

# GLENWHAN

## Land Management Plan 2021 - 2031

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.



The mark of  
responsible forestry





Property Details			
Property Name:	Glenwhan		
Grid Reference (main forest entrance):	NX 1570 6050	Nearest town or locality:	Glenluce
Local Authority:	Dumfries and Galloway		

Applicant's Details			
Title:	Mr	Forename:	Stephen
Surname:	Stables		
Position:	Planning Forester		
Contact Number:			
Email:	stephen.stables@forestryandland.gov.scot		
Address:	Forestry and Land Scotland, Newton Stewart Office, Minnigaff, Creebridge, Newton Stewart		
Postcode:	DG8 0BY		

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

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 the FC 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, Regional Manager		Signed, Conservator	
FLS Region	South	SF Conservancy	South
Date	23/07/21	Date of Approval	22/6/22
		Date Approval Ends	21/6/32



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## 1.0 Objectives and Summary

### 1.1 Plan overview, objectives and general site description

Plan name	Glenwhan
Forest blocks included	Glenwhan
Size of plan area (ha)	652.9ha
Location	See Location map ( <b>Map 1</b> )

<b>Long Term Vision</b>
The long term vision for the block is to maintain a productive mixed conifer woodland that provides a range of habitats incorporating a significant area of peatland restoration.
<b>Management Objectives</b>
<p>Key management issues to consider for this LMP are:</p> <ol style="list-style-type: none"><li>1. Continued contribution towards sustainable commercial timber production</li><li>2. Deer management (<i>Improve forest structure within the block to facilitate deer control, focussing on known invasion sites, by increasing the area of open ground to the south of the plan area</i>)</li><li>3. Enhanced species diversity (<i>Proposed increases in broadleaf restock to the east (centred on the existing Ancient Woodland areas) and alternate secondary species to replace larch restock will contribute towards the long term age class and species diversity of the plan area.</i>)</li><li>4. Enhancement of existing Ancient Semi Natural Woodland (ASNW) relict areas (<i>improved connectivity of and otherwise expansion of Native Woodland habitat</i>)</li><li>5. Management of open ground; specifically for landscaping and deer management to the south and for systematic restoration of plantation on deep peat to functioning peatland to the north (<i>Much of the northern boundary of the plan area comprises an amalgam of open ground and low density conifer and broadleaf on areas of blanket bog and upland Sphagnum bog. The potential for either peatland restoration to protect carbon storage and enhance future carbon sequestration or maintaining some low density tree cover for the benefit of a range of conservation species as well as continuing to provide landscape views from the Southern Upland Way (SUW) will be achieved through peat depth assessment and monitoring of the ongoing natural regeneration (and canopy closure of the existing crop) and initiating (as resources permit) any restoration and/or remedial action as required</i>)</li><li>6. Management of the River Luce water catchment, particularly the Craig Burn and other tributaries to maintain water quality and address surface water acidification and flooding impact issues</li><li>7. Railway line operations management (<i>The plantation adjacent to the railway line is now of a height &gt; 20m where there is a potential physical threat to the public safety of the line through windthrow. The proposed clearfell of a buffer corridor of</i></li></ol>

### Long Term Vision

*20m from the boundary fence, following all best practices and guidance during forest operations, should address these safety considerations. For continued safety, restocking of a permanent broadleaf crop with some increase in open ground should guarantee a greatly reduced operational impact on the line. Liaison with Network Rail throughout is essential.)*

### Critical Success Factors

- Sustainably maintain the productive timber capacity of the plantation
- Removal of *P. ramorum* infected larch from within Management zone
- Increase species diversity across the plan area notionally utilising the areas cleared for *P. ramorum*.
- Enhance existing and expand Native broadleaf areas throughout plan area
- Manage the resident and transient deer populations to achieve successful crop establishment
- Restore identified peatland areas using current best practice and expertise through suitably experienced contractors
- Maintain water condition (good) throughout Water of Luce catchment through enhancement of the riparian zones (centred on Craig Burn and other smaller unnamed burns within block)
- Initiate crop removal along plan boundary with Stranraer to Girvan railway line for line safety considerations

## 1.2 Summary of planned operations

Table 1

Summary of Operations over the Plan Period	
Clear felling	<b>205.1ha</b>
Thinning	<b>28.3ha</b>
Restocking	<b>150.2ha</b>
Afforestation	0.0ha
Deforestation (for peatland restoration)	<b>71.1ha</b>
Forest roads	0.0m
Forestry quarries	0.0ha

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 **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**.

The plan's objectives were analysed against the constraints and opportunities identified during scoping and consultation. Preferred options were then chosen for delivering the objectives, and these proposals are summarised on the Analysis and Concept map (**Map 3**).

## 3.0 Management Proposals - regulatory requirements

### 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)	N	Glen App and Galloway Moors lies 1.5km northwest of the block
National Nature Reserve (NNR)	N	
Special Protection Area (SPA)	N	
Special Area of Conservation (SAC)	N	
World Heritage Site (WHS)	N	
Scheduled Monument (SM)	Y	3 Sites (Craig Fell cairn, Old Hall hut circle & Glenwhan Moor hut circles)
National Scenic Area (NSA)	N	
National Park (NP)	N	
Deep peat soil (>50 cm thickness)	Y	Peatland restoration area to be peat depth assessed (see main text)
Tree Preservation Order (TPO)	N	
Environmentally Sensitive Area	Y	Western Southern Uplands
Biosphere reserve	Y	Galloway and Southern Ayrshire Biosphere
Local Landscape Area	N	
Ancient woodland	Y	Glen plantation
Acid sensitive catchment	N	
Drinking Water Protected Area (Surface)	N	

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

Under previous plan iterations, large areas of the Glenwhan block have been clearfelled both through approved felling plans and as a response to recent *P ramorum* infestation resulting in a relatively young age class profile across the block. Future block restructuring achieved by maintaining at least a 2m height differential or 8-10 year age gaps between adjacent coupes remains as an objective to continue to improve the spatial appearance and age class structure of the block.

Proposed peatland restoration, a greater focus on the removal of all Larch from the block and resilience felling for the Stranraer to Ayr railway line will result in even more felling during this plan period and will further skew the age class profile towards younger crop. The railway line felling, incorporating larch removal, and the peatland restoration felling are targeted for phase 1 with the remaining larch clearfell coupes identified for phase 2. The proposed phase 1 and 2 clear fell areas are identified on the Management map (Map 4).

Table 3

Clearfell Summary by Phase and Coupe Number			
Phase	Coupe Number	Fell Year	Gross Area (ha)
1	30002	2023	54.9
1	30005	2023	22.5
1	30009	2023	23.8
2	30032	2031	4.5
2	30033	2031	44.1
2	30034	2031	11.2
2	30035	2031	15.3
2	30036	2031	28.8
<b>Total</b>			<b>205.1</b>

Table 4

Clearfell by Species													
Coupe Number	Fell Year	Nett Area (ha) by Main Species >20% (or MC, MB)											Coupe Total
		CP	DF	EL	HL	JL	LP	NS	SP	SS	MC	MB	
30002	2023	-	-	-	0.8	0.3	15.0	-	1.8	34.7	0.8	-	53.4
30005	2023	-	-	2.9	-	12.9	1.9	-	-	4.3	-	-	22.0
30009	2023	-	-	-	-	-	3.3	0.7	-	18.8	-	-	22.8
30032	2031	-	-	-	-	2.4	-	-	-	-	-	-	2.4
30033	2031	1.3	-	-	-	7.0	-	-	0.7	24.3	1.3	5.5	40.1
30034	2031	-	-	-	-	9.9	-	-	-	1.3	-	-	11.2
30035	2031	-	-	-	-	7.3	3.0	-	-	2.0	-	-	12.3
30036	2031	-	-	-	-	19.5	-	-	-	2.6	-	4.7	26.8
<b>Plan Area Total (Nett)</b>		<b>1.3</b>	<b>-</b>	<b>2.9</b>	<b>0.8</b>	<b>59.3</b>	<b>23.2</b>	<b>0.7</b>	<b>2.5</b>	<b>88.0</b>	<b>2.1</b>	<b>10.2</b>	<b>191.0</b>

Table 5

Scale of Proposed Felling Areas										
Total Woodland Area				652.9	ha					
Felling	Phase 1	%	Phase 2	%	Phase 3	%	Phase 4	%	Long Term Retention	%
Gross Area (ha)	101.2	15.5	103.9	15.9	36.8	5.6	0.00	0.0	10.6	1.6

### 3.3 Thinning

Although the block has significant areas to the east that are deemed to be only moderately exposed, there is only a modest area of thinning planned for the period of this plan. The area, some 28.3ha to the west, is identified on the Thinning map (**Map 5**).

As crops reach pole stage, opportunities for the timeous thinning of second rotation crops within the block using site appropriate harvesting machinery will be assessed.

Any future 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.

### 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 exceptional 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 covered by this approval is 40 cubic metres per Land Management Plan 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 Restocking

Our restocking proposals on clearfell sites have been selected by ESC, on-site observations and the previous rotations. Where appropriate, species diversification has been undertaken utilising both BL and alternative conifers for species diversification. Species choice also meets the criteria for restocking under UKFS, UKWAS and internal FC policy.

Native small seeded broadleaf will comprise most of the proposed restocking as well as some native Oak for Ancient Woodland restoration.

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

Table 6

Restocking							
Phase	Coupe Number	Gross Area (ha)	Proposed Restock Year	Species	Method *	Minimum stocking Density (s/ha)	Note
1	30002	54.9	-	-	None	-	Peatland restorati
1	30005	22.5	2026	SS(8.8),DF(9.1),BL(4.6)	(R)	2500	
1	30009	23.8	2026	SS	(R)	2500	
3	30032	4.5	2034	SP(2.6), BL(1.9)	(R)	2500	
3	30033	44.1	2034	SS(27.5),SP(3.4),BL(13.2)	(R)	2500	
3	30034	11.2	2034	NS	(R)	2500	
3	30035	15.3	2034	SS	(R)	2500	
3	30036	28.8	2034	SS(4,0),NS(2.3),SP(13.7),BL(8.8)	(R)	2500	
<b>Total</b>		205.1					

\* replant (R) / natural regeneration (NR) / plant alternative area (ALT) / no restocking (None)

### 3.6 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.

Table 7

Plan area by Species						
Species	Current		Year 10		Year 20	
	Area (ha)	%	Area (ha)	%	Area (ha)	%
Sitka spruce	298.9	45.8	220.8	33.9	295.5	45.3
Other conifers	144.3	22.1	49.5	7.6	79.8	12.2
Native broadleaves	7.8	1.2	18.4	2.8	30.2	4.6
Other broadleaves	42.1	6.4	42.1	6.5	42.1	6.5
Open ground (includes transient fell)	159.8 (62.3)	24.5	321.2 (153.0)	49.2	205.3 (43.0)	31.4
<b>Total</b>	<b>652.9</b>	<b>100.0</b>	<b>652.9</b>	<b>100.0</b>	<b>652.9</b>	<b>100.0</b>

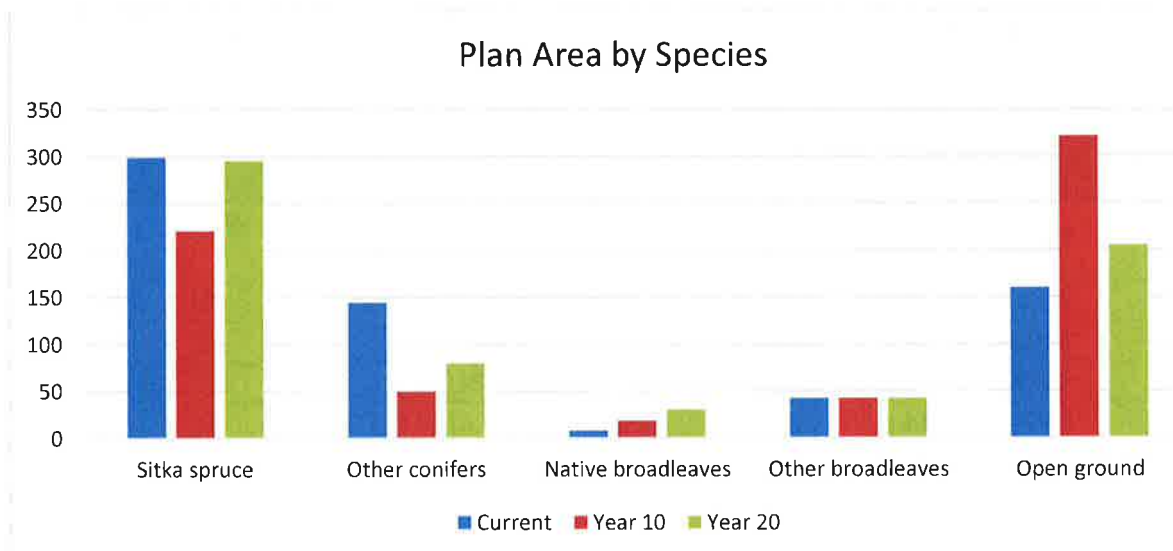
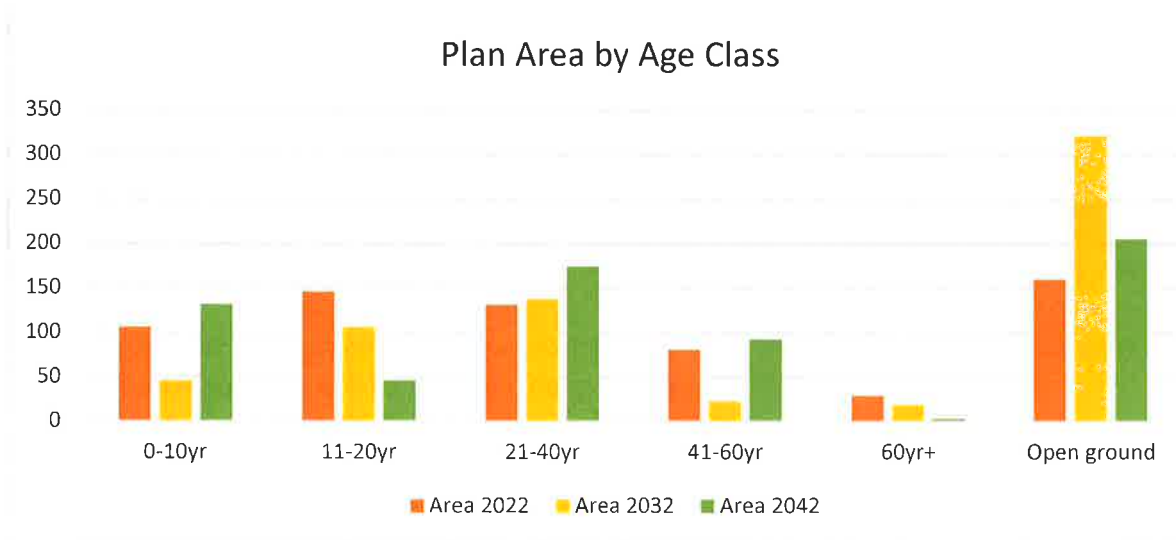


Table 8

Plan area by Age						
Age class (years)	Current		Year 10		Year 20	
	Area (ha)	%	Area (ha)	%	Area (ha)	%
0 – 10	105.8	16.2	45.7	7.0	131.7	20.2
11 – 20	145.9	22.3	105.8	16.2	45.7	7.0
21 – 40	131.4	20.1	137.9	21.1	174.3	26.7
41 – 60	80.7	12.4	23.1	3.5	92.6	14.2
60+	29.3	4.5	19.2	3.0	3.3	0.5
Open	159.8	24.5	321.2	49.2	205.3	31.4
<b>Total</b>	<b>652.9</b>	<b>100.0</b>	<b>652.9</b>	<b>100.0</b>	<b>652.9</b>	<b>100.0</b>



### 3.7 Road Operations and Quarries

There are three active quarries in the block (Glenwhan east, Glenwhan west and Glenwhan), all, along with planned new roads, road realignments, road upgrades and timber haulage routes are shown on the Road Operations and Timber Haulage map (**Map 7**).

Whilst two planned roads are identified both are planned for construction far in to the future. There is no planned new road construction for the period of the plan however regular and significant lengths of upgrade and maintenance will inevitably be required to facilitate access for forest operations, up to around 10000m over the 10 year plan period (see table 9)

Table 9

Forest Road Upgrades, Realignments, New Roads and New Quarrying				
Phase	Name / Number	Length (m)	Year	Operation
1	No road construction	-	-	-
2	No road construction	-	-	-

### 3.8 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	There is no proposed Afforestation for the LMP.
Deforestation	YES	There is a significant area of 10b soil type within the plan area that is proposed for peatland restoration. Where there has been an identified benefit to the wider environment or community, modest increases to permanent open space, mainly focussed within the riparian zones may also be likely.
Forest roads	NO	There are no new forest roads planned for construction for the period of the plan however some upgrading and maintenance of the existing road network may also be required to facilitate the harvesting operations, up to around 10000m. An assessment of the roading network throughout the National Forest Estate has been undertaken to see if a Construction licence from SEPA is required for works; none of the planned roading projects within the forest block will exceed the threshold requirements. All road construction would adhere to best practice regarding protection of the water environment from contamination and maintain natural water pathways. Currently all timber haulage from the block uses existing forest road and the minor county road network as a haulage exit route west to the minor county road.
Forestry quarries	YES	In real terms only Glenwhan east and Glenwhan west are the principal active quarries within the LMP. Stone material for forest road upgrade and maintenance to service the planned timber harvest will be sourced from these quarries.

### 3.9 Tolerance table

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



## 4.0 Management Proposals – guidance and context

General
<p><b>General</b></p> <p>The Glenwhan LMP is an isolated plantation block essentially surrounded by an intimate mix of open hill ground and agricultural land.</p> <p>Totalling 652.9ha it lies to the north of the main A75(T) road above Dunragit village and some 11km east of Stranraer, Dumfries and Galloway.</p> <p>The nearest, and only other, FLS plantation block in the area is the Torrs Warren LMP around 3km to the south.</p> <p>The plan area comprises mainly mixed conifer woodland with smaller areas of broadleaf. The forest is FSC certified and the management seeks at all times to meet the UK Woodland Assurance Standard.</p> <p>This plan is a revised submission of an earlier 10 year plan approved in 2011 (a single year extended approval until 31 March 2022 by Scottish Forestry was subsequently agreed) and presents our felling and replanting proposals and our forest road formation and upgrade plans for the next ten years (2021 to 2031) in detail.</p> <p>The initial ten year period is important because it relates to the parts of the LMP that require specific approvals from Scottish Forestry (South Scotland Conservancy) however longer-term management (beyond 2031) of the plan area is also considered, mainly to provide context and to indicate the direction of travel.</p>
<p><b>Silviculture</b></p> <p><b>Clear felling</b></p> <p>With large swathes of the Glenwhan block clearfelled under previous approved plan iterations, the projected harvesting programme for the 10 year period of the plan would notionally have been quite modest. However with a management focus on removing the remaining areas of <i>P ramorum</i> infected larch, a focus on areas designated for peatland restoration and targeted resilience felling along the railway line, some 205ha (around one third of the plan area) is scheduled for clearfell.</p> <p>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.</p> <p><b>Some steep slope working may be required in coupe 30005 adjacent to the railway line.</b></p>
<p><b>Other clearfelling</b></p> <p>See section 3.4 Other tree felling in exceptional circumstances</p>
<p><b>Thinning</b></p> <p>The approach to thinning will be influenced by each stand's species composition, structure and management objectives and with generally moderate DAMS scores (Detailed Aspect Method of Scoring) the block appears quite thinnable.</p>

## General

Previous attempts at thinning however suggest that is not the case and future efforts will generally be restricted to areas to the west (see Map 5) with opportunities for timeous thinning of second rotation crops the block assessed as crops reach pole stage.

## LISS

Previous plans suggested Low Impact Silviculture Systems (LISS), essentially Group Shelterwood would be possible across the plan area however with little previous preparatory group felling work having taken place most of the remaining mature conifer crops have now reached a stage where future thinning / group felling would almost certainly compromise stand stability removing that prospect.

Second rotation crops may offer future opportunities for the conversion of proposed clearfell coupes to Group shelterwood.

Group Shelterwood treatment will generally comprise:

- progressive thinning
- clearance of windthrow patches
- small-scale felling patches of up to 0.5ha to stimulate restructuring and promote regeneration of target BL tree species

## Long term retentions / minimum intervention / natural reserves

Across the plan area there are several coupes containing both mixed conifer and or broadleaf earmarked for Long Term Retention, Minimum Intervention and Natural Reserve.

Coupe 30030 comprises an area of 2011 Scots Pine that will retained when the surrounding coupe (that contains larch) is clearfelled and initially managed as Long Term Retention.

Several other coupes containing both broadleaf and conifer have been identified for Minimum Intervention in the short to medium term and, if a biologically rich native woodland community eventually develops here, they can be later reclassified as a Natural Reserve if required.

Management will be essentially be restricted to:

- Wildlife management
- removal of invasive exotics/non-native tree regeneration that could reduce value for biodiversity
- actions to benefit specific species of conservation priority
- fire fighting

Natural Reserves are predominantly wooded areas managed in perpetuity by minimum intervention where conservation of biodiversity is the prime objective. A single coupe only is currently identified, coupe 30501 contains some mature broadleaf woodland and lies adjacent to external Ancient Semi Natural Woodland remnant to the east of the block.

## Tree species choice

Our restocking proposals for clearfell sites have been selected by ESC, on-site observations and the previous rotations. Where appropriate, species diversification has been undertaken utilising both BL and alternative conifers. Species choice also meets the criteria for restocking under UKFS, UKWAS and internal FC policy.

## General

Restocking for the first two phases of the LMP comprise coupes previously felled outwith this plan due in phase one and proposed coupes for clearfell under this plan due in either phase one or two. Restocking is limited to these sites and where the opportunity arises, will accommodate natural regeneration. Planned restocking will avoid the use of larch focussing on broadleaf woodland species to bring additional species diversity to the block. Native small seeded broadleave will comprise most of the proposed broadleaf restocking as well as some native Oak to enhance areas adjacent to neighbouring areas of Ancient Woodland.

Ground preparation and planting of quality nursery stock of appropriate provenance will take place.

## Natural regeneration

There is little in the way of natural regeneration (where no ground preparation or disturbance will occur) across the block. Where it does occur the possibility remains however that regenerating trees may not provide sufficient stocking density and supplementary restock will be necessary.

## New planting

There is no new woodland creation planting scheduled for the plan area.

## Peatland restoration

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 with therefore a presumption to restore.

Currently there is second rotation conifer plantation on significant areas of 10b peat bog within the plan area particularly towards the northern central boundary.

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.

## Protection

## General

The current Region Deer Management Strategy is such that the deer population will be managed by shooting either internal or through lease (including the use of SNH 18(2) night shooting authorisations (if required and granted)) to facilitate the long-term establishment of broadleaf and soft conifer trees without recourse to physical protection. An annual cull, set using a variety of data including population counts, fecundity and mortality rates and damage levels, will allow us to meet current objectives.

Local FLS control through an increased Red Deer cull, focused on the mature and thicket crops, has had a positive impact on damage levels experienced throughout some mature crop in the block. This activity has however resulted in fairly large numbers of Red Deer moving and building up in numbers on neighbouring land to the south and west of Glenwhan. We continue to try and work with neighbours and aim to re kindle the deer Management Group in the area to try and increase pressure on them to also cull the deer. The design of open space areas for effective future control is key to the planned restock. Additional areas to the south and on the steeper ground to the east (specifically the sanitation strip adjacent to the railway line) will provide useful vantage points for deer control and extraction along with other ride line style open breaks that can double up as deer glades for species that are reluctant to break cover.

Proposed restock areas 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 tubes may be used. Establishment will be assessed at year five after restocking has been completed and if used, plastic tree guards will be removed and recycled once trees are satisfactorily established and less susceptible to browsing pressure.

Grey Squirrel has been detected close to the area with potential incursion in the block being monitored through sightings. Organisations such as Saving Scotland's Red Squirrels (acting under Scotland Wildlife Trust) and local squirrel groups are subsequently notified and if seen as a significant threat, these groups may then initiate further monitoring and or control actions as required.

## Road operations

Roads access is moderately restricted with the minor road C2W from Castle Kennedy to New Luce not really suited for articulated vehicles (currently categorised as Consultation route in the D&G Timber Transport Group Agreed Routes Map for Timber Haulage) and used for timber haulage to access the A75(T) main trunk roads. The Area Engineer Roads and Transport Division should be consulted at least 5 weeks prior to start of operations. An assessment of the roading network throughout the National Forest Estate has been undertaken to see if a Construction licence from SEPA is required for works; none of the planned roading projects within the forest block will exceed the threshold requirements. All maintenance works will adhere to best practice regarding protection of the water environment from contamination and maintain natural water pathways.

## General

To avoid the risk of using rock of unsuitable chemical content and to reduce the impact of stone transportation, stone material for forest road upgrade and other new construction to service the planned timber harvest will be sourced from three local active quarries, principally the Glenwhan 2(NX1455 6113) & 3(NX1686 6127) quarries to the east and west of the block.

Development quarry work over the lifetime of the plan will inevitably be required to provide a regular source of material for forest road maintenance. Where this is undertaken all works shall be done in accordance with The Quarries Regulations(1999). Additional quarry development proposals outwith the agreed tolerances will be submitted to FCS for approval prior to any work taking place (see Tolerance table Appendix II).

To avoid diffuse pollution arising from rainfall derived leaching, appropriate soakaways are in place in the main quarries and all construction work will comply with the general binding rules specified in the Water Environment (Controlled Activities) (Scotland) Regulations 2011.

District policy is to target Irish pipe bridges and other inappropriately designed structures for removal as they are known barriers to fish migration; there are no known such structures identified in the Glenwhan LMP area.

## Public Access

Although the block is not considered core for recreational development, there are two Core paths present as identified in the Dumfries and Galloway Core Paths Plan. The Southern Upland Way (SUW) (core path 504) runs along the northern edge of the block and the Glenwhan Gardens trail (core path 362) links the plan area south to external Recreation facilities. FLS will continue to liaise with the Southern Upland Way Ranger service regarding route enhancement.

Areas centred around these routes fall into our interactive and passive visitor zones (see Key Features map 2) where Recreational considerations will impact on our management choice.

## Biodiversity

### Designated sites

See Native Woodland below for Ancient Semi Natural Woodland sites.

### Native woodland

Ancient Semi Natural Woodland (including PAWS sites) is present.

Glen Plantation to the south east is recorded in the Ancient Woodland Inventory as Long Established Woodlands of Plantation Origin (LEPO) (class 2b).

There are other areas of scrub BL and associated woodland ground flora within the block however they should, as far as possible, be retained at time of conifer clearfell to provide focal points for future BL expansion (see local District BL policy document). Of particular interest are wet flat areas where opportunities to create Wet Woodland with open space, Willow and Alder may arise.

Whilst BL natural regeneration of these areas is not generally expected, it will be encouraged where present.

## General

### PAWS

The area of PAWS to the south of the plan area (Glen Plantation), currently planned for restoration, is critically under threat from shading by the existing conifer crop and also by herbivore impact.

Originally under a Group Shelterwood regime, the revised planned clearfell of larch during phase 2 of the plan period will initiate the PAWS restoration process hopefully facilitating an enhancement and buffering of the site and future colonisation of the area by the surrounding broadleaves. The situation will be monitored and should undesirable non-native species colonise the site then further clearance and enrichment planting may be required with a low density of tree and shrub species associated with high biodiversity (e.g. oak, aspen, hazel).

The restored site will ultimately resort to a Natural Reserve management system.

### Protected and priority habitats and species

Red Squirrel (UKBAP) is present within the block at low densities but given the valley connectivity that the block has to surrounding broadleaf woodland up the Water of Luce valley the plan area is not considered as a "Red Squirrel Stronghold site". Stronghold sites are areas designated by the Scottish Government as sites where Red Squirrel can be assisted to survive through positive management practices.

For now, our plans to continue with conifer restock and additional BL areas (generally small seeded) will ensure that the block does not further disadvantage Red Squirrel. If present, organisations such as Saving Scotland's Red Squirrels (acting under Scotland Wildlife Trust) and local squirrel groups may provide monitoring and or control actions as required for Grey Squirrel.

The Glenwhan LMP is not considered to be part of the region's core area for Black Grouse (red listed UKBAP species) however the species were reportedly present in and around the plan area prior to canopy closure. While numbers have dissipated as tree canopy closure has increased, this plan iteration presents a great opportunity to provide for the species through enhancing the wetter brood rearing areas in the valley floors with scattered broadleaf planting and increased amounts of open ground, by creating habitat linkages between valley floor and the woodland edge and by establishing stands of native broadleaf species for winter browsing favoured by the species.

The presence of Hen Harrier to the northwest and outwith the boundary of the block is noted (cited species in Glen App and Galloway Moors SSSI). The projected increases in open ground and Native Broadleaf cover should benefit the species and potentially facilitate future use of the plan area.

Numerous records of Otter (EPS/UKBAP species) suggests that the existing riparian habitats are well used by them. Increased BL cover and our aim to keep sections of stream banks permanently vegetated and allow them to persist throughout subsequent rotations will increase both the availability and connectivity of suitable breeding and feeding habitat. These measures should also benefit Water voles (UKBAP species) that may also be present.

## General

UKBAP fish species (Brown trout, Sea trout, Atlantic salmon and European eel) should all benefit from our continued positive riparian management.

Badgers use the block. Sett locations will be identified and protected with conifer retentions during harvesting operations.

## Open water

Glenwhan Lochs / Lochs of the Eyes currently lie in an area of open ground towards the northern boundary of the LMP and central to the area identified for peatland restoration. For maximum benefit wetland areas will be coincident with other open space areas to provide important wildlife habitat.

All restoration and other work undertaken will comply with the Forests and Water Guidelines (pending Fifth Edition) and our additional guidance "Managing Forest Ops to Protect the Water Environment (2019)".

## Open ground

Planned open space tends to be a mixture of permanent open space centred on heritage and key habitat sites, open areas along the main watercourses, deer management areas and of course proposed peatland restoration areas. Apart from the significant area of proposed peatland restoration there is only a modest increase in open ground over the plan period and following 10 years. Generally the future access and use of the open ground areas will be minimised however specifically, post clearfelling, there will be no conifer restocking within 20m (and on occasion up to 50m) within either the main watercourse riparian zones or any Groundwater Dependent Terrestrial Ecosystems (GWDTes) in particular springs/ flushes identified.

Advice and comments from the Galloway Fisheries Trust and SEPA will be taken into account when planning the management of natural regeneration and through the delivery of this Land Management Plan (LMP).

For areas designed as permanent open space, riparian zones and broadleaf areas there is an expectation that some areas will fill in with natural regeneration of both conifers and broadleaves. While all Native Broadleaf will be retained FLS will manage other natural regeneration so that any negative impact upon designated, protected or promoted habitats, species, landscapes and catchments within or adjacent to the LMP area is minimised and where possible mitigated.

There are three active Glenwhan quarries identified on the features map. There are no quarry developments planned for the period of this plan and they, along with other smaller inactive/disused quarry sites, will remain as areas of permanent managed open space.

## Dead wood

Whilst the Glenwhan block has generally low deadwood potential, site level retentions of broadleaf and occasional conifer to the east and west along with their associated expansion areas and areas within riparian features may potentially provide an increased expectancy for deadwood in the block.

## Invasive species

## General

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. Control measure treatments for areas of *Rhododendron ponticum* have previously taken place. Monitoring is ongoing and persistent identified groups will continue to be treated as per the Region's INNS Policy.

## Plant health

Dothistroma Needle Blight (DNB) has been identified on Corsican and Scots Pine crops across the Region although at present is only causing mortality in CP.

There is little evidence of DNB within the plan area (modest areas of pine) however the pathogen has been identified in other nearby forest blocks and its wider presence in the block cannot be ruled out.

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 district. 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 conifer restock areas are assessed, weevil numbers are recorded and along with other site data the optimum time for site restocking is determined. 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 2.7 as agreed with SF).

Phytophthora ramorum 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 a Statutory Plant Health Notice (SPHN) but are now generally treated under a "Management zone / Risk Reduction Zone" agreement (removal to be carried out as soon as practical within the period of the plan). Areas of infected mature larch have already been identified for removal.

Heterobasidion annosum is not endemic in the block. Stump treatment with urea post felling may however be required in the areas of poorer site types.

Ash dieback Chalara fraxinea is present in the area around the LMP. Monitoring is ongoing and identified specimens will be treated as per the FCS published Chalara Action Plan for Scotland in 2013.

## Historic Environment

Most of the plan area was purchased in the early 1950s in two acquisitions 262 Dunragit I and 347 Dunragit III. Two further smaller acquisitions completed the area, 1111 Old Hall Farm in 1973 and 1342 Craig Farm (pt) in 1980.

Glenwhan LMP borders a river valley and as might be expected contains several examples of human settlement, particularly on the drier, more improved sites.

## Designated sites other Heritage features

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



## General

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 (RHAMP) 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 map and machine operators will be fully briefed on their responsibilities prior to all sites being worked.

Whilst there are no Category A listed buildings in the plan area, there are however three Scheduled Monuments (see Appendix V). Our future intention is to maintain the Scheduled Ancient Monument sites in areas of buffered open space and to visit them on an annual basis with any work required programmed on a 5 year cycle. Where appropriate, opportunities to further open up the areas around the designated scheduled monuments will be explored in consultation with HES (Historic Environment Scotland). Other minor heritage features are also present throughout the plan area. 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 (see Appendix V).

## Landscape

Glenwhan lies within a pastoral landscape. Whilst the plantation is highly visible from the Stranraer / Girvan rail link and Glenluce to New Luce road to the east, it does not constitute a dominant feature in the landscape as it is generally viewed intermittently in the distance from the surrounding public road network.

The Dumfries & Galloway landscape assessment classifies the plan area as "Type 17 Plateau moorland", where much of the landscape type is flat or very gently undulating with an open and exposed character bordering to the east "Type 3 Shallow flat bottomed valley" a valley landscape of shallow depth and consequent lack of enclosure. These valley

## General

sides contain extensive mixed and deciduous woodland that gently gives way to moorland as elevation rises.

The December 2000 Galloway Forest Framework classification does not extend west of the Water of Luce however there are similarities with "Blad 7 Bladnoch Forestry" the furthest west classification type suggesting that restructuring, increased open space and age diversity and water quality issues are important.

With few dominant features in the gently sloping woodland, landscaping will focus internally on greater areas of open space along forest roads and watercourses and externally through smaller coupe sizes, increased BL restocking and where practical extended rotations.

Structural diversity will be achieved by maintaining at least a 2m height differential between adjacent coupes delivered by planning at least 8 to 10 year gaps between felling dates.

## People

### Neighbours and local community

During the development of this plan we have actively consulted with the local community and other stakeholders.

## Soils

### Ground Preparation

On most clearfell sites low risk intrusive techniques to minimise soil and carbon losses to air and water such as mounding or inverted mounding will be preferred, but hinge and trench mounding may also be used as site dictates. No ploughing will be undertaken due to the excess carbon release on peaty soils and the development of asymmetrical root plates that impact on long term stand stability.

Throughout any PAWS restoration, minimal ground disturbance is critical on sites with a continuity of woodland cover as substantial disturbance through mounding etc. can negatively impact on important and irreplaceable components of Ancient Woodland soils. Restocking will involve internal staff or external planting operators utilising trees of appropriate provenance sourced from various nurseries and tube shelters will be used when required.

### Deep peats

A significant area of 10b soil types (see soil map 09), centred on the area around Glenwhan Lochs / Lochs of the Eyes, has been identified as candidate deep peat areas for peatland restoration.

## Water

### Drinking water

Not applicable.

The small property at Craig Crossing to the southeast used to rely on the feed pipe supply through the plantation, it is no longer in use as the property is on mains water (details are still held in the District GIS layer and identified on the Features Map).

### Watercourse condition

## General

The plan area lies within two recognised drainage areas, the Chlenry Burn, Galloway Coastal catchment of the Solway Tweed River Basin district to the west and the Water of Luce (downstream from the Cross Water of Luce), Water of Luce catchment of the Solway Tweed River Basin district to the east. The main watercourse within the Glenwhan block itself is the Craig burn to the north that drains east the Water of Luce.

Overall management of waterbodies and catchment areas is a key environmental issue and we aim to comply with best practice in minimising sediment release from any forest operations and preventing any deterioration in their ecological status / potential.

The overall condition of both watercourses is currently considered good with good water quality, physical condition and water flow and high freedom from invasive species and fish migration and is projected to remain so therefore specific treatments that exceed water guidelines recommendations in Forest and Water guidelines 5th edition will be made to create significantly wider aquatic and riparian zones to provide long term protection against disturbance from future forestry operations and loss of light from canopy closure (a minimum of 20m for all significant burns).

The significance of the potential increase in peak flow will reduce as more water joins from other tributaries and the peak flow is diluted. Clearly if whole water catchments were being proposed for planting this would require greater examination and consideration.

Diffuse pollution from clearfell and restocking proposals is a threat to maintaining good water quality. For additional future site stability and water quality benefits, planned increases in the area of open ground, the restocking of permanent broadleaf crop that will result in a greatly reduced operational impact and the proposed enhancement of riparian zone buffers throughout the plan area, following all best practices and guidance during forest operations, should contribute towards maintaining and ameliorating the current good ecological status of the R Luce catchment.

All work undertaken will comply with the Forests and Water Guidelines (Fifth Edition) although in this important catchment riparian buffer zones will be enhanced.

None of the watercourses in the block have figured in the Region's water sampling programme monitoring.

## Flooding

There is no part of the plan area that lies within or adjacent to a Potentially Vulnerable Area (PVA) and no Natural Flood Management Actions have been identified for the area. FLS has considered flood risk of peak flows at the exit of the site and also further downstream. It is appreciated that new planting with associated operations of draining and ploughing can give rise to a very slight increase in peak flow, there are however no additional areas of new planting proposed for this LMP. With well-designed and significant riparian buffers and, where appropriate, forest wetland creation to minimise the effect of our projected felling across all plantation land, it is anticipated that our operations within the Glenwhan LMP will have no negative impact on the minimal existing flooding risk within the drainage area.

## General

Liaise with statutory bodies over catchment management and Natural Flood Management (NFM).

## Renewables

Currently there are no renewable developments planned for the Glenwhan LMP unit however the possibility remains that the area could be subject to future windfarm and/or mineral extractions applications.

Forestry and Land Scotland (FLS) is working to develop the wind and hydropower potential of the land and forests that we manage for the Scottish Ministers. Our aim is to ensure that the potential of the National Forest Estate is developed and managed in ways that

- contribute to the Scottish Government's renewable energy target
- maximise financial returns from the National Forest Estate
- secure benefits for local communities and
- achieve a reasonable and sustainable balance with other FLS objectives

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## Appendix I: Description of Woodlands

<b>General Site Description</b>
<p>Previously part of the old Bareagle Forest, the Glenwhan Land Management Plan (LMP) covers a relatively isolated forest block to the north of the main A75(T) road above Dunragit Village and located around 10km east of Stranraer, Dumfries and Galloway. The block is quite dissimilar to its nearest FLS neighbours, Torrs Warren (low priority timber production with high recreation and environment considerations) and Knock of Luce (small size dispersed blocks of commercial conifer with poor access) and accordingly stands alone as an LMP unit.</p> <p>This small scale plan of 652.9ha is virtually surrounded by agricultural and open hill ground. The plantation element of the plan area comprises mainly mixed conifer crops, principally Sitka spruce of both first and second rotation crop.</p> <p>Significant planned clearfelling has already taken place throughout the block along with recent sanitation felling of plantation larch and restructuring is well advanced.</p> <p>Part of South Region the plan area is not part of the Galloway Forest Park but does lie on the edge of an area designated an ESA and also is within 0.75km of the Glen App &amp; Galloway Moors SSSI/SPA.</p> <p>Whilst the eastern edge of the block is highly visible from the Stranraer / Girvan rail link, little of the remainder of the plantation is visible from public roads.</p> <p>This plan is a revised submission of earlier approved plans.</p>
<b>Topography</b>
<p>The topography is typically flat or gently undulating with elevations rising from 100m in the south up to 160m at Craig Fell in the east. Slopes are also somewhat steeper in the east where the plantation reaches down to the Water of Luce.</p>
<b>Geology and Soils</b>
<p>Solid geology comprises sedimentary greywackes and shales of the Ordovician / Silurian period extensively modified by glacial deposition and erosion. This combination has resulted in generally poorer soil types with peaty gleys and peat bog, both flushed and unflushed, dominating. There are also significant areas of shallow upland brown earths and skeletal soils to the east and south of the block.</p>
<b>Climate</b>
<p>The south west of Scotland has a predominantly mild windy oceanic climate influenced by the Gulf Stream. Annual rainfall in the block ranges from 1200–1400mm mainly falling during the winter months October to February.</p> <p>Guidance on Climate Change suggests that the Region can expect an increased frequency of extreme weather events with the climate remaining wet and mild. Whilst there will be little impact on this LMP block with regard to primary species choice (mainly broadleaf) there may be future threats towards the maintenance of wildlife habitat networks.</p>
<b>Hydrology</b>
<p>The main river catchment is the Water of Luce, an important salmonid river, lying to the east of the block. Two of its feeder burns, the Craig Burn along the northern boundary</p>

<b>General Site Description</b>
<p>and the unnamed burn running through Glen Plantation to the south drain the block. A small-unnamed burn flows southwest from the block to the Piltanton Burn that again feeds the Water of Luce.</p> <p>The Water of Luce shows good to high values for access for fish migration, water quality, water flows and levels and freedom from invasive species in the 2014 SEPA classification assessment, classifications that are projected to persist on to 2021.</p> <p>All watercourses will be afforded adequate protection from forest operations in line with Forests and Water Guidelines (Fifth Edition).</p> <p>Management of water catchment areas is a key environmental issue and the district has consulted regularly with both Galloway Fisheries Trust and SEPA and in the past undertaken water sampling in the Luce catchment.</p>
<b>Windthrow</b>
<p>The James Hutton Institute "Land Capability for Forestry" classification (previously Macaulay Institute) for the plan area is principally F5, land with limited flexibility for the growth and management of tree crops with small additional areas of F4, land of moderate flexibility. The terrain and poor soil conditions generally restrict species choice.</p> <p>There is evidence of blown trees across the block with the risk of windthrow moderate to high, accordingly no thinning has taken place over the latest plan period.</p>
<b>Adjacent Land Use</b>
<p>The plan area comprises a solitary commercial forestry block almost entirely surrounded by open ground. Most of the northern boundary is flanked with poor upland hill ground while to the south and west it becomes better quality arable land. To the east lies the main Stranraer to Ayr railway line.</p> <p>Aside from the issue of windthrow trees potentially impacting on the railway line (see previous comment on planned actions) there is little or no conflict with these neighbouring interests.</p>
<b>Access</b>
<p>The sole access to the plan area for timber haulage is west from the A75(T) along the Castle Kennedy to New Luce minor county road C2W (route currently categorised as a consultation route in the Timber Transport Agreed Routes Map Scotland).</p> <p>The Area Engineer Roads and Transport Division are consulted as part of the LMP consultation process and will be consulted at least 5 weeks prior to start of any operations. Within the LMP forested areas operational access is generally good although there may be a requirement for additional ATV tracks for future deer control (all access tracks will avoid key habitats).</p> <p>There is no planned new roads construction for the period of this plan however road upgrades to facilitate harvesting operations will be required (these will be assessed as part of the operational assessment). Where future proposed new construction routes potentially impact on historic environment assets, as far as possible any remains (eg. farmstead at NX14526114 ) should be avoided and any spoil removal minimised.</p> <p>All proposed / planned forest roads are identified on the suite of LMP maps.</p>

Location	Map 1 Glenwhan-Location map
Topography and Landscape	Map 2 Glenwhan-Key Features map
Public access	Map 2 Glenwhan-Key Features map
Historic environment	Map 2 Glenwhan-Key Features map
Biodiversity	Map 2 Glenwhan-Key Features map
Analysis and Concept	Map 3 Glenwhan-Analysis map
Management	Map 4 Glenwhan-Management map
Thinning	Map 5 Glenwhan-Thinning map
Future Habitats and Species	Map 6 Glenwhan-Future Habitats and Species map
Roads Operations and Timber Haulage	Map 7 Glenwhan-Roads Operations and Timber Haulage map
Woodland composition	Map 8 Glenwhan-current woodland composition
Geology and Soils	Map 9 Glenwhan-Soils map
Windthrow	Map 10 Glenwhan-DAMS map



## **Appendix II: EIA screening opinion request form**

See separate form.



## Appendix IIb: Supporting information for EIA screening (deforestation)

### Summary

- The Glenwhan Lochs/ Loch of the Eyes are blanket bog habitat – listed on the Scottish Biodiversity list and a UK BAP Priority Habitat: **the site is a priority for habitat restoration on ecological grounds.**
- Afforestation is listed as one of the key threats to peatland bog habitats, **having a significant impact on their conservation status at a National level** (*Control of Woodland Removal Policy –Annex 3: woodland removal without a requirement for compensatory planting*)
- Restoration of lowland raised bogs and blanket bogs is a key action from the Scottish Biodiversity Strategy: **Government agencies have a duty to further the protection and enhancement of these under the Nature Conservation Scotland Act (2004).**
- Remnant bog vegetation is present in parts of the site indicating the **site potential for restoration to be good**
- Forest-to-bog restoration techniques have improved greatly over the last few years, and **FLS is regarded as one of the leading organisations in developing best practice and delivering positive restoration programmes:** we would anticipate a more rapid recovery of water table (to suppress natural regen) and establishment of bog vegetation in restoration sites than experienced previously.
- The FCS Practice Guide '*Deciding future management options for afforested deep peatland*' deals with afforested peatlands that are not going to be restored for biodiversity reasons, and **states that replanting must be justified** by considering if the crop will achieve YC8 or more for SS: much of the area around Glenwhan Lochs/ Lochs of the Eyes is **matrix of deep peat types 10b (Scenario A peat edaphically unsuited to woodland) and 11b (Scenario C peat – potentially plantable as SS/ALP at 50:50 with PK added on well-drained sites.** Strategic ESC indicates these areas are at best marginal for commercial conifer.

### 1. Background

This purpose of this document is to provide supplementary information to support the EIA screening application for the potential deforestation in the Glenwhan LMP submission

## 1. Background

regarding large-scale peatland restoration in the Glenwhan Lochs/Lochs of the Eyes area including:

1. A description of the conservation importance and the potential of the site to be restored, and;
2. A plan for the restoration operations and ongoing maintenance and monitoring.

This document also demonstrates alignment with the following key SG/SF policy & practice:

- The Scottish Government Control of Woodland Removal Policy – in particular guidance on woodland removal without a requirement for compensatory planting
- FCS Practice Guide - Deciding future management options for afforested deep peatland
- Forestry on Peatland Habitats (FCS, 2000)
- UK Forestry Standard

## 2. FLS approach to peatland management

In the context of the global climate and biodiversity crises there is a great deal of focus on peat soils and habitats. Science has established that peatland in good condition is a significant carbon store – whereas all modified and degraded peat is a significant source of greenhouse gases.

Restoration of blanket bogs and lowland raised bogs is a key action from the Scottish Biodiversity Strategy, as both habitats are included on the Scottish Biodiversity List. Beyond their value as a carbon store, peatlands contain a huge diversity of organisms. Planting trees on peat leads to a fundamental change in the ecosystem<sup>1</sup>.

FLS is working on a Strategy for Peatland but further surveys, analysis, and consultation is needed before this will be concluded. In the meantime, in order to conserve biodiversity and carbon, FLS is protecting peatland and reducing carbon emissions. FLS being a Scottish Government agency, also has an added 'Biodiversity Duty', as stated in the Nature Conservation Scotland Act (2004). Protection of conservation values is mentioned in UKWAS and principles of sustainability are outlined in UKFS. What this means is that for afforested peatlands, restoration is considered first, before considering and justifying replanting.

This is set out in "Making future management decisions of afforested peatlands Practice Guide". It deals with afforested peatlands that are not going to be restored for

<sup>1</sup> Payne et al., 2018: The future of peatland forestry in Scotland : balancing economics, carbon and biodiversity. Scottish Forestry. pp. 34-40.

## 2. FLS approach to peatland management

biodiversity reasons, and **states that replanting must be justified** by considering if the crop will achieve YC8 or more for SS. The default is not to replant, unless there is evidence it will achieve a good growth rate of harvestable timber. If it doesn't, it is unsustainable, as the three legs of the sustainability stool are not there: Economic, Environmental, Social. A slow growing crop would not result in a profit, it would be acting as a carbon source and contributing to climate change, and society would be disadvantaged/threatened, based on current scientific information.

## 3. Conservation status and restoration of Glenwhan Lochs/ Lochs of the Eyes

The areas around the Glenwhan Lochs/ Lochs of the Eyes are blanket bog habitat (listed on the Scottish Biodiversity list and a UK BAP Priority Habitat) and are therefore a high-priority peatland restoration target for FLS.

Over time the conifer plantation has contributed towards the degradation of this habitat type. The continued presence of plantation will exacerbate the loss of water supply to the bog surface through evapotranspiration, further impeded by tree interception and reducing water availability by up to 40%. Additionally the weight of the trees and the loss of water from the peat can cause the peat surface to subside consequently impacting on the hydrology of adjacent areas of peat bog<sup>2</sup>.

The restoration potential of the site is considered to be good due to the wet ground conditions and remnant bog vegetation that can be seen in places.

Scottish Government now fund FLS directly to conduct peatland restoration projects to help achieve SG's 2045 'net zero emissions' target and address the 'climate emergency'.

FLS are considered a 'safe pair of hands' in peatland restoration, consistently able to deliver large-scale restoration projects within the time scales required.

Forest-to-bog restoration techniques are constantly evolving, and FLS have been prevalent in the implementation of novel methods to address the unique challenges these sites often present: drains, plough furrows, peat cracking, peat piping, harvesting brash, and stumps. Contemporary methods often utilise a combination of techniques, including ground smoothing, stump inversion, drain blocking and backfill trenching which results in a very high water table capable of resisting incursion by conifer regeneration. Further information on restoration methods is provided below.

<sup>2</sup> Lindsay et al., 2014: IUCN UK Committee Peatland Programme Briefing Note 4 – Ecological Impacts of Forestry on Peatlands

#### 4. Restoration plan for Glenwhan Lochs/ Lochs of the Eyes

Part of the long-term vision for the Glenwhan LMP is the restoration of priority bog habitat for multiple benefits. As such, this falls under the category of 'Woodland removal without a requirement for compensatory planting', Annex 3 of the Scottish Government's policy on control of woodland removal: implementation guidance (February 2019), under the objective 'Enhancing priority habitats and their connectivity'.

Objectives within the LMP unit include:

- Expand the area of designated peatland habitat by applying restoration treatments that encourage travel in the desired direction towards priority habitat (restoring it to function as a peatland within 30 years)
- Protect carbon storage in peat soils and maximize future carbon sequestration by peatlands
- Improve water quality, help regulate flow and monitor the impacts of treatments on water quality

#### Operational methodology

In many areas of the UK, large expanses of deep peat blanket bog have been historically drained and replaced with trees for commercial forestry. This afforestation has resulted in the degradation and loss of large areas of peat bog, however, with a greater interest in soil carbon and realization that many of the trees on deep peat are vulnerable to growth check and wind-blow, there is a shift to restore these low return forests back to open bog. 'Traditional' methods of achieving hydrological restoration on peatlands, such as ditch-blocking with dams, can help on damaged open bog habitat, but on previously afforested sites intensive intervention is often required. The vast majority of these sites retain a legacy 'ridge' and 'furrow' pattern, with either single or double ploughed furrows varying from ~30 cm up to 1 m depth in extreme cases. These furrows act as drainage conduits, thereby lowering the natural water table and drying out the peatland.

FLS have been a key organisation in developing 'ground smoothing and stump flipping' methods, which aim to re-profile this uneven surface to restore the natural surface topography on previously afforested sites. This can be achieved by flattening any plough ridges and/or infilling furrows which allows a greater proportion of the planar surface to be closer to the water table, thereby promoting the development of peat-forming species (i.e. *Sphagnum* mosses) and reducing the opportunity for tree regeneration that occurs on uneven/drained sites. These improved techniques result in much better surface re-wetting in previously forested peatlands and will be applied across FLS peatland restoration sites where appropriate. This is often used in conjunction with an element of

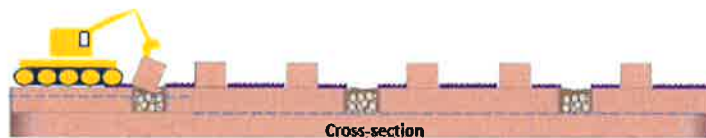
#### 4. Restoration plan for Glenwhan Lochs/ Lochs of the Eyes

drain blocking and backfill trenches (see later in this document) to achieve the best results.

The notable advantage of ground smoothing and stump flipping is that the vegetated surface of the peat is left upper-most, rather than inverted, which helps minimise the cover of bare, exposed peat. Where there are bigger and more solid wood stumps, the machine will invert the root plate into the furrow. The intact vegetation between the areas of the two plough ridges will assist with re-colonisation of bare peat where the ridges have been removed. Once the 'mining' aspect of the work has been completed, the machine then cross-tracks across the furrows to further flatten out any topography or brush that is still standing proud (Figure 2).



The 360° LGP excavator traverses the furrows at right angles and uses the bucket to compact any existing brush deeper into the furrow



The soft peat material of the ridge along with any old stumps are nudged, lifted and/or inverted, or dragged into the furrow, and then compacted to minimise any voids



Once the 'mining' aspect of the work has been completed, the machine then cross-tracks across the furrows to flatten out any topography or remaining brush that is still standing proud

Figure 2. Representation of the 'ground smoothing & stump flipping' technique.

#### Environmental protection

Surface management techniques, such as stump-flipping and cross-tracking, can potentially create areas of bare peat prior to vegetation establishing, and thus pose a risk to the downstream water environment via runoff and erosion of bare peat surfaces. Stringent Pollution Prevention Control (PPC) are integral to any ground-smoothing project, including intensive management of on-site drainage, and protection of watercourses within proximity to restoration sites. This includes robust sediment management measures, particularly in areas where stump-flipping is carried out, and SEPA are keen to ensure that appropriate design and siting of silt traps is implemented at these sites.

#### 4. Restoration plan for Glenwhan Lochs/ Lochs of the Eyes

Generally, a cascade of silt traps made from plastic piling will be required on clear-felled sites, in addition to fabric dams to trap any sediment run-off. These may already be in place on recently felled sites, along with lengths of drain that have been dammed, as part of pre-felling mitigation. If drains are not blocked or silt traps installed in preparation for harvesting operations, then this will be addressed prior to ground-smoothing works commencing. Buffer zones of at least 20 m will be employed to mitigate against elevated levels of dissolved organic carbon, suspended solids, phosphates or nitrates from entering any river, burn, ditch, or wetland, towards which the land drains.

##### **Machinery specification**

Ground smoothing techniques require the use of suitably equipped, low ground pressure (LGP) tracked excavators to allow safe working practice on wet and unstable terrain. FLS specify 360° LGP excavators on 1100 mm to 1400+ mm track pads, using wide toothed digging buckets, to achieve an average ground pressure of  $\leq 3$ psi.

##### **Backfill trenching**

Backfill trenching will be used where appropriate. Some afforested peatlands have suffered from surface cracking of the peat due to water deprivation which, with root structures, can lead to underground 'pipes' forming. These act as a conduit to dissolved and particulate organic carbon loss, and hamper the rewetting process acting as 'hidden drains'. Forest Research have developed a method to tackle this problem, greatly improving restoration efforts. Barriers to prevent water flowing away through cracks are formed by digging trenches deeper than the cracks and repacking them with peat with or without a plastic membrane lining one side of the trench. (Lochar Mosses Longbridge Muir site was one of two sites selected by FR to conduct this trial, which saw a dramatic rise in the water table (i.e. the level the water is at underground) after applying the treatments (Figure 3<sup>3</sup>).

##### **Monitoring**

Restoration sites are monitored on a regular programme to assess the change in surface vegetation (also a proxy indicator of water table level) and for conifer regen. Drone-based aerial photography monitoring may be used.

FLS continue to work with Forest Research on the effects of restoration on water quality, FR having monitored Flanders Moss for over 10 years, and currently have a monitoring

<sup>3</sup> Russel Anderson, 2019. Online: <https://www.forestresearch.gov.uk/research/peatland-ecosystem-services/rewetting-trials/>

#### 4. Restoration plan for Glenwhan Lochs/ Lochs of the Eyes

programme in place for upcoming peatland restoration at the Tannylaggie forest block in Galloway. Best practice recommendations made in the recent publication by Shah and Nisbett<sup>4</sup> based on 10 years data from Flanders Moss will be followed.

Where natural regen is considered to be problematic to the restoration trajectory, this will be removed with clearing saws in years 5-10; however, the restoration techniques FLS now use minimise the establishment potential of regen, and it is highly unlikely that more than a single intervention would be required, if at all.

#### Lowland raised bog trial, Longbridgemuir

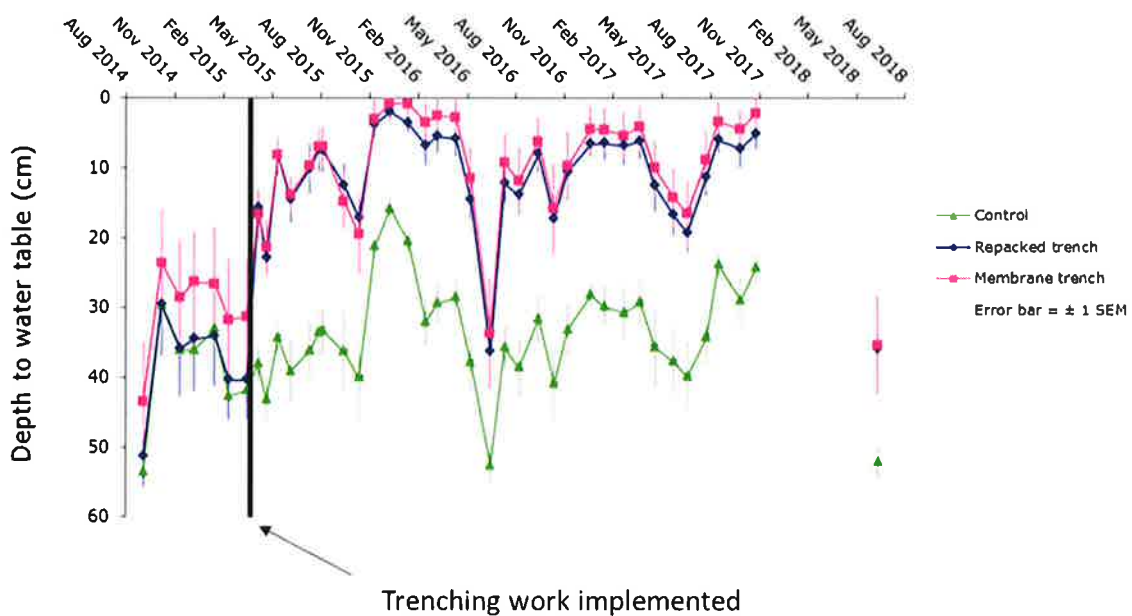


Figure 3. Results of backfill trenching trials at Longbridge Muir (Forest Research, 2019)

<sup>4</sup> Nadeem Shah, Thomas Nisbet. 2019. The effects of forest clearance for peatland restoration on water quality, Science of The Total Environment, Volume 693.

## Appendix III: LMP Consultation record

Consultee	Date contacted	Date of response	Issues raised	FLS response
SEPA: Simon Watt (Graham Andrews reply)	28 May 20	17 July 20	<p>Objection subject to issues being addressed</p> <ul style="list-style-type: none"> <li>• Post felling survey for Groundwater Dependent Terrestrial Ecosystems (GWDTEs) in particular springs/flushes (and avoid re-planting on or near any which are identified) is recommended</li> <li>• Consideration of peatland restoration, particularly along the northern margin where the management zone abuts wet heath/ peat bog habitat</li> <li>• Ensure appropriate buffers at water margins (of rivers and lochs), avoiding commercial planting at least 2m from banks. Buffers should be replanted with native broadleaf or allow natural regeneration with management to prevent regrowth of conifers</li> </ul>	Noted in LMP text



				<ul style="list-style-type: none"> <li>• Ensure any new road construction or maintenance works adhere to best practice regarding protection of the water environment from contamination and maintain natural water pathways</li> </ul>	
RSPB: Ed Tooth	28 May 20	23 June 20	<ul style="list-style-type: none"> <li>• woodland fringe / open ground habitat, particularly on the northern boundary of the block, welcomed as beneficial for Black Grouse and foraging habitat for Hen Harrier (and other birds from nearby SPA)</li> <li>• clearfell larch should be replaced with native broadleaved species</li> </ul>	Noted in LMP text	
Historic Environment Scotland: Martin Brann	28 May 20	14 June 20	<p>3 scheduled monuments identified within plan area</p> <ul style="list-style-type: none"> <li>• SM3841: Glenwhan Moor, hut circles 1000m NE of Old Hall Farm</li> <li>• SM3842: Glenwhan Moor, hut circle 840m N of Old Hall Farm</li> <li>• SM7149: Craig, cairn 700m SW of Old Hall Farm</li> </ul> <p>Sites are overgrown and require control of scrub, bracken and conifer regeneration</p> <ul style="list-style-type: none"> <li>• SUW maintenance comments</li> <li>• Potential for alternative loops</li> </ul>	Noted within LMP text and Appendix V	
Dumfries & Galloway Council: SUW Countryside Ranger Ross Gemmell	28 May 20	03 June 20		Noted in LMP text	

Dumfries & Galloway Council: Countryside Access Office Bryan Scott (Richard Masters reply)	28 May 20	02 June 20	<ul style="list-style-type: none"> <li>No issues</li> <li>Core path map provided (enhancements to paths appreciated)</li> </ul>	Noted in LMP text
Scottish Forestry: South Scotland Cons. Alasdair Hendry	28 May 20	No response		
Nature Scot: Francois Chazel	28 May 20	No response		
Galloway Fisheries Trust: Jamie Ribbens	28 May 20	No response		
CONFOR: Jamie Farquhar	28 May 20	No response		
Red Squirrels in South Scotland: Stephanie Johnstone	28 May 20	No response		
Galloway & South Ayrshire Biosphere: Ed Forrest	28 May 20	No response		

Consultee	Issues raised from LMP being on public register	South Region Response to consultee	SF consideration
SEPA	SEPA generally welcomes this plan for the diversity of species, attention to riparian zone management and the restoration of peatland all of which are	Specific issues raised <ul style="list-style-type: none"> <li>Pollution prevention; ref. adherence to most recent Forests and Water Guidelines</li> </ul>	

	<p>aimed at protecting and improving water quality. Specific issues raised</p> <ul style="list-style-type: none"> <li>• Ref. Forestry and Water Scotland Know the Rules Booklet v2 ; Good site planning for pollution prevention (map old land drains, measures to slow water flow)</li> <li>• Ref. Scottish Forestry "Cultivation of Upland Woodland Creation Sites – Applicants Guide"; incorporate low risk intrusive techniques to minimise soil and carbon losses to air and water such as mounding or scarifying (SEPA is aware that restocking will take place site however given the local acidification issues and impacts on water chemistry, ground preparation has a major role to play to meet RBMP and Water Framework Directive obligations)</li> <li>• Ref. thinning operations; need for an appropriate machine type to be used to minimise ground disturbance (limited brush availability) or possible environmental damage and/or pollution</li> <li>• All access tracks should avoid areas of shallow and deep peat to avoid disturbance of key habitat and</li> </ul>	<p>(pending Fifth Edition) within plan text</p> <ul style="list-style-type: none"> <li>• Cultivation; Section 4.0 Soils/Ground Prep refers</li> <li>• Thinning operations machinery equipment; Section 3.3 Thinning refers</li> <li>• Peat and key habitats; Section 4.0 Open Ground and Appendix I Access refer</li> <li>• Machinery wash down; noted and addressed in site specific workplan detail</li> <li>• Treeguard removal to avoid unacceptable waste disposal; Section 4.0 Protection refers</li> </ul>	
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	<p>organic compound release into surface waters</p> <ul style="list-style-type: none"> <li>• Need to power wash down machinery working within the forest block as per good practice to avoid accidental spread of invasive species (keep photographic record of wash for UKWAS audit inspection)</li> <li>• Treeguard removal plan required if tree guard tubes and/or vole guards are proposed (plastic-based guards lying around is unacceptable and constitutes improper waste disposal)</li> </ul>		
HES	<ul style="list-style-type: none"> <li>• Identified presence on site of 3 (three) Scheduled Ancient Monument (SAM) sites within the plan area that may be impacted by future operations</li> <li>• Welcome the plan proposals to establish and maintain appropriate buffers and to control natural regeneration around the Scheduled Ancient Monuments and noted that plan has generally accounted for these measures</li> </ul>	<ul style="list-style-type: none"> <li>• Specific points raised addressed in final text, sections Designated sites other heritage features, Appendix I Access, Appendix III LMP Consultation Record and Appendix V Historic Environment records</li> </ul>	
Andrew Nicholson; D&G Archaeologist	<ul style="list-style-type: none"> <li>• Need to open areas around Scheduled Ancient Monuments</li> <li>• For future road building, special care to be taken to avoid any historic asset e.g. remains of the farmstead at NX</li> </ul>	<ul style="list-style-type: none"> <li>• Specific points raised addressed in final text, sections Designated sites other heritage features, Appendix I Access and Appendix III LMP Consultation Record</li> </ul>	

	1452 6114 by at least 10m and to ensure that boundary bank removal is minimised		
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## 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 ground open ***	Windblow Clearance ****
FC Approval normally not required	N	<ul style="list-style-type: none"> <li>Fell date can be moved within 5 year period where separation or other constraints are met.</li> </ul>	<ul style="list-style-type: none"> <li>Up to 10% of coupe area.</li> </ul>	<ul style="list-style-type: none"> <li>Up to 3 planting seasons after felling.</li> </ul>	<ul style="list-style-type: none"> <li>Change within species group e.g. evergreen conifers or broadleaves.</li> </ul>		<ul style="list-style-type: none"> <li>Increase by up to 5% of coupe area</li> </ul>	
Approval by exchange of letters and map	Y	<ul style="list-style-type: none"> <li>Advance of Phase 2 coupe into Phase 1</li> </ul>	<ul style="list-style-type: none"> <li>Up to 15% of coupe area</li> </ul>	<ul style="list-style-type: none"> <li>Between 3 and 5 planting seasons after felling, subject to the wider forest and habitat structure not being significantly compromised.</li> </ul>		<ul style="list-style-type: none"> <li>Additional felling of trees not agreed in plan.</li> <li>Departures of &gt; 60m in either direction from centre line of road</li> </ul>	<ul style="list-style-type: none"> <li>Increase by up to 10% of coupe area</li> <li>Any reduction in open space of coupe area by planting.</li> </ul>	<ul style="list-style-type: none"> <li>Up to 5ha</li> </ul>
Approval by formal plan amendment may be required	Y	<ul style="list-style-type: none"> <li>Felling delayed into second or later 5 year period.</li> <li>Advance felling (phase 3 or beyond) into current or 2nd 5 year period.</li> </ul>	<ul style="list-style-type: none"> <li>More than 15% of coupe area.</li> </ul>	<ul style="list-style-type: none"> <li>More than 5 planting seasons after felling, subject to the wider forest and habitat structure not being significantly compromised.</li> </ul>	<ul style="list-style-type: none"> <li>Change from specified native species.</li> <li>Change between species group.</li> </ul>	<ul style="list-style-type: none"> <li>As above, depending on sensitivity.</li> </ul>	<ul style="list-style-type: none"> <li>In excess of 10% of coupe area.</li> <li>Colonisation of open space agreed as critical.</li> </ul>	<ul style="list-style-type: none"> <li>More than 5ha.</li> </ul>

### 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	Adjustment to felling coupe boundaries	Timing of restocking	Changes to species	Changes to road lines
<b>FC Approval not normally required</b>	Fell date for all larch can be moved and also directly associated other species	Larch areas can be treated as approved coupes. Other conifers directly associated with larch being felled, may also be removed up to an equivalent of 20% of the area occupied by the larch or 5 ha, whichever is greater	To be undertaken within the overall plan approval period.	Replacement as per the agreed restock plan, but where this is not specified or is larch this may be replaced with either another diverse conifer (not SS) or Broadleaves.	
<b>Approval normally by exchange of letters and map. In some circumstances Approval by formal plan amendment may be required</b>		Removal of areas of other species in excess of the limits identified above.	Restocking proposals outwith the plan approval period.	Restocking proposals for other species which do not meet the tolerances identified above.	New road lines or tracks directly necessary to allow the extraction of larch material.

## Appendix V: Historic Environment records

SITE	GRID	COMMENT
SM3841 Glenwhan Moor; hut circles 1000m NE of Old Hall Farm	NX 150600	Scheduled Monument; Two hut circles in an open grassy clearing surrounded by conifer plantation. Bracken growth and encroachment is endemic across the scheduled site and surrounding area (long term control is not feasible, is unsustainable and will not take place) <b>Maintain in area of buffered open space / Monitor as per RHAMP</b>
SM3842 Glenwhan Moor; hut circle 840m N of Old Hall Farm	NX 143601	Scheduled Monument; Hut circle remains in open clearing on plantation edge (No work required, plantation trees removed). <b>Maintain in area of buffered open space / Monitor as per RHAMP</b>
SM7149 Craig Fell, cairn 700m SW of	NX 172603	Scheduled Monument; Cairn surrounded by conifer plantation (conifer regeneration and scrub growing on site to be controlled). <b>Maintain in open buffered space / Monitor as per RHAMP</b>
Glenwhan Moor; small cairns	NX 154603	Not identified in felled area
Glenwhan Moor; cairn / building remains	NX 155603	Located, in felled area, low level extensive building and dyke remains <b>Maintain within area of open space / BL</b>
Glenwhan Moor; field	NX 155603	Dyke remains near forest road <b>Maintain within area of open space / BL restock</b>
Glenwhan Moor; pens	NX 157605	Located, extensive sheep pens in existing open space <b>Maintain within area of open space</b>
Sheep pens	NX 173602	Located, extensive sheep pens in existing open space <b>Maintain within area of open space</b>
Craig Fell; small cairns	NX 173604	Located in pole stage plantation, only a small pile of stones <b>Maintain within area of open space</b>
Boreland Hill; Farmstead	NX 160592	Not identified in recently restocked area
Glenwhan Moor; field system	NX 164606	Not identified in pole stage crop



Airyhemming; small cairns	NX 168597	Not identified in recently felled area
Airyhemming; field system	NX 169598	Not identified in recently felled area
Craig; small cairns	NX 168610	Not identified in area of windthrow
Glenwhan Moor; small cairns	NX 149600	Not identified in mature plantation
Craig Fell; hut circle	NX 171615	Not identified in mature crop



## **ROADS APPENDIX**

### **TYPE OF SCHEME: FELLING PERMISSION**

**SCHEME NAME : Glenwhan LMP**

**SCHEME REF: LMP263**

This proposal fall outside the consultation arrangements agreed between the Scottish Forestry and Dumfries & Galloway Council. However Scottish Forestry has agreed to pass on the following standard information as advice to the applicant from the Council. The information does not affect Scottish Forestry approval of the forestry proposal.

### **WATER & SEWERAGE**

Applicants should satisfy themselves that apparatus which is owned by the Water and Sewerage Department will not be affected by the proposed works.

No planting should be carried out within 5 metres on either side of any apparatus. For further advice or free on-site apparatus location and marking up service: telephone 0845 601 8855 (email: [searches@scottishwater.co.uk](mailto:searches@scottishwater.co.uk)).

Applicants will be held liable for the full cost of repairs to Water and Sewerage apparatus and all claims made by third parties as a result of any interference or damage.

### **ROADS DEPARTMENT**

Persons in charge of vehicles will be held responsible for the prompt removal of all mud, silt or loose material collecting on public roads arising from the operation of haulage vehicles to and from the site (Section 95, Roads, Scotland) Act 1984)

The applicant should contact the Wigtown Manger, Roads and Transportation Department at least five weeks prior to work commencing on site to seek agreement on any proposed access locations required to the plantation; in this respect a road opening permit will be required and must be applied for. Planning consent may be required for the proposed access; please contact the Physical Planning Department.

In the event of planting being carried out and the adjacent roads not being improved in the future to a standard suitable for use by forestry haulage vehicles, a financial liability under the provision of Section 96 of the Roads (Scotland) Act 1984 could arise when timber extraction is undertaken.

The Wigtown Manger, Roads and Transportation Department, Area Roads Office, Ailsa House, Sun Street, Stranraer. Telephone Stranraer 702151

### **THINNING/FELLING**

The applicant should ensure that the person responsible for felling and extraction operations notifies, in writing the Wigtown , Roads and Transportation Department at least five weeks prior to work commencing on site to seek agreement on:

1. Appropriate haulage routes from this site.
2. Provision for all loading, unloading and stacking taking place out with the boundaries of the Public Roads; grass verges should not be used.

### **ARCHAEOLOGY**

There are recorded archaeological remains on this site. No ground disturbance must take place within the defined area or within a 20 metre protection zone around the area.

Any features or objects which come to light as a result of forestry operations elsewhere should be brought to the attention of the Council Archaeologist who can be contacted at the Development Planning and Environment, Dumfries and Galloway Council, Kirkbank House, English Street, Dumfries DG1 2HS. Tel: 030 33 33 3000.

The Council Archaeologist can be contacted at the Development Planning and Environment, Dumfries and Galloway Council, Kirkbank House, English Street, Dumfries DG1 2HS. Tel: 030 33 33 3000.

### **RIGHTS OF WAY**

There are no recorded Rights of Way running thorough the site. However any current public access should be retained and any damage to footpaths reinstated – Core Path 362-‘Glenwhan Moor’.

