Forestry and Land Scotland
Coilltearachd agus Fearann Alba

West Region

Name of Plan: Leanachan Land Management Plan

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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Plan Reference No: ******

Plan Approval Date: ******

Plan Expiry Date: ******

Forestry and Land Scotland
Coilltearachd agus Fearann Alba

FORESTRY AND LAND SCOTLAND
Application for Land Management Plan Approvals in Scotland

Forestry and Land Scotland - Property

Region:	West
Woodland or property name:	Leanachan
Nearest town, village or locality:	Fort William
OS Grid reference:	NN 1915 7803
Local Authority district/unitary Authority:	The Highland Council

Areas for Approval	Conifer Ha	Broadleaf	Open Space	Peatland Restoration
Clear felling	784	23*	158	
Restocking (incl legacy RS)	1627	80	149	269
Selective Fell (CCF)	168			
Natural Regeneration		154		
Thinning	619	125		

- Broadleaf component only felled if unavoidable

Note: restock includes areas felled under previous Plan

1. I apply for **Land Management Plan** approval for the property described above and in the enclosed Forest Plan.
2. * I apply for an opinion under the terms of the **Environmental Impact Assessment (Forestry) (Scotland) Regulations 1999 for road building /~~quarries /afforestation /deforestation~~** as detailed in my application.
3. I confirm that the initial scoping of the plan was carried out with FLS and SF staff in Jan 2017 and a further internal consultation on 22nd August 2023.
4. I confirm that the proposals contained in this plan comply with the UK Forestry Standard.
5. I confirm that the scoping, carried out and documented in the Consultation Record attached, incorporated those stakeholders which the SF agreed must be included.
6. I confirm that agreement has been reached with all of the stakeholders over the content of the forest plan and that there are no outstanding issues to be addressed. Copies of consultee endorsements of the plan are attached.
7. I undertake to obtain any permissions necessary for the implementation of the approved Plan.

Signed …… Regional Manager

Signed …… Conservator

Region: West

Conservancy:

Date :

Date of Approval: ……

Date approval ends: ……

Contents

1 Regulatory Requirements

1.1 Summary of Proposals

This Land Management Plan (LMP) presents the vision for Leanachan forest and set out the management planned for the next 10 years to progress that vision.

The Leanachan forest LMP area lies at the north foot of the Ben Nevis and Anoach Mor massif within the broad strath of the Great Glen close to the Highland town of Fort William. The LMP area covers around 3,100ha from 40m to 650m in altitude. It is made up of around 80% woodland cover, predominantly Sitka spruce and Lodgepole pine plantation of a wide range of ages alongside some native broadleaf woodland on the slopes and along the water courses. The open ground is largely covered by the Lon Leanachain SSSI designated for its blanket bog and on the upper slopes, upland heath and acid grassland which lie on the northern periphery of the much larger Ben Nevis SSSI and SAC. The forest lies in the heart of the outdoor capital and hosts the Nevis Range Mountain gondola.

The objectives for the future management of the forest recognise the location of the forest and the importance of the conservation designations. Conifer sawlog timber production will remain an objective where the soils can support this with an increase in the diversity of conifer species to increase future resilience and provide a more varied forest environment for outdoor recreation. The first 10 years of the plan will see a major peatland restoration project around the Lon Leanachain SSSI removing forest cover from its hydrological unit to maintain and increase the rewetting of the bog. The plan will also continue the work of recovering the native woodland along the upland edge and the ongoing development of the riparian woodland to improve water quality and fish habitat.

Objectives

- Through forest design and management, create and maintain an attractive environment for people visiting the forest for leisure, outdoor activity and employment, in support of the local tourist economy.

- Maintain the productive potential of the forest, providing a sustainable, steady flow of conifer sawlog timber and managing suitable broadleaf areas for wood production.

- In the core recreation area, manage the forest using lower impact silvicultural systems and a wider variety of tree species where crop condition, terrain and access are suitable.

- Protect and enhance the wetland, in particular the Lon Leanachain SSSI, and riparian features of the forest. Protect and restore areas of deep peat.

- The development of a more natural ecological transition between the conifer forest and the open hill land through the restoration, linkage and expansion of the PAWS and semi-natural woodland remnants.

- Maintain the carrying capacity of the red squirrel stronghold through the restructuring of the forest. NB This is a longer term objective as due to the present age and species structure the forest it is not possible to maintain sufficient suitable habitat in the medium term.

Summaries of Management Proposals

The felling proposals in the first twenty years of the plan are summarised below:

Felling	Phase 1	Phase 2	Phase 3	Phase 4
Area in ha	420	365	172	199
% of area (not including other land)	15	13	7	8
Volume (Km3)	210	183	86	95

The species composition over the first twenty years is as follows:

Species Group	Current – 2024		Year 10 – 2034		Year 20 – 2044	
	Area (ha)	%	Area (ha)	%	Area (ha)	%
Sitka Spruce	1302.5	48%	843.2	35%	798.9	33%
Norway Spruce	45.5	2%	106.7	4%	116.3	5%
Larches	92	3%	45.4	2%	26.9	1%
Mixed Conifers	14.3	1%	29.6	1%	37.5	2%
Mixed Broadleaves	17.5	1%	13.9	1%	13.4	1%
Native Broadleaves	307.1	11%	474.1	20%	504.4	21%
Internal Open Space	**955.3**	**35%**	**905.6**	**37%**	**921.1**	**38%**
Forested Area Total	**2734.2**	**87%**	**2418.5**	**77%**	**2418.5**	**77%**
Open Hill & Bog Restoration	**385.2**		**700.9**		**700.9**	
Agriculture	**8.6**		**8.6**		**8.6**	
Open Water	**1**		**1**		**1**	
Open Habitat Total	**394.8**	**13%**	**710.5**	**23%**	**710.5**	**23%**
LMP area Total	**3129**		**3129**		**3129**	

The age class composition over the first twenty years is as follows:

Age Class	Current – 2025		Year 10 – 2035		Year 20 – 2045	
	Area (ha)	%	Area (ha)	%	Area (ha)	%
0 – 10 yrs	177.5	5%	754.2	24%	653.5	21%
11 – 20yrs	233.7	8%	114.5	4%	457.2	15%
21 – 40 yrs	368.2	12%	420.5	13%	311.8	10%
41 – 60yrs	121.6	4%	124.4	4%	218.4	7%
60+ yrs	2228.3	71%	1715.7	55%	1488.4	47%
Total	3129.3	100	3129.3	100	3129.3	100

Productive Forest Area Statement

UKWAS Summary

Description	% of LMP Area[1]	Location of Data
Restock main conifer spp	24%	Forester Restock Layer
Restock other conifer	20%	Forester Restock Layer
Open Space[2]	29%	Forester Restock Layer
Native broadleaves[3]	19%	Forester Restock Layer
Management for biodiversity as primary objective (incl NR and MI area)(This is minimum intervention figure only).	35%	Forester Management Layer
LISS	6%	Forester Management Layer
Natural reserves	1%	Forester Management Layer

Notes The % will total more than 100% as the species and management categories overlap.

1. Only the larger areas of open space area recorded here. There many more small areas of open space within the broadleaf woodland.
2. The native broadleaves will be at variable stocking densities.

Planned Roading Operations

Planned operations	2024 – 2034 10 plan period	
Road Construction	LE10	500m
Road Construction	LE61	600m
Road Construction	LE121	1660m
Road Construction	LE123	5370m
Road Construction	LE1210	510m

The roads to be constructed, as detailed on Map 6 will require local authority Prior Notification (PN) approval. This will be submitted following EIA determination approval by Conservancy, as included in this plan.

Any unexpired PNs and EIAs are listed in Appendix IX.

Planned operations	Screening opinion obtained 20th February 2024	
Road Construction	LE7	1620m
Road Construction	LE16	740m
Road Construction	LE110	370m
Road Construction	LE401	280m

1.2 Activity Summary

	1.1 Table of Clearfelling (Phase 1 & 2)										
Coupe No.	**Total Area (Ha)**	**Spp by Ha (SS)**	**Spp by Ha (SP)**	**Spp by Ha (LP)**	**Spp by Ha (NS)**	**Spp by Ha (Larch)**	**Spp by Ha (MC)**	**Spp by Ha (BL)**	**Open Land by Ha**	**Restock Year** Within 3 years of felling	**Monitoring Comments**
31008	13.83	10.09		0.12		1.9			1.72		Fell at end of period – adjacency
31009	15.85	6.34				3.72		3.73	2.06		
31018	14.02	9.81		0.02				0.64	3.55		
31034	0.98	0.91	0.03						0.04		Fell at end of period – adjacency
31037	1.17	0.46	0.61					0.02	0.08		Fell at end of period – adjacency
31038	6.42	3.39	0.73	0.68		0.09		0.2	1.33	1 year	Adjacency
31041	1.84	0.74			0.03	0.73		0.27	0.06		
31049	2.49	1.9		0.001		0.4		0.08	0.1		
31053	2.56	2.12				0.01		0.19	0.24		Fell at end of period – adjacency
31058	1.74	1.4				0.3			0.04		
31063	5.64	3.26		1.17		0.7			0.51		
31064	2.7	1.99				0.28		0.1	0.33		
31068	4.98	1.96	0.08			0.06		0.34	2.54	1 year	Adjacency
31071	3.08	2.71							0.37	1 year	Adjacency
31072	5.73	5.18							0.55		Fell at end of period – adjacency
31082	58.19	36.66		2.7		8.02	0.19	1.35	9.27		
31086	3.87	3.44			0.02		0.03	0.02	0.36	1 year	Adjacency
31088	54.27	37.72	0.49	1.39	1.42	6.08			7.17		
31089	4.59	2.04		0.19		0.69		0.13	2.59		

	1.1 Table of Clearfelling (Phase 1 & 2)										
Coupe No.	**Total Area (Ha)**	**Spp by Ha (SS)**	**Spp by Ha (SP)**	**Spp by Ha (LP)**	**Spp by Ha (NS)**	**Spp by Ha (Larch)**	**Spp by Ha (MC)**	**Spp by Ha (BL)**	**Open Land by Ha**	**Restock Year** Within 3 years of felling	**Monitoring Comments**
31092	2.71	1.54						0.4	0.77	1 year	Adjacency
31094	2.2	1.11				0.13		0.16	0.80		
31095	2.4	1.17	0.14	0.29		0.46		0.1	0.33	1 year	Leith Quarry expansion
31098	31.05	18.99	3.51		0.03	0.01		2.01	6.5		
31100	6.82	2.04	1.86		1.92				1		
31105	9.67	6.05	1.25			0.04			2.33		
31107	11.79	11.1							0.69		
31109	14.5	13.22				0.81		0.02	0.45		
31111	58.72	49.75		2.67				0.03	6.27		
31114	134.05	105.03		3.3	0.1	2.75		0.89	21.98		
31118	55.02	45						0.02	10		
31146	36.5	18.74	0.5	11.07				1.14	5.05		Fell at end of period – adjacency
31153	23.92	9.2		7.34		0.57	0.2	0.24	6.35	1 year	Adjacency
31190	29.97	24.3						1.24	4.43		
31192	62.32	52.03		0.2				1.77	8.32		
31194	26.3	8.79		1.71		5.01		3.02	7.77		Fell at end of period – adjacency
31202	19.75	8.53		4.63		0.44		1.4	4.75		
31213	5.81	4.35		0.01				0.57	0.88		
31221	31.54	17.02		4.94	3.9	0.02	0.05	0.67	4.94		
31226	53.36	34.17		4.66		1.03	0.02	1.98	11.5		
31233	7	6.13				0.54		0.18	0.15		
31240	28.6	12.69		5.45		2.94		0.13	7.41		
31245	64.67	56.07				2.99		0.57	5.04		

1.2 Table of CCF Felling (Phase 1&2)											
Coupe No.	**Total Area (Ha)**	**Volume (M^3)**	**Spp by Ha (SS)**	**Spp by Ha (SP)**	**Spp by Ha (LP)**	**Spp by Ha (NS)**	**Spp by Ha (MC)**	**Spp by Ha (MBL)**	**Open Land by Ha**	**Silv.Method**	**Monitoring Comments**
31025	21.22	0	5.21	2.45	0.01			7.12	6.43	Beat up to ensure establishment P2018	P2018
31042	6.72	130	2.57	0.2			0.68	1.05	2.22	P91 1st thin younger stands, clear windblow, LTR for the P33 SS Consider crown thinning for sub-thin	P91
31054	22.9	1,130	15.37			0.33	2.53	0.57	4.10	P2003 1st thin stand earlier to increase future stability. Preferentially remove larch. Consider crown thinning for sub-thin	P2003
31055 31056	13.35	70	0.35					4.40	8.6	P90 Remove conifer component	P90
31057	12.81	200	0.84	0.21			1.22	6.25	4.29	Mixed age Light thinning removing both conifer and broadleaf species to maintain a mixed woodland. Extending 2017 work carried out	Vision – mixed stand of native woodland and commercial conifer forming the setting for the downhill trails
31059	10.2	370	6.84				0.41	0.35	2.6	P88, P96 1st thin and consider crown thinning for sub thin to create a more open structure. Clear windblow. Remove larch component.	Vision – Future recreation area. Mixed age and species stands with P33 SS on a LTR

1.2 Table of CCF Felling (Phase 1&2)											
Coupe No.	**Total Area (Ha)**	**Volume (M^3)**	**Spp by Ha (SS)**	**Spp by Ha (SP)**	**Spp by Ha (LP)**	**Spp by Ha (NS)**	**Spp by Ha (MC)**	**Spp by Ha (MBL)**	**Open Land by Ha**	**Silv.Method**	**Monitoring Comments**
31074	11.98	260	4.35	0.11			0.29	0.46	6.76	P86 Light thinning to open stands and encourage natural regeneration	Vision – restore to full riparian woodland with mixed, natural age structure
31077	1.84	30	0.64	0.22				0.15	0.84	P33 Light thinning to maintain large conifer stand. Priority over broadleaves and riparian zone in this small area	Vision – mixed age and species stand close to the houses and office at Torlundy. Some trees may also need to be felled if they become unsafe adjacent to property.
31081	5.72	110	0.25				0.03	2.01	3.43	P60 Ist thinning with preferential removal of larch	Vision – open mixed age structure. Retain P30s stands.
31085	15.43	370	5.69				1.88	0.16	7.7	P2004 1st thinning with preferential removal of larch Sub thin by crown thinning	Vision – a more open mixed structure as part of the setting for Nevis Range and a permanent woodland cover is desirable.
31087	30.3	980	13.13	3.34		2.22	1.62	3.57	6.42	P86 Large coupe partially cleared of WB in the past. Restock the felled areas with mixed conifer. Clear windblow to create further mixed structure	Vision – mixed age and species stand of predominantly conifers as setting for recreation trails. The structure will be small groups of different ages.

1.2 Table of CCF Felling (Phase 1&2)											
Coupe No.	**Total Area (Ha)**	**Volume (M^3)**	**Spp by Ha (SS)**	**Spp by Ha (SP)**	**Spp by Ha (LP)**	**Spp by Ha (NS)**	**Spp by Ha (MC)**	**Spp by Ha (MBL)**	**Open Land by Ha**	**Silv.Method**	**Monitoring Comments**
31101 31102	2.01	60	0.05	0.13			0.57	0.37	0.89	P95 Single tree selection remove JL Underplant with other conifers	Vision – attractive approach to Nevis Range. Unfortunately dominated by larch so gradual pre-emptive removal of larch
31139	9.41	120	2.47	0.78	1.33		1.29	1.32	2.22	P2000, P42 Enrichment of nat regeneration with mixed species. Retain P42 SP	Vision – Mixed woodland adjacent to recreation area and burn
31156	4.27	130	2.73				0.7	0.68	0.16	P2000, P42 1st thinning with preferential removal of larch Sub thin by crown thinning	Vision – well thinned stand of SS for LTR

1.3 Table of Silvicultural Thinning (Phase 1 & 2)							
Generic prescription for Silvicultural thinning				These are predominantly Conifer stands – SS, Larch with some LP, SP, NS in mixture. Most of these coupes have naturally regenerated birch some of which will need to be felled for access to the stands as part of the thinning operation. 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. Preferential removal of larch where this is in mixtures along with the promotion of NS and SP where suitable			
Coupe No.	**Total Area (Ha)**	**Species**	**Thin-able Area (Ha)**	**Current age of stand**	**Final Thinned Area (Ha)**	**Final Vol/Ha Removed**	**Monitoring Comments**
31017 31023	6.3	NS/JL/SS	5.7	P2000			
31047	9.6	SS/BI	6.7	P91			
31054 31060 31016	19.2	SS/EL	17.3	P2010			
31030 31033 31034 31045 31051 31052 31053 31070 31072 31073 31104	38.5	SS/HL	25.6	P85 P88 P34			

1.3 Table of Silvicultural Thinning (Phase 1 & 2)							
Coupe No.	**Total Area (Ha)**	**Species**	**Thin-able Area (Ha)**	**Current age of stand**	**Final Thinned Area (Ha)**	**Final Vol/Ha Removed**	**Monitoring Comments**
31079	12.5	SS/HL/LP/Bi	9.9	P2001 Part 1st thin			
31080	30.2	SS/EL/HL/Bi	27.5	P2001, P2013			
31099 31103 31106 31112	63.88	SS/NS/SP EL/HL/Bi	22.43	P2000 - P2005 P60 HL to remove 1.14ha			
31086 31091 31093 31094	13.4	SS/DF/JL	4.8	P34, P86, P2000			
31134 31145 31142	90.8	SS/NS/JL/HL	61.7	P2000, P20011- P2013			
31151 31164 31168 31169 31170 31249 31175 31187	128.2	SS/NS/SP HL/JL/Bi	81.8	P90, P2000, P2005, P2011, P2013			
31201 31203 31204 31209 31225	89.1	SS/NS/DF/SP Bi	57.2	P2000, P2004, P2009, P2017			

1.3 Table of Silvicultural Thinning (Phase 1 & 2)							
Coupe No.	**Total Area (Ha)**	**Species**	**Thin-able Area (Ha)**	**Current age of stand**	**Final Thinned Area (Ha)**	**Final Vol/Ha Removed**	**Monitoring Comments**
31214 31230 31232	18.0	SS/NS/HL/Bi	14.4	P2000, P2003			
31227 31228 31242 31246 31247 31248	99.6	SS/NS/Bi	73.5	P2003, P2004, P2008			

1.3a Table of Other Thinning/tree removal (Phase 1 & 2)				
Type	**Total area**	**Species**	**Thinnable area**	**Prescription**
Native Woodland management	125ha	Broadleaf – predominantly birch but also non-native conifer	70%	Thinning will be directed towards removal on non-native conifer and the respacing of the broadleaves, mainly birch, to promote stem form where there is the potential for future extraction, to encourage crown retention and favouring other native species. There will be little if any produce in the first thinnings **Monitoring comments - final area managed**
Amenity management Selective felling	120ha	Mixed – SS, larch and birch as the main species	80%	Selective felling to remove individual trees in order to open up the trails, roadsides, viewpoints, features of interest and trees that have become unsafe through disease or windblow. There will be little if any produce from these operations **Monitoring comments – final area treated**

1.4 Table of Total Felling for Approved Plan Period										
Method	**Total Area (Ha)**	**Total Volume (M^3)**	**Spp by Ha (SS)**	**Spp by Ha (SP)**	**Spp by Ha (LP)**	**Spp by Ha (NS)**	**Spp by Ha (MC)**	**Spp by Ha (MBL)**	**Open Land by Ha**	**Comments**
Clearfell	966	393,000	657	9	68	7	43	24	158	
Thinning	744	40,000					619	125		
CCF	168	3,960								
			Grand Total of Felled Timber Proposed for Plan Period							

1.5 Table of Restocking – including incomplete RS from previous plan												
Coupe No.	**Total Area (Ha)**	**SS (Ha)**	**LP (Ha)**	**SP (Ha)**	**NS (Ha)**	**Other Con. (Ha)**	**Native Mixed B/Leaf**	**Other B/Leaf**	**Open (Ha)**	**Year**	**Restock Method & Density (Restock/Nat Regen/Alt Area/Coppice/Open)**	**Monitoring Comments (Including any reason not to restock)**
31003	43.05	19.87	8.52	0.99	0	1.03	4.89	0	7.76	26/27	CF Restock @ 2,500 Native NR @ 600-1,200	Legacy restock (2024) Riparian
31005	50.8	27.5	11.79				5.43		6.08	26/27	CF Restock @ 2,500 Native NR @ 600-1,200	Legacy restock (2023) Riparian
31006	27.38	11.98	5.13				5.59		4.68	26/27	CF Restock @ 2,500 Native NR @ 600-1,200	Legacy restock (2023) Riparian
31008	13.83			1.67		8.25	3.89		0.03		CF restock @2500 Restock @ 1600	

1.5 Table of Restocking – including incomplete RS from previous plan												
Coupe No.	**Total Area (Ha)**	**SS (Ha)**	**LP (Ha)**	**SP (Ha)**	**NS (Ha)**	**Other Con. (Ha)**	**Native Mixed B/Leaf**	**Other B/Leaf**	**Open (Ha)**	**Year**	**Restock Method & Density (Restock/Nat Regen/Alt Area/Coppice/Open)**	**Monitoring Comments (Including any reason not to restock)**
31009	15.85			3.13		5.09	7.3		0.34		CF restock @2500 Native Restock @ 1600	
31014	10.33						0.25		10.08		Native Restock @ 1600	
31018	14.02	7.36					0.32		6.34		CF Restock @ 2,500 Native NR @ 600-1,200	Landscape
31029	9.27			3.71			5.56			26/27	Restock @ 1,600	Legacy restock (2025)
31034	0.98			0.20		0.78					Restock @ 2,500	
31035	3.08			0.92			2.16			26/27	Restock @ 1,600	Legacy restock (2025)
31036	1.10						1.10			26/27	Restock @ 1,600	Legacy restock (2025)
31037	1.18	0.64						0.54			CF Restock @ 2,500 Restock @ 1,600	
31038	6.42	4.02		1.9				0.50		1 year	CF Restock @ 2,500 Restock @ 1,600	Future adjacency
31041	1.84			0.37		1.46			0.01		Restock @ 2,500	
31049	2.49		0.27	0.58		0.27	1.36				CF Restock @ 2,500 Restock @ 1,600	
31053	2.56			0.51		1.30	0.38		0.38	1 year	CF Restock @ 2,500 Native NR @ 600-1,200	Future adjacency
31058	1.74	0.29					1.46				Native NR @ 600-1,200 Supplement plant SP	
31063	5.64				0.66	1.3	1.26		2.42		Restock @2,500	

1.5 Table of Restocking – including incomplete RS from previous plan												
Coupe No.	**Total Area (Ha)**	**SS (Ha)**	**LP (Ha)**	**SP (Ha)**	**NS (Ha)**	**Other Con. (Ha)**	**Native Mixed B/Leaf**	**Other B/Leaf**	**Open (Ha)**	**Year**	**Restock Method & Density (Restock/Nat Regen/Alt Area/Coppice/Open)**	**Monitoring Comments (Including any reason not to restock)**
31067	2.54			0.48		0.1	0.99		0.97	26/27	Native NR @ 600-1,200 Supplement plant SP	Legacy restock (2023)
31068	4.98			0.08		0.3	1.48		3.12	1 year	Native NR @ 600-1,200 Supplement plant SP	Wayleave Future adjacency
31071	3.08			0.62		2.48				I year	Restock @2500	Future adjacency
31072	5.72			1.03		4.13			0.56		Restock @2500	
31078	19.38			7.12	2.37		2.37		7.52	25/26	CF Restock @ 2,500 Native NR @ 600	Peat restoration Legacy restock (2018)
31082	58.20				0.74		8.78		48.68		CF Restock @ 2,500 Native NR @ 600	Peat restoration
31083	8.11					0.84		0.85	6.42		CF Restock @ 2,500 Native NR @ 600	
31086	3.81					2.54			1.27	26/27	Restock @ 2500	
31088	54.27			3.58		1.88	6.16		42.65		Native NR @ 600 Supplement plant SP	Peat restoration
31092	2.70	1.33							1.37		Restock @ 2500	
31094	2.19	1.29				0.90					Restock @ 2500	
31095	2.40					1.37	0.4		0.63	1 year	CF Restock @ 2,500 Restock @ 1,600	Leith Quarry expansion Future adjacency
31098	31.02			0.95			6.50		23.57		Native NR @ 600 Supplement plant SP	Peat restoration

1.5 Table of Restocking – including incomplete RS from previous plan												
Coupe No.	**Total Area (Ha)**	**SS (Ha)**	**LP (Ha)**	**SP (Ha)**	**NS (Ha)**	**Other Con. (Ha)**	**Native Mixed B/Leaf**	**Other B/Leaf**	**Open (Ha)**	**Year**	**Restock Method & Density (Restock/Nat Regen/Alt Area/Coppice/Open)**	**Monitoring Comments (Including any reason not to restock)**
31100	6.82						0.14		6.68		Native NR @ 600	Peat restoration
31105	9.66						1.48		8.18		Native NR @ 600	Peat restoration
31107	11.77			4.33			5.43		2.01		Restock @ 2500 Native NR @ 600	Peat Restoration
31109	14.50			7.39			6.93		0.18		Restock @ 2500 Native NR @ 600	
31111	58.77			1.98			7.91		48.88		Native NR @ 600 Supplement plant SP	Peat restoration
31114	134.06	4.97		11.74	6.88		37.05		73.42		CF restock @ 2500 Native NR @ 600 Supplement plant SP	Peat restoration
31118	55.02			2.60			10.4		42.02		Native NR @ 600 Supplement plant SP	Peat restoration
31133	16.31						1.78		14.52		Native NR @ 600	Peat restoration
31146	36.31	21.13	7.77		2.99		1.76		2.66		CF restock @ 2500 Native NR @ 600	Riparian
31153	23.98			6.2	6.18		7.57		4.03		CF+SP restock @ 2500 SP/Bi @ 600	
31189	20.31			9.7		3.23	6.97		0.41		Restock @ 1600	
31190	29.98			4.46		2.39	23.13				Native NR @ 600-1,200 Restock SP/Bi @ 2500	

1.5 Table of Restocking – including incomplete RS from previous plan												
Coupe No.	**Total Area (Ha)**	**SS (Ha)**	**LP (Ha)**	**SP (Ha)**	**NS (Ha)**	**Other Con. (Ha)**	**Native Mixed B/Leaf**	**Other B/Leaf**	**Open (Ha)**	**Year**	**Restock Method & Density (Restock/Nat Regen/Alt Area/Coppice/Open)**	**Monitoring Comments (Including any reason not to restock)**
31192	62.32			25.18			37.14				Native NR @ 600-1200 Restock SP/Bi @ 2500	
31194	26.31	11.03	1.41	3.31			5.80		4.76		CF restock @ 2500 Native NR @ 600	Riparian
31202	19.75	10.24					4.06		5.45		CF restock @ 2500 Native NR @ 600	Riparian
31213	5.80					3.60	0.58		1.62		CF restock @ 2500 Native NR @ 600	Riparian
31221	31.39	15.75			13.45		1.09		1.09		CF restock @ 2500 Native NR @ 600	
31223	2.31						0.60		1.71		CF restock @ 2500 Native NR @ 600	
31226	53.37	5.43			29.69		4.13		14.13		CF restock @ 2500 Native NR @ 600	Riparian
31233	6.99	3.11	1.33		2.54						Restock @ 2500	
31240	28.61	22.67							5.94		Restock @ 2500	
31245	64.68	52.38		4.81	2.39				5.09		Restock @ 2500	

1.6 Table of New Planting												
Coupe No.	**Total Area (Ha)**	**SS (Ha)**	**LP (Ha)**	**SP (Ha)**	**NS (Ha)**	**Other Con. (Ha)**	**Native Mixed B/Leaf**	**Other MBL**	**Open (Ha)**	**Year**	**Planting Method & Density (Planting/Nat Regen)**	**Monitoring Comments**
zero												

1.7 Table of Civil Engineering				
Proposed Activity (Road/Quarry)	**OS Grid Reference**	**Forest/Coupe**	**Description (Length/Area/Construction)**	**Monitoring Comments**
Road LE10	NN 1462 7597	31009/31010	500m/0.5ha/full forest road specification	Lower Chapmans extension
Road LE61	NN 1654 7778	31079/31082	600m/0.6ha/full forest road specification	Tom Sonnachain west access
Road LE121	NN 2240 7705	31192/31203	1660m/1.66ha full forest road specification	Coille Leanachain
Road LE123	NN 2048 7713	31146/31212	370m/0.37ha/full forest road specification	By quarry
Road LE1210	NN 2275 7701	31192/31194	510m/0.51 full forest road specification	Spur off LE121
Road LE7	NN 1559 7749	31081/31063	1620m/1.62ha/full forest road specification	Cabin bypass
Road LE16	NN 2077 7927	31114	740m/0.74ha/full forest road specification	West of Kingleys
Road LE110	NN 1751 7767	31085	370m/0.37ha/full forest road specification	Opposite Nevis Range

1.7 Table of Civil Engineering				
Proposed Activity (Road/Quarry)	**OS Grid Reference**	**Forest/Coupe**	**Description (Length/Area/Construction)**	**Monitoring Comments**
Road LE401	NN 1816 7888	31111	280m/0.28ha/full forest road specification	SSSI east access
Total length			**6,920m/6.92ha**	

1.8 Table of Other Projects				
Proposed Activity	**Coupe**	**Forest/Coupe**	**Description (Length/Area/Construction)**	**Monitoring Comments**
ATV Tracks			Only ATV tracks n restock coupes proposed. The EIA SOR will be submitted as required once the routes are confirmed.	
Environment works	31119	Lon Lenachain SSSI	Non-native removal as required 126ha (gross)	Below 10cm dbh
	31111, 31114, 31118	Lon Leanachain peat restoration	Peat restoration post harvesting 155ha (gross)	
	31078, 31079, 31082, 31085, 31088, 31098, 31100, 31105	Tom a Sonnachain	Peat restoration, presumption to restore 154ha (gross)	
	31173, 31174, 31176, 31177, 31184, 31186	Ben Nevis SSSI	Removal of non-native regen 183ha (gross)	Below 10cm dbh

1.3 EIA Screening Determination

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Please complete this form to find out if you need consent from Scottish Forestry, under the **Forestry (Environmental Impact Assessment) (Scotland) Regulations 2017**, to carry out your proposed forestry project. Please refer to Schedule 2 Selection Criteria for Screening Forestry Projects under Applying for an opinion. If you are not sure about what information to include on this form please contact your local Conservancy office.

Proposed Work

Please put a cross in the box to indicate the type of work you are proposing to carry out. Give the area in hectares and where appropriate the percentage of conifers and broadleaves

Proposed Work	select	Area in hectares	% Conifer	% Broad-leaves	Proposed work	select	Area in hectares
Afforestation	☐				Forest roads	☒	3.63
Deforestation	☐				Forest quarry	☐	
Location of work		Leanachan Forest LE10, LE,61, LE121, LE1210, LE123 . See LMP Map 6					

Description of Forestry Project and Location

Provide details of the forestry project (size, design, use of natural resources such as soil, and the cumulative effect if relevant).
Please attach map(s) showing the boundary of the proposed work and other known details.

Planned road projects:
This EIA screeing opinion request is for the construction of the planned roads for Leanachan foresst, area 3,129ha to deliver felling, thinning, restocking and peat restoration for the LMP. The total length of planned road is 3,630m covering 3.63ha. Area based on approx 10m width post construction which includes 3.5m running surface plus ditches and verges. The application is deemed to include all passing places, turning points, stacking areas and ramps. The application allows for a 60m buffer which will allow micrositing of the exact roadline depending on ground conditions encountered during construction.

Planned road LE10:
Extension of Class A forest road at NN 1479 7616 ending at NN 1444 7578. It is 500m in length and 0.5ha. To access phase 2 and 3 coupes which include 4-6ha of larch in the priority access zone.

Planned road LE121:
Construction of a Class A forest road, accessed from forest road LE12 at NN 2180 7753 ending at NN 2258 7638. It is 1650m in length and 1.65ha. To access phase 1 coupe and two phase 2 coupes on PAWS site with creeping windblow. The road will improve access for deer management in the wood and onto the hill above. It is intended to manage the Scots pine element of the native woodland restoration for timber production in the future.

Planned road LE1210:
Construction of a Class A forest road from the above forest road LE121 at NN 2251 7697 ending at NN 2289 7719 for a phase 1 coupe. It is 510m in length and will occupy 0.5ha.

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Planned road LE123:
Construct a Class A forest road accessed from forest road LE12 at NN2050 7733 ending at NN 2044 7733 for a phase 2 coupe. It is 370m in length and will occupy 0.37ha. LE12 is a haul rout used by the neighbouring Killiechonnate estate and, therefore, sufficient turning and stacking areas completely off the road are required.

Planned road LE61:
Construction of a Class A forest road accessed from forest road LE6 at NN1633 7764 ending at NN 1650 7805. It is 600m in length and will occupy 0.6ha. To access a phase 2 coupe for western half of the peat restoration site and future timber harvesting. The road will also improve access for deer management on the peat restoration area.

With regards to the construction of all the planned roads the following applies:road material will most likely be sourced from the commercial quarry within Leanachan Forest. Failing that material will be sourced from the FLS Mucomir quarry near Gairlochy.

Turning points, welfare & maintenance zones and passing places will be included in the construction of the road in accordance with the FLS Civil Engineering Handbook. Ramps and stacking areas will be constucted prior to future harvesting operations; the road gradient will not exceed 10%; the size and width of the bends will be in compliance with the Civil Engineering Handbook. Section 7 of this Handbook details the road construction techniques when crossing peat areas.

All operations will comply with the UK Forestry Standard, UKWAS and SEPA CAR regulations. The design of the planned roads will conform to both the Timber Transport Forum document "The design and use of the structural pavement of unsealed roads 2014" and SNH's "Constructed tracks in the Scottish Uplands - revised Sept 2015".

Soil will be excavated down to a base layer and stone used to construct the base nad road surfcace. All water croswsings will be of bottonless or arched culverts or bridges sized to accommodate a 1 in 200 year storm event.

Prior Notification will be required following EIA screening and the approval of the LMP.

Provide details on the existing land use and the environmental sensitivity of the area that is likely to be affected by the forestry project.
The existing land use affecting all planned road areas is conifer production with some native woodland areas affecting some parts of LE121 and LE 1210. These roads will also be constructed through a PAWS site that is still to be restored to native woodland. Leanachan Forest is deemed a red squirrel stronghold. The routes of planned roads LE121 and LE61 cross a mosaic of soil types which includes deep peat regarded as assessed peat types. . Planned roads LE121 and LE1210 crosses the line of the Puggy Line which was used in the construction of the hydro pipeline that serves the aluminium smelter dating back to the 1920s.

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Planned road extension for LE10 lies within the impact zone of a suspected breeding site (2021 record).

Description of Likely Significant Effects
Provide details on any likely significant effects that the project will have on the environment (resulting from the project itself or the use of natural resources) and the extent of the information available to assist you with this assessment.
Negative: Disturbance of soil of a PAWS site through excavation for road construction (LE121 and LE1210). Disturbance of adjacent breeding sites (LE10) Destruction of a section of the Puggy Line (LE121 and LE1210). Loss of carbon due to the disturbance of deep peat (LE121). Loss of a small portion of birch woodland (LE121 and LE1210). LE10 crosses the North Face recreation access which is a core path Visual impact of LE10 Positive: Restoration of PAWS area of Coille Leanachan through harvesting of conifer crop facilitated by planned road LE121 Increased resilience of habitat and carbon storage through the restoration and linking of four presumption to restore peat areas south of Nevis Range through the removal of commercial conifer crops and forest-to-bog restoration facilitated by planned road LE61.

Include details of any consultees or stakeholders that you have contacted in order to make this assessment. Please include any relevant correspondence you have received from them.
FLS staff: Landscape Architect, Civil Engineering team, Environment team. Public consultation held at Torlundy

Mitigation of Likely Significant Effects
If you believe there are likely significant effects that the project will have on the environment, provide information on the opportunities you have taken to mitigate these effects.
Compliance of the UK Forestry Standard and UK Woodland Assurance Standard throughout. Compliance with SEPA GBRs. The FLS Environment team will ground truth the planned road construction routes for all aspects of the environment, including heritage features and known conservation features e.g. breeding sites. Protection zones will be marked on the ground and mitigation measures will be input in the Work Plan for the operation. If required, licences will be sought from Naturescot. These mitigation measures form part of the pre-commencement meeting and contract. New information will be updated on the internal Forester Web system so that it will be captured in subsequent operations. Good practice will be followed where relevant including the following: FCS Guidance note 31: Forests and wildlife protection FCPG9: Forest operations and badger setts. FCS Guidance Note 33: Forest operations and red squirrels in Scotland

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FCS Guidance note 34: Forest operations and protected species in Scottish Forests
FCS Guidance note 32: Forest operations and birds in Scottish forests
Disturbance distances in selected Scottish bird species - Naturescot guidance.

Heritage feature:
Marker cairn close to the line of LE61 will be located and marked during surveys and the road microsited to avoid any damage. NN1651 7782

Line of the Puggy Line:
The planned road crosses the route of the Puggy Lin used during the construction of the hydo pipe for the aluminium smelter which is now used a recreation path. Ther eare some original features on this section of the Puggy Line. Ground truthing will relocate these with the intention of avoiding these during construction. If this is not possible due to the terrain, best practice as per the FLS practice guide: Archaeology and the Historic Environment will be followed.

Deep peat:
The route of planned road LE121 cannot avoid crossing areas of peat for 80m. The planned line currently crosses a further 250m of peat up the hill which it may be possible to avoid through micrositing.
Constuction will follow the best practice within the FLS Civil Engineering Handbook, section 7: Roads over peat. This outines mitigation measures to minimise the disturbance to peat and associated hydrology.

Native woodland:
The construction of LE121 and LE1210 with require the unavoidable felling of two small areas of birch woodland alongside the puggy line c.0.2ha. LE121 will facilitate the removal of restortion of native woodland on the PAWS area of Coille Leanachan.

Core Path:
Liaison with the Highland Council during construction of LE10 to enable safe access with minumum of disruption to access for recreation users.

Landscape:
LE 10 will be visible briefly from the A82 and the entrance to Inverlochy Castle. The road alignment avoiding the steeper sections of the the slope and the restock design that brings the different species boundaries across the line of the road together with the restocking as it grows will mitigate the impact of the road in the view.

Sensitive Areas	
Please indicate if any of the proposed forestry project is within a sensitive area. Choose the sensitive area from the drop down below and give the area of the proposal within it.	
Sensitive Area	Area
Deep peat soil	0.35ha
Select...	
Select...	
Select...	

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Select...	

Property Details			
Property Name:	Leanachan Forest		
Business Reference Number:	030/519/149	Main Location Code:	
Grid Reference: (e.g. NH 234 567)	NN 1602 7805	Nearest town or locality:	Fort William
Local Authority:		Highland	

Owner's Details				
Title:	Ms	Forename:	Christina	
Surname:	Tracey			
Organisation:	Forestry and Land Scotland		Position:	Regional Planning Manager
Primary Contact Number:	07767 251380		Alternative Contact Number:	0300 067 6650
Email:	christina.tracey@forestryandland.gov.scot			
Address:	FLS West Region, Torlundy Office, Fort William			
Postcode:	PH33 6SW		Country:	Scotland
Is this the correspondence address?			Yes	

Agent's Details				
Title:	Ms	Forename:	Catriona	
Surname:	MacLennan			
Organisation:	Forestry and Land Scotland		Position:	Planning Forester
Primary Contact Number:	07823537772		Alternative Contact Number:	0300 067 6650
Email:	catriona.maclennan@forestryandland.gov.scot			
Address:	FLS West Region, Torlundy Office, Fort William			
Postcode:	PH33 6SW		Country:	Scotland
Is this the correspondence address?			Yes	

Office Use Only	
GLS Ref number:	

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1.4 Other Regulations

Standards and guidance

This land management plan has been produced in accordance with a range of government and industry standards and guidance as well as recent research outputs, including the following;

"The UK Forestry Standard 5th Edition (2023)" (UK gov)

"The design and use of the structural pavement of unsealed roads revised 2020"(Timber Transport Forum)

"Constructed tracks in the Scottish uplands – revised Sept 2015" (SNH)

"Securing a green recovery on a path to net zero: climate change plan 2018–2032" (Scottish Government)

"Protecting private water supplies during forestry activities" (Confor); this includes observing the UKFS 50m buffer around abstraction points.

"River Basin Management Plan for Scotland 2021 – 2027" (SEPA)

"Deadwood Management Guidance" (FLS) - supplement to Scottish Forestry Practice Guide: "Managing deadwood in forest and woodlands".

"Managing forest operations to protect the water environment" (Forest Research Practice Guide)

"Building wildfire resilience into forest management planning" (FC Practice Guide).

"Strategic guide for the conservation management of open habitats on Scotland's national forest estate." (FLS)

"The state of Scotland's rainforest – research report 2019."

"Deciding Future Management Options for Afforested Deep Peatland" (FCS Practice Guide 2015)

"Planting and restocking on peat soils" (Standard Operating Procedure, FLS 2021)

"PAWS Guidance" (FLS)

"An approach to prioritising control of rhododendron" (FLS)

"Managing and controlling invasive rhododendron" (FC Practice Guide 017)

"Managing invasive and non-native forestry species" (FCS)

"Priorities for rhododendron control" (FLS)

"Deadwood Guidance" (FLS)

"Forest operations and wildlife in Scottish Forests" (FCS Guidance Notes 31)

"Forest operations and birds in Scottish Forests" (FCS Guidance Notes 32)

"Forest operations and European protected species in Scottish Forests" (FCS Guidance Note34)

"Forest operations and bats in Scotland" (FCS Guidance Notes 35a)

"Forest operations and otters in Scotland" (FCS Guidance Notes 35c)

"Managing forests for white-tailed eagles" (FCS Practice Notes 101)

"Forest operations and badger setts" (FCS Practice Guide 9)

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 in 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, services and drains.

The maximum volume of felling in exceptional circumstances covered by this approval is 75 cubic metres per Land Management Plan per calendar year. A record of the volume felled in this way is detailed below and will be considered during the five year Land Management Plan review.

Table of Other Felling				
Date	**Coupe/Area**	**OS NGR**	**Volume**	**Comments**

Table of Other Felling				
Date	**Coupe/Area**	**OS NGR**	**Volume**	**Comments**

Departure from UKFS guidelines

Adjacency issues

This LMP sets out the programme for felling over the next 40 years with the aim of continuing to restructure the forest and meet the objectives of a more even flow of timber, species change and habitat restoration. It is, however, ambitious with some stands reaching 70 years before they are scheduled for harvesting.

Coupes where adjacency is at the minimum are identified in the activities tables: phase 1 coupes for rapid restock (1 year) and phase 2 coupe for felling at the end of the period.

The UKFS Adjacency Standard is not always achievable during the clear felling of the remaining timber crop in the forest, due to the mature age of the present even-aged stands and the increasing risk of windthrow as the felling progresses.

While full adjacency will not be achieved a degree of age separation will occur. The future design plan has been developed to prevent this from being a recurring issue through the redesign and creation of new coupe boundaries. The creation of a number of significant riparian corridors will further help to break up the forest in the future.

1.5 Tolerance Table

	Adjustment to felling coupe boundaries	Timing of restocking	Changes to species	Changes to road lines	Designed Open Ground	Wind blow clearance
Scottish Forestry Approval not normally required (record and notify SF)	10% of coupe size	Up to 5 planting seasons after felling (allowing for fallow periods for Hylobius)	Change within species group e.g. Native broadleaves Non-native conifers e.g Sitka spruce to Douglas fir Non-native to native species (allowing for changes to facilitate Ancient Woodland policy) For Caledonian pine woodland – SP to native BL to allow for disease issues	Departures of up to 60m from the centre of the roadline	Increase by up to 5% of coupe area	
Approval by exchange of emails and maps	10-15% of coupe size	5 years +	Change of coupe objective likely to be consistent with current policy	Departures of greater than 60m from the	Increase between 5-10% coupe area.	Up to 5 ha

			e.g. from productive to open, open to native species	centre of the roadline	Any reduction in open ground within coupe area	
Approval by formal plan amendment may be required	> 15% of coupe size		Major change of objective likely to be contrary to policy e.g. native to non-native species, open to non-native	As above, depending on sensitivity	Increase >10% of coupe area	More than 5 ha

2 LMP ANALYSIS

2.1 Introduction

Leanachan is an important forest in Lochaber as a source of accessible spruce for the timber industry as well as containing significant riparian and peatland habitats. It is a major visitor destination for outdoor sport and the setting for an industrial quarry and rural business centre. The Land Management Plan (LMP) aims to balance these different needs, which can at times be conflicting, while maintaining the integrity of the forest landscape and function.

Leanachan forest lies in the broad forested strath of the Great Glen to the north east of Fort William. It covers the north-western lower slopes of Aonach Mor, Carn Mor Dearg and Ben Nevis mountain massif and includes a small part of the Beinn Nebheis SSSI and SAC. The 3,130ha national forest estate here is continuous with the forest of Killiechonate estate to the north and the re-establishing natural woodland of the Jahama Highland estate to the south. These forested areas fringe the lower slopes of the mountain massif when viewed from the Commando Memorial. The north western boundary is the West Coast railway line.

The forest is a predominantly conifer plantation woodland with good access and proximity to timber markets. A fringe of native woodland has developed above the conifer tree line giving a gradation of woodland to the open hill. Restructuring of the forest has begun with felling of the first rotation crop as it reaches maturity in line with the previous forest design plan. The forest along with Killiechonate has been identified as a red squirrel stronghold due to its isolation from grey squirrels and large area of conifer woodland although the carrying capacity at present is low.

In addition to establishing the second rotation of productive conifers, the restocking has created wider riparian areas and increased the amount of native broadleaf and open space. In the core of the forest lies the lowland blanket bog of Lon Leanachain SSSI. The burns coming from the hills and the bog are a defining feature of the forest area and there is scope for further strengthening the associated semi-natural habitats. Further peatland with a presumption to restore has been identified in the afforested area to the west of the SSSI.

The water flowing from the mountains to the south provides hydro power and from the eastern part of the forest flows into the River Spean and then the River Lochy supplying Fort William with its drinking water.

For many people, Leanachan Forest is associated with recreation and mountain biking in particular. At its heart is Nevis Range with its gondola, catering for 200,000 visitors a year, ski-ing and downhill mountain bike trails but the forest also offers gentle cycling and walking trails.

The commercial Dornie quarry lies within the forest boundary as does the Lochaber Rural Complex with the auction mart.

This is a revision of a plan originally approved in 2006.

For a detailed description of the forest see Appendix III

2.2 Plan Objectives

- Through forest design and management, create and maintain an attractive environment for people visiting the forest for leisure, outdoor activity and employment, in support of the local tourist economy.

- Maintain the productive potential of the forest, providing a sustainable, steady flow of conifer sawlog timber and managing suitable broadleaf areas for wood production.

- In the core recreation area, manage the forest using lower impact silvicultural systems and a wider variety of tree species where crop condition, terrain and access are suitable.

- Protect and enhance the wetland, in particular the Lon Leanachain SSSI, and riparian features of the forest. Protect and restore areas of deep peat.

- The development of a more natural ecological transition between the conifer forest and the open hill land through the restoration, linkage and expansion of the plantations on ancient woodland sites (PAWS) and semi-natural woodland remnants.

- Maintain the carrying capacity of the red squirrel stronghold through the restructuring of the forest. NB This is a longer term objective as due to the present age and species structure the forest it is not possible to maintain sufficient suitable habitat in the medium term.

Key challenges

- Age structure – The age structure of the conifer component is uneven with around half aged between 50 and 60 years old. This uneven and older age structure reduces the options to achieve restructuring of the forest as a whole within the this rotation. It also increases the risk of a period of time when the proportion of coning trees will only be able to support a low population of red squirrels.

- Most of these stands have reached their economic maturity and are at increasing risk of windblow. Larch areas are being targeted due to the likelihood of infection from the airborne

fungal disease Phtophthora ramorum, which skews the ability to restructure the forest successfully.

- Low Impact Silvicultural Systems (LISS) and thinning – the lack of thinning for many years in Leanachan means that none of the current mature stands can be managed under continuous cover forestry (CCF). There is potential to initiate thinning with a view to long term CCF management in some of the young conifer stands. Priority should be given to the stands in the west where the recreation interest is highest. Working on rough and often soft ground is the main challenge to achieving a silvicultural thinning. The current markets for biomass in the Lochaber are small due to its location relative to the demand. There is, however, a growing interest and demand nationally which could change the local position during this plan period.

  On a smaller scale there is scope for thinning some of the birch areas but this is depended on sourcing the appropriate equipment to cost-effectively handle small material.

- Wind – Leanachan is generally a relatively sheltered forest which has allowed the retention of some areas of conifers beyond their normal felling age. To achieve a greater degree of restructuring this rotation some risks are being taken with these older stands. The forest has suffered from significant storm damage in the past. Priority has been given to the clearance of windblown stands in the development of this plan includes the premature felling of a large coupe at Chapman wood due to extensive wind damage.

  Resilience – Leanachan has a high percentage of Sitka spruce (SS) in its species composition and forms part of a larger spruce dominated forest landscape. This does increase the vulnerability in the event of a serious disease or pest of SS or a change in the climate which makes the area less favourable. The opportunity for alternative conifers is limited to the low-lying more sheltered river areas where the soils are also better. A changing climate in the west of Scotland brings the probability of milder but wetter winters and an increase in storm events. LISS is not an option in the current rotation due to the lack of past thinning. The focus of resilience for wind will lie in coupe design and the provision of rides and the break-up of the even aged structure of the forest.

- Phytophthora ramorum –the number of infected stands of larch is expected to increase significantly in Lochaber during the plan period. The forest is in Scottish Forestry's Priority Action Zone (PAZ) in which larch stands served with a Statutory Plant Health Notice must be felled as soon as possible, to prevent a further sporulation. Forestry and Land Scotland's (FLS) policy is to pre-emptively remove 20% of the larch standing volume (at April 2022) in the PAZ forests by April 2027. The plan seeks to identify some coupes that can be taken early to reduce the overall percentage of larch as well as making provision for accessing other stands should they become infected.

- Dothistroma needle blight (DNB) – a survey undertaken in 2019 has identified some likely infection in Lodgepole pine (LP) in Leanachan. The level of infection in the individual stands is generally low but there are some areas where the pine is in poorer condition. Removal of windblow stands is the higher priority in the first phase of the plan although this will also remove some LP e.g. at Chapman Wood. Monitoring of the pine stands condition will be undertaken every three years and if there is further deterioration of the pine condition a felling amendment will be sought.

- Economic activity – The forest provides the setting for recreation and commercial interests which are due to increase as further tourism development is planned over the next few years and the quarry expands its operations to the east. The plan seeks to minimise the potential conflict between these activities through forest design.

- Plantations on Ancient Woodland Sites (PAWS) restoration – the main PAWS restoration area is Coille Leanachain on the slopes of Aonach Mor. The priority in this plan period is to secure regeneration of the felled part of the wood with the clearing of the remaining conifer being delayed until phase 3, provided the wind damage does not progress further. Conifer natural regeneration in the riparian and PAWS areas required constant monitoring and periodic intervention.

- Peatland – Past practices of deep plough, draining and application of fertiliser allowed conifer crops to be established on deep peat sites with varying degrees of success. There is a balance between tree growth and sequestration of carbon and the loss of carbon from peat which depends on the nature of the peat and the tree species. Assessments following Scottish Forestry guidance will be undertaken to determine whether or not to restock and the species. Any restocking of peat will also need to take account of the impact on tree growth from using lower intensity ground preparation and drainage before a final decision is made

- SSSI – Initial assessment indicate that the hydrological integrity of the Lon Leanachain blanket bog is being compromised by the planting of conifers outside the boundary of the SSSI but within the hydrological unit. They also increase the risk of seeding of non-native species on to the SSSI. And increasing number of Sika deer The plan seeks to find a solution to the removal of these conifers and facilitate the restoration of the natural vegetation in the first phase.

- Herbivore impact – Over the last 5 years herbivore impact assessment result have been variable but 43% of the conifer crops by area have suffered high to very high damage levels but only 29% having low levels of damage. This is primarily due to deer – roe, red and increasingly Sika deer – with some sheep incursion. The regeneration in the native woodland areas,

particularly to the south, is being held back by the browsing pressure. The Lon Leanachain SSSI is currently in unfavourable declining condition due in part to over grazing. Control of deer is challenging in a high recreation use forest. There is also a lack of strategic deer fence to the south against the sporting estate and winter incursion of red deer adds pressure to the management of the resident population. The current impact of herbivores on Lon Leanachain bog and in the PAWS restoration areas is high enough to be affecting the ability to meet the maintenance and restoration objectives without further action to reduce populations in these areas.

2.3 Analysis and concept

Objective	Opportunity	Constraint	Concept
To enhance the forest environment for recreation To use LISS in the core recreation areas	• Gleann Domhanaidh naturally attractive glen linking Nevis Range to North Face car park • Work already undertaken along Puggy Line, Gleann Domhanaidh and on the access to Nevis Range • Forest Holidays cabin development will enhance the woodland around their site	• Unthinned conifer stands in main recreation area cannot be thinned or managed under LISS without risk of inducing windblow • Dominance of mid rotation sitka spruce • P ramorum threat to larch precludes its use in the forest in the foreseeable future • Difficulty of undertaking harvesting operations within the busy recreation areas, particularly above Nevis Range	• Early intervention in the young stands to thin and maintain future options to manage under LISS • Early start on smaller felling coupes to create a more diverse age structure in Gleann Domhanaidh • Increase the planting of more diverse range of conifers around the recreation areas • Work with Nevis Range to manage the woodland around the gondola.
To maintain the productive potential of the forest	• Current production forecast is c22km3/yr over the next 10 years of predominantly spruce • Good access both within and to the forest to timber production • Some accessible broadleaf stands could also be managed • Access and more sheltered location should allow more	• Uneven age structure means that the annual production will reduce significantly beyond 10 years • Peatland expansion to protect SSSI • PAWS priority for restoration will lower the production potential	• Focus on restocking with productive conifers out with areas of high priority of conservation (e.g. SSSI, PAWS and riparian areas) • Maintain conifer production within the recreation areas with a focus on LISS and a greater diversity of conifer species

Objective	Opportunity	Constraint	Concept
	thinning in the second rotation crops	• Ground conditions may impede access to stands to thinning • Some areas of poorer growth in the current 2nd rotation crops • Areas of windblow developing	• Ongoing assessment of potential for management of broadleaves for woodfuel. • Target open space to areas where in brings multiple benefit e.g. protection of the bog habitat and water quality • Assess each stand for thinning potential and ensure first thinning is carried out at the correct height to minimise windthrow risk and maintain crown depth. Retain some first rotation crops where conditions allow to maintain some stands of mature trees for longer
To maintain the carrying capacity of the forest for red squirrel in the future	• Suitable scale of conifer forest to support a red squirrel population • Avoid creating route for grey squirrel incursion should they reach the Lochaber area.	• Loss of mature stands and diverse age structure with high proportion of 1950s and 60s stands which are due for felling • Limited conifer species diversity in the younger second rotation stands • Loss of Larch as a future component of the forest due to disease	• It is not possible to maintain the carrying capacity in the medium term within Leanachan • Balance the retention of older stands with the other objectives such as, peatland restoration, and the risk of windthrow as the crops age

Objective	Opportunity	Constraint	Concept
		• In the short to medium term the carrying capacity of the forest will fall further • Peatland restoration and native woodland expansion in Leanachan will reduce the suitable habitat for red squirrel • The data does not include the Killiechonate area of the strong hold	• Retain Norway spruce and other mixed conifers where possible • Avoid planting large seeded broadleaves • Increase the diversity of commercial conifers particularly targeting a corridor to link the east and west of the forest
To enhance the forest in the core recreation area	• The main recreation area is more sheltered and with some better soils • Potential to use CCF and smaller felling coupes in these areas • Similarly scope to Increase the diversity of conifer species	• Lack of thinning in the current conifer stands makes it more difficult to create more open stands of trees in short to medium term. • High recreation use of the forest all year brings challenges to undertaking forest operation in the stands • Higher resource commitment needed to plan and manage operations in recreation area.	• Identify areas where small scale felling and thinning can be undertaken to maximise the recreation benefit. Develop timed programme of next interventions required. • Seek to establish a diverse range of conifer species in the recreation area • Focus broadleaf establishment along the riparian corridors and create more open woodland in these areas • Small scale respace of trees within 20m of paths and roads in the main recreation areas. Develop more detailed zone plans and programmes.

Objective	Opportunity	Constraint	Concept
To develop a more natural ecological transition between the conifer forest and the open hill	• Already native woodland remnants along the upper margin with some PAWS area within the conifer forest to provide expansion down the hill. • Opportunities to link the current remnants across the slope • Neighbouring land owner of the open hill is seeking to expand native woodland elsewhere on their estate • There may be remnant montane willow on the cliffs below Sgurr Finniosgaig	• Deer and sheep grazing pressure currently holding back regeneration on open hill. • Loss of some productive conifer ground • Non-native regeneration will be a continuing management issue • Natural regeneration can be slow and site vegetate up before sufficient regeneration is established • Adjacent to sporting estate with porous strategic deer fence	• Focus initially on the restoration of the PAWS areas to native woodland • Consider the establishment of productive native woodland including Scots pine in PAWS areas of lower ecological potential and suitable site conditions • Monitoring of natural regeneration and enrichment plant and respacing if necessary • Work with NatureScot and neighbouring land owner to reduce the grazing pressure above Coille Leanachain to encourage the regeneration of the birch woodland in this area
To protect and enhance the riparian and wetland features and to restore deep peat	• Important bog in the heart of the forest with potential to expand and link to other features • Strong riparian features already present through the forest from past management decisions • Remnants of native woodland along some of the water course	• Loss of some productive ground to wetland and riparian expansion • Regeneration of non-native species will be a constant management issue • Still some mature conifers over shading water courses	• Identify potential expansion areas for Lon Leanachain and agree approach with NatureScot. • Continue to develop the riparian corridors to form strong links with the native woodlands and priority wetland habitats throughout the forest

3 LMP Proposals

3.1 Management

(See Map 3 for Management Proposals)

Clear Felling

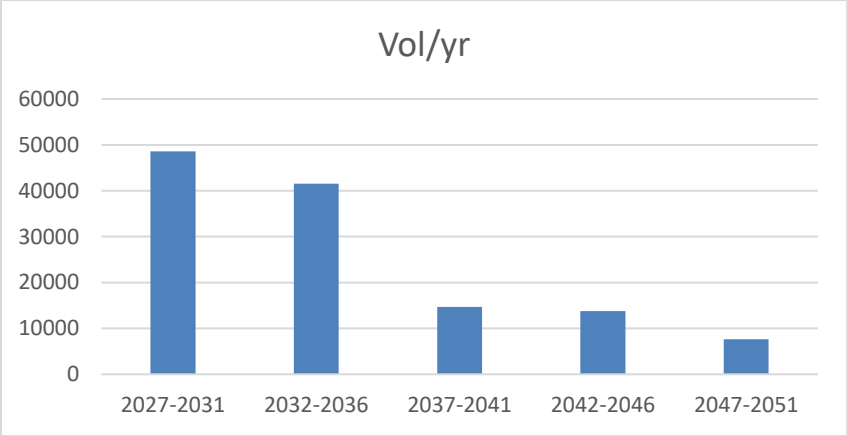
Clearfelling will continue to be the predominant silvicultural system in this plan period based on the current crop and site conditions. The aim is to harvest the crops as close to their age for economic felling while at the same time moving towards a more normal age structure and patchwork of coupes. The size of the coupes has taken account of the location and visibility as well as the age of the crops with smaller coupes in Gleann Domdhanaidh. Where production is the principle objective in the east the coupes are larger reflecting the landform and the more even aged nature of the existing stands.

The significant felling during the 10 year period of the plan is a reflection of a number of factors.

- The current Scottish Government priority for peatland restoration as a key element in the Net Zero strategy together with the opportunity to protect the Lon Leanachan SSSI. In the first phase the focus is on the felling of trees within the hydrological unit of the SSSI and in the second phase the restoration of the interlinked bog habitats on Torr Sonnachain will be the priority.
- The need to deal with significant areas of windblown throughout the forest including bringing forward the large Chapman wood coupe by 20 years due to the extensive damage. The coupe east of Lon Leanachan has similarly been brought into the first phase. This plan will clear 85% of the current windblow in the next 10 years.
- The age structure of the forest dominated by 1950s and 60s stands limiting the restructuring options and increasing the risk of further windblow
- Around 23% of the standing volume of larch will be felled in the first phase with a further 37% scheduled for the second phase.

Early felling of small coupes in Gleann Domhanaidh and to the south of Dornie Quarry is to introduce some structural diversity into the popular recreation area and start the 50 year process of transforming this area of woodland into one managed using CCF.

This plan does carry the risk of increasing windblow and a failure to achieve the desired structure if coupes have to be felled earlier than planned. The average age of felling does rise to 74 in the third phase However, it has been decided, at least for this plan period, to accept the risk for the wider environmental and recreational benefits it will bring even if the long term plan has to be revised significantly in year 10.



Graph of average annual production forecast of timber (m^3 overbark standing)

To comply with UKFS adjacency requirements for restructuring of even aged forests, the aim of the coupe felling phasing is to allow time for the restocking to be the agreed stocking density and to have reach 2m in height before the adjacent coupe is clear felled. To meet the other objectives such as smaller coupe size in Gleann Domhanaidh recreation area or where wind blow has already compromised restructuring there are some phases 1 and 2 coupes next to each other. There are identified in the activities table for restocking within one year of felling (phase 1) and for felling at the end of the phase (for phase 2). Where it is not possible to delay the clear felling of the phase 2 coupe, planting may be delayed until the adjacent crop has met the agreed restocking requirements.

Thinning

Due to a lack of past thinning in Leanachan very few of the mature stands are now suitable for thinning. This is unfortunate as the forest is relative sheltered, with a low DAMS score, accessible stands and a high recreation use where well thinned mature stands of trees managed under LISS would have been preferred. Subsequent thinning is limited to some areas in Gleann Domhanaidh and close to Nevis Range. However, each site will need to be review at the actual time of thinning to assess the risk and implications of inducing further windthrow.
The thinning map shows where the potential for thinning is in Leanachan and identifies four types of thinning approach – silvicultural, LISS, amenity and native woodland.
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 mean annual increment (MAI), or yield class (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. Operations will be monitored by checking pre and post thinning basal areas for the key crop components.

The principle challenge to achieving the thinning is the availability of suitable technology to allow the extraction of the products from second rotation sites with minimum damage to the standing trees and the ground. In some instances the first thinning may be undertaken without removing the produce from site e.g. where a well thinning more open stand is an essential part of the recreation experience an early intervention to protect the crowns may be necessary to allow future interventions to be successful.

Decisions on first thinning will be taken on a site by site basis at time of intervention taking account of the crop condition, objectives, terrain and available harvesting resource.

Thinning

(See Tables 1.3 and 1.3a and Map 4 for all thinning proposals)

Silvicultural thinning

The thinning map identifies young conifer crops that are within or coming into the thinning window as having potential. It is, however, essential that the first intervention is undertaken on time to minimise the risk of windblow and to maintain the crowns of the remaining trees. Priority will be given to stands in the western area of the forest with the higher recreation use and to stands of alternative conifers if resources are limited.

Native and broadleaf woodland

Broadleaf thinning will also be considered driven primarily by recreation and environmental objectives but also with an eye to future firewood potential in more accessible locations.

Amenity thinning/selective felling (Visitor Zone)

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

Where possible LISS or silvicultural thinning is the preferred approach in recreation areas but there are areas where this is not possible due to the current condition of the crop.

In these areas, single trees or small groups of trees will be removed when necessary to protect facilities, infrastructure and trails, to enhance the setting of features, to maintain existing views or for safety reasons (including to increase visibility to ensure that sites are welcoming and feel safe). A buffer of 30m has been identified along routes not covered by other felling or thinning permissions to facilitate this.

There is usually no measurable volume removed and fellings will target small, scattered and individual trees in order to achieve the objective. The scale of the operations makes representation of these areas on maps difficult. In general, the approach would be to remove minimum numbers of trees to achieve the objective of removing the adverse impacts arising from cover within these targeted areas.

Further detail is provided in Appendix XII

Low Impact Silvicultural Systems (LISS)

(See Tables 1.2 and Thinning Map 4)

Low impact silvicultural systems offer a slower rate of change in the forest, avoid the exposing of large areas of bare ground for a period and create attractive woodland for people to enjoy. They are, however, more demanding in management time and work best where the soil and climate conditions are drier and less windy than is experienced in Lochaber.
The plan does identify some of the younger crops in the west, the more popular recreation area, with the potential for future management under some form of shelterwood system. This is to highlight the importance of first thinning in these stands to create future management options. Some of the riparian woodland of Gleann Domhanaidh is also included for more active intervention as part of the recreation area.

Where the conifer stands in the recreation area have not been adequately thinning, small clearfells are planned to at least allow the introduction of a greater diversity of conifer species into the even aged Sitka spruce stands. The longer term objective would be to manage the stands under LISS. The LISS area south of Dornie quarry is a mixture of felled and standing trees as a result of storm damage and will need some adaptive management with the end goal of achieving a diverse stand of mixed species and ages.

Minimum Intervention (MI)

Most of the riparian areas are identified as minimum intervention which means that management will be limited to the remove of non-native regeneration and invasive species and deer management. Riparian woodland in Leanachan has developed through natural regeneration in most cases and required no further planting. Similarly the woodland on the upper margin of the forest is also identified as minimum intervention providing a natural transition of varying density of conifer and birch from the forest of the lower slope to the open hill.

Natural Reserves (NR)

The allocation of areas of natural reserve is undertaken at a Regional level and includes some of the birch stands on the upper margin of the forest, important as seed source for native woodland expansion. Two additional small areas of natural reserve have been identified within Leanachan in this plan to add to the West Region resource. An area of old windblow (31171) on the upper slopes now provides a valuable source of deadwood and is beginning to regenerate with mixed species.
The second area (31140) is the site of the Green Shield Moss, a European Protected Species. The roadside strip is excluded from the natural reserve area to allow trees to be felled if they become unstable.

Long Term Retentions (LTR)

The felling of first rotation Norway spruce and Scots pine and remnants of the 1920s Sitka spruce has, where possible, been delayed in order to retain some cone bearing trees for red squirrels while the forest is restructuring. It is recognised that the areas are too small to sustain a population but are nevertheless bring other biodiversity and visual benefits. Some of the retentions are too small to be mapped but there is a presumption to retain these when the adjacent stand is felled provided they are relatively stable.

Resilience

RESTRUCTURING:

The main purpose of restructuring is to create multi-purpose forests meeting a wide range of objectives including enhancing landscape, biodiversity, productivity, community and recreation opportunities whilst protecting and improving the setting of heritage features and restoring priority habitats. Increased species and age class diversity also increases the resilience of the

forest. The restructuring of Leanachan forest has been well progressed through previous plans and this plan seeks to continue the process.

The coupe size reflects the objectives and the land form. In the recreation zone around Gleann Domhanaidh to the east of Nevis Range the coupe size ranges from less than a hectare to 25ha but 85% are less than 10ha. The coupe size here is a compromise between an ideal of small scale felling or LISS and the reality of the crop condition in this area.

By contrast to the east of the Dornie quarry, the coupes are generally much larger where the landform can accommodate them. Larger coupes also provide greater in timber harvesting. Here the average coupe size (excluding the large felling around the SSSI for peatland restoration) is 27ha. While the design seeks to create a more diverse age structure in the future and a more even flow of timber from the forest, these stands are already between 50 and 60 years old. As the felling progresses the remaining stands become more vulnerable to the wind and full restructuring may not be possible this rotation.

CLIMATE CHANGE:

Climate change models suggest that the general trend will be towards a significantly warmer climate with higher winter rainfall and lower rainfall in the summer potentially leading to a partial soil moisture deficit during the summer months. The ESC 2080 model has been applied indicating that a greater variety of alternative conifer species will become suitable for the lower lying areas of the forest. This will be kept under review throughout the period of the plan and the latest advice followed.

Climate change predictions also include an increase in the frequency and intensity of storm events. While preventing damage from these events is not possible, the design of coupes and variation in age structure can reduce the extent of damage in any one storm event. Additional rides have been included in the restocking proposals to create further breaks in the crop along with strengthening the riparian woodlands.

Wind damage has been a significant driver in the selection of the phase 1 felling coupes for the first period of the LMP, in particular the premature felling of c.120ha in Chapman's wood and extending the felling beyond the hydrological unit to the west of Lon Leanachain. There are areas of windblow which have not been included in the early felling phases in order to try and deliver on other objectives such as structural diversity e.g. at Collie Leanachain. However, they will need to be monitored for the progression of damage and coupes brought forward if necessary.

TREE DISEASES AND PESTS:

An increase in the type and scale of tree diseases and pests is increasingly impacting on the management of the forest either through the need to prematurely fell infected or vulnerable trees and limitations on the species that can be planted.

Phytophthora ramorum of larch is the most serious tree disease currently in the region and the only one subject to statutory plant health notices (SPHN). One SPHN was issued in 2018 at the western edge of the forest and the larch cleared. Larch is no longer a viable tree species for forestry on the west coast. An accelerated programme to remove the existing stands of larch is underway and it is no longer being planted.

Larch is not a major species within Leanachan forest amounting to c100ha although its value in terms of the internal and external landscape of the forest is out of proportion to the area it occupies. It has been planted in small areas – the largest subcompartment is 5ha with the average being under 1ha. It is also an alternative food source for red squirrel.

Given the small and scattered nature of larch, in 115 separate components, it has not been specifically targeted for removal in the first phase but 22ha (23%) is due to be felled as component of other felling coupes. A further 37ha (37% is scheduled for felling in phase 2. A review of how to reach stands in the event of infection with the 10 years of the plan approval has been undertaken and highlighted on Map 5 Future of larch.

There is a total of 11 ha of pre-1945 larch which form an important component in the recreation forest. These are all accessible and will be retained unless they show signs of infection or are covered by a SPHN.

For a number of years larch was planted as a firebreak around the edge of coupes. It is more likely that should they become infected the larch will be simple be felled and where possible extracted or left to recycle. Felling of the whole coupe is unlikely to be justified but there will be a moderate increase in vulnerability to wind to the remaining crop.

The more challenging coupes are the intimate mixtures of larch and usually spruce. In the younger crops it may be possible to target the larch during a thinning operation. Map?

Dothistroma needle blight (DNB) affects pine species with Lodgepole pine being the most vulnerable in Leanachan. Pine stands are being monitored on a three year cycle to allow decisions to be made on whether to bring forward coupes for harvesting. There is infection in Leanachan but no coupes are yet being brought forward for felling due to the disease. The clearance of the windblow at Chapman Wood and the clearance of stands for peatland restoration, however, will remove 66ha in phase 1 and a further 28ha in phase 2 amounting to 85% of the current area of LP over the plan period. Planting of Lodgepole pine as a nurse for

Sitka spruce will continue using Alaskan provenance which has resistance to the disease. Scots pine can be planted in Leanachan as there are no Caledonian pinewood inventory sites nearby.

Ash Dieback is working its way through the Region with the expectation that as much as 90% of the ash will be lost. Pre-emptive felling of ash is not being undertaken in the hope of being able to identify some resistant trees but no ash is being planted. However, diseased trees will be removed from recreation areas for safety reasons due to the risk of branches falling.

FIRE RESILIENCE

Due to climate change there is an increasing risk of fires across Scotland's National Forest Estate (NFE) although the risk is low in the generally wetter conditions of the West Highlands. There are, however, periods during the year when, even in the west, the fire danger can be high. Leanachan is a popular recreation forest and contains a number of businesses, residential properties and key infrastructure assets such as the pylon line serving the aluminum smelter. The Lon Leanachan SSSI is completely within the forest and the Beinn Nebhis SSSI marches to the south. Consideration is, therefore, needed to minimise the risk of fires starting and to limit the spread and severity if one does occur.

Risk Factor	Description
Location/remoteness	Leanachan is close to emergency services in Fort William which also makes it a popular visitor destination
Topography	Only on the slopes of the mountains to the south could the topography accelerate the spread of any fire.
Land-use/vegetation	The slopes of the mountains above the forest have potentially high risk vegetation in dry spring conditions
Neighbouring land use	Lower risk with commercial forest and SSSI moorland. The gondola does, however, bring a 130k visitors a year above the forest.
Forest and tree health including windblow	Windblow is the main tree health issue in the forest with a mix of larger internal areas and fallen edges. The plan period will see the majority of the internal areas of blow cleared
Access for fire management	Generally well roaded with further roading infrastructure planned in the period of this plan
History of fire	None in recent years

In terms of design, the principle is to create and maintain suitable breaks and belts within the forest limit the spread of any fire and increase resilience around key assets. The numerous watercourses along with the current and proposed roads within Leanachan form a network dividing the forest into smaller areas up to 280ha in size. To be effective the road corridor and the key riparian corridors should be c30m in width. The cordon sanitaire around the cabin site is primarily in place to provide wind resilience but could also act as a fire belt.

In terms of silvicultural resilience, restructuring of the forest will help to limit the spread provided there are adequate breaks. The use of broadleaves closer to houses is proposed as an effective fire break as well as providing a range of benefits.

FLOOD RISK

Leanachan Forest lies in the catchment of the River Lochy which flows into Loch Linnhe at Inverlochy. The lower stretch of the Lochy are included in the potentially vulnerable area (PVA) around the head of Loch Linnhe on SEPA flood risk maps but it is not an objective target area (OTA). The risk of flooding property comes from a combination of a high tide and flood water. Coastal flood defense measures have now been installed.

Leanachan makes up less than 20% of the catchment of the Lochy and there are currently no natural flood management (NFM) studies or plans covering the forest. The increase in the area of Lon Leanachain bog, however, will help to hold back more water and the increase in native broadleaf woodland will also slow down the rate of water movement through the riparian areas.

Although the tributaries within Leanachan forest have sections with a high likelihood of flooding these areas do not threaten infrastructure. The water flow patterns from the hills above the forest are affected by the early C20th hydro scheme which did not allow for any compensatory flow and also moved water between catchments.

The River Lundy joins the River Lochy below the houses at Torlundy. The SEPA flood risks maps show a medium to high likelihood of flooding (0.5 – 10% chance/year) for a dozen houses below the A82. Around 50% of the natural catchment is afforested above Torlundy. The natural catchment of the Lundy has been altered by the aluminum smelter hydro scheme of the 1920s with water transferred over to the Allt Caillich. The only larger coupe to be felled in the catchment in the next 10 years is c65ha of the Torr Sonnachain peatland restoration the rest of the catchment area is being managed under CCF or small clear fells and with a significant riparian area on the flood plain in Glean Domhanaidh.

Operational Access

Timber Haulage within the forest area is set out in the following protocols: Protocol for timber transport operations.
Around 7km of new roads are required during the period to access the planned coupes – see Map 6 and Appendix X for EIA scoping requests and Appendix IX for current unexpired EIA determinations.
The detailed design of roads (LE121, LE1210) to access the Coille Leanachain area will need to minimise the impact on the puggy line. LE10 is in the high recreation area with the North Face trail but is the only route possible to reach this area of woodland due to the steep terrain above.
The design of the road will conform to both the Timber Transport Forum document "The design and use of the structural pavement of unsealed roads 2014" and SNH's "Constructed tracks in the Scottish uplands – revised Sept 2015".
The principle forest access is via the Nevis Range public road access at NN170774 which is an agreed route (Timber Transport Forum). The minor road into Leanachan farm is an excluded route due to the weakness of the road and the railway bridge as far as the forest road junction at NN211793 and then a consultation route to the farm. The Torlundy access road is a consultation route with a narrow railway bridge to cross.
Where there is a requirement to use a public road consultation route, FLS will discuss and agree timber haulage with the Local Authority prior to any harvesting.

There is very little available stone left in Leanachan for road construction or maintenance. No new potential quarry sites have been identified with suitable stone. In the foreseeable future stone will need to be brought in from FLS quarry at Mucomir near Gairlochy or purchased from Leiths' quarry within the forest.

3.2 Establishment

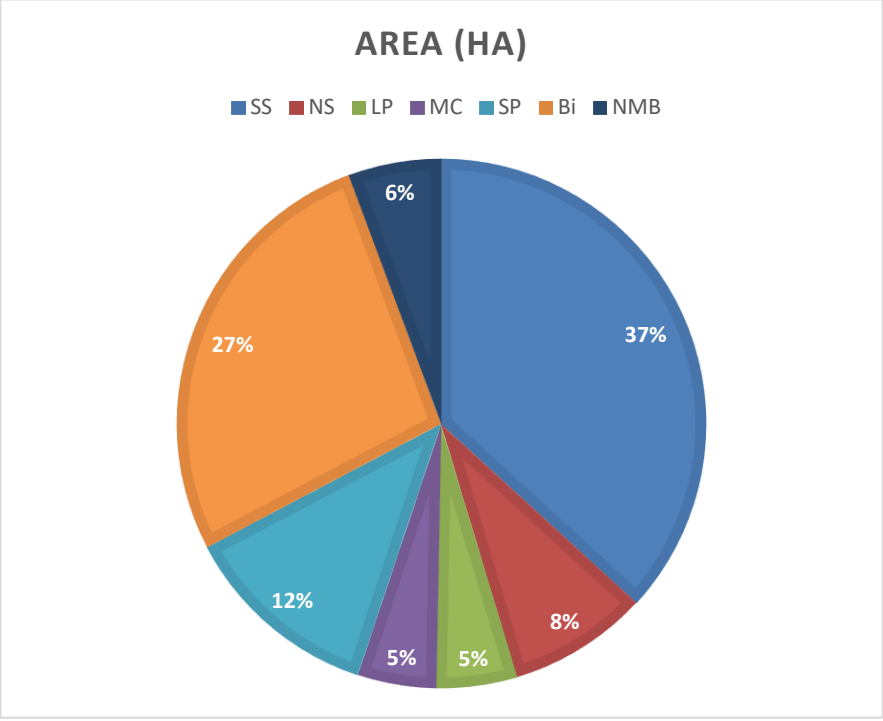
(See Map 7 for Future Habitats and Species)

Restocking

Timber production is one of the key objectives of Leanachan forest given its accessible terrain and proximity to the A82 transport corridor. Sitka spruce will be the principle conifer used in restocking, 37% by area. It is well suited to the climatic conditions of the area, more tolerant of the soils conditions, less vulnerable to browsing damage and yields long fibre, white wood. However, it is important to introduce more diversity into the conifer element to increase the

forest resilience in the future as well as creating more interesting forests for visitors to enjoy in the popular recreation areas. In sheltered areas with better soils, the nutrient and moisture regimes become more favourable for a wider range of alternative conifer species which could include: Norway Spruce (NS), Grand Fir (GF), Douglas Fir (DF), Noble Fir (NF), Scots Pine (SP), European Silver Fir (ESF) and a range of other minor conifers e.g. Western Red Cedar (WRC) Serbian Spruce (OMS) Japanese Cedar (JCR) as minor elements. Together the alternative species make up 30% of the proposed restocking with the expectation that they will be thinned and managed for timber.

Exposure, poor nutrient status and impeded drainage are factors limiting the choice of productive species at higher elevations, with Sitka Spruce (SS) being the only commercially viable species (See DAMS map). On more challenging sites SS & Lodgepole Pine (Alaskan) mixtures can facilitate the establishment and growth of a productive SS crop. Birch may also provide some nutrient and soil benefits in mixture with SS.



Graph showing the final tree species composition by area

The increase in native broadleaves is associated with the restoration of PAWS areas e.g. Coille Leanachain in the south of the forest.
There are some potentially suitable sites for oak but, due to the designation of the forest as a red squirrel stronghold, oak will not be planted. However, Scots pine would provide a

substitute native species in these situations and will be planted both for its conservation value and also, where accessible, for timber potential.
A significant area of expansion of native broadleaf including birch is focused on the edge of the peat habitat restoration areas around Lon Leanachain and Torr Sonnachain. The riparian areas of Gleann Domhanaidh to the west and Allt an Loin linked to the Cour to Lon Leanachain will also be strengthened in the plan period.

All compartments will be restocked within five years of clearfell, normally a two year fallow is used. Stocking densities will be a minimum 2,500 per ha for Conifer and 600 per ha for Broadleaves for further details on species and stocking for different restocking objectives see Appendix VI Woodland Types agreed with Highland Conservancy. Restock compartments will be monitored and maintained throughout the establishment phase, with losses being replaced to maintain the stocking density. Monitoring methods and techniques to be followed are outlined in the FLS Operating Guidance Booklet 4 – Plant Density.

Seed zone 106 will be used for all native trees. Should this seed zone be unavailable, Scottish Forestry will be consulted prior to planting and agreement sought to using any adjacent seed zones or any other seed being used, where it meets the requirements of Scottish Forestry guidance note "Seed Sources for Planting Native Trees and Shrubs in Scotland Guidance note".

Cultivation methods in future rotations will be selected to aid the establishment of the trees which seek to balance minimising the amount of the soil disturbance and the need for herbicide treatment. The preferred method of establishing broadleaves is through natural regeneration where the objective is to restore native woodland provided conditions are suitable – see below.

Conifer crops will normally be planted within two years after the felling of the previous crop at a density of 2500/ha. However, where heather encroachment or weevil damage is deemed a threat planting of spruce crops will occur as soon as possible post felling. There is also the option to leave a site fallow for up to 5 years if the Hylobius population levels will cause high mortality.

Natural Regeneration

Where there is a good seed source the preference is to allow natural regeneration to re-establish the native woodland. In the riparian corridors this has generally been successful. The larger area of Coille Leanachain and Coille Moire are more challenging due to the limited native seed source relative to the size of the coupe and some planting has been and is likely to continue to be required.

Broadleaf sites will be assessed post harvesting to make sure that the conditions are suitable for natural regeneration e.g. good seed source, seed bed and low herbivore pressure. Once a site is identified for natural regeneration it will be monitored and protected throughout the establishment phase. Minimum stocking densities will be 2,500 per ha for Conifer and 1,600 per ha for Broadleaves, except for riparian zones and some upper margins where open canopied broadleaved woodland is desirable (up to 800 stems per ha will be accepted here; 50 – 80% open ground is desirable on upper margins to create transitional woodland edge habitat). Should these densities not be met by year five, a planting operation will be carried out to achieve the required stocking density and species or, if a further period of regeneration monitoring is proposed beyond year five then Scottish Forestry will be notified.

Monitoring of natural regeneration will be undertaken via Stocking Density/Herbivore Impact Assessments. The monitoring for regeneration will run concurrently with any stated Fallow periods to avoid an additional 2-5 years period in advance of monitoring.

Woodland Expansion

There are scattered areas of birch woodland along the upper margin of the forest. The long term aspiration is for there to be a continuous area of native woodland above the forest along the upper margin of the forest transitioning into the open mountain habitats and linking to the lower forest through the riparian woodlands. If the grazing pressure is reduced, the birch is likely to spread albeit slowly up to its altitudinal limit of c500m forming an open woodland.

Recently a deer fence has been constructed above Coillie Leanachain where there are veteran birch with natural regeneration which is being held back by browsing of both sheep and deer. This area lies within the Beinn Nebheis SSSI.

Maintenance

Map identifies area of young crop where growth is looking poor and further investigation and remedial work is required. This includes drains maintenance, addressing heather check and cleaning. Some of these sites may be deep peat where restoration would be the most appropriate approach. Each site will be assessed before a decision is made and if required an EIA screening opinion request will be made to Scottish Forestry.

The natural regeneration of SS and LP does occur throughout Leanachan were the conditions are suitable. In sites designated for native woodland development it may be necessary to fell to recycle non-native trees if these are threatening the integrity of the native woodland development or key features. For practical reasons up to 15% of naturally regenerated non-

native tree will be accepted in native woodland restoration areas before intervention to control it is taken.

PAWS restoration

The process of removal of non-native conifer element from the PAWS areas in Leanachan was ongoing through the previous plan period. There is still a significant area of PAWS remaining albeit with little by way of visible remnant features. It is the intention to remove the conifer crop from the remaining PAWS area in Coille Leanachainn over the next 10 years. The current stand of conifer is growing very well and it is proposed to restock this with some Scots pine at commercial spacing for the next rotation along with birch and rowan. Thinning to favour native species will also be undertaken in the P2005 stand here.

The other area of PAWS still to be restored is further west Coille Moire. Here the coupe size is smaller to take account of the high recreation use of the area. So the removal of the non-native conifers is scheduled over 25 years.

The preferred approach to re-establish the native woodland on PAWS sites is to allow natural regeneration where there is a good seed source the preference. See above. In the riparian corridors this has generally been successful. The larger area of Coille Leanachain and Coille Moire are more challenging due to the limited native seed source relative to the size of the coupe and some planting has been and is likely to continue to be required.

Riparian Management

The future habitat plan seeks to strengthen the links between the open hill and the lower forest through expanded riparian woodland, particularly the Cour, Allt Rais, Allt na Caillich and Allt Daim. As well as protecting the water quality, these corridors also give a strong semi-permanent framework to the forest which will remain undisturbed during future operations and act as a natural fire break.
Running east west through the forest the riparian and wetland habitats along the Allt an Loin between Lon Leanachan and the Cour and in Gleann Domhanaidh will continue to be maintained and expanded.

The species proposed are indicative of what is expected in the riparian woodland but alternative native species will be accepted. Increasing the width of the riparian woodland

between Lon Leanachain and the Cour provides some protection for the important wetland areas and a stronger habitat network between the two features.

Deadwood

The highest ecological potential for deadwood is found in the established woodland within PAWS and riparian areas and also within Long Term Retentions and minimum intervention areas. Areas of lower potential for deadwood will be found in the higher, more exposed areas of conifer crop.

3.3 Open Land

The amount of internal open space within the plan area will increase significantly during the period of the plan with the expansion of the Lon Leanachan SSSI and restoration of the Torr Sonnachain peat areas. The existing internal open space will be retained and in some instances increased e.g. the ride network is expanded and widened to increase wind resilience.

Natural regeneration is widespread in Leanachan, especially in the core of the forested area. The encroachment of natural regeneration into open ground is likely to continue unless managed. The important areas within the forest to maintain as open are the butterfly habitat under the pylon line, Lon Leanachain SSSI and the Torr Sonnachain peatland.

Lon Leanachain SSSI

The long term management aim is to bring the blanket bog back into favourable condition. At present, mature plantations of Sitka spruce and locally Lodgepole pine surround much of the SSSI, typically right up to the boundary, and in the centre of the site extending slightly onto the SSSI. Many of these are on deep peat, formerly blanket bog. These plantations are likely to be having an adverse impact on the wetness of the site through the presence of the trees and associated drainage ditches. They are also releasing conifer seeds onto the SSSI and non-native regeneration is now widespread in places.

This plan sets out to fell all remaining mature planted conifers both in the designated area (1.84ha) and within a considerable buffer surrounding SSSI. The area within the buffer will be restored to blanket bog where appropriate, with scattered birch woodland establishing on the drier knolls. This buffer should improve the hydrology of the area and reduce non-native seed rain into the SSSI. A programme of non-native vegetation removal within the designated site will further address this issue.

See Appendix XI for the designated site management plan

Peatland Restoration

There are three principle areas of peat restoration identified in Leanachan forest during the first 10 years of the plan. These are described below and covered in the application for a deforestation EIA screening , together with a justification for the removal of trees and the potential for restoration.

There are potentially other areas associated with deep peat suitable for restoration based on soil data available. It has not been possible to assess these sites in advance of the LMP preparation but they will be surveyed prior to harvesting. If the peat is of sufficient depth, quality and scale to deforest, following the peatland guidance, an EIA screening request will be submitted on a site by site basis.

LON LEANACHAIN SSSI EXPANSION: The SSSI boundary does not follow the hydrological unit of the bog. The proposal seeks to restore the connection between the remaining open bog and the wider hydrology to improve the ecological function of the site and its future resilience. The terrain beneath the forest is complex with deep peat and mineral soils in mosaics in a relatively flat landscape. Using peat probing, terrain assessments from 5m contours and internal expertise a boundary for the hydrological has been identified. This outer edge may be modified once the trees are removed when it becomes easier to see the lie of the land. Techniques for the tree removal will involve low ground pressure harvesters and longer extraction distances to minimize the need to construct haulage roads into the bog. The native broadleaves are located on the drier raised knolls and again once the conifer crop is removed it will be easier to see these. From the clearance work to date these drier areas will colonise with birch the vision is to see a natural habitat develop of bog and native woodland. Scots pine will be introduced on some of the larger knolls as part of the habitat development.

See Appendix IX current EIA screening opinion determination.

The parallel roads of Lochaber SSSI underlies the north and west of the restoration area and the work proposed is included in the SSSI management plan agreed with NatureScot. The designated site management plan also includes the 1.84ha of the Lon Leanachain SSSI which still bears mature conifers. These will be felled and restored with the wider area.

Map 8 Statutory Designations and Appendix XI for the Designated site management plan

TORR SORRACHAIN: this areas was identified as a significant area of peatland restoration due to the presence of upland sphagnum bog which is a presumption to restore peat type. Further probing was then undertaken to try and identify the boundary of the hydrological unit of the five sphagnum bog areas mapped. These coalesced to form the single large area on the flatter plateau. In reality the precise boundaries where hard to determine and there are definitely some drier areas within the outer boundary. The knolls of native woodland are a best estimate based on the contours and probing and will be refined once the current crop is removed. The proposal also includes the removal of the P2022 planted area. The same techniques will be used as above.

See Appendix IX current EIA screening opinion determination.

The parallel roads of Lochaber SSSI underlies the south of the restoration area and the work proposed is included in the SSSI management plan agreed with NatureScot.

See Map 8 Statutory Designations and Appendix XI for Designated site management plan

ACHADH NA SINE: This is another area of Upland Sphagnum Bog within the forest and therefore a presumption to restore site. Further investigation is needed to confirm the extent of peat and the hydrological unit, however, the bog lies within a phase one coupe with significant windblow. It is proposed to undertake further ground investigation once the trees are felled and an EIA screening request will be submitted if restoration is identified as the best course of action. The current restocking indicates an open wet woodland type.

Beinn Nebhis SSSI/SAC

The long term management aim is to improve qualifying features to favourable condition. The Land Management Plan aims to increase native woodland cover to the immediate north/northwest of the designated area. This will increase resilience and reduce the risk of non-native seed rain into the designated area from adjacent commercial conifer plantation. Over-grazing by deer has historically been an issue in the area. The construction of a new deer fence by Forestry and Land Scotland in 2021, and associated increased culls in the area aims to address this.

See Map 8 Statutory Designations and Appendix XI for Designated site management plan

3.4 Deer Management

(see Appendix V, Deer Management Plan)

3.5 Visitor Zones and Public Access

Community

The closest community to Leanachan Forest is Torlundy with a number of houses within or on the boundary of the forest plan area. At a community consultation in February 2024 many local residents contributed and discussed issues with the local team. The most important was to increase the management and maintenance of the forest immediately around the properties and to manage the increasing visitor use of the forest to avoid potential conflict with the community especially in relation to vehicles. The management of the forest will be the subject of a more detailed plan discussed with the local residents to create a more open mixed woodland.

Formal access

Leanachan Forest supports both local recreation and tourist facilities and there is an increasing demand for access and business opportunities. The design of the forest around the facilities to create an attractive environment and backdrop for actives is a key consideration in the development of this plan. Some of the work is too detailed to be shown at the scale of the LMP but the principles are set out in Appendix II Silvicultural prescriptions.

Nevis Range and the Gondola

The facilities at Nevis Range of the large car park, café and gondola attract ca 200,000 visitors a year to enjoy the views and the network of mountain bike trails both downhill and around the forest. Although straight, the gondola and power line corridor are not very visible in the landscape and the mix of species along the edge provide some diversity when viewed from above. The principle challenge to the forest design is the management of the face immediately behind the base station and café where ideal the woodland would be mixed and managed under CCF system. In practice the density of trails and the nature of the crop means that a

compromise of small coupes and thinning to favour pine, open spruce and broadleaves is likely to be all that can be managed

Access Road to the Forest and Nevis Range

Thee access road has been managed to create a mixed conifer corridor with a view point of the mountains on approach to Nevis Range. Unfortunately the dominant species is larch which is very likely to be lost to disease in the next few years. Work has already begun to replace this with some underplanted mixed species. In the interim it is proposed to continue to thin the larch, favouring other conifers that are present.

Nevis Forest Masterplan

See Map 9 Recreation issues and analysis
The success of Nevis Range and the growing demand for wider recreation provision led to the development and adoption of a Masterplan for tourist accommodation development on the access road. The Masterplan covered forest cabins, a hotel and space for low cost accommodation and the area is zoned in the local plan for development. Nevis Range opened a 26 bedroom hotel adjacent to the gondola base station in January 2023. Work began in January 2024 on the construction of a forest cabin site under a lease with Forest Holidays. Neither the higher end hotel nor the low cost accommodation options in the original Masterplan are being progressed at present.

Forest Holidays assume responsibility for the management of the trees within the cabin lease boundary. The site itself is surround by productive forest to the north and west and the management interface between the two areas will be reviewed as part of the regular liaison between FLS and Forest Holidays. A ride will be created around the cabin site of sufficient width (30m) to allow the trees on both sides to develop natural stability as well as provide a fire break. The 10 year old stand to the west of the lease area has been designated as LISS and will need to be thinned during the approval period of the LMP.

Core forest visitor zone

The core recreation area for Leanachan Forest is focused on Gleann Domhanaidh between the North Face car park on the west of the forest and the Allt Criche east of Nevis Range. It also encompasses the main public access road to the forest and Nevis Range. The area has been identified through observation, discussion with recreation managers and visitor surveys as being the area of highest public use and potential for further recreation expansion.

Good quality, well maintained recreation facilities and the quality of the woodland and environment within which they are set are key elements of the visitors' experience. Both conifer and native woodland will be managed within the recreation area. The native woodland within the wider riparian area is dominated by alder and birch. Here the remaining stands of planted and regenerated spruce are due to be removed. The aspiration is to create a more diverse and well structure conifer forest beyond the riparian corridors. Ideally this area would be managed through thinning and encouraging natural regeneration under the older canopy or in small groups of less than 2ha. Unfortunately the age and species of most of the forest in this area does not lend itself to this type of management at present. The creation of small clearfells averaging 7ha and replanting with mixtures of alternative conifer is the compromise.

There are proposals to increase the capacity of the North Face car park to alleviate the inconsiderate parking that has been a feature over the summer period and good winter climbing days negatively impacting both residents and forest operations. The plans to create three additional parking areas to the north of the current car park (Coupe 31059) are currently under consideration by Highland Council planning. The plan will involve some felling within the planned LISS area. This will be approved through the planning process.

Informal access

The forest road network provides cyclists and walkers with opportunities to enjoy and explore the wider area. This informal access is managed under the Scottish Outdoor Access Code (SOAC). A number of longer distances tracks and paths cross the forest from west to east, some following claimed rights of way. These encourage more people to explore the eastern part of the forest away from the main visitor areas.
A small area for parking off the minor public road from High Bridge cross roads is regularly used by people looking for a quieter dog walking area closer to Spean Bridge.
The north-south routes are at either end of the forest, along the Cour to the east and to the west the popular access to the North Face of Ben Nevis and CIS hut. A number of these are also identified as core paths. See Map 10 Core Paths and Rights of Way.

Appendix XII describes the proposed zones for different woodland treatment for amenity and gives an outline of the proposed management . The appendix also covers principles for management for additional small scale work along path and forest road edges to create and maintain interest and more open areas.

The guidance FCPNO19: Managing Public Safety on Harvesting Sites, will be followed always. FLS will liaise with the Highland Council Access Officer ahead of operations should a diversion be required; appropriate signage will be put in place for any diversions.

3.6 Heritage Features

The key priorities for archaeology and the historic environment are to undertake conservation management, condition monitoring and archaeological recording at our significant historic assets and to seek opportunities to work in partnership to help to deliver Our Past, Our Future: the Historic Environment Strategy for Scotland and Scotland's Archaeology Strategy. Significant heritage features will be protected and managed following the UK Forestry Standard (2023) and UKWAS (2024). Harvesting coupes, access roads and fence lines will be surveyed prior to any work being undertaken in order to ensure that upstanding heritage features can be marked out and avoided. At establishment and restocking, work prescriptions exclude relevant heritage features from ground disturbing operations and replanting. Where appropriate, significant heritage features 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 Scheduled Leanachan Motte will be managed in accordance with the West Region's Regional Historic Assets Management Plan (RHAMP). The RHAMP describes an ongoing programme of conservation management, condition monitoring and detailed archaeological recording at relevant significant designated historic assets. It identifies and records any major conservation works, significant condition monitoring programmes (including Historic Asset Risk Assessments) and archaeological measured surveys undertaken.
Control of regeneration was last undertaken in 2012 and advice from Historic Environment Scotland (HES) is that this will be required again within the plan period. They will be contacted for consent prior to any work being undertaken on the monument.

Details of all known heritage features are held within the Forester Web Heritage Data (built using national and regional historic environment records) and included within specific operational Work Plans to ensure damage is avoided. Significant heritage features will be depicted on all relevant operational maps. These are shown on Map 11 Heritage sites and described in Appendix XIV Heritage sites
The remains of the township of Craig Aoil close to Nevis Range has been left more open to visually reconnect the building remains.

Geological Heritage - Parallel roads of Lochaber SSSI

The Parallel roads SSSI covers a large area around Spean Bridge and Glen Roy encompassing features associated with glaciation. Area is largely under conifer woodland in Leanachan and this will continue to be the land use. Any planned work involving potential ground disturbance within the SSSI area will be discussed with NatureScot and checked against the key features information they hold to ensure that these are identified and protected during operations. See Map 12 SSSI glacial features

3.7 Habitats & Species

See Map 13 Environment issues and analysis

There are areas of the forest that are known habitat for bats, otters and raptors which are covered by the European Protected Species regulations. Prior to any harvesting operations, FLS will ensure a pre-commencement survey is undertaken in the coupe to check for the presence of any protected species. The relevant FCS guidance notes: Wildlife and Forest. Operations 31- 35d will be adhered to if protected species are found to be present.

Red squirrel

Leanachan, along with the neighbouring forest of Killiechonate, is identified as a red squirrel stronghold. The actual population is unknown but modelling suggests a current population potential of c150 in Leanachan Forest (excluding Killichonate area of the stronghold). The original objectives for the stronghold identified maintaining and diversifying the long term supply of food and shelter alongside reducing the suitability of the forest to grey squirrel incursion.
The LMP has endeavored to include management practices favourable to red squirrels. In future restructuring of the forest, the plan has sought to spread the harvesting of mature stands over a greater number of years and to retain older NS and SP stands where possible. In considering the future forest composition, areas for introducing alternative conifers have been identified and in the main forest the establishment of large-seeded broadleaves is avoided. Note that some limited oak planting in Coille Leanachain is considered acceptable given its higher elevation, isolated nature and designated feature considerations.

We have been able to model for the next 20 years and this shows a drop in the potential carrying capacity to 76 for the Leanachan part of the stronghold but a recovery in the population of 138 after 75 years. A minimum viable population would need to be c125 individuals.

This drop in potential carrying capacity is primarily due to the reduction in the area of mature spruce and lodgepole pine and the loss of larch as a future suitable conifer. The decision to give priority to peatland restoration to prevent to loss of carbon and the increase in small seeded broadleaves associated with native woodland restoration and to provide a habitat buffer around the Lon Leanachan SSSI enhances the overall biodiversity of the forest but does impact the suitability of the forest for red squirrels. Nevertheless combined with Killiechonnate the indication is that the forest should be able to continue to support a small population of red squirrels in the future.

Chequered skipper

The wider area around the Cour River with fairly open birch wood is an important chequered skipper habitat and will be maintained as a core area for the butterfly. The pylon line wayleave is also an important long term habitat for them and maintained by SSE. The chequered skipper and other butterflies make use of the more dynamic open habitats of rides and open spaces within the crops and the native woodland network within Leanachan is important in maintaining connectivity for these other areas as they come and go in management cycles. The riparian woodland will be increased over time and include some low tree density areas/glades.
The monitoring of the two butterfly transects will continue.

Priority habitats

The open hill above the forest is at the edge of a mountain area stretching for thousands of hectares to the south and east. The vegetation is predominantly acid grass land and upland heath open to grazing by deer and sheep. Beyond the recent enclosure to promote the regeneration of the area of veteran birch above Collie Leanachain there is no other management proposed during the plan period.

The open habitat survey identifies some important areas of reedbeds and poor-fen grading into wet woodland associated with the Allt an Loin. These have been incorporated into the riparian area.
The other important habitat noted in the survey was the ‘exceptional’ Lon Leanachain blanket bog with its pool and hummock system – see section 3.3 Lon Leanachain SSSI.

Watercourses

Over the ten year of the plan approval the Allt nan Slat which flow south into the Allt Loin and then the Cour will have most of the conifer in its riparian zone replaced with native woodland and open space. The Allt a Chois, another tributary of the Cour, will have almost all of the

remaining conifer harvested in phase one. The UKFS Creating and Managing Riparian Woodland Practice Guide provides further advice on management.
The peatland restoration work around Lon Leanachain will open up more of the watercourse, particularly those flowing into the bog from the west.
In Gleann Domhanaidh further conifer removal will be undertaken on the Lundy and around the headwaters of the Allt na Caillich.

Watercourses will be protected by buffers (minimum 20m for watercourses width 2m and above; 10m for 1 – 2m wide watercourses and 5m for watercourses < 1m width). Riparian broadleaved woodland will be developed on larger watercourses where possible, following the guidance outlined in the Riverwoods Initiative. Further mitigation measures will include avoidance of drains directly into watercourses; deployment of silt traps where required; adopting low risk ground preparation techniques that are appropriate to the site conditions, and avoiding operations during prolonged periods of heavy rain, where feasible. Work Plans and other operational plans will make provision for suitable storage of fuel and materials and will identify suitable locations for refuelling, which will be out with the catchment area affected. Prior to commencement, the Forestry Works Manager will prepare a Diffuse Pollution Plan, which will identify all sensitive features, waterbodies and high risk areas on site. Forest and Water Guidelines, SEPA guidance and Confor guidance will be followed always.

3.8 Invasive Species

The level of invasive non-native species is low in Leanachan.

Rhododendron is present as scattered bushes and currently a low priority for the treatment. FLS will continue to monitor Rhododendron and for other invasive plant species to allow early warning of expansion and to plan for removal.
Monitoring for the presence and impact of feral pigs, known to be in Killiechonate to the east, on the various habitats of Leanachan will continue on an informal basis through observation by rangers and foresters. Feral pigs will be culled where possible when seen taking account of welfare issues.

3.9 Water Supplies

Public Water Supplies

A very small area (ca 9ha) of Leanachan forest lies within the public water supply catchment 8.5km upstream of the Wellfield Water Treatment Works at Camisky. There are no know drinking water protected areas. Scottish Water confirmed that there is very low risk from forestry activities provided these are undertaken in accordance with best practice.
In addition to meeting the UK Forestry Standard (UKFS) and Forests and Water Guidelines, guidelines for good practice will be taken into account including the Forestry & Water Scotland "Know the Rules" (Confor) and "Guidance on Forestry Activities Near SW Assets"; site specific risks and mitigation measures will be assessed and implemented where appropriate.

All forestry operations will meet relevant General Binding Rules applicable to forestry under the Water Environment (Controlled Activities) (Scotland) Regulations 2011 and any divergence will be licensed or registered with the Scottish Environment Protection Agency (SEPA).

The careful timing of any works will be imperative in minimising any risk to water catchments and good practice will be followed to ensure this.

Private Water Supplies

All known private supplies, based on Local Authority Health Department Data, deeds and local knowledge, within FLS land are recorded in a spatial database. The water catchments that feeding into these abstraction points have been identified and mapped for use at an operational level where best practice Forestry and Water Guidance will be rigorously followed. Any subsequent supplies found will be added into the database to give comprehensive coverage. During the preparation of this LMP, householders known or believed to be on private water supplies were contacted to confirm the location and nature of their abstraction points and infrastructure. The information received has been used to update the database. Not all householders responded to the request.

Prior to any harvesting, engineering or restocking operations, the database information on private water supplies and catchments is reviewed and site visits undertaken to verify the supply and infrastructure on the ground. A plan to protect and manage the water supply during the operation is prepared in conjunction with the property owner. FLS internal guidance, Scottish Forestry "Managing Forestry Operations to Protect Private Water Supplies" and

"Protecting private water supplies during forestry activities" (Confor) will be followed including a minimum 50m buffer upstream of the water abstraction point.

3.9 Critical Success Factors

- The future stability of the mature stands is critical to being able to extend rotations and promote a more normal forest age structure
- Suitable resources to be able to manage the thinning of second rotation conifer stands in order to create conditions for CCF systems to be deployed in the future and to allow the alterative conifer species in particular to develop into attractive stands with high sawlog components.
- The successful regeneration of native broadleaf species both naturally and by planting to be able to restore the PAWS areas and expand the riparian woodland
- The successful establishment of alternative conifers to create a more diverse forest for recreation, red squirrel habitat and forest resilience
- Management of herbivore impact targeting the priority habitats and establishment areas both planted and naturally regenerating
- Timely construction of haulage roads to allow coupes to be felled
- Availability of funding to enable successful restoration of peatland areas

4 List of Maps and Visualisations