Forestry and Land Scotland
Coilltearachd agus Fearann Alba

Minniwick

Land Management Plan
2023 - 2033
V1.0

We manage Scotland's National Forest Estate to the United Kingdom Woodland Assurance Standard – the standard endorsed in the UK by the international Forest Stewardship Council® and the Programme for the Endorsement of Forest Certification. We are independently audited.

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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Property details	
Property Name:	Minniwick
Grid Reference (main forest entrance):	NX 3494 7646
Nearest town or locality:	Newton Stewart
Local Authority:	Dumfries and Galloway

Applicant's details	
Title / Forename:	Ms Laura
Surname:	Green
Position:	Planning Forester
Contact number:	07717 157 602
Email:	laura.green@forestryandland.gov.scot
Address:	Forestry and Land Scotland, Ae Office, Ae Village, Parkgate, Dumfries
Postcode:	DG1 1QB

Owner's Details (if different from Applicant)	
Name:	N/A
Address:	N/A

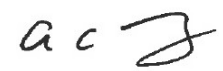
1. I apply for Land Management Plan approval for the property described above and in the enclosed Land Management Plan.

2. I apply for an opinion under the terms of the Forestry (Environmental Impact Assessment) (Scotland) Regulations 2017 for afforestation / deforestation / roads / quarries as detailed in my application.

3. I confirm that the scoping, carried out and documented in the Consultation Record attached, incorporated those stakeholders which Scottish Forestry agreed must be included. Where it has not been possible to resolve specific issues associated with the plan to the satisfaction of the consultees, this is highlighted in the Consultation Record.

4. I confirm that the proposals contained in this plan comply with the UK Forestry Standard.

5. I undertake to obtain any permissions necessary for the implementation of the approved Plan.

Signed, Pp Regional Manager		Signed, Conservator	
FLS Region	South	SF Conservancy	South
Date	10 May 2023	Date of Approval	22/9/23
		Date Approval Ends	21/9/33

Contents

1.0 Objectives and Summary

1.1 Plan overview and objectives

Plan name	Minniwick
Forest blocks included	Minniwick
Size of plan area (ha)	700.1
Location	See Location map (Map 1)

Long Term Vision
Expectations for the Minniwick block will be to establish a valuable, sustainably managed forest through the increased use of alternative to clearfell systems. This will result in increased species diversity and age class to provide a range of ecosystem services including timber supply, greater habitat biodiversity and water quality. A network of broadleaved riparian zones will connect to the Ancient Semi-Natural Woodlands, both within the block linking to important oak woods in the surrounding area whilst creating important buffers to the Water of Minnoch and the River Cree. The forest block will continue to offer access to local communities and visitors through a network of informal paths, forest roads and the Southern Upland Way core footpath. Silvicultural management will, enhance the experience of time spent in the forest and its associated wellbeing benefits.
Management Objectives
1. Enhance the quality of prospective timber production through the use of a wider range of silvicultural management. 2. Mitigate potential negative effects on forest and aquatic ecosystems and develop their future resilience 3. Encourage the restoration of Ancient Semi-natural woodlands to increase biodiversity value, building a strong woodland habitat network to link the Glentrool Oakwoods with the Wood of Cree, along the water of Minnoch. 4. Retain access and enable communities to enjoy the woodland to improve overall health of the nation.

Critical Success Factors
• Increased use of alternative to clearfell management practices. • Management of spruce in low impact management areas, ancient woodland areas and riparian zones. • Creation of access provisions for affective deer management. • Resources committed to re-generation removal to maintain open areas. • Fell years to be kept as priority in Acid Sensitive Catchment areas.

1.2 Summary of planned operations

Table 1

Summary of Operations over the Plan Period	
Clear felling (gross)	137.09 ha
Thinning (potential area)	286.42 ha
Restocking (gross)	168.11 ha
Afforestation	0 ha
Deforestation	0 ha
Forest roads	100 m
Forestry quarries	0 ha

The forest is managed to the UK Woodland Assurance Standard – the standard endorsed in the UK by the *Forest Stewardship Council and the Programme for the Endorsement of Forest Certification*. Forestry and Land Scotland is independently audited to ensure that we are delivering sustainable forest management.

2.0 Analysis and Concept

The planning process was informed by collecting information about the woodland, which is presented in Appendix I and on the Key Features map (Map 2). During the development of this plan we have consulted with the local community and other key stakeholders, and a Consultation Record is presented in Appendix III.

Below lists the objectives for the site and how the key features present opportunity or constraint. The Analysis of these form the concept for this Land Management Plan.

Objective: Enhance the quality of prospective timber production through the use of a wider range of silvicultural management.

- Opportunities:
  - Ensure sustainable timber production from the block from a plantation that is predominantly second rotation, mixed conifer species.
  - Develop potential areas for the regional thinning programme to enhance timber quality, improve forest structure and forest resilience.
  - Improve forest structure and visual setting through the use of appropriate Low Impact Silvicultural Systems (LISS) focused around local settlements and visitor areas, including along the main entrance routes to the Loch Trool visitor centre and car park.

- Constraints:
  - Lack of staffing resources, local experience and contractor base expected to be prohibitive to thinning programme during phase 1.
  - Consultation with the local authority may be required to use part of a severely restricted route for access to a single coupe.
- Concept:
  - Improve age structure by reducing average coupe size, extending or advancing fell dates and optimising tree species choice.
  - Maintain a good forest road network and infrastructure.
  - Integrate appropriate areas alternative to clearfell management to improve required species composition, stem spacing and to create future green edges for wind resilience.

Objective: Mitigate potential negative effects on forest and aquatic ecosystems and develop their future resilience

- Opportunities:
  - Maintain and enhance positive effects on the River Cree and Water of Minnoch catchments to ensure continued water quality while also supporting flood risk management.
  - To support habitats of priority UK Biodiversity Action Plan (UKBAP) species such as Atlantic Salmon, Otter and Water Vole .
- Constraints:
  - Removal of fragments of mature spruce of seed bearing age near riparian zones with access issues.
  - Challenging access will need to be carefully considered to help with deer control.
- Concept:
  - Focus on establishment of a permanent matrix of open space and native broad leaved establishment, linking riparian zones along extensive watercourses.
  - Reduce fragments of conifer species remaining after sanitation felling utilising historical machine tracks.

Objective: Encourage the restoration of Ancient Semi-natural woodlands to increase biodiversity value, building a strong woodland habitat network to link the Glentrool Oakwoods with the Wood of Cree, along the water of Minnoch

- Opportunities:
  - Enhance and maintain areas of existing Ancient and Semi-ancient woodlands and Plantations on Ancient Woodland Site's (PAWS).
  - Increase links between habitats encouraging wider network associations for biodiversity.
- Constraints:
  - Re-establishment of Ancient Woodlands will be a long term vision.
  - Potential deer browsing pressure on palatable species.
- Concept:

- The design will look to strengthen connectivity, utilize native buffers, encourage native natural regeneration.
- Where viable, enrich these further through native broadleaved planting.
- Increase thinning programme to allow access to 2nd rotation thickets for effective deer management of the wider block.

Objective: Retain access and enable communities to enjoy the woodland to improve overall health of the nation.

• Opportunities:
  - Provide a varied and enjoyable woodland experience for users ensuring continued use of the forest under Scotland's Outdoor Access Code, core paths, the Southern Upland Way and the forest road network.
• Constraints:
  - There are no financial resources currently available for creation of any formal recreation infrastructure or ongoing maintenance.
• Concept:
  - Continue existing open access from Loch Trool Village for walking, cycling and horse-riding within the forest block.
  - Use visitor zone areas to design alternative low-impact forest management and species diversity to enrich the user experience.

Different management options for achieving the plan's objectives were considered against the constraints and opportunities identified during scoping and consultation. The preferred approach is summarised on the Concept map (Map 3).

3.0 Management Proposals - regulatory requirements

This land management plan was produced in accordance with a range of government and industry standards and guidance as well as recent research outputs, recognised at the time of its production. A full list of the current standards and guidance which guide the preparation and delivery of FLS Land Management Plans can be found using the link HERE.

3.1 Designations

The plan area forms part of, includes, or is covered by the following designations and significant features.

Table 2

Designations and significant features		
Feature type	Present	Note
Site of Special Scientific Interest (SSSI)	No	
National Nature Reserve (NNR)	No	
Special Protection Area (SPA)	No	
Special Area of Conservation (SAC)	No	
World Heritage Site (WHS)	No	
Scheduled Monument (SM)	Yes	Old Bridge of Minnoch.
National Scenic Area (NSA)	No	
National Park (NP)	No	
Deep peat soil (>50 cm thickness)	Yes	Scenario 'B' soils.
Tree Preservation Order (TPO)	No	
Biosphere reserve	Yes	Galloway and Southern Ayrshire
Local Landscape Area	Yes	'Galloway Hills' Local Landscape Area
Local Conservation Site	Yes	'Holm Wood' - Dumfries and Galloway Local Authority.
Ancient woodland	Yes	Plantation on Ancient Woodland Sites include, Brigton, Holm, Manse and Minnoch Woods.
Acid sensitive catchment	Yes	River Cree u/s Minnoch Confluence & Water of Minnoch u/s Water of Trool
Drinking Water Protected Area (Surface)	No	

The Key Features map (Map 2) shows the location of all designated areas and significant features. Any deep peats are indicated on the Soils map (Map 9).

3.2 Clear felling

Sites proposed for clear felling in the plan period are identified as Phase 1 and Phase 2 coupes on the Management map (Map 4).

Table 3

Clearfell Summary by Phase and Coupe Number			
Phase	Coupe Number	Fell Year	Gross Area (ha)
1	10010	2024/25	5.76
1	10052	2025/26	3.67
1	10035	2026/27	14.97
1	10020	2026/27	67.99
2	10022	2029/30	19.85
2	10023	2029/30	15.64
2	10044	2029/30	8.04
2	10063	2029/30	1.17

Total	137.09

Table 4

Clearfell by Species													
		Net Area (ha) by Main Species >20% (or MC, MB)											
Coupe Number	Fell Year	CP	DF	EL	HL	JL	LP	NS	SP	SS	MC	MB	Coupe Total
10010	2024/25					3.44				1.45			4.89
10052	2025/26						0.51	0.05	0.31	1.43			2.3
10035	2026/27					1.22	3.92	0.22	0.66	8.05			14.07
10020	2026/27				0.41		1.88	2.26	1.27	6.75			12.57
10022	2029/30					5.8		0.02	2.6	6.54	0.1		15.06
10023	2029/30				3.42				1.25	2.94	0.01		7.62
10044	2029/30					0.03		0.07	1.68	1.75			3.53
10063	2029/30							0.25		0.45	0.02		0.72
Plan Area Total					**3.8**	**10.5**	**6.3**	**2.9**	**7.8**	**29.4**	**0.1**		60.76

NB Coupe totals: Table 3 shows gross coupe area / Table 4 shows net area of species

Table 5

Scale of Proposed Felling Areas										
Total Woodland Area			562.7 ha							
Felling	Phase 1	%	Phase 2	%	Phase 3	%	Phase 4	%	Long Term Retention	%
Net Area (ha)	33.83	6	26.93	5	14.06	3	0	0	0	0

3.3 Thinning

Potential sites for thinning in the plan period are identified on the Thinning map (Map 5).

This covers an area of 334.65 ha

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.

Table 5.5

Thinning Summary by Phase and Coupe Number			
Phase	Coupe Number	Next Intervention Year	Gross Area (ha)
1	10002	2026/27	140.94
2	10005	2030/31	61.64
2	10010	2032/33	32.15
2	10006	2033/34	21.1
2	10007	2034/35	6.21
2	10008	2034/35	24.38

Total	286.42

3.4 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].

3.5 Woodland Management in Visitor Zones

Visitor Zones have been identified in areas of Minniwick where FLS encourage and manage access or where the woodland managed by FLS interacts with popular visitor sites or access routes. Visitor Zones are mapped on Map 13.

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.

3.6 Restocking

Restocking						
Phase †	Coupe Number	Gross Area (ha)	Proposed Restock Year	Species (% mix)	Method *	Minimum stocking Density (s/ha)
F	Various infected larch sites	11.4	2024	Scots Pine (SP) & Mixed Broadleaves (MB).	R & NR	2500/1600
1	10010	5.76	2027	SP, MB	R	2500/1600
1	10032	20.64	2025	Sitka Spurce (SS) , Mixed Conifers (MC), SP, MB/Open (50:50)	R	2500/1600
2	10020	67.94	2029	SP,MB, Oak (OK), OK/MB (50:30), MB/SP (30:20), MB/SP (30:20)	R	2500/1600
2	10022	19.85	2032	MC, SP,MB	R	2500/1600
2	10023	15.64	2032	Douglas Fir (DF), Norway Spruce (NS)/SS (90:10), SP/MB (80:20), Nobel Fir (NF)	R	2500/1600
2	10035	14.97	2027	SS/Lodgepole Pine (LP) (70:30), SP	R	2500/1600
2	10044	8.04	2032	SP/MB (50:50), MB/SP (80:20), SP/MB (80:20)	NR	1600
2	10052	3.67	2026	MB/MC (50:20), MB/SP (60:40)	R	1600
2	10063	1.17	2032	MB, NS/MB (80:10)	R	2500/1600

Total	168.11

Proposed restocking is shown on the Future Habitats and Species map (Map 6).

Table 6

† recently felled awaiting restock (F) / Phase 1 (1) / Phase 2 (2)
* replant (R) / natural regeneration (NR) / plant alternative area (ALT) / no restocking (None)

If the Restock or natural regeneration should fail to reach 1600 per hectare (Native Broadleaves) or 2500 sph (productive Conifers) 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.

3.7 Species diversity and age structure

The following tables show how the proposed management of the forest will help to maintain or establish a diverse species composition and age-class structure, as recommended in the UK Forestry Standard. The current woodland composition is shown on Map 8.

Stands adjoining felled areas will be retained until the restocking of the first coupe has reached a minimum height of 2m. Where this is not possible (e.g. due to windblow risk), the planned approach to achieving height separation between adjacent coupes is outlined in section 4.1 – Clear felling.

Table 7

Plan area by species						
Species	Current Area (ha)	%	Year 10 Area (ha)	%	Year 20 Area (ha)	%
Sitka spruce	206.7	30	171.7	25	170.9	25
Other conifers	155.7	23	164.7	24	185.6	26
Broadleaves	170.6	25	159.1	23	165	24
Fallow	29.8	4	55.6	8	24.3	4
Open ground	121.3	18	141	20	146.7	21
Total		100		100		100

Chart 1

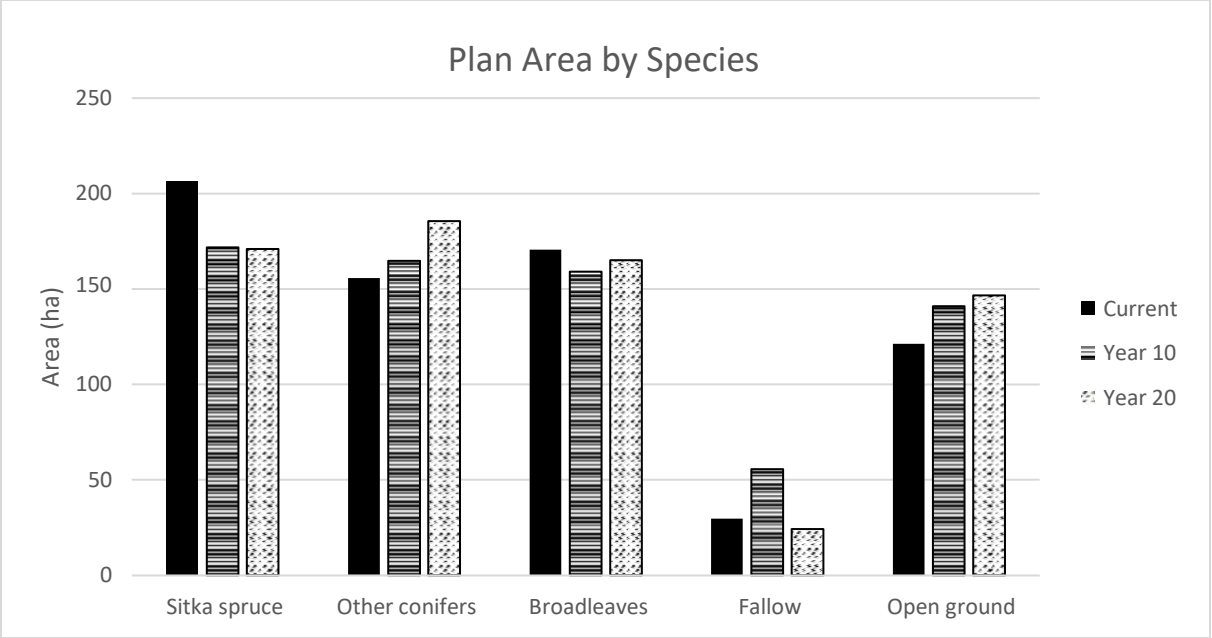
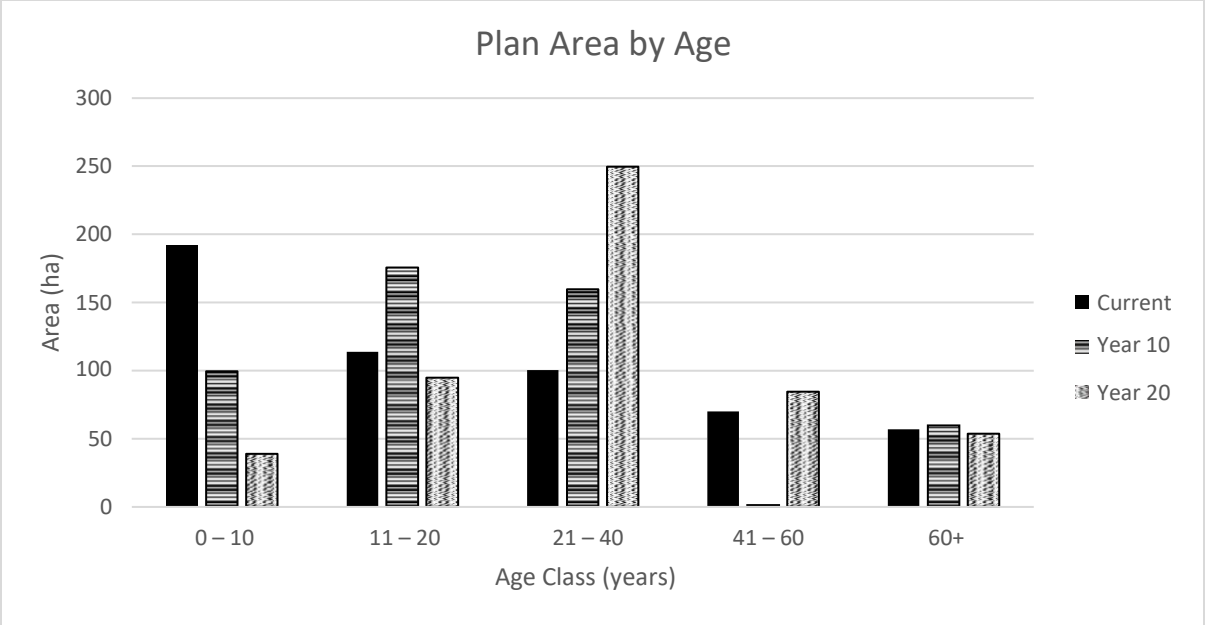


Table 8

Plan area by Age						
Age Class (years)	Current Area (ha)	%	Year 10 Area (ha)	%	Year 20 Area (ha)	%
0 – 10	191.6	36	99.4	20	39	7
11 – 20	113.9	21	175.5	35	94.7	18
21 – 40	100.4	19	159.6	32	249.6	48
41 – 60	70.1	13	1.4	0	84.4	16
60+	56.9	11	59.7	12	53.8	10
Total		100		100		100

Chart 2



3.8 Road Operations and Quarries

Planned new roads, road realignments, road upgrades, new quarrying, and timber haulage routes are shown on the Road Operations and Timber Haulage map (Map 7).

Table 9

Forest Road Upgrades, Realignments, New Roads and New Quarrying				
Phase	Name / Number	Length (m)	Year	Operation
1	Bargrennan	100	2024	2 x Turning point

3.9 Environmental Impact Assessment (EIA)

Any operations requiring an EIA determination are shown in the table below. If required, the screening opinion request form is presented in Appendix II.

Table 10

EIA projects in the plan area		
Type of project	Yes / No	Note
Afforestation	No	None
Deforestation	No	None
Forest roads	Yes	Two turning points
Forestry quarries	No	Extensions not required at this time

3.9.1 Tolerance table

Working tolerances agreed with Scottish Forestry are shown in Appendix IV.

4.0 Management Proposals – guidance and context

4.1 Silviculture

4.1.1 Clear felling

Coupes for clearfelling during the plan period (refer to Map 4):

10010 2024/25 5.76 ha (4.89 ha net)
Areas of mature larch to be felled as per FLS Larch Strategy (2022). Water course and utilities adjacent to site. Acidified catchment coupe complete in 2025.

10052 2025/26 3.67 ha (2.3 ha net)
Challenging coupe split by the A714, with neighbouring land on 3 of the boundaries another public road and a small dwelling. Site is beginning to blow due to wet ground, with potential safety implications. Infrastructure to be implemented and to be restocked as non-productive for biodiversity and amenity. Existing broadleaves will be retained, particularly around the neighbouring buildings, but some may be felled to allow for safe machine access due to poor ground conditions and adjacent public roads.

10035 2026/27 14.97 ha (14.07 ha net)
Mature crop with some wet areas. Ensure all lodgepole is felled in areas designated as managed open in next rotation. High visitor use area. Watercourse, heritage feature and utilities adjacent to coupe. Over head powerline on entrance to turn around and stacking area. Acidified catchment coupe complete in 2027.

10020 2026/27 67.99 ha (12.57 ha net)
Large coupe where the objective is biodiversity, water quality and to create a riparian link between ancient woodland sites. The area of clearfell is patchy due to spruce left over from sanitised felling of larch in previous years. The aim is to remove these as potential seed sources for unwanted future species. The site is knolly and wet in places with challenging access, though tracks are remaining from previous operations. Alongside, Water of Minnoch, care to be taken to sensitively manage operations near water.

10022 2029/30 19.85 ha (15.06 ha net)
Areas of thicket stage larch to be felled, majority is dead standing, to be removed from site and not felled to waste. Option to complete a first thin (rack and matrix) on spruce remaining within the coupe or clearfell as one site. Heritage feature, watercourse and utilities adjacent to site. Acidified catchment coupe complete in 2030.

10023 2029/30 15.64 ha (7.62 ha net)
Clearfell mature crop which is beginning to blow. Areas of thicket stage larch to be felled , majority is dead standing, to be removed from site and not felled to waste. Option to complete a first thin (rack and matrix) on the young conifer remaining within the coupe as part of first thin for thin coupe 10002. The long term vision will be to manage as CCF. Acidified catchment coupe complete in 2030.

10044 2029/30 8.04 ha (3.53 ha net)
To revert to Natural Reserve once clearfell of spruce (left from previous works) has been completed. Scots pine and broadleaves to be retained. Spruce to be removed due to its size, current propensity to blow along the Southern Upland Way path and to prevent negative impacts on water quality. Area is steep in places and challenging to access, though tracks are remaining from forest road from previous operations. Alongside, River Cree, care to be taken to sensitively manage operations near water.

10063 2029/30 1.17 ha (0.72 ha net)
Clearfell of P54 crop beginning to blow behind Scottish Water sewage works and alongside the Black Burn. Can be accessed from forest road via existing forwarder track. In addition a small areas of mature larch to be felled as per FLS Larch Strategy (2022).

To achieve the UK Forestry Standard of separation between adjacent crops, adjoining coupes should not be felled before the restocking of the first area has reached and average height of at least two metres. We expect this to be achieved in 5 years following planting.
Any unforeseen reduction in separation during the period of the plan will be formally agreed with Scottish Forestry as an amendment. Felling will be undertaken once trees in adjacent restocked coupes have reached 2 m height.

4.1.2 Thinning

Coupes for thinning during the plan period using the thin coupe reference number (refer to Map 5):

10002 2026/27 140.94 ha
Thin objectives timber production, improve age structure and species composition.

10005 2030/31 61.64 ha
Thin objectives timber production, improve age structure and species composition

10006 2033/34 21.1 ha
Thin objectives timber production and species composition.

10008 2034/35 24.38 ha
Thin objectives amenity and species composition. Low intensity thin as and when required to remove conifers.

4.1.3 Low Impact Silviculture Systems (LISS) / Continuous Cover Forestry (CCF)

Coupes for thinning during the plan period in LISS areas (refer to Map 4):

10007 2034/35 6.21 ha
Thin objectives amenity and species composition. Low intensity thin as and when required.

10010 2032/33 32.15 ha
Thin objectives amenity and species composition. Low intensity thin in PAWS site, as and when required, to remove conifers only.

4.1.4 Long term retention (LTR) / Minimum intervention (MI) / Natural reserve (NR)

For coupes under LISS management (refer to Map 4):

Long Term Retention
There are no designated LTRs in the plan, however current species include extensive areas of retained Scots Pine as components within restock coupes (4 %) that provide benefits for biodiversity such as red squirrels and pine martens, improve age structure and serve important deadwood habitats.

Within Minniwick, extensive felling has occurred in recent years, therefore retaining mature Scots Pine is very valuable. It is proposed that this be maintained for future clearfell coupes on the grounds that: Scots Pine is of good structure and likely to stand, ideally with green edges; the Scots Pine areas are larger than 0.5 ha; are not in areas where self-seeding of Scots Pine would be undesirable; there is future access and resources for management of these areas from undesirable regen such as other conifers. In addition, low-intensity thinning will be encouraged in these areas if they are part of a thinning coupe, in order to promote the growth of future mature "granny" pines that will serve as essential biodiversity habitats.

Minimum intervention

10013 13.24 ha
Black Burn Riparian Zone.

10043 4.42 ha
PAWS & Ancient Woodland (of semi natural origin).

10036 12.97 ha
Biodiversity, PAWS & Ancient Woodland (of semi natural origin).

10019 11.72 ha
Biodiversity, PAWS & Ancient Woodland (of semi natural origin)

42.35 ha of the plan area (6 %) has been classified as 'minimum intervention' where activities (when resources allow) will be limited to: wildlife management; removal of invasive /non-native tree regeneration and vertebrate pests that could reduce value for biodiversity or colonise surrounding stands; fencing works; maintenance of paths, rides and associated safety work; actions to benefit habitats of conservation priority and water quality.

Natural Reserves

10040 Broadleaf 3.97 ha Natural Reserve
A PAWS site with a mature native canopy that extends into semi-natural mature riparian woodland and to create habitat connectivity.

10601 Broadleaf 1.82 ha Natural Reserve
A site with mature native canopy that extends into semi-natural mature riparian woodland part of Minnoch Ancient Woodland (of semi natural origin) and to create habitat connectivity.

10514 Plantation 20 ha Natural Reserve
Mixed mature conifer stands managed to conserve and enhance the habitats of the local high priority species.

10044 Plantation 8.04 ha Natural Reserve in 'set-up' phase.
An initial 'set up' operation will be required where active stand management is undertaken. Operations will include felling removing spruce and retaining SP and MB; clearance of plantation trees from riparian corridor and removal of small SS regen to favour young MB species. Once the set up operation is completed the management type will change to "Natural Reserve".

33.83 ha of the plan area (5 %) has been classified as 'Natural Reserves' where activities (when resources allow) will be limited to: wildlife management; removal of invasive /non-native tree regeneration and vertebrate pests that could reduce value for biodiversity or colonise surrounding stands; fencing works; maintenance of paths and rides and safety work.

4.1.5 Tree species choice / Restocking

Management coupes for restock during the plan period (refer to Map 6):

Various infected larch sites 2024 11.4 ha (net)
Restocking species as per larch tolerance table and sites may be delayed in line with Phytophthora Ramorum policy.

10010 2027 5.76 ha (5.46 ha net)
SP 4.79 ha , MB/Open (80:20) 0.67 ha to be planted on iron pan and brown earth soils. Patchy sanitised larch site. Challenging access for operations. No fallow period required flat plant after felling to avoid need for machine access.

10020 2029 67.94 ha (16.08 ha net)
SP 2.2 ha , OK/MB/Open (50:30) 5.43 ha, MB/SP/Open (30:20:50) 8.45 ha to be planted on brown earth soils, very wet or peat soils to be left open . Patchy clearfell areas surrounded by natural regeneration and open. Challenging access for operations, wet ground, knolls and existing woodland. No fallow required flat plant after felling to avoid need for machine access. Coupe adjacent to Water of Minnoch.

10022 2032 19.85 ha (18.01 ha net)
MC 14.81 ha, SP/Open (80:20) 3.04 ha, Open/MB (80:20) 0.16ha to be planted on brown earths, rankers and gley soils. ESC showing Firs an optimum mix conifer species for diversification if species where supply allows. Mature scots pine to be retained on knolls and enhanced with possible under planting where appropriate.

10023 2032 15.64 ha (13.69 ha net)
DF 6.52 ha, NS/SS (90:10) 2.94 ha, SP/MB (80:20) 2.43 ha, NF 1.8 ha to be planted on mainly brown earths with some gleys to produce a diverse crop for future thinning and for improved landscape views from the A714. Archaeological feature on site buffer required.

10032 2025 20.64 ha (18.39 ha net)
SS 5.7 ha, 7.11 MC, SP 4.5 ha, MB/Open (50:50) 1.59 ha to be planted on mainly brown earths with some gleys to allow the use of an alternative to spruce next to the broadleaved area. MB will be planted in the riparian zone along the watercourse mixed with open ground.

Mature SP to be retained on knolls and enhanced with possible under planting where appropriate, and to increase the existing SP areas.

10035 2027 14.97 (12.29 ha net)
SS/LP (70:30) 10.19 ha, SP 2.1 ha to be planted on 9b peat soils as a self-thinning mixture, SP will be planted on a raised brown earth. In areas where the previous crop support good growth of above Yield Class 8, the areas will be restocked. An open area has been left in this coupe where 9b soils have not been able to support suitable tree growth in the previous rotation.

10044 2032 8.04 ha (5.31 ha net)
SP/MB (50:50) 1.97 ha, MB/SP (80:20) 1.74 ha, SP/MB (80:20) 1.6ha will be left to regenerate on brown earth soils. This area will revert to a Natural Reserve once felling has taken place.

10052 2026 3.67 ha (3.66 ha net)
MB/MC/Open (50:20:30) 2.52 ha, MB/SP (60:40) 1.14 ha to be planted on wetter soils such as gleys but will not be productive due to major challenges of operation of the site. Therefore amenity species should be chosen.

10063 2032 1.17 ha (1.07 ha net)
MB/Open 60:40 0.86 ha, NS/MB/Open (80:10:10) 0.21 ha. Open with mixed broadleaves to be planted on the wetter soils and riparian zones with NS on the brown earths to create a buffer behind the Scottish Water sewage works and the Black Burn.

All broadleaf planting should complement and/or enrich 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.

4.1.6 Natural regeneration

Natural regeneration (of the desired species) should be a preference for broadleaf areas (to maintain provenance and improve the chances of establishment) but where this is unlikely or has not been successful then these areas should be planted/beaten up to the required stocking density and site requirements.

It is expected that some of the riparian zones, designed open ground and broadleaf areas will fill in with natural regeneration of both conifers and broadleaves. This will be managed in such a way as to ensure that, where practicable, it does not significantly impose negative

impact upon the objectives of the plan. Nor should it cause a negative impact upon the watercourse in terms of shading and acidification.

There are some productive sites where natural regeneration is occurring. These will be monitored and recorded in the FLS sub-compartment database. Where this is the desired species, we will endeavour to use it to achieve the required stocking density. If stocking density is too low it will be beaten up by year 5. If the natural regeneration is too dense it may be necessary to clear and restock or to respace through a thinning regime. Where natural regeneration is not the desired species it will be considered against the plan objectives and agreed tolerance and either accepted (with a plan amendment if necessary) or removed preferably through early thinning interventions retaining the approved restock species.

4.1.7 New planting

There is no new planting planned within this LMP revision

4.1.8 Protection

Deer

There is a significant challenge in establishing species palatable to deer such as soft conifers and broadleaves. Generally, within the South Region there is a presumption not to erect physical protections against deer. The Wildlife team have provided a Deer Management Plan (DMP) for Minniwick produced alongside this plan, from which the details below have been collated.

Minniwick forest is one of 52 wildlife management units located within the Galloway Main block Deer Management Unit 1 (DMU) as denoted in the South Region Deer Strategy 2021-2026. Currently the deer numbers within Minniwick appear low due to the diverse areas of natural regeneration that are occurring, which is particularly beneficial in the natural reserves and PAWS areas. However, 71% of the block is between 3 – 30 years old with 36% of the high forest area planted since 2011. Some of this is a result of windblow events and sanitisation felling of larch. Fertile soils and an abundance of seed sources have increase regeneration in some areas of the crop and increase stocking levels. In the near future this will make managing deer numbers and their impacts increasingly challenging, with the boost in thickets within the area allowing places for deer to shelter unimpeded. Thinning these areas will benefit wildlife management and create opportunities for open areas through machine racks and implementation of deer glades for identified problem areas. Furthermore deer management efforts within the Minniwick block are impacted by moderate public recreational use, nearby

public roads and undulating terrain with numerous rocky knolls making sightlines problematic in some locations.

Proposed restock species have been chosen primarily on the basis of site suitability in addition to accessibility for protection. At the work planning stage, we will re-assess all restock areas to determine site specific deer management requirements. If the potential occurrence of deer browsing is high, and where protection through deer population control alone is likely to prove difficult, alternative protection measures such as plastic tree guards may be used. Establishment will be assessed at year five after restocking has been completed. If used, plastic tree guards will be removed and recycled once trees are satisfactorily established and less susceptible to browsing pressure.

Minniwick has stock fences installed around parts of its boundary and adjacent to the small agricultural lease to keep neighbouring livestock from straying. There is no deer fencing and no current plans to construct further fencing within the block.

Tree Pests and Diseases

Tree diseases reported in Minniwick include *Phytophthora ramorum* whose general infection has been confirmed on Larch across the region. Several infected areas in the plan area were initially felled to comply with the requirements of Statutory Plant Health Notices (SPHN). There is 19.4 ha of larch in total across the block. As Minniwick is within the SF *P.ramorum* on larch Action Plan (July 2022) Management zone, removal of all "live" larch is required by April 2032. 11.6 ha of the larch currently present in Minniwick is pure thicket stage larch stands, the majority of which is dead standing. 4.6 ha of this is mature crop which will be felled as part of clearfell coupes within the first phase of the plan. Approval is sort to keep 2 areas of uninfected 'live' mature larch within a Natural Reserve where health and safety will not be an issue, the retained area would total 0.14 ha. Restocking of these sites will be compliant with SF Larch Tolerance Table, see Appendix IV.

Dothistroma Needle Blight (DNB) has been identified on Corsican and Scots Pine crops across the Region. Likely infection on pine in the block though effects of mortality is currently minimal.

Ash dieback *Chalara fraxinea* is present within the LMP boundary, though its scale and proximity to any infrastructure is minimal. Monitoring is ongoing and identified specimens will be treated as per the FCS published Chalara Action Plan for Scotland in 2013.

The great spruce bark beetle *Dendroctonus. micans* is increasingly spreading in the south of Scotland and was found in Minniwick in spruce in 2011. Sanitation felling took place in 2015 and since then no serious D micans infestations have been found. Forest Research released the predator *Rhizophagus grandis* here as part of the national effort to control this pest. Monitoring is ongoing.

Hylobius, the Pine weevil, can cause extensive damage to young conifer crop (and at times young broadleaves) and is found in this plan area and throughout the region. As part of the districts chemical minimisation strategy, the *Hylobius* Management Support System (HMSS) is

used to measure *Hylobius* numbers on clearfell sites. Using billet traps on conifer restock areas to assess, weevil numbers to establish optimum time for site restocking. This more flexible fallow period between felling and re-stocking may result in restocking not taking place within two years of felling (see Tolerance Table section Appendix IV).

FLS encourage good biosecurity practices to prevent diseases from spreading. Monitoring established and emerging pest and diseases in Minniwick will be completed through defined plant surveys, and through training staff to recognise and report tree health issues. Enabling early detection of emerging tree health threats and any negative changes in existing ones.

When designing the restock of this plan, species have been appropriately matched to sites, and efforts have been made to diversify the range of species and silvicultural systems used where appropriate, including greater use of mixtures to reduce future impacts of climate affects.

Fire
FLS continues to work closely with the 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.

4.1.9 Road operations, Timber haulage and other infrastructure

Map 7 shows the existing forest road network, planned new roads, main egress points, and agreed Timber Transport Routes.

No new roads are required for Minniwick, however two turning points will be required along with road maintenance, machine tracks, facilities and all terrain vehicle tracks will be necessary over the term of the plan. Minniwick quarry, asset number 1475, is not proposed for extension during the period of the plan but the quarry is active and will be used to provide material to local forest road infrastructure.

Consultation with Ayrshire Roads Alliance must be made prior to any extraction from these blocks to determine any restrictions required, and the impact on haulage. A restricted route may be required for use for access to a single coupe, all other timber can be removed from site along forest roads to the main egress point for the block, on to the A714. All timber haulage will adhere to the Timber Transport Forum "Road Haulage of Round Timber – Code of Practice".

4.2 Biodiversity

4.2.1 Designated sites

There are no designated sites within the LMP boundary.

There is one Local Nature Conservation Site (LNCS), Holm Wood, referred to by Dumfries and Galloway as a Local Wildlife Site. Continued management of the area is planned when resources allow. INNS management in this area will continue as part of the plan, to provide protection to existing trees and help to encourage regeneration of broadleaves. See comments in 4.2.3 Ancient woodland / Plantation on Ancient Woodland sites (PAWs)

4.2.2 Native woodland

Ancient woodland areas from Nature Scots Woodland Inventory include Holm Wood, Manse Wood, Brigton Wood, Minnoch wood and some smaller un-named sites within the LMP boundaries.

Riparian areas will look to link the woodland areas through appropriate broadleaved expansion leading to greater associations between ancient woodland sites nearby, creating a robust woodland network to link the designated Glentrool Oakwoods to the Wood of Cree following the path of the Water of Minnoch. Positive steps taken during the term of the previous plan can already be seen through establishment of native regeneration of broadleaved species increasing the connectivity of these valuable habitats.

Furthermore a large area (10020) will look to enrich ancient woodland sites, along the Water of Minnoch and the Southern Upland way through enhancement of a substantial area to return to an area benefiting local ecosystems. This will be encouraged, through removal of mature seed-bearing spruce, encouragement of natural regeneration to establish some wet woodland species of Aspen, Birch, Willow and other suitable native broadleaves, in a mosaic of native trees and open ground expanding these fragmented units.

An area of 4.6 ha adjoins Brigton Wood and appears on the ancient woodland inventory as previously wooded. Whilst there is no legal requirement for restoration of the semi ancient woodland marked on the Roy map, FLS recognise that restoring areas where possible meets FLS values. Therefore there are plans to re-establish an area of native woodland on this site where natural regeneration has already begun and will continue to be promoted.

The above measures also support the objectives in the Dumfries and Galloway Forestry and Woodland Strategy in relation to the restoration and enhancement of ancient woodland sites.

4.2.3 Ancient woodland / Plantation on Ancient Woodland sites (PAWs)

Holm Wood, Manse Wood, Brigton Wood make up 19.3 ha of PAW sites within the forest block. Maintaining these existing woodlands and creating links between the fragments will be a plan objective.

Manse Wood contains established native woodland along with areas of remnants that include some veteran trees. Current threats to the site are INNS, including rhododendron, non-native regeneration and variegated yellow archangel *Lamiastrum galeobdolon subsp*.

Holm Wood is an area adjacent to the River Cree consisting of native oak woodland with some areas regenerating birch wet woodland. Widespread W4, W11 and W17 woodland ground flora, however areas are becoming threatened by regeneration non-native conifer.

Brigton Wood is an oak woodland with many mature oak and some ash. Some non-native conifer regeneration is present. W11 ground flora is present with species including bluebell, pignut, violets, yellow pimpernel and wood sorrel. Areas here are also are becoming threatened by regeneration non-native conifer.

Monitoring of non-native regeneration (mostly Sitka spruce) will continue and be removed where resources allow. Some broadleaved areas have established mixed native woodlands to varying degrees and natural regeneration of native species will be supported with some supplementary planting where needed. Management interventions during this plan period include selective thinning and removal of conifer natural regeneration.

Where broadleaved areas are established, this native woodland has been designated as ‘minimum intervention’ with the intention of other areas such as these also being considered MI once they are planted and have become established. With a possible future increase in the levels of herbivore impacts, deer control will be monitored to ensure all native woodland areas establish successfully.

4.2.4 Protected and priority habitats and species

All forest management operations involve a planning process before work commences which includes checks for wildlife and important habitats. Work plans will be adjusted if necessary to avoid disturbance, and opportunities to further protect species or enhance habitats will be identified.

Red squirrel *Sciurus vulgaris*
This area is not a stronghold though the species is present within the area and efforts have been made to further encourage the species through habitat provision, retaining mature trees and reducing coupe sizes. FLS has a single species licence to cover forest management activities that may affect red squirrels on the national forest estate (NFE). All works within the plan area will follow the assessment and mitigation actions set out as conditions of this licence.

Otter *Lutra lutra*
Otters are abundant throughout the LMP area. The species should benefit from continued riparian management that will aim to keep sections of stream banks permanently vegetated. The Black Burn, part of the western boundary of the LMP forms part of an otter route from the Cree to the Minnoch.

Water Vole *Arvicola amphibius*
Water Vole have been recorded in a number of tributaries to the Minnoch. Continued development of the riparian zones have been integrated into the enhancement of habitat connectivity, in addition to providing direct benefits for water quality and the maintenance of fish stocks.

Atlantic Salmon *Salmo salar*
Both the Cree and the Minnoch systems support important breeding populations of fish, including Atlantic salmon. See 4.7.2 Watercourse condition

Pine Marten *Martes martes*
Pine Marten is well established, with a breeding population within the forest block which makes particular use of the riparian corridor. The population is monitored annually and efforts to retain mature crop have been implemented where possible within the plan.

Badgers *Meles meles*
Badgers are present in the block. Site surveys are carried out and species licenses from NatureScot will be obtained should they be required. Forestry Practice Guide 9 Forest Operations and Badger Setts is followed as appropriate.

Birds
Various raptors, including Barn Owl *Tyto alba* within the LMP area. The plan provides a mosaic of habitats providing a range resources for different bird species which will increase as the plan is delivered. In-house environmental surveys will provide up to date information on bird species using the area prior to the start of any operations.

Invertebrates & Amphibian
Brigton Pond has developed a rich aquatic flora, and historically supported all 10 species of dragonflies that are widespread in SW Scotland. Common Frog *Rana temporaria*, Common Toad *Bufo bufo* and Smooth Newt *Lissotriton vulgaris* were also noted to breed at high density.

Priority habitats
Upland Oakwood (W17) is the most significant UK Biodiversity Action Plan (UKBAP) Priority Habitat within the LMP, that includes some veteran specimens. In addition to this some wet Woodlands (W7) are developing within the riparian zone alongside the Water of Minnoch. The design plans to enhance the surrounding areas whilst maintaining the these valuable existing habitats.

For Priority Peat comments please see 4.6.3 Deep peats

4.2.5 Open ground

Managed open ground contributes to nearly 18% of the plan area, and there is an expectation that resources will be allocated to maintaining it as open. These areas are primarily located around riparian zones and internal ridelines.

Some natural regeneration will be tolerated as long as it is compatible with the plan objectives and does not consist of more than 20% within the managed open space. These are areas primarily located along riparian zones and block boundaries.

Monitoring of these areas will allow us to identify any significant changes, and Scottish Forestry will be notified if these require amendments to the plan. By year 10 the plan area will consist of 20% open ground with additional internal open space as a component amongst planted areas.

Fallow clearfell sites will contribute to transitional open space throughout the forest

There is one active quarry identified in Minniwick on the features map. There are no quarry extensions planned for the period of this plan and this will remain as an area of permanent managed open space.

In addition there is a small area of agricultural ground to the north of the plan and will remain as permanent managed open whilst under a grazing lease.

4.2.6 Dead wood

Opportunities for retaining or creating deadwood will be identified during the planning of all felling and thinning works, favouring areas with the highest deadwood ecological potential. Valuable deadwood and deadwood areas will be marked on contract maps. Areas of natural reserve will offer some of the best opportunities for the development of standing and fallen deadwood. Where it is safe to do so, standing mature dead trees, particularly Scots Pine, will be retained as these offer excellent potential for a range of species.

4.2.7 Invasive species

Invasive Non-Native Species (INNS) can impact directly on many environmental aspects of an area and are specifically recognised as a significant risk to water environments potentially causing problems for communities who rely on rivers and lochs for their livelihoods. There is evidence of Grey squirrel *Sciurus carolinensis*, Common rhododendron *Rhododendron ponticum* in small pockets throughout the plan area. American Skunk Cabbage *Lysichiton americanus* reported in Manse Wood and concerted action to contain this using annual treatment of the species. There are some spruce regeneration in some environmentally sensitive areas. However the extent of these are minimal and will be monitored and dealt with as appropriate by the FLS environment team, when resources allow.

Monitoring of INNS is ongoing and any invasive species identified will be treated as per the Region's INNS Policy and this includes the use of biosecurity measures, which are also highlighted before operations begin, at the work plan stages

4.3 Historic Environment

Refer to Map 12.

Our key priorities for archaeology and the historic environment are to undertake conservation management, condition monitoring and archaeological recording at significant historic assets; and to seek opportunities to work in partnership to help to deliver Our Place in Time: the historic environment strategy for Scotland (2014) and Scotland's Archaeology Strategy (2015).

Significant archaeological sites will be protected and managed following the UK Forestry Standard (2017) and the FCS policy document Scotland's Woodlands and the Historic Environment (2008). Harvesting coupes, access roads and fence lines will be surveyed prior to any work being undertaken in order to ensure that upstanding historic environment features can be marked and avoided. At establishment and restocking, work prescriptions remove relevant historic environment features from ground disturbing operations and replanting. Where appropriate, significant historic assets are recorded by archaeological measured survey, see active conservation management and may be presented to the public with interpretation panels and access paths. Opportunities to enhance the setting of important sites and landscapes will be considered on a case-by-case basis (such as the views to and from a significant designated site).

The Regional Historic Asset Management Plan includes conservation management intentions for designated historic assets on the National Forest Estate. Details of all known historic environment features are held within the Forester Web Heritage Data 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 should be checked both on FLS's internal historic environment records and also with the Council's HER prior to the commencement of forestry activities. Any upstanding features should be clearly marked, both on the ground and on operational maps. Care should be taken to avoid any damage to surviving structural elements.

4.3.1 Designated sites

The Old Bridge of Minnoch (NX 373 759; scheduled monument (SM) number 4286) is a narrow high-arched stone built bridge spanning the Water of Minnoch. Built for foot and packhorse use in the 17th or 18th centuries. The bridge is semi-circular on plan and measures around 3m in width and 10m in length. The bridge is built almost entirely of split slabs of local whinstone and is sited between two natural rocky outcrops in the river valley.

FES Archaeologist commented in the Monument Management plan (2016) 'The current FES assessment of cultural significance[i] has determined that the site has low intrinsic value (containing little to no significant archaeological potential in regards to its simple structural form) (1); low contextual value (as a relatively common monument type) (1); but medium associative value (as a monument with good aesthetic characteristics albeit in a relatively inaccessible location) (2). The bridge is clearly of great local significance as a landmark.'

Any works including weed and scrub control or minor masonry repairs to maintain the bridge will be completed in agreement with Historic Environment Scotland. The SM is surveyed at regular intervals by in-house staff to appropriately maintain its condition.

Access to the bridge by members of the public is discouraged and no formal trails will be constructed. Fencing and warning signs have been implemented as recommended by the FLS Archaeologist & FLS Bridge Engineer (surveyed 2020).

4.3.2 Other features

There are several known undesignated historic environment features in the plan area, 20 of which are of regional importance. These are recorded in Appendix V along with locally important features within the block.

Other features mainly include old building, farmsteads, kilns and cairns from Minniwick's agricultural past. These areas will be identified on site before operations commence and will be avoided as appropriate.

4.4 Landscape

4.4.1 Designated areas

Minniwick sits within the Galloway Hills Regional Landscape Area (RSA) designated by Dumfries and Galloway local authority (see Map 11). These Local Landscape Areas have been designated due to the location and setting within the wide ranging landscapes found in Dumfries and Galloway. The block itself contributes characteristics of smooth, rounded, forested lower summits, containing narrow wooded valleys forming connections from the foothills to the more rugged upland hills.

Minniwick is covered by 2 of NatureScots Landscape Character Assessment areas as described in Appendix 1. The majority of the forest sits within the Plateau Morland with Forest (174) Landscape Character Type (LCT). Elevation ranges from 120m on the more prominent summit and drops down to 140m to the east of the block adjacent to the water of Minnoch. The landform is typical of the lower slopes of the Galloway hills and valleys with a back-drop of large-scale rolling hills descending to small-scale knolly hill patterns, dissected by riparian corridors, burns and rivers, incorporating some small settlements and pastoral landscapes on the lower slopes. Narrow Wooded Valley, the second LCT, consists of a linear zone that follows the River Cree with gradual slopes rising from this valley bottom, covered with patches of conifers and transitional forest areas, merging naturally with broadleaved belts that buffer the river moving softly into the network of grazing fields on neighbouring farms on the lower plateaus.

The Minniwick forest block is visible heading north and south on the A714 from Barhill towards Newton Stewart. Minniwick forest is largely screened from the south and east being

adjacent to Brigton and Kirriedarroch forests on the NFE. The forest is visible from the minor forest roads throughout the block, however these views are small in scale.

Key landscape issues to consider will be the setting of the block on the periphery of the local villages of Bargrennan and Loch Trool villages. Along with its location as a main tourist route to the FLS Loch Trool Visitor Centre and recreational facilities. Views south west to the face above the River Cree should be enhanced and management areas blended into the landscape with a more natural affect within the characteristics of the Galloway Hills area.

Coupe shapes have been simplified and reduced in size, restock species and open space have been designed to diversify the appearance and 'feel' of the area, while LISS coupes will be implemented and will include permanent Natural Reserves to provide a stable element to the transient nature of a sustainable forest landscape.

4.5 People

4.5.1 Neighbours and local community

Neighbours and the local community were consulted as part of the plans development. Their aspirations have been incorporated where they do not conflict with the objectives of the plan and are consistent with FLS's approach to land management.

4.5.2 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 have to manage their land and water responsibly in relation to access rights and FLS will only restrict public access where it is absolutely necessary, and will keep disruption to a minimum.

4.5.3 Renewables, utilities and other developments

See Appendix 1 – Infrastructure, for details of services within the LMP area.

All utilities will be covered by servitude rights on the NFE and all necessary precautions will be taken to locate services on the ground at the work planning stages. This will include robust preparation, liaison with relevant stakeholders and dissemination of emergency and work planning particulars before any operations begin.

No proposed developments for renewables are currently submitted.

4.5.4 Support for the rural economy

Minniwick is part of the local landscape that attracts visitors to the Loch Trool area, who take advantage of local businesses and services. It also provides a more intimate backdrop for those following the Southern Upland Way. Careful forest design with these factors in mind, along with responsible delivery of forestry operations will provide a positive visitor experience and encourage return visits to the area.

FLS supports a sustainable rural economy by managing the national forests and land in a way that encourages sustainable business growth, development opportunities, jobs and investment.

4.6 Soils

4.6.1 Protection and Fertility

See Map 9 Soils.

There will be minimal soil disturbance and machine movement on sites where appropriate to reduce the risk of compaction or damage to the soil structure. Brash mats (or alternative measures) will be used to protect sensitive soils. Felling residue will usually be left on site to allow nutrient recycling, with consideration for the practicalities of restocking.

4.6.2 Cultivation

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.

4.6.3 Deep peats

FLS is preparing a Peatland Restoration Strategy which will be published in April 2022. (incorporating the 'FES Lowland Raised Bog and Intermediate Bog Strategy', 2013). In the interim, we will take a precautionary approach to restocking on deep peat soils, following the principles laid out in the FCS practice guide 'Deciding future management options for afforested deep peatland', in particular where there is a 'presumption to restore'.

Sites for which there is a 'Presumption to restore' are defined as:

- Habitats designated as qualifying features in the UK Biodiversity Action Plan, or on Natura sites, Ramsar sites, Sites of Special Scientific Interest (SSSI) or National Nature Reserves (NNRs);
- Sites or parts of sites where restocking is likely to adversely affect the functional connectivity (hydrology) of an adjacent Annex 1 peatland habitat (as defined in the EU habitats Directive) or a habitat associated with one;
- Sites where deforestation would prevent the significant net release of greenhouse gases

Some peat types (8a, 8d, 9a, 10a, 10b, 14, 14h, 14w) are classed as 'Scenario A' soils: edaphically unsuited to woodland. Additionally, 10a and 10b peat types are associated with raised bog habitats. Lowland raised bog and blanket bog are UK BAP priority habitats and therefore a presumption to restore. In the LMP process, by default we will not commercially restock areas where Scenario A peat types dominate, and will include such areas for further assessment for either peatland restoration, or manage as native broadleaf or peatland edge woodland (PEW).

After areas for which there is a presumption to restore are identified, the remaining afforested peatlands will be investigated, looking for evidence to support replanting, as per the FCS Practice Guide. If evidence is found that they will clearly support good growth of Yield Class 8 or more, then they will be restocked. If no evidence is found, they will either be restored, if this is considered to be achievable, or if not, e.g. on slopes of greater than 5%, have a low density native woodland established (PEW).

4.7 Water

4.7.1 Drinking water

All known private drinking water supply points and pipelines are recorded as a layer in our geographic information system (GIS). GIS is consulted during the work planning process for all forestry operations to aid their protection. Features will be clearly marked on all contract maps, as well as on the ground, and relevant neighbours will be consulted prior to any works commencing. Ground truthing for properties surrounding the block were completed as part of this plan that included identifying catchments of relevant PWS (see Appendix VII Private Water Supplies Consultation (SENSITIVE)). Prior to operational commencement, a pollution prevention plan and site management rules will be established. Roles and responsibilities will be assigned with clear instructions on protocols and contactable people in the event of an incident. All operations will comply with UKFS Forestry and Water guidelines, Forestry & Water Scotland Know the Rules booklet V2, Private Water Supplies: guidance-on-forestry-activities-near-pws-sept-2018.pdf (confor.org.uk) and, where necessary, additional pollution prevention measures will be applied.

In the event of water supply disturbance by operations, FLS will follow due procedure as per the UKFS and relevant legislation, which will involve informing the local authority's Environmental Health department and affected residents. The design of the future forest has incorporated an open space or broadleaf buffers of at least 50m around these supply points and 5m either side of pipelines to minimise future disturbance. Further description of private water sources within the LMP can be found in Appendix 1 – Description of Woodlands, Watersources, Hydrology.

There are no active Scottish Water drinking water catchments or water abstraction sources, which are designated as Drinking Water Protected Areas (DWPA) – Surface Water, within the LMP area as confirmed by Scottish Water.

There are no groundwater protected drinking water catchments within boundary of this plan

4.7.2 Watercourse condition

The current status of Minniwick's water environment has been informed by SEPAs river basin management plan (RBMP) that outlines the condition, protection and improvement of the water environment across Scotland (see Appendix 1 - Description of Woodlands, Hydrology). This LMP will also work towards delivering the RBMP actions through adhering to relevant legislation and 'good working' practices.

Ground water catchments of Galloway and Cree Valley & Wigton Coastal in the Solway Tweed river basin district that cover the LMP area are both in good condition.

The River Cree and Water of Minnoch surface waters cover the plan area and are in good and moderate condition respectively, due acidification. However, it has been noted by SEPA that improvement to water quality condition is likely to be a long-term process due to the natural processes required to improve soils in the catchment. Therefore it is likely the water quality will continue to remain at current levels.

Minor tributaries flow from the forest block feeding into the rivers described above and are important for biodiversity, supporting the local fish species and in-turn the local communities with their interest in recreational angling. Most notable of these species are the Brown Trout and the protected, Atlantic Salmon. These rivers are important spawning and breeding areas especially for the nationally declining population of Atlantic Salmon.

Two acid sensitive catchments interact with the plan area: 'at risk' of acidification is the River Cree u/s Minnoch confluence, while the Water of Minnoch u/s Water of Trool is reaching 'failing' status. The proposed scale and timing of felling in the forest, along with increases in open ground and broadleaf cover in riparian zones, seeks to reduce significant negative impact within these catchments as per the Managing Forests in Acid Sensitive Water Catchments guidance. Refer to Appendix VI - Acid Sensitive Catchments.

Efforts to improve water quality within the land management plan will be realised through continued implementation of riparian zones along water courses that include increasing broadleaf percentages, copses and glades. The Riverwoods Initiative (https://www.riverwoods.org.uk) principles have also been incorporated into the plan where possible to promote and provide a valuable habitat corridor for the important ecosystems in these areas. The proposed increase in open ground and increased areas of permanent broadleaf woodland should result in a greatly reduced operational impact and positive impacts on water quality.

As standard, and to support the improvement to water quality of the area all forestry operations will meet the requirements of the UKFS Guidelines on Forests and Water and follow the good forestry practice advocated by the Forestry & Water Scotland initiative. All necessary precautions will be taken to avoid water quality deterioration, including robust preparation and dissemination of emergency and work planning particulars before any operations begin.

4.7.3 Flooding

Minniwick's localised flooding potential has been checked using the SEPA Flood Hazard and Flood Risk Information tool to identify localised downstream flood risk areas. This identified high risk areas along the River Cree and Water of Minnoch which correlate with SEPAs Flood Risk Management Plans (FRMP).

There is 1 Objective Target Areas (OTA) downstream of 2 main catchments within the plan area as highlighted in SEPAs FRMP - Solway Local District Plan (see Map 14). River Cree and Minnoch catchments flow southwards from the block towards the Newton Stewart OTA (TA 140).

There is a risk of surface water and river flooding highlighted in the Solway Datasheet https://www2.sepa.org.uk/frmplans/documents/lpd14-solway-frmp-2021.pdf.

FLS has considered its effect on flood risk and peak flows further downstream at the relevant OTA. The minor scale of felling in the forest, along with measures to improve the diverse age structure and riparian corridors is likely to have a beneficial impact on downstream flood risk and may contribute to flood alleviation.

Relevant actions needed to help TA objectives in the FRMP include the use of Natural Flood Management (NFM) within the relevant catchments. Restock areas in the plan will be well-thought-out and watercourses given significant riparian corridors where appropriate to support these objectives. It is anticipated that our operations within the Minniwick LMP will have no negative impact on the existing flooding risk within the drainage areas.

For enquiries about this plan please contact:

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Appendix I: Description of Woodlands

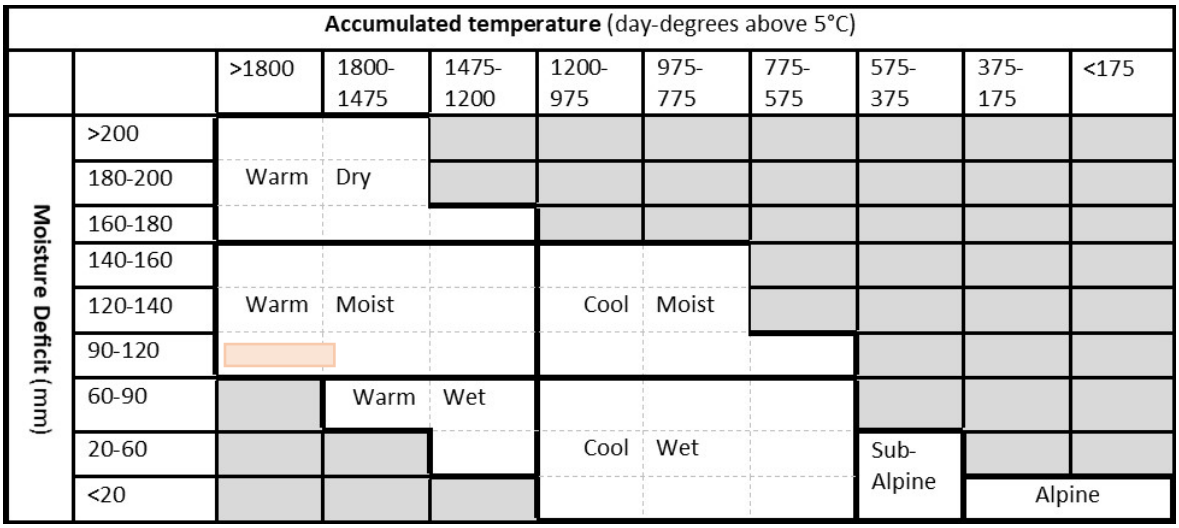
Description of woodlands
Topography and Landscape
Map 11. Shows the relevant NatureScot Landscape Character Types (LCT) relevant to Minniwick: • Plateau Moorland with Forest – LCT 174 - Covers 88% of forest block area • Narrow Wooded Valley – LCT 160 - Covers 12% of forest block area <u>Key Characteristics relevant to Minniwick</u> • Elevated flat or gently undulating landscape of large scale. • Dark horizons formed by forest margins. • Sparsely populated, but with some pockets of settled farmland. • Dominant broadleaf (semi-natural) woodland character with conifers on higher slopes. • Riparian trees and woodlands following meandering river courses in lower reaches. • Numerous arched stone bridges over the rivers. <u>Regional Scenic Area – Dumfries and Galloway – 4. Galloway Hills</u> The instant outlook wraps the Water of Minnoch and Cree valleys as seen from the minor road to Straiton and A714. The Plateau Moorland with Forest rises directly to the summits of the Galloway Hills from these valleys, showing dramatic vistas. The Narrow Wooded Valley of the Cree is also striking on its own merit with its narrow riverside pastures. Looking west, the undulating, partly forested landscapes are less significant.
Geology and Soils
The prominent bedrock lithology is sedimentary made up of both mudstone and wacke these rocks are marine in origin. Superficial deposits primarily make up the sedimentary deposits consisting of diamicon, sand, gravel, of glacigenic origin; peat of lacustrine and palustrine origin; silt, sand and gravel of fluvial origin. Soils types within the forest block are shown on Map 9
Climate
<u>Accumulated temperature (day-degrees above 5°C)</u> Min: 1729, Max: 1865, Mean: 1805

Description of woodlands

Moisture Deficit (mm)

Min: 95, Max: 109, Mean: 103

The climate of the LMP area is highlighted pink on the table below



Hydrology

Map 2 shows all watercourses, open water, and recorded water supplies.

The forest sits in the Solway Tweed river basin district.

Water quality

Bodies of surface waters (as identified by SEPA) in the plan area:

Name: River Cree (u/s Minnoch conf) (ID: 10521) Overall Condition: Good

Impacted condition / Responsible pressures (Responsible activity):

No further information available via SEPA's water environment hub.

Acid Vulnerable Catchment – At Risk

Name: Water of Minnoch (River Cree to Water of Trool) (ID: 10527) Overall Condition: Moderate

Impacted condition / Responsible pressures (Responsible activity):

There is an unknown pressure on water animals and plants, with SEPA's assessments indicating fish populations may not be in good condition.

Acid Vulnerable Catchment – Failing

Name: Water of Minnoch (u/s Water of Trool) (ID: 10528) Overall Condition: Moderate

Impacted condition / Responsible pressures (Responsible activity):

There is an acid rain pressure on water quality, with SEPA's assessments indicating activities of fossil fuel burning & acidified soils being responsible. Forest re-structuring to aid soils recovery.

Flooding

SEPAs Flood Risk Management Plans - Solway Local District Plan (see Map 14)

Description of woodlands
Operational Target Area Catchments (Information from SEPAs Flood Risk Management Datasheet) Catchments: River Cree and Minnoch Target Areas (TA): Newton Stewart (TA 140) Relevant TA objectives: Consider whole catchments and coastlines and work with natural processes and the environment to deliver outcomes. <u>Water supplies</u> There is 2 recorded private drinking water supply within the LMP boundary. There are no public water supplies
Windthrow
Map 10 illustrates the DAMS measurements for the Plan area. The majority of the area is moderately exposed moving to sheltered around the river valley areas at the bottom of the less exposed slopes within the forest.
Adjacent land use
The adjacent land use is mainly that of private agricultural land, mainly upland grazing of both cattle and sheep. The villages of Loch Trool and Bargrennan and situated on the western periphery of the plan area. FLS established commercial conifer plantations, border three sides of the Minniwick forest boundary with the forest blocks of Loch Trool, Glencaird Hill and Brigton.
Public access
Map 2 and Map 13 show the location of promoted trails and visitor zones. There are no formal FLS facilities in the block however there are core paths. One of these follows the Southern Upland Way, Bargrennan to St Johnstone of Dalry section of the route. There is one community path which runs from Loch Trool Village to the House O'Hill Hotel. There are visitor zones within the block. Passive zones follow core paths which are in-turn buffered by interactive zones. A passive zone is also located around a large layby at Bargrennan which is used as an unofficial carpark. No angling permissions are in place within the block. There is an agricultural tenancy for an small area of grazing near Loch Trool village. There are several third party access rights established in the plan area. A Sustrans route follows the public road through the center of the block.
Historic environment
Historic environment records for the forest are shown in Appendix V and on Map 12. The Old Bridge of Minnoch is the only Scheduled Monument within the block. Various undesignated historic assets can be found throughout the plan area.

Description of woodlands
Biodiversity
Designated Sites – None within the block or nearby Priority Habitats – Upland Oak Woodland Priority Species – Red Squirrel, Badger, Otter, Water Vole, Atlantic Salmon, Barn Owl & Pine Marten. Ancient Woodland - 21.3 ha, of Ancient (of semi natural origin) and 4.6 ha of Other (on Roy map) PAWS - Manse Wood (2 ha) , Brigton Wood (1.4 ha) and Holm Wood (4.28 ha) Natural Reserves – 4 sites across the block 2 of which are plantation reserves. Deadwood potential – Main core of the block is low, with slopes falling to the lower ground towards the burns is medium. High areas around the PAWS sites and riparian zones. Local Nature Conservation Site – Holm Wood (Dumfries and Galloway Council) Open ground – Rides, components of riparian zones, Minniwick quarry, agricultural grazing and utility infrastructure.
Invasive species
Grey squirrel (*Sciurus carolinensis*) has been reported in the block. Common rhododendron *(Rhododendron ponticum)* in small pockets throughout the plan area. American Skunk Cabbage *(Lysichiton americanus)* reported in Manse Wood
Woodland composition
The current species composition of the forest is illustrated on Map 8. The current woodland is majority second rotation high forest with some remnants of first rotation coupes. A small area of agricultural leased ground is also incorporated in the block to the west of the plan area. Current woodland management (and % of plan area): Clearfell (57.7%) Long term retention (7.6%) CCF / LISS (29.9%) Minimum intervention (4%) Natural reserve (0.5%) Other/Open land (0.3%)
Plant health
Phytophthora ramorum - The block lies within SF 2022 Larch Strategy Risk Reduction Zone where there is a requirement to removal at least 50% of larch by April 2027 including removal of all mature larch in same period. Young thickets Larch, currently dead, within the block. Extensive sanitation felling in the block completed in previous years. *Phytophthora pluvialis* – None known but monitored as part of an emerging disease in Scotland

Description of woodlands
Chalara – Minimal Ash within block and away from any infrastructure, though likely infected. *Dendroctonus Micans* – Found in spruce by forest research where the predator R grandis was released here as part of the national effort to control this pest. *Dothistroma* Needle Blight – Likely to be present as now widespread in Galloway. *Hylobius* – Common pest on clearfell sites including those in Minniwck *Heterobasidion annosum* - Not endemic in the block but a proportionate area is within FR High Hazard area. Stump treatment with urea post felling may be required in the areas of these poorer site types.
Infrastructure
There is a well-established road network of are Class A and B roads throughout the plan area, providing adequate access to most sites. Some further infrastructure will be required to facilitate future thinning operations. There are no bridges. Minniwick quarry is within the block but currently not active. Boundary fences and some fencelines protecting PAWS areas are within the block Scottish Power overhead 11kV electricity powerline passes through the main plan area. Other 11kV and low voltage powerlines are located around the Loch Trool village, Bargrennan and in the east at High Minniwick. An underground cables are located in close proximity to Loch Trool Village into the forest. BT overhead telephone line runs from the visitor center along the public road to the village along the blocks northern boundary. Scottish Water assets in the area include a 90mm HPPE water main within the site boundary but this appears to be running under the public road. Scottish Water owned sewage works is within the block along the minor public road to Glen Trool village. A minor public road passes through the center of the forest block from Clachaneasy bridge to Loch Trool Visitor Center and car park.

Appendix II: EIA screening opinion request form

Overleaf if required

Appendix III: Consultation record

Consultee	Date contacted	Date of response	Issues raised	FLS response
Community Council - Cree Valley	08/09/2022	None as at 10/10/2022	-	-
CONFOR	08/09/2022	None as at 10/10/2022	-	-
Crichton Carbon Centre	08/09/2022	None as at 10/10/2022	-	-
Dumfries & Galloway Council (D&GC)(Access)	08/09/2022	15/09/2022	No issues with proposals, any enhancements to improve access on these routes would be welcomed. Core path route needs updating on councils mapping system which will be done in due course as the route follows the SUW.	See 4.5.2 Public access & Map 13 Visitor Zones
D&GC (Archaeology)	08/09/2022	None as at 10/10/2022	-	-
D&GC (Environment)	08/09/2022	None as at 10/10/2022	-	-
D&GC (Environmental health)	08/09/2022	None as at 10/10/2022 Second request 27/02/2023	27/02/2023 Stating PWS addresses within the Minniwick area. Confirmed D&G council have no accurate locations for the abstraction points or infrastructure.	See 4.7.1 Drinking water & Appendix VII Private Water Supplies Consultation (SENSITIVE)

Consultee	Date contacted	Date of response	Issues raised	FLS response
D&GC (Resilience/Flooding)	08/09/2022	None as at 10/10/2022	-	-
D&GC (Roads Network)	08/09/2022	None as at 10/10/2022	-	-
Galloway & Southern Ayrshire Biosphere	08/09/2022	None as at 10/10/2022	-	-
Galloway Fisheries Trust	08/09/2022	28/11/2022	The Minnoch supports an important and healthy Atlantic salmon population which supports an important rod fishery. The High Cree suffers from acidification along most of its length following afforestation of this poorly buffered catchment. In recent years there has been some recovery of salmon stocks in the lower High Cree but salmon and trout populations are low or absent from much of the mid and upper catchment. The Black Burn which enters the High Cree near the church supports an important Brown trout population and would benefit from improved riparian management. In the past GFT removed some riparian conifers to benefit the burn but further removal of any natural regen riparian conifers would help. We strongly support the proposed objective to 'Mitigate potential negative effects on	See 4.7.2 Watercourse condition & Appendix VI - Acid Sensitive Catchments.

Consultee	Date contacted	Date of response	Issues raised	FLS response
			forest and aquatic ecosystems and develop their future resilience'. We are interested in the 'Alternative to Clear fell zone'. We would expect this type of forest management to reduce the potential for silt problems during harvesting and ground preparation. Silt entering rivers can have significant impact on freshwater ecology, especially fish and aquatic invertebrates, so any measures which reduce the risk of silt pollution is good. We strongly support the proposed ancient woodland zone which covers important riparian habitats. Brigton Pond which is described as important for dragon flies had perch and roach illegally introduced in to it many years ago. GFT used to be requested to remove some of these fish to reduce possible predation on the dragonflies. We strongly support your suggested 'Riparian zone management'. It would be beneficial to establish deciduous trees within the riparian zone to provide important shade to the rivers and burns to help enhance their resilience to climate change driven water temperature rises and to increase future levels of woody debris which help rivers to function more naturally.	See 4.1.3 Low Impact Silviculture Systems (LISS) / Continuous Cover Forestry (CCF) See 4.2.2 Native woodland See 4.2.4 Protected and priority habitats and species Historic management referred to the FLS environment team to take forward with GFT. See 4.7.2 Watercourse condition
Glentrool & Bargrennan	08/09/2022	None as at 10/10/2022		-

Consultee	Date contacted	Date of response	Issues raised	FLS response
Community Trust				
Historic Environment Scotland	08/09/2022	07/10/2022	Identified one scheduled monument lies on the edge of the Plan boundary Old Bridge of Minnoch SM4286. The scheduled area extends to cover all elements of the bridge itself. Works to the monument would require prior Scheduled Monument Consent from Historic Environment Scotland. If works are planned in the vicinity of the monument, please contact us for further advice, well in advance of them taking place. We welcome that the Plan Brief clearly states that the monument will be maintained as per UK Forestry Standard guidelines, Dumfries and Galloway's regional historic asset management plan, and Historic Environment Scotland guidelines and advice. We welcome that the monument has been marked on the supplied maps We advise that the monument continue to be clearly marked on all relevant mapping. Given the nature of the bridge it should of course not be used for vehicular traffic.	See 4.3 Historic Environment & 4.3.1 Designated sites The bridge will not be used for vehicular traffic.

Consultee	Date contacted	Date of response	Issues raised	FLS response
IUCN Otter Specialist Group	08/09/2022	None as at 10/10/2022		
NatureScot	08/09/2022	08/09/2022	Do not intend to offer formal comment on this proposal as it falls below the Scottish Forestry – NatureScot concordat, August 2021 for forestry related casework.	-
Raptor Study Group	08/09/2022	None as at 10/10/2022	-	-
RSPB	08/09/2022	None as at 10/10/2022	-	-
Saving Scotland's Red Squirrels	08/09/2022	08/09/2022	Keen to minimise the impact of any future forestry work on the local red squirrel population whilst acknowledging that commercial conifers will be subject to cycles of felling and restocking, and that other factors also need to be considered such as windthrow. As red squirrels are known to be present in the Newton Stewart/Glentrool area, we would expect that, with regard to planning felling works, all the relevant surveys are carried out in advance and the work is planned to factor in the breeding season. We would suggest that, alongside the felling permission, landowners and contractors are made aware of the risk and responsibility they have to resident red squirrels, and are	See 4.2.4 Protected and priority habitats and species

Consultee	Date contacted	Date of response	Issues raised	FLS response
			made aware of surveys to be conducted in advance of felling activities We would appreciate if you could take into consideration ways of improving/ maintaining the habitat for red squirrels – such as providing continuous cover, long-term retention, small-coupe felling and, when planning felling, take into account the movement of squirrels and habitat connectivity. Other aspects to consider include planting regimes, which include a mix of species and age class to allow for a continuity of food supply.	See 4.1.3 Low Impact Silviculture Systems (LISS) / Continuous Cover Forestry (CCF)
Scottish Forestry	08/09/2022	None as at 10/10/2022	-	-
Scottish Power Energy Networks	08/09/2022	None as at 10/10/2022	-	-
Scottish Water	08/09/2022	29/09/2022	Sent list of SW precautions for assets guidance. Generic email response referring to SW guidance. No SW drinking catchments or water abstraction sources on site. Water main within site boundary but runs under public road.	See 4.5.3 Renewables, utilities and other developments & 4.7 Water
Scottish Wildlife Trust	08/09/2022	None as at 10/10/2022	-	-

Consultee	Date contacted	Date of response	Issues raised	FLS response
SEPA	08/09/2022	08/09/2022	Letter commenting on following best practice in SEPA's general comments on forestry activities.	See 4.7 Water
Southern Upland Way Ranger	08/09/2022	08/09/2022	Suggestion of upgrades and additional recreational infrastructure particularly in the Bargrennan Hall to Loch Trool area The planting and management alongside the Southern upland way in Minniwick is very sympathetic to the route , and has a good mixture of species creating varying interest during different seasons. Some management of self-seeding Spruce may be needed in the near future and could be done by working alongside the Scottish Woodlot Association working to the management plans of the old Cree Valley Community Woodland Trust	Due to SOAC and the open access for members of the public on the NFE, it is felt that new infrastructure in this area is not required due to the related ongoing maintenance costs and resources currently available to FLS. See also 4.5.2 Public access See Map 13 Visitor Zones, 3.5 Woodland Management in Visitor Zones & 4.1.5 Tree species choice / Restocking
Timber Transport Forum	08/09/2022	None as at 10/10/2022	-	-
Vincent Wildlife Trust	08/09/2022	None as at 10/10/2022	-	-
Visit Scotland	08/09/2022	None as at 10/10/2022	-	-
Glentrool Camping and Caravan Site	12/09/2022	None as at 10/10/2022	-	-
House O'Hill Hotel	12/09/2022	None as at 10/10/2022	-	-

Appendix IV: 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 afterfelling, 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

	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

NB: Larch felled in the autumn and winter, when the presence of P. ramorum cannot be 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. SPHNs will still be issued and should be complied with accordingly. This tolerance table is offered to assist in the pre-emptive early removal of the host species

Appendix V: Historic Environment records

Refer to Map 12

Historic Environment Records					
Designation	Name	Feature Description	Grid Reference	Importance	Area (ha)
Undesignated	Bargrennan, farmstead	What may be a farmstead, comprising two unroofed buildings annotated 'Ruin' and four enclosures is depicted on the 1st edition of the OS 6-inch map (Kirkcudbrightshire 1852, sheet 21).	NX349764	Regional Importance	0.12
Undesignated	Bargrennan, Middle Bridge of Cree	A stone bridge which carries the A714 public road over the River Cree. Early 19th century. Single span, with semicircular arch. Rubble. Granite voussoirs and slab coping. Blocked overflow to NW. Low rubble walls adjoined to S.	NX349764	Local Importance	0.02
Undesignated	Brigton	What may be a single unroofed building is depicted on the 1st edition of the OS 6-inch map (Kirkcudbrightshire 1852, sheet 21).	NX359746	Regional Importance	0.01
Undesignated	Clachaneasy Bridge Cairn	This cairn is situated at the top of a small knoll within a dense forest. It measures 4.2m in diameter and 0.6m high.	NX356754	Regional Importance	0.01
Undesignated	Clachaneasy Bridge	Circa 1800. Single segmental arch stone built bridge spanning River Cree; rock faced granite voussoirs, springers and soffit. Rubble spandrels, abutments and parapets; parapet coping squared granite with terminal piers. 56ft span approx.	NX355751	Local Importance	0.01
Undesignated	Clachaneasy Bridge, Old Fence	A length of wall annotated 'Old Fence' which may form an enclosure is depicted on the 1st edition of the OS 6-inch map (Kirkcudbrightshire 1852, sheet 21).	NX359752	Local Importance	0.11

Historic Environment Records					
Designation	Name	Feature Description	Grid Reference	Importance	Area (ha)
Undesignated	Concrete Observation Point and Sheep Pen	Within a 100m square is a concrete observation point and a sheepfold.	NX354764	Uncategorised	1
Undesignated	Drumsuir Farmstead	A farmstead, comprising four unroofed T-shaped building, 3 unroofed structures annotated 'Hay Ree' and a head-dyke and a field-system annotated 'Old Fence' are depicted on the 1st edition of the OS 6-inch map (Kirkcudbrightshire 1852, sheet 21).	NX367756/ NX364758	Regional Importance	8.4
Undesignated	Glentrool Corn Kiln (South)	A circular structure annotated 'Old Kiln (Corn)' is depicted on the 1st edition of the OS 6-inch map (Kirkcudbrightshire 1852, sheet 21).	NX359766	Regional Importance	0.01
Undesignated	Glentrool Corn Kiln (West)	One unroofed structure and a circular structure annotated 'Old Kiln (Corn)' are depicted on the 1st edition of the OS 6-inch map (Kirkcudbrightshire 1852, sheet 21).	NX357778	Regional Importance	0.01
Undesignated	Glentrool Corn Kiln (North)	A circular structure annotated 'Old Kiln (Corn)' is depicted on the 1st edition of the OS 6-inch map (Kirkcudbrightshire 1852, sheet 21).	NX355768	Regional Importance	0.02
Undesignated	Glentrool Village, Farmstead	A farmstead, comprising 1 building annotated 'Ruin', a field-system, 1 structure annotated 'Sheep Ree' and 1 circular structure annotated 'Old Kiln (Corn)' are depicted on the 1st edition of the OS 6-inch map (Kirkcudbrightshire 1852, sheet 21).	NX359775	Regional Importance	6.29
Undesignated	Glentrool Village, Old Fence	A small unroofed structure annotated 'Old Fence' is depicted on the 1st edition of the OS 6-inch map (Kirkcudbrightshire 1852, sheet 21).	NX359780	Regional Importance	2.62
Undesignated	High Minniwick	One unroofed structure annotated 'Old Corn Kiln' is depicted on the 1st edition of the OS 6-inch map (Kirkcudbrightshire 1852, sheet 21).	NX371774	Regional Importance	0.01

Historic Environment Records					
Designation	Name	Feature Description	Grid Reference	Importance	Area (ha)
Undesignated	Hilltop Cottage, Glentrool	Recorded in 1993 during felling operations. Walls stand up to 2m high in places. In use from at least early 19th century into early 20th century.	NX357769	Regional Importance	0.02
Undesignated	House O' Hill Hotel	A farmstead, comprising three unroofed buildings and two enclosures, one unroofed structure annotated 'Old Sheep Ree' and a head-dyke are depicted on the 1st edition of the OS 6-inch map (Kirkcudbrightshire 1852, sheet 21).	NX359767	Regional Importance	0.4
Undesignated	Old House O' Hill , Glentrool	Possible township comprising 1 roofed, 6 unroofed buildings, 3 enclosures, 6 structures annotated 'Sheep Ree' and 'Old Fences', field system and head-dyke is depicted on the 1st edition of the OS 6-inch map (Kirkcudbrightshire 1852, sheet 21).	NX356770	Regional Importance	0.2
Undesignated	House O' Hill, Old Fence	A field-system annotated 'Old Fence' and one unroofed structure annotated 'Old Sheep Ree' are depicted on the 1st edition of the OS 6-inch map (Kirkcudbrightshire 1852, sheet 21).	NX364767	Regional Importance	2.68
Undesignated	Lightsome Knowe	A single unroofed structure annotated 'Hay Ree' and field system depicted on the 1st edition of the OS 6-inch map (Kirkcudbrightshire 1852, sheet 21).	NX358757	Regional Importance	1.84
Undesignated	Low Minniwick	A possible farmstead, comprising one building, two enclosures and a possible well is depicted on the 1st edition of the OS 6-inch map (Kirkcudbrightshire 1852, sheet 21).	NX374766	Regional Importance	0.13
Undesignated	Mackie Weil	A single unroofed building annotated 'Ruins' is depicted on the 1st edition of the OS 6-inch map (Kirkcudbrightshire 1852, sheet 21).	NX373766	Regional Importance	0.02
Undesignated	Minnoch Bridge	Stone bridge over Water of Minnoch, built 1841. A single track on E-W axis. Single span, with segmental arch. Rubble. Granite voussoirs and abutments. Stone parapets replaced by modern iron railings and concrete coping.	NX362748	Local Importance	0.02

Historic Environment Records					
Designation	Name	Feature Description	Grid Reference	Importance	Area (ha)
Undesignated	Old Bridge of Minnoch, Shed	A single unroofed T-shaped building annotated 'Shed' and a length of head-dyke annotated 'Old Fence' are depicted on the 1st edition of the OS 6-inch map (Kirkcudbrightshire 1852, sheet 21).	NX376764	Regional Importance	4.31
Designated	Old Bridge of Minnoch	Scheduled Monument. Pack horse bridge: 17th to 18th century. A single track on NW/SE axis. Single span, with high semi-circular arch. Rubble. Rubble voussoirs. Arch springs from natural rock. No parapets. Rubble roadway.	NX373759	National Importance	0.01
Undesignated	Old Bridge of Minnoch, Sheep Ree	A single unroofed structure annotated 'Old Sheep Ree' is depicted on the 1st edition of the OS 6-inch map (Kirkcudbrightshire 1852, sheet 21).	NX370764	Local Importance	0.02
Undesignated	Old Bridge of Minnoch, Hay Ree	A single unroofed structure annotated 'Hay Ree' is depicted on the 1st edition of the OS 6-inch map (Kirkcudbrightshire 1852, sheet 21).	NX371761	Regional Importance	0.01
Undesignated	Rig of Cairn	A single unroofed structure annotated 'Hay Ree' attached to a wall of a field is depicted on the 1st edition of the OS 6-inch map (Kirkcudbrightshire 1852, sheet 21).	NX355761	Regional Importance	0.01
Undesignated	Sheep Pen	A small square sheepfold annotated 'Sheep ree' on the 1st edition of the OS 6-inch map (Kirkcudbrightshire 1852, sheet 21).	NX356767	Local Importance	0.01