now and in the future. This survey was conducted on the 02/09/2024.
Canopy reduction is known to affect the peak water flow in an area, especially where there are steep slopes. Care will need to be	Internal consultation with the FLS Environment team.	The Felling plan will need to consider the felling order to consider the canopy reduction.

Issue	Raised by	Requirement / Recommendation / Concern / Aspiration
taken to avoid significant reduction.		
There is 69.5Ha of Larch within this forest.	Internal consultation with the Programming team.	This larch is within the Larch Risk Reduction Zone, which means that there is an obligation to remove it in Phase 1 of the new LMP.
Private Water supplies within the forest	Internal consultation with the FM team	The plan should follow best practice guidance regarding water and soil management.
The following stakeholders responded with no comment or no issues:		
The following stakeholders were contacted during scoping but did not respond: Dumfries & Galloway Council departments: Access, Environmental Health, Flooding, Roads, Planning (Landscape) note the response was just to say there is no longer a Landscape advisor within D&G Council. Carbon Centre.org, Colvend Community Council, Confederation of Forest Industries (CONFOR), Dumfries & District Gliding club, Kirkbean Community Council, NatureScot, New Abbey Community Council, Raptor Study Group, RSPB, Scottish Forestry, Scottish Wildlife Trust, SPEN, Timber transport forum, Vincent wildlife trust, Visit Scotland.		

Appendix II: Historic Environment records

Historic Environment Records						
Map ref	Designation	Name	Feature Description	Grid Reference	Importance	Area (ha)
1	Unassigned	Farmstead (Canmore 178371)	Single unroofed building, possibly a farmstead attached to an enclosure.	NX9161 6596		0.18ha
2	Unassigned	Field System (Canmore 178375)	A field system annotated 'Old Fence' and a sheepfold annotated 'Sheep Ree'.	NX 9305 6626		4.03ha
3	Unassigned	Farmstead, Field System (Canmore 178387)	A Farmstead comprising the ruins of four unroofed buildings and two enclosures, and a field system. Tannoch.	NX 9434 6551		3.34ha
4	Unassigned	Tannoch Gill Field System (Canmore 178388)	A field system and one unroofed structure annotated 'Old Sheep Ree'.	NX 9490 6559		4.05ha
5	B Listed Building	Waterloo Hill Monument (LB171312)	Dated 1816, tall circular monument, with internal staircase and viewing parapet. Built to commemorate "the valour of British, Belgian and Prussian soldiers who gained victory of Waterloo".	NX 95255 65593	Building of special architectural/ historic interest which is a major example of a particular period/type.	0.05ha
6	Unassigned	Dun Stone (Canmore 65499)	A large granite stone about 7tonnes in weight and 5ft high situated at an angle on the	NX 9357 6297		0.01ha

Historic Environment Records						
Map ref	Designation	Name	Feature Description	Grid Reference	Importance	Area (ha)
			boundary between New Abbey and Colvend parishes.			
7	Unassigned	Long Cairn (Canmore 65491)	Unchambered long cairn, constructed of rounded, bare stones and rising to a maximum of 1m in height. Trapezoidal in shape, 22m long by 13m.	NX 9239 6142		0.35ha
8	Scheduled Monument	Slewcairn (SM1045)	This monument comprises the remains of two circular cairns, funerary monuments dating from the early bronze age (c2000-1500BC).	NX 92773 61330	National Importance	2.29ha
9	Scheduled Monument	Slewcairn (SM1045)	As above	NX 92773 61330	National Importance	0.3
10	Scheduled Monument	Slewcairn (SM3341)	Remains of a pre-historic hut circle & a stone wall house. Hut circle has a internal diameter of 7m, and walls 0.8m tall, and up to 2.5m wide. Large entrance boulder portal stone.	NX 93015 61452	National Importance	0.38
11	Unassigned	Clearance Cairn (Canmore 65496)	Two scooped hut platforms and a group of small cairns lie on the SW slope of Abbey Fell.	NX 930 611		6.19
12	Unassigned	Parruten burn Farmstead (Canmore 178365)	Two unroofed buildings denotated as ‘Rees’ and a field system ‘Old Fences’.	NX 9310 5920		10.01
13	Unassigned	Dunmuck Sheepfold (Canmore 178345)	Dunmuck sheepfold denotated ‘Sheep Ree’.	NX 9303 5894		0.30

Appendix III: Tolerance table

	Maps Required (Y/N)	Adjustment to felling period *	Adjustment to felling coupe boundaries **	Timing of Restocking	Changes to Restocking species	Changes to road lines	Designed open ground ** ***	Windblow Clearance ****
FC Approval normally not required	N	• Fell date can be moved within 5 year period where separation or other constraints are met.	• Up to 10% of coupe area.	• Up to 3 planting seasons after felling.	• Change within species group e.g. evergreen conifers or broadleaves.		• Increase by up to 5% of coupe area	
Approval by exchange of letters and map	Y	• Advance felling of Phase 2 coupe into Phase 1	• Up to 15% of coupe area	• Between 3 and 5 planting seasons after felling, subject to the wider forest and habitat structure not being significantly compromised.		• Additional felling of trees not agreed in plan. • Departures of > 60m in either direction from centre line of road	• Increase by up to 10% of coupe area • Any reduction in open space of coupe area by planting.	• Up to 5ha
Approval by formal plan amendment may be required	Y	• Felling delayed into second or later 5 year period. • Advance felling (phase 3 or beyond) into current or 2nd 5 year period.	• More than 15% of coupe area.	• More than 5 planting seasons after felling, subject to the wider forest and habitat structure not being significantly compromised.	• Change from specified native species. • Change Between species group.	• As above, depending on sensitivity.	• In excess of 10% of coupe area. • Colonisation of open space agreed as critical.	• More than 5ha.

NOTES:

* Felling sequence must not compromise UKFS, in particular felling coupe adjacency

** *No more than 1ha, without consultation with FCS, where the location is defined as 'sensitive' within the Environmental Impact Assessment (Forestry) 1999 Regulations (EIA)*

*** *Tolerance subject to an overriding maximum 20% open space*

**** *Where windblow occurs FCS should be informed of extent prior to clearance and consulted on where clearance of any standing trees is required*

Table of working tolerances specific to larch and available for <u>all</u> approved Forest Plans in the Risk Reduction Zone (RRZ) in order to help reduce sporulation of Phytophthora ramorum on Larch spp.

	Adjustment to Felling period	Timing of Restocking and species component	Felling of larch within a mixed coupe	Changes to Road Lines
SF Approval normally not required	Fell date for phase 2 can be moved forward where larch comprises 50% or more of the coupe species component.	changes to restocking proposal that exclude larch and closely related species in the same genus, eg Sitka and Norway Spruce. Up to 3 planting seasons after felling		
Approval normally by exchange of letters and map	Felling moved between phases 1 and 2 where larch comprises less than 50% of the coupe species component	Changes to restocking proposals that include larch or closely related species in the same genus, eg Sitka and Norway Spruce. Between 3 and 5 planting seasons after felling	Areas of pure larch up to 20% of coupe area within phase 1 and 2 can be felled to remove the sporulating host, with restocking deferred until the rest of the crop is felled. Where the Larch constitutes more than 20% of the coupe component, then the whole coupe must be felled and restocked together.	New road lines (subject to EIA screening opinion) or tracks within existing approved plans necessary to allow the extraction of Larch material. Where necessary Prior Approval should be dealt with directly with the relevant Regional Council
Approval by formal plan amendment is required	Advance felling into current or 2nd phase for pre-emptive larch removal			Where a new public highway entrance or exist is required. Where necessary Prior Approval should be dealt with directly with the relevant Regional Council

Larch felled in the autumn and winter, when the presence of P ram cannot assessed visually must be treated as infected and will therefore require a movement licence. When carrying out operations where the clearance has not been on the Public Register or through the consultation procedure it is important that due diligence is undertaken to identify sites that will require to be protected.