



Forestry and
Land Scotland

Coilltearachd agus
Fearann Alba

West Region

Appin Land Management Plan



Plan Reference No: *****

Plan Approval Date: *****

Plan Expiry Date: *****

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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FORESTRY AND LAND SCOTLAND

Application for Land Management Plan Approvals in Scotland

Forestry and Land Scotland - Property

Region:	West
Woodland or property name:	Appin forest
Nearest town, village or locality:	Appin
OS Grid reference:	NM 9406 5074
Local Authority district/unitary Authority:	Argyll and Bute

Areas for Approval	Conifer Ha	Broadleaf	Open Space	Other Land	Peatland Restoration
Clear felling	38.41	1.08	12.17		
Restocking (including legacy RS)	26.83	27.36	9.43		
Selective Fell (CCF)					
Natural Regeneration	22.67	26.74	10.13		
Thinning	32.06	14.19	7.81		

Note: restock includes areas felled under previous Plan; broadleaves in clear fell coupes will normally be retained unless felling is unavoidable for operational reasons such as access and safety

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 August 2019.
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

PP Regional Manager

Signed

Conservator

Region: West

Conservancy:

Date : 09/12/2020, revised 25/02/2021

Date of Approval:

Date approval ends:

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1 Regulatory Requirements

1.1 Summary of Proposals

The Appin Land Management Plan (LMP) area covers 645.43 ha of land extending from sea level to 437 m, located near the settlement of Appin, about 20 miles NE of Oban. The forest comprises a mosaic of Semi-Natural Woodland (SNW) and Planted Ancient Woodland Sites (PAWS); areas of mixed conifers and broadleaves; a component of commercial conifers and large tracts of open ground including some agricultural land (the in-bye portion of which has recently been disposed).

The forest is highly visible in the landscape and forms an important backdrop to the coastal scenery of North Lorn; the Lynn of Lorn National Scenic Area lies adjacent to the SW boundary of Appin forest. The 2021-30 LMP should be viewed in the context of the wider group of linked forests under FLS management in this part of North Argyll and the Strategic Plan that will guide management across this wider area.

Appin is a small forest but the associated open ground extends northwards to Bealach and there is potential for continuous native woodland cover from Appin to Bealach. The intention is to join Bealach and Appin into one LMP in future. The forested hill (Dallens Hill) is an important feature in an historic landscape that is of national importance and future management will create a better fit with landform and enhance the landscape character, which is defined by the native woodland and open ground habitats.

The forested area covers about 285 ha, with 96 ha under broadleaves and 90 ha under conifers, the rest of the area has been felled. More than 50% of the land holding is open ground, dominated by a series of mountain ridges running parallel to the coast; 316 ha of the open ground has been identified as plantable.

Although the conifer mix is fairly diverse across a relatively small area, there is a significant area of larch, which will be felled at a suitable opportunity. The major areas of conifers were established between 1930 and the 1970's (with the largest area of planting in the 1960's) and a more recent area of 2nd rotation restocking but there are small areas of old, mature conifers and broadleaves. Felled areas are covered with advance regeneration of a range of conifer and broadleaved tree species. Invasive Non- Native Species (INNS) including Rhododendron, Western hemlock and in this context beech, are spreading through the forest. Rhododendron is encroaching from neighbouring ground the South and although work is ongoing to control this incursion, an area of which was subject to a Statutory Plant Health Notice (SPHN) for *P. Ramorum*, there remains an extensive spread. Bushes occur on rock outcrops, cliff faces and steep slopes that are difficult to treat and there is ingress onto the open hill. The construction of ATV tracks will facilitate this ongoing vegetation control as well as assisting deer management. The forest contains 11.6 ha of larch, most of which will be removed in the first 5 years of the LMP.

Restoration of at least 85% of PAWS on FLS land is a priority but in Appin, it is not feasible to attempt this until the INNS are under control. Therefore, the plan is to accept existing natural tree regeneration, which is extensive; weed/clean out undesirable species, including Sitka spruce; implement a thinning programme at an early stage and then manage as Continuous Cover Forestry. Over time, native broadleaved and conifer species will be favoured, eventually transitioning to native woodland in the PAWS areas.

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Mature specimen conifers, veteran trees and all native broadleaves will be retained, along with standing dead wood where this does not present a hazard but mature Western hemlock and beech trees are seeding into felled areas and road /track sides and will be felled at the earliest opportunity. Larch trees will be felled early where possible or access established to enable felling in the event of an SPHN. Conifer stands planted in the last 20 years will be thinned and managed as CCF where possible. The exception is the felled coupe at the South end of the forest, which is not suitable for establishment of broadleaves or mixed woodland at this stage due to the high degree of Rhododendron infestation in the vicinity. Here, Sitka spruce will be planted as this species has the greatest potential to cope with the competition and unfavourable conditions that prevail. The hill face on this side is highly visible and is a major feature in the landscape when viewed from the South and nearby settlements, so the planting will be diversified as far as possible under the circumstances, by including a birch/ Sitka mix further up the hill, transitioning to mixed and broadleaved woodland further North and West. It may then be possible eventually, to establish broadleaved woodland on the hillside here in the longer term, if the Rhododendron can be controlled adequately.

Watercourses will be protected during harvesting operations, conifers removed and riparian corridors of native broadleaved woodland developed that will link with existing native woodland and the open hill. The strip of land between the A828 road and the shore will be managed to retain views and ensure that the area is safe.

The native broadleaved scrub woodland that currently covers the ridges extending North towards Bealach will be expanded, eventually linking with native woodland at Bealach to form continuous woodland along the three mile stretch.

Opportunities for growing more areas of productive forest will be explored, focusing on broadleaves. Coupe sizes will be small- scale, reflecting the landscape character. Archaeological and conservation features; protected species and priority habitats will be protected. New ATV tracks will make some of the heritage features more accessible for visitors.

Objectives

- Focus conifer production on the most suitable areas (in the context of the wider group of linked forests) and review options on steep and marginal ground, to optimise production and continue to contribute to regional timber production targets and maximise returns
- In the longer term, once invasive species are under control, enhance and expand native woodland in SNW/PAWS zones, through removal of non-native conifers during subsequent thinning cycles and by promoting natural regeneration of locally native species. In the short term, accept and manage the existing natural regeneration of mixed species that occurs
- Work with neighbours to manage deer populations, to minimise grazing / browsing pressure on planted and naturally regenerating trees
- Continue to remove Rhododendron and other Invasive Non-Native Species (INNS)
- Plan for timely pre-emptive removal of larch in response to the previous identification of *P. ramorum* on Rhododendron stands
- Review long term felling and restock plans in the South and West-facing slopes in the southern section of the forest, to enhance visual amenity and reflect priorities for timber production, landscape and environment

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- Develop options for woodland creation on some of the open ground in the northern section of the forest block, while protecting priority open ground habitats

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	Open
Area in ha	39.85				12.17
% of area (not including other land)	10%				
Volume (m3)	16,417				

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

Species Group	Current – 2021		Year 10 – 2031		Year 20 – 2041	
	Area (ha)	%	Area (ha)	%	Area (ha)	%
Sitka Spruce	48.4	7.49	30.4	4.71	29.4	4.55
Norway Spruce	22.8	3.53	5.5	0.85	3.8	0.59
Larches	11.6	1.8	3.52	0.54	3.52	0.54
Mixed Conifers	27.7	4.3	42.68	6.61	59.38	9.19
Mixed Broadleaves	1	0.15	0	0	0	0
Native Broadleaves	121*	18.73*	135.8**	21.02**	159.2***	24.64***
Successional / felled/ open Space	159.36	24.67	173.96**	26.93**	136.56***	21.14***
Managed internal open space	17.25	2.67	17.25	2.67	17.25	2.67
Total	409.11	63.33	409.11	63.33	409.11	63.33
Open hill	233.73	36.18	233.73	36.18	233.73	36.18
Agriculture						
Open Water	3.16	0.49	3.16	0.49	3.16	0.49
Total	646	100	646	100	646	100

Note:

* minimum of 56.2 ha (8.7% land area) of native broadleaves is managed primarily for conservation and biodiversity objectives

** minimum of 67.55 ha 10.5% of native broadleaves/ successional is managed primarily for conservation and biodiversity objectives

*** minimum of 98.79 ha 15.3% native broadleaves / successional is managed primarily for conservation and biodiversity objectives

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

Age Class	Current – 2021		Year 10 – 2031		Year 20 – 2041	
	Area (ha)	%	Area (ha)	%	Area (ha)	%
0 – 10 yrs	73.7	31.78	158.1	72.16	107.6	41.64
11 – 20yrs	23.1	9.96	5.8	2.65	107	41.41
21 – 40 yrs	1.6	0.69	22.7	10.36	28.3	10.95
40 – 60yrs	82.6	35.62	7.1	3.24	0	0
60+ yrs	50.9	21.95	25.4	11.59	15.5	6
Total	231.9		219.1		258.4	

Productive Forest Area Statement

PHASE 1

<i>FELLING AREA</i>	<i>ha</i>	<i>ESTABLISHMENT AREA</i>	<i>ha</i>
Conifer	26.61	Conifer	28.26
Open Space	12.17	Open Space	9.48
Broadleaves	1.07	Broadleaves – NR	5.83
		Broadleaves – native planting	19.62
		Broadleaves – non-native planting	0
Existing Broadleaves	0	Existing Broadleaves	0
TOTAL	39.85	TOTAL	63.19

PHASE 2

<i>FELLING AREA</i>	<i>ha</i>	<i>ESTABLISHMENT AREA</i>	<i>ha</i>
Conifer	0	Conifer	21.24
Open Space	0	Open Space	10.08
Broadleaves	0	Broadleaves – NR	23.28
		Broadleaves – native planting	1.41
		Broadleaves – non-native planting	0
Existing Broadleaves	0	Existing Broadleaves	0
TOTAL	0	TOTAL	56.01

Note: Broadleaves present in clear fell coupes will normally be retained, unless there are unavoidable operational reasons to fell them

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UKWAS Summary

Description	% of LMP Area ¹	Location of Data
Restock main conifer spp	2.64	Forester Restock Layer
Restock other conifer - Scots Pine	4.72	Forester Restock Layer
Open Space ²	7.21	Forester Restock Layer
Native broadleaves ³	8.14	Forester Restock Layer
Management for biodiversity as primary objective (incl NR and MI area)	12.02	Forester Management Layer
LISS	6.05	Forester Management Layer
Natural reserves	0	Forester Management Layer

Notes

1. The % will total more than 100% as the species and management categories overlap.
2. Only the larger areas of open space area recorded here. There many more small areas of open space within the broadleaf woodland.
3. The native broadleaves will be at variable stocking densities.

Planned Road Operations

Planned operations	2021 – 2031 10 plan period
Road Construction	0

A road or track may be required to facilitate native woodland expansion, which will be taken forward as a separate project. It will require local authority Prior Notification (PN) approval, which will be submitted following EIA determination approval by Conservancy, as included in this plan.

Any unexpired PN's and EIAs are listed in Appendix VIII.

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1.2 Activity Summary

1.1 Table of Clearfelling (Phase 1)											
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	Monitoring Comments
46351	19.95	6.53	0	0	0	1.61	1.88	0.01	9.92	2026	
46502	3.53	0.48	0	0	0	1.24	1.56	0.18	0.07	2025	
46083	4.66	2.07	0	0	0	1.86	0.16	0.16	0.41	2022	
46082	7.58	0.34	0	0.08	0	3.37	1.99	0.404	1.4	2021	
46042	0.66	0.001	0	0	0.02	0.02	0.28	0.29	0.05	2023	Felling to remove WH – retain BLs wherever possible.
46052	2.36	0.12	0	0.005	0.7	0	1.5	0	0.035	2023	
46062	1.11	0.04	0	0	0.14	0.02	0.59	0.035	0.285	2023	
Totals	39.85	9.58	0	0.085	0.86	8.12	7.96	1.08	12.17		

1.3 Table of CCF Felling (Phase 1)											
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
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Totals	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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1.4 Table of CCF Felling (Phase 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
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Totals	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

1.5 Table of Thinning (Phase 1 & 2)

Coupe No.	Total Area (Ha)	Species	Thin-able Area (Ha)	Prescription for Thinning	Final Thinned Area (Ha)	Final Vol / Ha Removed	Monitoring Comments
46136	12.47	SS, NS, MB, SP, WH	7.91	Much of coupe planted 2011 but includes mature SS & MB from 1920's, to be retained. Remove all WH and any larch at earliest opportunity. Next thin 2026/27 when stands are 15 years old – intermediate thin on 5 year cycle, 1.1 thin intensity; 20 years crown thin at 1.3 thin intensity; 25 years crown thin at 1.2 thin intensity; 32 years intermediate thin at 1 thin intensity; 40 years neutral thin and at 50 years, neutral thin.			
46137	3.7	SP, NS	3.7	Planted 2010, first thin 2025/26. When stands are 15 years old – intermediate thin on 5 year cycle, 1.1 thin intensity; 20 years crown thin at 1.3 thin intensity; 25 years crown thin at 1.2 thin intensity; 32 years intermediate thin at 1 thin intensity; 40 years neutral thin and at 50 years, neutral thin.			

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1.5 Table of Thinning (Phase 1 & 2)								
Coupe No.	Total Area (Ha)	Species	Thin-able Area (Ha)	Prescription for Thinning	Final Thinned Area (Ha)	Final Vol / Ha Removed	Monitoring Comments	
46154	1.09	SS, HL, WH, MB	1	Planted 2010/2011, first thin 2025/26. Remove all larch and WH at first thinning or earlier if possible. When stands are 15 years old – intermediate thin on 5 year cycle, 1.1 thin intensity; 20 years crown thin at 1.3 thin intensity; 25 years crown thin at 1.2 thin intensity; 32 years intermediate thin at 1 thin intensity; 40 years neutral thin and at 50 years, neutral thin.				
46504	6.38	SP, HL, MB	5.52	Mature trees, with MB dating from 1890's and 1950's and SP/larch from 1903. Review in 2026/207 with a view to removing larch.				
46505	8.97	SS, SP, DF, NS, HL, MB	8.74	Planted 2001; first thin 2021/22. Remove larch at first thin; clean out any WH, BE, larch regeneration. From 20 years, line thin; remove 1: 6 rows; at 25 years intermediate thin on a 5 year cycle at thin intensity fraction 1; at 60 years intermediate thin on a 20 year cycle at 1.2 thin intensity fraction.				
46508	6.06	MB, NS, SS, WH	6.01	Mature trees ca 1964. Remove all WH in 2021/22 and review options for neutral thin of remaining stems at that stage.				
46520	6.94	SS, SP, NS, xcon, WH, MB	5.98	Planted 2001; first thin 2021/22. Remove all WH at first thin and clean any larch / BE regeneration. Intermediate first thin on 5 year cycle, 1.1 thin intensity; 20 years crown thin at 1.3 thin intensity; 25 years crown thin at 1.2 thin intensity; 32 years intermediate thin at 1 thin intensity; 40 years neutral thin and at 50 years, neutral thin.				

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1.5 Table of Thinning (Phase 1 & 2)								
Coupe No.	Total Area (Ha)	Species	Thin-able Area (Ha)	Prescription for Thinning	Final Thinned Area (Ha)	Final Vol / Ha Removed	Monitoring Comments	
46531	5.69	SS, DF, MB, NS, WH, HL	5.49	Planted 2006; first thin 2021/22. Remove all WH and intermediate thin remaining stands on 5 year cycle, 1.1 thin intensity; 20 years crown thin at 1.3 thin intensity; 25 years crown thin at 1.2 thin intensity; 32 years intermediate thin at 1 thin intensity; 40 years neutral thin and at 50 years, neutral thin. Aim to retain MB in stand.				
46802	2.76	MB, SS	1.94	Natural regeneration established 2014 but > 40% of coupe supports more recent regeneration. Clean out undesirable species at earliest opportunity. Thin to favour broadleaves but select best stems. First thin 2029/30; intermediate thin on 5 year cycle, 1.1 thin intensity; 20 years crown thin at 1.3 thin intensity; 25 years crown thin at 1.2 thin intensity; 32 years intermediate thin at thin intensity 1; neutral thin at 40 and 50 years.				

1.6 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)	PP by Ha (Larch)	Spp by Ha (MC)	Spp by Ha (MBL)	Open Land by Ha	Comments
Clearfell	39.85	16,417	9.58	0	0.085	0.86	8.12	7.96	1.08	12.17	
Thinning	54.06	112	13.98	3.96	0	5.64	3.21	5.27	14.19	7.81	
CCF											
	93.91	16,417	Grand Total of Felled Timber Proposed for Plan Period								

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1.7 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/Lf	Open (Ha)	Year	Restock Method & Density (Restock/Nat Regen/Alt Area/Coppice/Open)	Monitoring Comments (Including any reason not to restock)
46514	43.86	17.08	0	0	0	4.95	18.18		3.65	2021	Broadleaves at coupe margins to W, S and E. Pure SS in 9.61 ha of southern section of coupe, E of forest road, grading to a 60:40 SS/BI mix to the N of the coupe (12.45 ha). BI should be planted in discrete groups, minimum 30 m diameter, within a matrix of SS. MC/MB mix to W and NW of the coupe in a 50:50 intimate mixture to achieve net 2050 stems/ ha. Accept and manage NR but weeding out WE, BE, R. ponticum and other INNS. Plant native MB along watercourses at 1100 stems / ha, leaving 30% open ground.	
46506	6.92	0	0	0	0	2.76	3.39		0.77	2026	Natural regeneration of MB and MC to achieve minimum density 1600 stems/ha BLS and 2500 stems / ha conifers where there are pure stands and 2050 stems per ha where stands are heterogeneous. Achieve stocking levels within 5-10 years, supplemented by planting if necessary. NR surveys at	

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1.7 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/Lf	Open (Ha)	Year	Restock Method & Density (Restock/Nat Regen/Alt Area/Coppice/Open)	Monitoring Comments (Including any reason not to restock)
											5 and 10 years. Weeded and cleaned to remove all INNS including WH, R ponticum and BE. Favour BL where possible, with the expectation of higher proportion of BL on upper slopes. Note dangerous pothole in NE area of coupe.	
46082	7.58	0	0	0	0	1.58	2.37		3.63	2023	Planted MB and MC to achieve net 2050 stems / ha plantable area. Plant in a mosaic with areas of intimate mixtures and discrete groups. (2500 CON stems / ha and 1600 BL stems / ha where planting discrete groups). Accept natural regeneration but remove any WH and BE that occurs. MB to include OK, BI, ASP, ROW, WCH, HOL, HAZ, MC can include SP, DF, NS, GF, WRC.	
46083	4.66	0	0	0	0	0	3.96		0.7	2023	Planted with MB to achieve minimum density 1600 stems/ha net plantable area. MB to include BI, ROW, HAW, with CAR in wetter areas.	

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1.7 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/Lf	Open (Ha)	Year	Restock Method & Density (Restock/Nat Regen/Alt Area/Coppice/Open)	Monitoring Comments (Including any reason not to restock)
46072	3.16	0	0	0	0	0	1.9		1.26	2030	Broadleaves - natural regeneration to achieve minimum density 1600 stems/ha within 5-10 years, supplemented by planting if necessary. NR surveys at 5 and 10 years.	
46092	2.92	0	0	0	0	0.52	0.35		2.05	2027	Natural regeneration to achieve minimum density 1600 stems/ha BLS and 2500 stems / ha conifers (2050 stems per ha where stands are heterogeneous) within 5-10 years, supplemented by planting if necessary. NR surveys at 5 and 10 years. NR BL along watercourse with 50% open canopy.	
46502	3.53	0	0	0	0	1.41	1.41		0.71	2026	Planted MB and MC to achieve minimum density 2050/ ha net plantable area, accepting NR where this occurs but removing any WH or BE regeneration.	

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1.7 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/Lf	Open (Ha)	Year	Restock Method & Density (Restock/Nat Regen/Alt Area/Coppice/Open)	Monitoring Comments (Including any reason not to restock)
46507	9.84					3.31	4.72		1.81	2028	Natural regeneration of MB and MC to achieve minimum density 1600 stems/ha BLS and 2500 stems / ha conifers in pure stands and 2050 stems per ha where stands are heterogeneous. Stocking densities achieved within 5-10 years, supplemented by planting if necessary. NR surveys at 5 and 10 years. Weeded and cleaned to remove all INNS including WH, R ponticum and BE. Favour BL where possible, with the expectation of higher proportion of BL on upper slopes. Clean/ thin out SS where it occurs in high proportions. NR MB in riparian zone with 50% open ground.	
46518	29.64					12.92	12.92		3.8	2028	Natural regeneration of MB and MC to achieve minimum density 1600 stems/ha BLS and 2500 stems / ha conifers where there are pure stands and 2050 stems per ha where stands are heterogeneous. Stocking levels achieved within 5-10 years,	

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1.7 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/Lf	Open (Ha)	Year	Restock Method & Density (Restock/Nat Regen/Alt Area/Coppice/Open)	Monitoring Comments (Including any reason not to restock)
											supplemented by planting if necessary. NR surveys at 5 and 10 years. Remove any WH, BE, R. ponticum and other INNS where they occur. Favour BL where possible, with the expectation of higher proportion BL on upper slopes. Clean/ thin out SS where it occurs in high proportions.	
46042	0.66					0.32	0.32		0.02	2023	MB and MC planted to achieve an average 2050 stems / ha – to supplement any BLs retained after felling.	
46052	2.36			0.44	0.1	0.59	0.76		0.47	2023	MB and MC planted at average 2050 stems / ha but accept natural regeneration of desirable species. All NR of undesirable species (SS, WH, BE, Rhode etc.) to be removed.	
46062	1.11			0.43			0.43		0.25	2023	SP (50%) BI (40%) and ASP (10%) to be planted at average 2050 steams / ha. Natural regeneration of all undesirable species to be removed but NR of desirable species accepted where appropriate.	

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1.8 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
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

1.9 Table of Civil Engineering				
Proposed Activity (Road/Quarry)	OS Grid Reference	Forest/Coupe	Description (Length/Area/Construction)	Monitoring Comments
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

1.10 Table of Other Projects				
Proposed Activity	OS Grid Reference	Forest/Coupe	Description (Length/Area/Construction)	Monitoring Comments
ATV Tracks	NM 94195069 and NM 9354 4871	46501, 46507, 46518, 46514, 46513, 46506, 46802, 46092	5.62 km tracks in six separate sections including a 2,039 m loop in S. part of forest. 30 m buffer, minimum depth 150 mm using	

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1.10 Table of Other Projects				
Proposed Activity	OS Grid Reference	Forest/Coupe	Description (Length/Area/Construction)	Monitoring Comments
			mineral spoil sourced as close as possible. Up to 2.5 m running surface. Built to standard FLS specifications.	
Fencing	NM 9467 4983		Approx. 3.1 km new livestock fence on eastern march boundary, running N. to link with existing fence at Bealach. Repair / upgrade / replace 3.5 km existing livestock fence at S. and SE. march boundaries. Remove section of redundant deer fence (312 m) in northern section of coupe 46520. Check, and repair where necessary, southern boundary fence at Bealach.	
Environment works		46802, 46092, 46505, 46508, 46520, 46531, 46507, 46351, 46137, 46518, 46136, 46513, 46514	Management of riparian areas during clear felling, restocking and thinning operations. Protect watercourses during felling / thinning; avoid drainage directly into watercourses / use silt traps and avoid work in extremely wet weather. Retain BL in riparian zones during clear fell. Remove all non- native conifers from watercourses and avoid restocking conifers in riparian zones, leaving 10 m unplanted buffer for watercourses 1- 2 m channel width and 5 m for watercourses < 1 m wide.	

1.10 Table of Other Projects				
Proposed Activity	OS Grid Reference	Forest/Coupe	Description (Length/Area/Construction)	Monitoring Comments
			Riparian native BL woodland – planted at up to 1100 stems / ha where specified, otherwise natural regeneration or successional development – to achieve an overall canopy cover of 40-50%. Remove regeneration of conifer species.	
		All – but particular ref to 46518, 46351 and 46092	Retain and protect all mature / veteran native BL and CON trees (ref SP and SOK) and standing dead trees during harvesting and thinning operations.	
		46351, 46518, 46513 (& any other coupes where they occur)	Protect wood ant nests during felling, thinning & restocking operations. Environment team to advise prior to commencement of operations	
		All except 46514, 46520, 46501 & 46083	PAWs or SNW present in some part of coupe. Manage existing regeneration / restock as mixed woodland under CCF (part from 46514) but favouring native species wherever possible, with conversion to native woodland in the longer term.	
		All	Remove WH, BE, larch & Rhododendron regeneration from all road and track edges – ongoing. Remove buddleia where growth is dense or prolific.	

1.10 Table of Other Projects				
Proposed Activity	OS Grid Reference	Forest/Coupe	Description (Length/Area/Construction)	Monitoring Comments
		All	Protect breeding & resting sites where identified or found, during felling, thinning, restocking or other management operations. Environment team to advise prior to commencement of operations	
Tree health		46154, 46083, 46513, 46351, 46502, 46531, 46504, 46505	Larch present in these coupes. Monitor trees regularly for signs of disease. Coupes 46083, 46351 and 46502 to be felled in first 5 years (phase 1) – remove any adjacent larch at same time where possible. Coupe 46513 to be felled in phase 3. Coupes 46514, 46531 and 46504 are LISS – larch to be removed during thinning operations and any larch regeneration weeded out.	
Tree health		46136	Monitor ash trees for ash die-back (Chalara). Retain dead/dying trees apart from accessible areas close to rides, roads etc, where they may present a hazard.	

1.3 EIA Screening Determination

See separate documents

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. A full list of these standards and guidance can be found here:

<https://scotland.forestry.gov.uk/managing/plans-and-strategies/land-management-plans/links>

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 **40** 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

1.5 Tolerance Table

	Adjustment to felling coupe boundaries	Timing of restocking	Changes to species	Wind blow clearance	Designed open ground	Changes to road lines
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		Increase by up to 5% of coupe area	Departures of up to 60m from the centre of the roadline
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 (e.g. from productive to open, open to native species).	Up to 5 ha	Increase between 5-10% coupe area. Any reduction in open ground within coupe area	Departures of greater than 60m from the centre of the roadline
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	More than 5 ha	Increase >10% of coupe area	As above, depending on sensitivity

2 LMP ANALYSIS

2.1 Introduction

Appin forest is located approximately 21 km NE of Oban, close to the settlement of Appin and is accessed from the public C- class road, which joins the A828 at Lurignish. The forest and associated hill ground covers around 646 ha, extending from sea level to 437 m and comprising a mosaic of Ancient Semi-Natural Woodland (ASNW) Semi-Natural Woodland (SNW) and Planted Ancient Woodland Sites (PAWS); areas of mixed conifers and broadleaves; a component of commercial conifers and large tracts of open ground including some agricultural land.

The Land Management Plan (LMP) is presented in the context of the wider group of linked forests under FLS management in this part of North Argyll and the strategic plan that is being prepared to guide management across this wider area. Appin is a small forest but the associated open ground extends northwards, where there is existing scattered native woodland that is contiguous with scrub woodland in Bealach. There is potential for woodland expansion to create continuous native woodland from Appin to Bealach. The intention therefore, is to join Bealach and Appin into one Land Management Plan in future.

The western boundary of Appin forest runs alongside the A828; to the North, the forest bounds with Bealach (also under FLS management) and to the East and South, with private land. Almost 60% of the land holding is open ground. The forested area covers 285 ha, currently comprising 186 ha with standing trees – the rest of this area has been felled (95 ha) or has failed or suffered windblow (4 ha). Much of the felled area is visible from surrounding settlements. Of the area currently under trees, 96 ha supports broadleaves and 90 ha conifers. Most of these conifers were planted in the 1960's, with a further area planted since 2000 and small areas of old, mature conifers (remnants of a policy-type woodland). The conifer mix is fairly diverse across a relatively small area but there is a significant area of larch (11.6 ha) that will be felled at the earliest opportunity. The open ground extends to 416 ha, which includes 49 ha agricultural land and 316 ha of ground that is identified as plantable.

Rhododendron is established within the forest and has started to seed into the open hill ground; there is extensive incursion into the forest from neighbouring ground to the South. Western hemlock, beech and buddleia have also spread through the forest. Removal of these invasive species will be a priority but also a major challenge, which impacts on the feasibility of restoring the PAWS woodland in this rotation.

It won't be practical to fully restore the PAWS during the current rotation due to the extensive colonisation of invasive species, which need to be tackled first. Instead, the significant existing natural regeneration of both conifers and broadleaves in felled areas will be managed to produce a productive crop under Continuous Cover Forestry (CCF), with enhancement planting where required. Broadleaved species will be favoured where possible, with the aim of eventually restoring the PAWS sites to native broadleaves, over the course of the following rotation.

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A further challenge will be to try to fulfil multiple aims: establish and maintain diversity of a productive mixed conifer / broadleaved crop; move towards native broadleaved woodland restoration; remove invasive species; protect and enhance the landscape character of the area and contribute to sustainable volume production across the North Argyll forest area as a whole.

This forested hill is an important feature in an historic landscape that is of national importance and its western boundary lies adjacent to the Lynn of Lorn National Scenic Area. Although recreational use is largely limited to local walkers, the southern part of the forest provides an important backdrop to the Appin coastal landscape. The commercial forest extends part way along the ridge between Appin and Bealach and is a major feature in the landscape when viewed from the South and from Port Appin, Lismore and Shuna Island.

Future management will create a better fit with landform and enhance the landscape character, which is defined by the native woodland and open ground habitats.

2.2 Plan Objectives

- Focus timber production on the most suitable areas (in the context of the wider group of linked forests in North Argyll) and review options on steep and marginal ground, to optimise production and continue to contribute to regional timber production targets and maximise returns
- In the longer term, once invasive species are under control, enhance and expand native woodland in SNW/PAWS zones, through removal of non-native conifers during subsequent thinning cycles and by promoting natural regeneration of locally native species. In the short term, accept and manage the existing natural regeneration of mixed species that occurs
- Work with neighbours to manage deer populations, to minimise grazing / browsing pressure on planted and naturally regenerating trees
- Continue to remove Rhododendron and other Invasive Non-Native Species (INNS)
- Plan for timely pre-emptive removal of larch in response to the previous identification of *P. ramorum* on Rhododendron stands
- Review long term felling and restock plans in the South and West-facing slopes in the southern section of the forest, to enhance visual amenity and reflect priorities for timber production, landscape and environment
- Develop options for woodland creation on some of the open ground in the northern section of the forest block, while protecting priority open ground habitats

Key challenges

- Minimise and maintain low grazing / browsing impacts (deer and livestock) sufficient to achieve successful growth of young naturally regenerating and planted broadleaved and soft conifer species; protect biodiversity and promote restoration and maintenance of priority open habitats
- Remove and control the extensive spread of Invasive Non Native Species (Rhododendron, Western hemlock, beech, buddleia) from the forest – young trees will be outcompeted and fail and species and structural diversity will decrease if these species are not controlled

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adequately. Dense regeneration of SS in mixed stands other than in coupe 46514 will also need to be controlled

- Achieve satisfactory restocking in the coupe furthest South, in the context of encroaching Rhododendron from neighbouring ground
- Manage natural regeneration effectively, to create a diverse mixed conifer / broadleaved woodland managed under Continuous Cover Forestry but favouring broadleaves where possible while achieving reasonable stand quality
- Over a longer timeframe, managing the transition from conifer and mixed woodland to native broadleaves, not losing sight of the aim to restore the PAWS within the forest
- Manage restock and planting design to complement the coastal landscape
- Create sufficient access to the open hill, to facilitate deer management and Rhododendron control and along the hillside towards Bealach, to enable woodland expansion

2.3 Analysis and concept

See Map 2: Concept

Issues	Opportunity	Constraint	Concept
Improve forest resilience and focus timber production on the most suitable areas	A range of species are suitable for areas of better soils and more sheltered locations. Review options on steep and marginal ground, to optimise production and continue to contribute to regional timber production targets and maximise returns. Existing natural regeneration in felled coupes is relatively diverse and can be managed and enhanced to develop mixed woodland and produce viable crops. Areas where growth has been poorer, on wetter /poorer soils, can be restocked with broadleaves and by allowing successional development of naturally regenerating conifers and broadleaves, which will contribute to biodiversity and climate mitigation. Opportunities for growing productive broadleaves on some of the better soils on lower slopes.	Challenges in controlling INNS species within the forest and preventing further colonisation, particularly of Rhododendron, from neighbouring land. Presence of invasive Rhododendron limits species choices in coupes in the South of the forest, which are also the most visible from neighbouring settlements. Risk of climatic and disease impacts restricts restocking species choices. Deer browsing pressure may also limit natural regeneration and species choices for restock. Increased frequency and / or intensity of storm events may limit rotation lengths.	Increase species diversity in suitable areas and use / promote species best suited to the site. Identify areas of better growing conditions and focus production on these, using a variety of species on better soils in more sheltered conditions. Pull back productive forestry from very wet or poor areas; allow natural regeneration in these areas and promote to successional woodland. Consider planting site- suitable native species in these areas where appropriate.
Rhododendron and other invasive species (WH, BE,	Where possible, coordinate Rhododendron removal with neighbouring landowners.	Extensive growth of Rhododendron, including on cliffs and steep slopes and WH in	Continue to remove Rhododendron within the forest and any new generation on open hill. Remove WH,

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Issues	Opportunity	Constraint	Concept
Buddleia) are present throughout the forest	Clean out invasive species during weeding and thinning operations.	riparian areas. Rhododendron colonising open hill and encroaching from neighbouring land to the South. Subsequent control of regrowth will be a long term commitment. Continued seeding of WH, BE from mature trees in the vicinity.	BE and other invasive species within the forest. Liaise with neighbours to control colonisation of Rhododendron from neighbouring ground to the South.
Extensive natural regeneration of a range of conifer and broadleaved species has occurred in felled coupes	Manage existing natural regeneration with removal of undesirable species and enhancement planting where required, to achieve required stocking densities. Eventually, manage trees under CCF, to achieve desired species, canopy and age structure. Accept and manage existing regeneration but favour broadleaves with a long term objective of restoring the PAWS areas to native woodland.	Extensive growth of invasive species, needs to be controlled to enable management of desired tree species. Natural regeneration may result in dominance of more competitive species (e.g. Sitka) so cleaning, selective thinning and enhancement planting will be required. Deer management will be crucial to achieve successful tree establishment. Careful selection and management of growing stock to produce timber of sufficient quality.	Remove invasive species, clean / thin out highly competitive species (including SS), followed by selective thinning to achieve the best stems, favouring broadleaved species where possible.

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Issues	Opportunity	Constraint	Concept
The current extent of invasive species across the forest impacts the long term aim to restore the PAWs areas (through removal of non - native conifers and natural regeneration of locally native species)	Protect existing SNW from encroachment of invasive species. Manage existing diversity of natural regeneration that is doing well, to establish mixed stands that are more resilient to invasive, competitive species. Over a longer time period, manage stands under CCF to eventually achieve high quality native woodland.	Extent of spread of Rhododendron, particularly in the southern part of the forest. Extensive natural regeneration of WH, BE, buddleia and other species that need to be cleaned from the forest before enhancement planting and management can take place. Potential for deer pressure to increase within the forest, putting broadleaves and softer conifer species at greater risk.	Continue to control Rhododendron, working with neighbouring landowners where possible. Fell mature trees of invasive species at the earliest opportunity. Clean existing natural regeneration to remove WH, BE and other invasive species and remove any ongoing regeneration. Enhancement plant where required, primarily with broadleaved species to achieve productive timber in areas of better growth and non -commercial stands in areas of poorer soils and greater exposure. Prepare to manage most of the forest under CCF. Select best stems but try to favour broadleaves during thinning cycles. Over time, as the canopy develops, slowly fell groups to open up areas suitable for further natural regeneration or planting, with the eventual aim of restoring the PAWS areas to native broadleaves.
Minimise grazing / browsing pressure on planted and	Maintain low deer browsing pressure, collaborating with neighbouring landowners to enable successful establishment of a diversity of planted and	Deer pressure appears to have been relatively low, given the amount of natural regeneration	Deer control will focus on minimising browsing pressure on vulnerable crops, working closely with the

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Issues	Opportunity	Constraint	Concept
naturally regenerating trees.	naturally regenerating broadleaved and soft conifer species. Manage deer population across the strategic plan area, focusing effort on reducing pressure on areas of young and regenerating trees.	occurring but this may increase as more coupes are felled. Cessation of livestock grazing following resumption and disposition of agricultural land may lead to incursion of livestock (and possibly deer) from neighbouring land to fill the vacuum unless the block is adequately fenced.	neighbouring landowners and DMG as much as possible. The deer management plan will cover the whole of the FLS land holding in the strategic plan area, informed by Herbivore Impact Assessments. A stock- proof fence will be constructed along the march boundary to the East.
Enhance forest diversity	Diversify age structure and species through restocking and natural regeneration; retain areas of mature trees to broaden age range and retain standing dead trees where these are not a hazard. Promote broadleaved species wherever possible; strengthen broadleaves in riparian zones. In the longer term, management as CCF will help to increase diversity of age structure and introduce more spatial layers. Protect and enhance other priority habitats and link open space within the forest to the open hill.	Consider need for fire breaks and maintenance of some open ground within forest. Deer management will be essential to protect young broadleaves and soft conifer species. Management of CCF will require timeous implementation of thinning regimes.	Plant and promote natural regeneration of native broadleaves in riparian zones, on higher ground and on as much of the PAWS as is practical at this stage. Manage existing natural regeneration to create mixed MC / MB stands with early introduction of thinning regimes for management as shelterwood under CCF. Retain broadleaves and mature and veteran conifer specimens (but remove WH and BE). Manage ground between A828 public road and shore, to retain views, maintain diverse vegetation structure/control any INNS and ensure area is safe for public access.

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Issues	Opportunity	Constraint	Concept
Remove conifers from riparian zones and encourage development of an open broadleaved canopy (30- 50%) in these areas.	Improve status of these short, high flow watercourses through forest management and development of riparian broadleaved woodland.	Maintaining low levels of deer browsing pressure and control of invasive species will be essential for establishment of broadleaved trees.	Create buffer zones around watercourses. Protect during harvesting and keep conifer restock a minimum of 10 m away from watercourses (1 < 2 m channel width). Narrower buffer zones (5 – 10m) applicable for small watercourses (< 1 width). Promote natural regeneration or plant native broadleaves along watercourses to create dappled shade.
Plan for timely pre-emptive removal of larch in response to the previous identification of P. ramorum on Rhododendron stands	Use cleaning and thinning programmes to target larch regeneration. Create access to coupes with mature larch to facilitate felling in the event of a SPHN Leave mature larch trees along roadside close to forest entrance as these can be easily accessed for felling if required.	Steep slopes above main road where larch are growing at the SW end of the forest. Larch present in the natural regeneration that is establishing in felled coupes. Some trees in steep / difficult riparian areas.	Remove mature larch during adjacent felling and thinning operations where possible and ensure any mature trees that are left standing are easily accessible. Remove any larch regeneration occurring anywhere in the forest, during cleaning and weeding operations in stands of natural regeneration, along roadsides and more recently felled areas.
Review long term felling and restock plans on the S. and W. facing slopes in the southern	Restock the coupes at the S and SW margin of the forest with species that can withstand competition from R. ponticum. Design restock to provide a better fit with the coastal landscape and improve visual	Encroachment of Rhododendron from the S and SW significantly limit the species choice for these coupes, to fast growing, competitive species.	Plant with conifers or conifer / broadleaved mixes where there is greatest threat from encroaching Rhododendron (SS grading to SS/BI mixes in the most southerly coupes).

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Issues	Opportunity	Constraint	Concept
section of the forest, to help address issues with INNS; to enhance visual amenity and reflect priorities for timber production, landscape and environment	amenity, while maintaining sustainable timber production.		
Develop options for woodland creation on some of the open ground in the northern section of the forest block, while protecting priority open ground habitats	Develop native woodland; strengthen woodland linkages with Bealach and enhance habitat networks. Possible potential to create productive broadleaved woodland in NW part of the block. Create woodland cover that fits with and enhances the coastal landscape.	Challenges to create access across difficult ground – topography of ridges and plateaus, many gullies and watercourses, and various sink holes in the northern part of the block. Need to minimise grazing / browsing pressure by controlling deer and preventing incursion of livestock from adjacent land.	Establish native broadleaved woodland across the hillside between Appin and Bealach. Create access to facilitate woodland management with track stretching northwards from the hairpin on the forest road in Appin. Aim for some areas of productive broadleaves where possible.

3 LMP Proposals

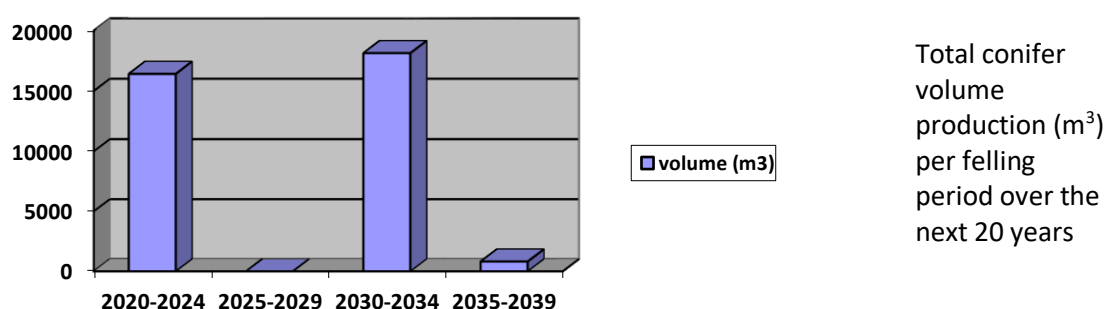
3.1 Management

(See Maps 3 a & b for Management Proposals)

Clear Felling

Much of the forest has been felled previously, with natural regeneration establishing well in felled coupes. Once the remaining coupes (approximately 73 ha) have been clear felled, most of the restocked forested area will then be managed as Continuous Cover Forestry (CCF). However, the large coupe (43.86 ha) at the southern margin will be restocked with SS grading to a SS/BI mixture following recent clear felling and may not be suitable for CCF due to the degree of exposure here, as well as presence of invasive species.

11.29 ha larch will be felled during the 10 year lifespan of this LMP (8.08 ha clear felled and 3.21 ha removed through thinning).



Native broadleaves and mature specimen conifer trees will be retained during felling operations, with the exception of Invasive Non Native species including mature Sitka spruce, Western hemlock and beech, which can seed into felled coupes creating future problems; also larch for plant health reasons. Where possible, standing dead trees will also be retained for their habitat value, where these do not present a hazard.

Thinning

A thinning programme will be implemented for recently planted and naturally regenerating stands, with the aim of eventually managing as much of the forest under CCF as possible. The aim will be to favour good stems of all suitable main crop species but focusing on broadleaf species where possible, to retain the presence of broadleaves in the stand - removing wolf conifer trees early and thinning stands on a 5 – 10 year cycle.

Potential final crop trees will be identified for selection at an early stage. Where groups of broadleaves are stocked in a matrix of conifers, remove the conifers adjacent to the broadleaved groups and then thin the broadleaves selectively. One or more potential final crop trees will be

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identified in each group to ensure a predominantly broadleaved final stand. Where broadleaves are planted / restocked in intimate mixture with conifers, the outer one or two rows of conifers on the South side of broadleaved trees will be removed at first thinning and the broadleaves selectively thinned, removing any adjacent conifer rows and selectively thinning the rest of the crop at the second thin.

Stands will be assessed and pruned and cleaned at an early stage where necessary, pruning to 3 m prior to first thinning and to 6 m before the second thinning.

Amenity thinning will also be carried out here to protect forest roads and tracks or to deal with problem trees.

Mature specimen broadleaved and conifer species (other than undesirable species) will be retained during thinning operations.

See Map 4 for detail on areas to be thinned and Appendix VIII for coupe prescriptions.

Low Impact Silvicultural Systems (LISS) / CCF/ min intervention

Most of the coupes in the northern section of the commercially forested area will be managed under LISS (CCF), with the intention to grow productive broadleaves where possible; favouring broadleaves within the broadleaved/ conifer natural regeneration where feasible, with the longer term aim of restoring the PAWS areas to native broadleaved woodland.

The existing native woodland remnants that lie between the main forested area of Appin forest and Bealach will be managed under minimum intervention. Between these areas, natural regeneration of native broadleaves will be promoted through control of livestock grazing / browsing and removal of Invasive Non- Native Species (INNS - primarily Rhododendron) to link these areas and expand the woodland, with enhancement planting where necessary. Some areas of new woodland will be managed for productive woodland where feasible, under CCF.

Summary of LISS coupes:

All coupes with natural regeneration to be weeded and cleaned at the earliest opportunity, removing all undesirable species including WH, BE, larch, SS and Rhododendron. Buddleia to be removed where this grows prolifically or densely.

Coupe	Species	Notes	Next thin date
46504	EL (2.09 ha); MB (2.36 ha); SP (0.91 ha); open (1.01 ha)	6.37 ha ; Irregular shelterwood Retain mature specimen trees but remove any EL NR and gradually fell EL as they become senescent. Under- plant with BL and thin the restock when top height of 10 m is reached. Remove any larch, SS, WH, BE or Rhode regeneration that occurs.	2026/27
46520	MB (4.21 ha); SP (0.34 ha); MC (0.81 ha); NS (0.33 ha); SS (0.17 ha); open (1.08 ha)	6.94 ha; Thin on an initial 5 year cycle, starting at about 15 years or when stand top height has reached 10 – 12 m (20 – 30 m ³ /ha basal area) to favour best stems but aim to favour and retain BL in the stand. Aim to remove SS from the	2021/22

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Coupe	Species	Notes	Next thin date
		coupe. Remove any larch, SS, WH, BE or Rhode regeneration that occurs.	
46154	BL (0.4 ha); SS (0.25 ha); EL (0.15 ha); WH (0.1 ha); open (0.11 ha)	1.09 ha; Thin on an initial 5 year cycle, starting when trees are 15 years or when top height has reached 10 – 12 m to favour best stems but favour and retain BL and aim to remove SS from the coupe. Remove all WH and EL. Remove any WH, larch, BE, SS, Rhode regeneration that occurs.	2025/26
46802	BL (1.56 ha); SS (0.38 ha); open (0.82ha)	2.76 ha; Thin on a 5 year cycle, starting at 10 m top height, to favour the best stems but retaining BL, eventually removing SS. Allow natural regeneration of a mixture of species but remove any regenerating SS, larch, WH, BE or Rhode.	2029/30
46508	NS (1.96 ha); SS (1.13 ha); BL (0.39 ha); WH (1.58 ha); open (1 ha)	6.06 ha. Remove WH at earliest opportunity and any WH NR. Gradually remove individual / small groups SS and NS to create gaps for NR with enhancement planting where necessary.	2021/22
46531	SS (2.4 ha); BL (0.56 ha); NS (1.19ha); DF (0.93 ha); HL (0.02 ha); WH (0.02 ha), open (0.48 ha)	5.6 ha. Thin on an initial 5 year cycle, starting when trees are 15 years or when top height has reached 10 – 12 m to favour best stems but favour and retain BL. Remove all HL and WH at first thin. Aim to gradually remove SS during thinning. Accept natural regeneration of mixed species where gaps occur but remove any WH, larch, BE, SS or Rhode regeneration.	2021/22
46137	SP (2.4 ha); NS (1.3 ha)	3.7 ha, First thin at 20 years; initial line thin on an initial 5 year cycle. Retain minor species where possible but remove any WH, larch, BE etc. that occurs.	2025/26
46136	SS (4.08 ha); BL (2.75 ha); WH (0.27 ha); open (1.77 ha)	11.94 ha. Thin on an initial 5 year cycle, starting at 15 years or when stand top height has reached 10 – 12 m (20 – 30 m ³ /ha basal area) to favour best stems but aim to retain and favour BL in the stand. Remove all WH at first thin. Monitor for ash die-back disease – retain dead/dying trees where these do not present a hazard. Remove any young WH, larch, BE, SS trees that regenerate in gaps.	2026/27

Natural Reserves (NR)

There are no areas of Natural Reserves in Appin forest.

Long Term Retentions (LTR)

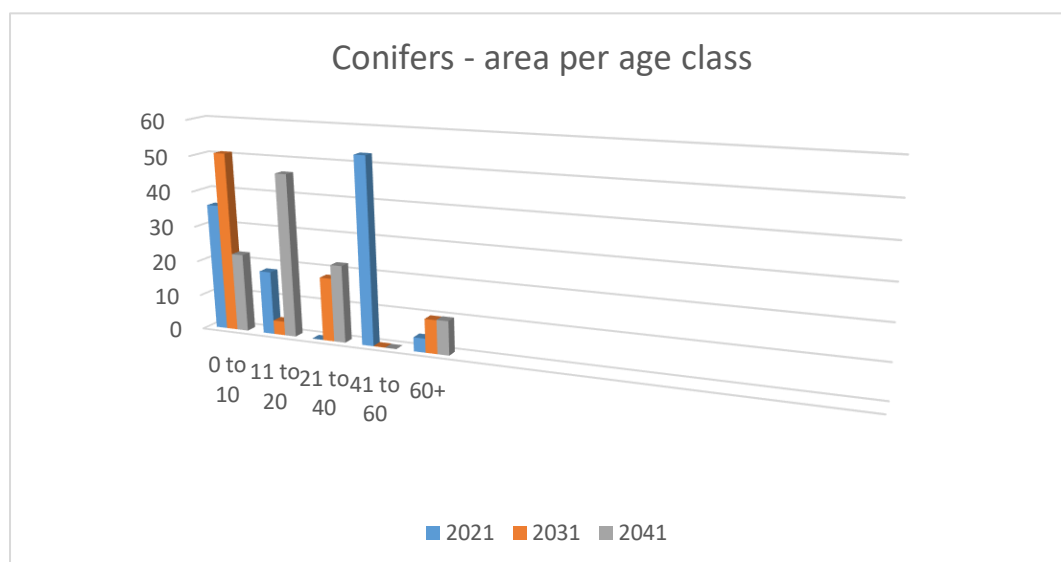
There are no areas of Long Term Retention in Appin forest.

Resilience

RESTRUCTURING:

The main purpose of restructuring is to create truly multi-purpose forests meeting a wide range of objectives including enhancing landscape, biodiversity, productivity and community/recreational

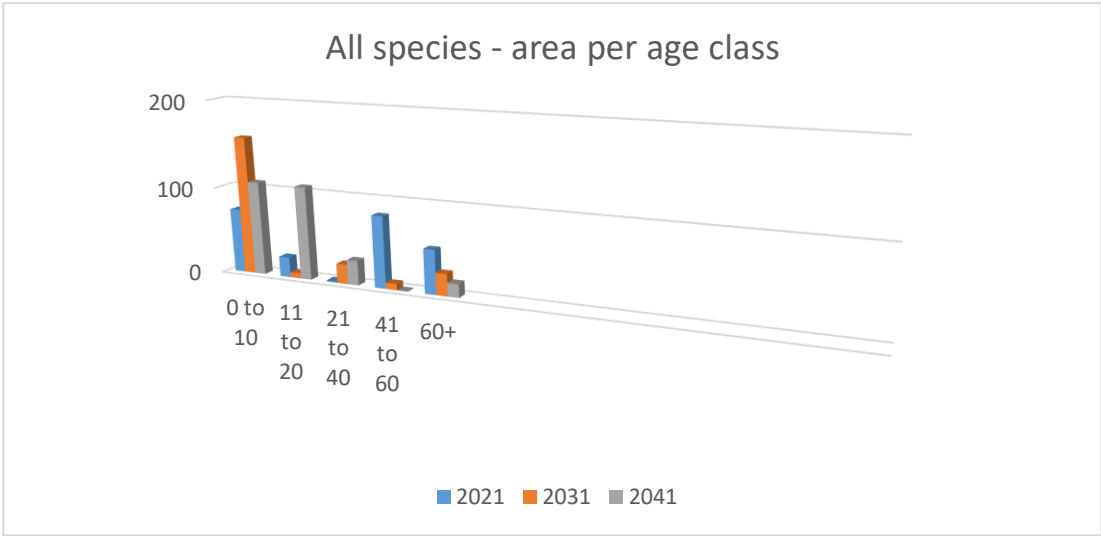
opportunities whilst protecting and improving the setting of heritage features and restoring priority habitats. Increased species and age class diversity also increases the resilience of the forest. Most coupes have been felled previously and felled areas are regenerating naturally with a mixture of conifers and broadleaves. Increased age and species diversity will partly be achieved by management of this young regeneration from an early stage to remove invasive species, maintain a species mix but with the longer term aim of transitioning to broadleaved woodland. Enhancement planting will be undertaken where required. This new restock will be managed as CCF, together with some existing stands of older trees. There are a number of mature / over mature and veteran conifer trees, reflecting the relatively recent history as a policy- type of woodland and a relatively diverse range of conifer species are present in a small area of woodland. These trees will be retained for as long as possible but any natural regeneration of larch, beech and Western hemlock will be removed as early as possible and on an ongoing basis. As older trees fail and are removed, gaps will be filled either by natural regeneration or planting, with ongoing removal of invasive species. Standing dead trees will be retained where they do not present a hazard. Expected changes in conifer age structure:



Broadleaves will be strengthened along riparian corridors and the existing native broadleaved woodland that stretches North from Appin towards Bealach will be maintained and expanded where possible. Elsewhere in the forest, effort will be focused on growing a mixture of species where conditions allow, ensuring that the remaining felling coupes fit the landscape from all perspectives. There will be particular focus on ensuring that the restocking at the southern end of the forest complements the landform and provides a backdrop that is in-keeping with the coastal landscape, and that invasive species can be controlled sufficiently to allow successful establishment of the required trees species.

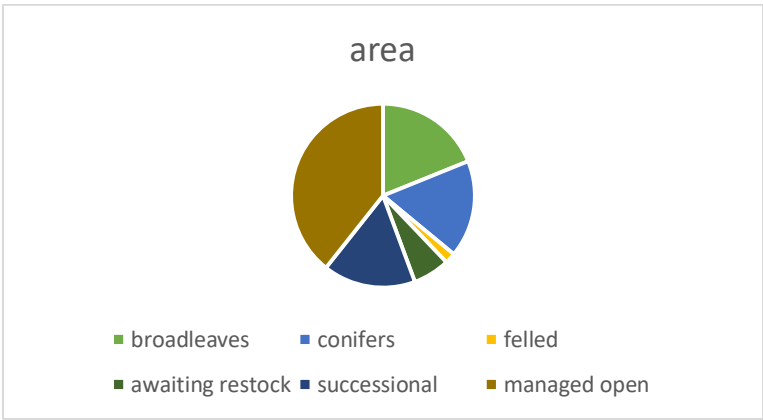
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Changes in age structure – all species:



Changes in species composition during the first 20 years:

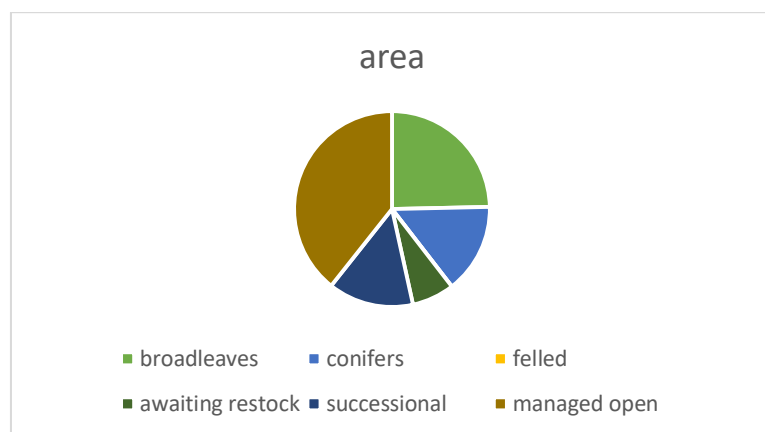
2021:



2031:



2041:

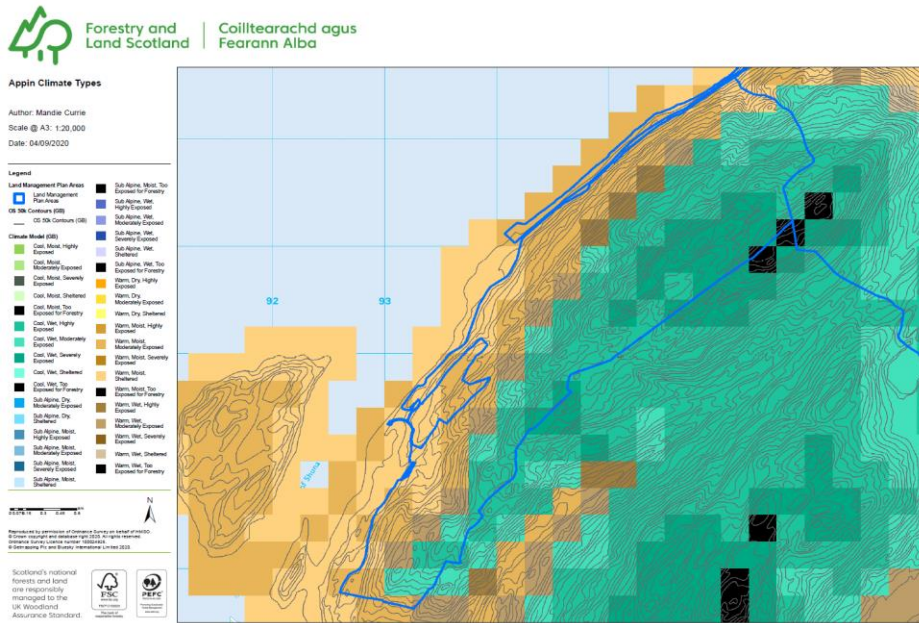


CLIMATE CHANGE:

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, leading to a partial soil moisture deficit during the summer months. In terms of the next rotation these figures have limited impact on species choice - according to ESC models - and the short rotation of SS across much of the site further reduces the risk of climatic impacts. However, this level of climatic change is likely to interact in the longer term with soil characteristics and this may impact on soil structure and the range of species potentially suitable for the site. In more sheltered areas, the effects may be positive, enabling a wider range of potentially suitable species. But in parts of Appin forest, higher rainfall may lead to greater leaching and podsolization where soils are free draining and greater waterlogging where drainage is poor. There are also threats to the suitability of Sitka spruce as a timber species if significant summer droughts on thinner soils become normal, especially on higher ground and along ridges. This needs to be reviewed and our response agreed to climate change locally. But where possible, a mixture of species will be grown, including mixed conifers and mixtures of conifers and broadleaves (not losing sight of the ultimate aim of eventually restoring the PAWS areas to native woodland).

DAMS scores range between 12 and 14 across most of the LMP area, rising to 16 on higher slopes and 17 – 20 at the highest elevations, where exposure to the prevailing SW winds will be highest. Local climatic conditions vary from warm, moist or wet and sheltered or moderately exposed, to cool, wet and moderately exposed, with the highest elevations (340 – 460 m) being severely exposed / too exposed for forestry. Most of the LMP area is moderately exposed. Trees at the western margin of the forest will be subject to salt laden winds, which also constrains the species that will grow successfully. There has been limited windthrow in the past but restocking must take account of climate change and an anticipated increase in wet and windy weather and higher frequency of storm events. Management of CCF across most of the forest with a more diverse structure will help increase stand stability but together with species choices, early management intervention, particularly thinning, will be key to developing a forest that is resilient to climate change.

Climate types in Appin forest:



TREE DISEASES AND PESTS:

A rise in the type and scale of tree diseases and pests is increasingly impacting on species choice and forest management. The most serious disease currently in the region is *Phytophthora ramorum* in larch (also found on Rhododendron) which is subject to Statutory Plant Health Notices (SPHN). Larch is no longer a viable tree species for forestry on the west coast. It is no longer being planted and existing stands of larch will be removed early wherever possible. Eight coupes in Appin forest contain larch but most of this will either be clear-felled in the first 5 years (LMP phase 1) or removed as soon as possible during thinning operations. Where pre-emptive felling is not feasible, access will be created to larch stands, to facilitate felling if this needs to be done quickly. Young larch regeneration will be removed from felled and restock coupes during weeding and cleaning operations.

Dothistroma needle blight (DNB) affects a range of conifers, notably pine species and occurs in the Region but hasn't yet been recorded in the North Argyll strategic plan area. Native pinewood forests are at particular risk and planting of pine is restricted in those areas. Only the Alaskan lodgepole pine has resistance and Scots pine can only be planted away from the Caledonian pinewood inventory sites. As a native conifer, Scots pine plays a valuable role in maintaining both species and bio diversity and will be planted in Appin forest where soil and microclimate conditions are suitable.

Ash Dieback (Chalara) is caused by a fungal pathogen (*Hymenoscyphus fraxineus*) characterised by leaf loss and crown dieback in infected trees. It is spreading through West Region with the expectation that at least 90% of the ash will be lost. The disease hasn't been identified in Appin forest but has been recorded in the locality. Pre-emptive felling of ash is not being undertaken in the hope of being able to identify some resistant trees. But trees will be monitored around roads, rides and other accessible areas and any diseased trees removed where necessary, to protect public safety.

Ash is a unique tree in the forest environment. It supports a rich ground flora, due to its light canopy and readily decomposed leaf litter, and a diversity of insects and birds. As a long-lived tree, ash can support many specialist deadwood species and hole-nesting birds, as well as roosting space for many

species of bat. Ash bark is alkaline and supports a wide range of epiphytic lichens and bryophytes and attracts snails. The loss of ash will have a devastating impact on the landscape and the biodiversity of our woodlands. It is thought that a proportion of trees may have some tolerance to the disease, so that the population might recover over time (probably 50 years or more). With this in mind, consideration must be given to what species might be used to replace ash in areas of planted restock or woodland creation. Given the unique features of this tree species, no single species can replace it and it is likely that a mixture of native tree species would be required instead. This will require careful thought and planning, and species mixtures will need to be very site specific. Birch, rowan and aspen may be suitable for planting near native woodland, although these are pioneer species and not very long lived. Natural regeneration of ash in native woodland areas may occur, if there is even a small proportion of ash trees that are tolerant or immune to the disease. Sycamore may be considered in areas for timber production, although not in the vicinity of A/SNW.

FIRE RESILIENCE:

Due to climate change there is an increasing risk of fires across Scotland's National Forest Estate (NFE). The proposals within this plan aim to limit the risk in Appin through improved age and species diversity, an increase in the proportion of broadleaved trees and by maintaining open rides and glades. The road and track network will also provide a barrier for fires and enable access to areas if a fire does occur. The A828 lies close to/ at the boundary of, the commercial forest in places as does the unclassified road that links the forest entrance to the A828. There are various domestic properties close to, but not within, the forest. Coupes in the vicinity of buildings will be managed as LISS, with high broadleaved content at the forest edge, to create a more fire resilient margin.

FLOOD RISK:

There is a very low risk of flooding in the LMP area – there are a few small, fairly short and steep watercourses and few areas where standing water is likely to gather, which are not close to infrastructure. The lochans are distant from infrastructure, the forested areas or any areas that might be stocked in future.

Operational Access

No new forest roads are planned during the lifetime of this plan, although 5.62 km of tracks will be required, to manage restock, control invasive species and to facilitate deer management. A new road may be required to facilitate woodland expansion between Appin and Bealach but this will be considered as part of the wider strategic plan for the North Argyll forests and will therefore need to be taken forward as a separate project, requiring an amendment. Map 6 shows the potential road line.

Timber Haulage within the forest area is set out in the following protocols: [Protocol for timber transport operations.](#)

The only “in forest” route runs South to North, where it joins the minor public road and ultimately, the A828, at Lurignish. There are no other road users within the forest but the minor road is used by adjacent domestic and business properties.

The forest tracks will conform to Nature Scot (SNH) “Constructed tracks in the Scottish uplands – revised Sept 2015” [Constructed Tracks in the Scottish Uplands.](#) They will be built from material won locally.

3.2 Establishment

(See Maps 5 a - Future habitats and species & 5 b – Restocking in 1st 10 years)

Restocking

The forest includes significant areas of PAWS, which will be restored to native woodland in the longer term. However, currently there is extensive natural regeneration of a range of conifer and broadleaved tree species on clear felled sites, including Western hemlock and beech, which can be invasive. There is also significant ingress of Rhododendron from neighbouring land to the South and bushes are spreading throughout the forest and have started to colonise the open hill. It will be extremely difficult to establish native broadleaved woodland until the Invasive Non- Native Species are controlled. Therefore, the strategy adopted will be to accept and manage the existing natural regeneration, while focusing on controlling the invasive species. Areas of natural regeneration will be weeded; Rhododendron, Western hemlock, beech, buddleia (where it causes a problem) and other undesirable species removed. A thinning programme will be initiated as early as possible, accepting the best potential stems of conifers and broadleaves but favouring broadleaved species wherever possible. These stands will be managed under CCF with an eventual transition to native broadleaved woodland across much of the forest and definitely across the PAWS.

Outwith the PAWS areas, in the longer term a mixture of conifers and broadleaves will be accepted in the main body of woodland, reflecting the more recent history of a policy-type woodland here. The aim will be to expand native woodland across the upper slopes and on the hills linking Appin with Bealach. This will be dependent on minimising browsing pressure from livestock and deer, through deer control and erection of a new livestock fence along the eastern boundary of the FLS land.

The coupes at the southern end of the forest are the most visible from surrounding settlements and transport routes and therefore merit careful attention regarding restocking design and species used. In the longer term, the aim will be to restore a native woodland on these slopes in keeping with the coastal landscape. However, these coupes are under pressure from Rhododendron infestation from neighbouring ground and within the forest. Broadleaved and soft conifer species would not withstand this level of competition, so these coupes will be restocked with Sitka spruce, transitioning to a Sitka / birch mix, as a buffer for the mixed woodland and native woodland areas beyond. It is hoped that by the time of the next rotation, the Rhododendron will be sufficiently controlled to allow a native woodland or at least a more naturalistic woodland, to develop on these South facing slopes.

Where necessary, natural regeneration will be enhanced by planting with a selection of site suitable species to achieve the required stocking densities. Broadleaves may include oak, birch, sycamore (except on PAWS), aspen, hazel, rowan, gean, hawthorn etc with willows and alder on wetter sites. On the better soils in sheltered to moderately exposed sites, the nutrient and moisture regimes will support a 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: (Western Red Cedar (WRC) Serbian Spruce (OMS) as small elements. Some of these species are already present on the site although the softer, diverse conifers are vulnerable to deer damage

Exposure, poor nutrient status and impeded drainage limit the choice of productive species at higher elevations, where Sitka Spruce (SS) is the only commercially viable species (See Appendix X -

Productive forest: species selection). On more challenging sites, SS can be grown in mixture with a number of other species, including birch (BI) to improve growing conditions - grown in discrete stands where the proportion of BI is lower and in intimate mixtures where the species percentages are more evenly balanced. Larger stands will include some clumps of BI / broadleaves (minimum 30 m diameter) to provide some distinctive habitat, and potentially to create biodiversity “stepping stones”, linking native and semi-natural habitats. Further information is provided in coupe prescriptions (Appendix IX).

Most conifers will be restocked to achieve a minimum density of 2,500/ha net plantable area at year five (or when considered to be established); Scots pine stands will be planted to achieve 1,600 stems / ha at establishment. Broadleaves established through natural regeneration will be expected to achieve a minimum stocking density of 1,600/ha over a 5 to 10 year period, supplemented by planting if necessary to achieve the required stocking density. Broadleaves will be planted to achieve 1,600/ha at five years on most sites, reduced to 1,100 stems / ha in native woodland areas. Pure broadleaved planting identified for timber production will achieve a minimum stocking density of 3,100 stems / ha (1.8 m spacing) at year five.

Most coupes will be restocked within 2 years unless specified (e.g. for pest control). Restocked compartments will be monitored and maintained throughout the establishment phase, with losses replaced to maintain stocking density. Surveys of natural regeneration areas in this plan will be made at year 5 to assess progress and again 10 years after felling. Full establishment will be achieved by year 10, planting when necessary to supplement natural regeneration.

Cultivation methods in future rotations will be selected to aid the establishment of trees while minimising the amount of the soil disturbance and the need for herbicide treatment.

The impact of tree diseases increasingly guides species choice. *Phytophthora ramorum* in larch, Dothistroma needle blight (DNB) in pines and Ash Dieback have all had an impact on species choice and crop management across the UK and were taken into consideration when selecting restock species for Appin.

Woodland Creation

The intention is to create areas of new woodland, to link the existing native woodland between Appin and Bealach, through natural regeneration where possible and by planting a selection of suitable native species where required. Productive woodland will be grown in appropriate areas where possible but this is dependent on access and the feasibility of road construction into parts of the area. This large scale woodland creation will be developed as a separate project and submitted for EIA scoping at a later date.

Natural Regeneration

Permanent native woodland habitats have been identified for expansion and/or establishment following felling operations. Typically these areas will include open space as well as native broadleaved woodland. Birch is well suited to most of the area and would make a positive contribution to biodiversity. But much of the forest supports fertile soils and a range of broadleaved tree species can be established to create mixed broadleaved woodland. Broadleaves will be grown for timber on lower slopes, where possible, and managed as LISS.

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A Natural Regeneration Survey of areas identified for regeneration in this plan will be made at year five after felling, to assess progress. If there is evidence that natural regeneration is unlikely to achieve full stocking by 10 then the area will be planted.

PAWS restoration

Several of the felling coupes fall within a large area of PAWS which will eventually be restored to native woodland. There is advance natural regeneration of a mixture of conifer and broadleaved species in clear fell coupes but as already discussed, the extensive incursion of Invasive Non -Native Species, including in areas of natural regeneration, will make it very difficult to fully restore the PAWS at this stage. Instead, a transitional phase is proposed, where invasive species are removed from existing regeneration areas, which are then managed as mixed woodland under LISS. Broadleaves and native conifers will be favoured where possible, eventually converting the whole area to native woodland in the longer term. In some instances, where unavoidable, further adjacent felling may take place before a full 2 m height difference has been achieved, to reduce conifer seed rain back into these areas of restoration, especially of Sitka spruce and Western hemlock trees.

Riparian Management

Appin forest includes a number of fairly short watercourses on steep ground that drain directly into the sea, with riparian zones that are relatively narrow. Flood risk is low but natural regeneration of native woodland along the riparian corridors will help to reduce flood risk by reducing the speed of run-off. The aim will be to achieve about 50% canopy cover. There is the potential for natural regeneration of conifer species within the riparian corridor. Ideally, this will all be removed as it occurs but in practice, up to 15% may be left until operations are undertaken in the adjacent coupe, at which time it will be removed.

A minimum 10 m buffer will be created along watercourses (1 – 2 m width) to protect them during harvesting. Where smaller burns run along very narrow gullies (< 1m wide) often on steep ground, the buffer created will be 2 – 5 m wide.

3.3 Open Land

Integral open ground within the forest area delivers a significant part of the forest's ecological value. Within the forest, open ground will be maintained along rides and some of the smaller riparian corridors. The aim will be to achieve 50% open canopy along larger riparian corridors to maintain suitable invertebrate and fish habitat in the watercourses. The hill slopes and tops will be left as open ground, with the exception of future native woodland expansion on the seaward facing slopes between Appin and Bealach, which will in itself incorporate open ground in a complex habitat mosaic.

An open habitat survey has been completed and areas of priority open habitat identified, to ensure that any native woodland expansion does not impact them. Between Appin and Bealach, the land is mainly upland heathland, with some areas of blanket bog, base-rich wet flushes and calcareous grassland and areas of limestone pavements on hill tops; also, acid grassland and other non- priority habitats. There are small lochans in the NE of the LMP area,

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with small areas of juniper bushes in the vicinity. An Open Habitat Management Plan will be prepared to underpin the wider Strategic Plan and this will inform future open habitat management within the Appin LMP area.

3.4 Deer Management

(see Appendix V - Deer Management Plan)

3.5 Visitor Zones and Public Access

Visitor access in the LMP area is largely limited to local residents but the forest road and tracks provide cyclists and walkers with opportunities to enjoy the spectacular views across to Lismore, Morvern and Mull as you climb the hillside (see map 7 – access features). New ATV tracks will also improve visitor access to the ringing stones and other heritage features at the South end of the forest. This informal access is managed under the Scottish Outdoor Access Code (SOAC).

The strip of land between the A828 road and the sea shore will be managed to retain views, ensure public safety and maintain as diverse a vegetation structure as possible, controlling any INNS that occurs.

3.6 Heritage Features

A number of unscheduled archaeological features from different periods are present across the forest, including stone dykes; remains / evidence of buildings; settlements; sheepfolds; charcoal burning platforms; cists; sheilings and lime kilns – see map 8. There are also two “ringing stones” at the southern end of the forest – large stones / rocks bearing many “cup marks” that sound like a natural gong when struck. A similar stone is located at Balephetrish on Tiree.

These sites will be managed in accordance with the [Forests & the historic environment](#) guidelines and will be protected during operations in line with the UKFS. If new sites are found these will be mapped and recorded and protected from operations. Detailed operational workplans will be drafted nearer the period of felling and will include a full range of mitigation measures to safeguard archaeological features. Additionally, the restocking proposals (including open space) are sympathetic to both the features and its immediate environs. Further advice will be obtained from the FLS Archaeologist if required.

3.7 Habitats & Species

The southern half of the forest supports extensive areas of SNW, PAWS and other long established woodland of plantation origin. Small areas of ancient or long established semi-natural woodland are scattered along the coastal fringe northwards towards Bealach forest, with another larger area along the boundary with Bealach.

Almost 60% of the land holding is open ground, dominated by a series of mountain ridges running parallel to the coast. The open ground comprised part of an agricultural holding and includes areas of improved grassland (now disposed) as well as a mosaic of grassland, bracken, heathland and a

complex of gullies and wet flushes. Watercourses run in short lengths straight into Loch Linnhe as well as in a NE-SW direction along gullies, extending to small lochans in the NE, where there is also an area of juniper bushes. Groups of scrubby birch run along the three mile stretch between the Appin forested area and Bealach.

Most of the watercourses in the forested area drain into South Loch Linnhe, which achieved a Moderate classification for overall environmental condition in 2014 due to water quality, although it is expected to achieve Good status by 2027. Indications were that bottom living invertebrate animal populations were not in good condition for reasons unknown.

Appin forest lies in an area defined as lowland ridges and moss, with densely forested rocky ridges and a patchwork of marginal pastures in the glens. Specific landscape guidelines suggest that large – scale forestry would be out of scale; archaeology and its setting should be conserved; woodlands should be thinned and Rhododendrons controlled.

Priority species include Sea eagles, Wood ants, Red squirrels, butterflies, Black grouse (on adjacent ground), veteran Scots pine and sessile oak trees. Prior to any harvesting operations, FLS will undertake a pre commencement survey in the coupe to check for the presence of any protected species. The relevant FCS guidance notes: Wildlife and Forest. Operations 31- 35 d will be adhered to if protected species are found to be present. See Map 9 - Environmental features.

3.8 Invasive Species

Rhododendron is present throughout the forest and bushes are encroaching onto the open hill but the greatest infestation is at the southern end, where growth is dense and bushes are spreading in from neighbouring land. The high degree of infestation constrains the available restock species that can be used in this part of the forest. Many bushes are on cliffs, rock outcrops and steep slopes and will present a challenge to remove. It is necessary to control Rhododendron locally before PAWs restoration and native woodland expansion can occur because broadleaved and native conifer species are unable to survive the vigorous growth; dense shade and acidic, toxic leaf litter produced by Rhododendron.

Western hemlock and beech are regenerating vigorously in clear felled coupes and on road/track sides, seeding in from mature trees within the forest. Both species are non -native and their vigorous growth will outcompete broadleaves and native conifer species. Young growth and mature trees of these species will be removed as early as possible during management operations. Where coupes have been clear felled and there is advance natural regeneration of mixed species, this will be accepted and managed but all Western hemlock and beech trees will be removed during cleaning and weeding operations. Young trees will also be removed from road and track / ride sides at the same time. Mature trees will be removed during clear felling or thinning operations but Western hemlock will be removed from all riparian areas at the earliest opportunity.

Buddleia bushes have spread into the forest from neighbouring land. These plants attract butterflies and do not present a problem at present but this species can spread easily and grow vigorously so plants will be removed from coupes during weeding and cleaning operations.

3.3 Critical Success Factors

- Effective control of Invasive Non-Native Species (INNS) is essential to achieve successful tree establishment in restock coupes
- Control of grazing / browsing by deer or livestock, to enable establishment of conifer and broadleaved tree species
- Timely implementation of weeding, cleaning and thinning programmes to manage existing natural regeneration for productive forestry and over a longer period, to transition to native woodland in PAWS sites
- Implementation of an effective thinning programme in established conifer / mixed stands as early as possible
- Late thinning and restocking of more mature stands, to manage as CCF
- Resolution of access issues on ground to North of LMP area - this will inform options on development of an area of commercially productive woodland or whether this will be non-commercial native woodland