



Forestry and
Land Scotland
Coilltearachd agus
Fearann Alba

Central Region

Limerigg Forests Complex Land Management Plan

Approval date: 08-Feb- 2022

Plan Reference No: 032/21/01

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Plan Expiry Date: 07-Feb-2032

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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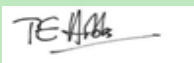
Land Management Plan Details

LMP Name:	Limerigg Forests Complex		
Grid Reference:	NS 8488 7072	Nearest town or locality:	Limerigg
Local Authority:	Falkirk and North Lanarkshire		
Land Management Plan area (hectares):	663.10		

Owner's Details

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Version History

Version	Date	Comments
0.0		Initial Draft layout
1.0	16/07/2021	First draft for internal FLS Regional comment
1.1	12/08/2021	Updated after FLS Regional comment
1.2	07/09/2021	Updated coupe refs as per SF comment
1.3	21/01/2022	Updated following public consultation and Scottish Forestry comments on peatland restoration. Updated to remove Gateside block from plan pending sale.



1.0 Summary of Proposals

The Limerigg Forests serve as multifunctional woodlands within Central Region primarily producing standard quality softwood timber and providing biodiversity with areas of open habitat and woodland dedicated to minimum intervention management.

The objectives of the plan are listed below but the primary objectives for the plan area are to manage for the following: the production of standard quality timber and to maintain biodiversity value, attractive woodlands and recreation opportunities.

Table 1 - Woodland changes

Species Breakdown	Current	Year 10	Year 20
Primary species: Sitka spruce	146.1	151.5	134.3
Secondary species: other conifers	114.9	117.6	129.8
Broadleaves	79.3	80.1	83.5
Open space, Agricultural, Open water, Felled (awaiting restock)	322.8	313.9	315.5
Total Plan Area:	663.1	663.1	663.1

LMP objectives

1. Maintain Small Round Wood, Pallet log and biomass production (maintained timber income, clearfell/restock)
2. Plan roads to access less accessible crops.
3. Continue to restore and maintain areas of bog habitat (reduce carbon release, diversify habitat)
4. Protect historical features
5. Mitigate against excessive water runoff in catchments.
6. Pre-emptively remove larch where appropriate adhering to the FLS National Strategy
7. Provide for potential increased use by local community (proposed settlement expansion, fire risk).



2.0 FCS Regulatory Requirements

2.1 Summary of planned operations

Table 2 - Summary of planned operations

Planned Operations	2022-2032
Clearfell (afforested area)	10.0 Ha
Thinning	2.37 Ha
Restock (replanted area)	11.0 Ha
Open habitat restoration	4.88 Ha
Woodland Creation	n/a
Road Construction	n/a

2.2 Proposed felling in years 2022-2032

Table 3 – Clearfelling Phase 1 & 2

Coupe No	Total Area (Ha)	Spp by Ha (Larch)	Spp by Ha (NS)	Spp by Ha (SS)	Spp by Ha (SP)	Spp by Ha (MC)	Spp by Ha (MB)	Open land by Ha
16	0.24	0.24						0
19	7.76	1.15	0.03		0.88	4.51		1.19
38	4.10			0.12	0.63	2.44		0.91
Total	12.1	1.39	0.03	0.12	1.51	6.95		2.1

2.3 Proposed thinning in years 2022-2032

Table 4 – Thinning Areas

Woodland species	Area (Ha)
Larch	2.37

2.4 Proposed restocking in years 2022-2032

Table 5 – Restocking of felled areas 2022-2032

Coupe No	Total Area (Ha)	Spp by Ha (MC)	Spp by Ha (MB)	Open (Ha)	Year	Restock Method & Density (Restock/Nat Regen/Alt Area/Coppice/Open)	Monitoring Comments (including and reason not to restock)
16	0.24	0.19		0.05	2024/25	Restock	SDA
19	7.76	6.92		0.84	2024/25	Restock	SDA



Coupe No	Total Area (Ha)	Spp by Ha (MC)	Spp by Ha (MB)	Open (Ha)	Year	Restock Method & Density (Restock/Nat Regen/Alt Area/Coppice/Open)	Monitoring Comments (including and reason not to restock)
38	4.10	2.72	1.16	0.22	2024/25	Restock	SDA
Total	12.1	9.83	1.16	1.11			

2.5 Departure from UKFS Guidelines

This LMP adheres to UK Forestry Standard Guidelines.

2.6 Standards and guidance on which this LMP is based

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>



2.7 Tolerance table

Table 6 Tolerance Table

	Map Required (Y/N)	Adjustment to felling period	Adjustment to felling coupe boundaries	Timing of restocking	Change to species	Wind throw response	Adjustment to road lines	Designed open ground
Scottish Forestry (SF) Approval not normally required (record and notify SF)	N	Fell date can be moved within 5 year period where separation or other constraints are met	<10% of coupe size.	Up to 5 planting seasons after felling (allowing fallow periods for hylobius).	Change within species group E.g. Scots pine to birch, Non-native conifers e.g. Sitka spruce to Douglas fir, Non-native to native species (allowing for changes to facilitate Ancient Woodland policy).			Location of temporary open ground e.g. deer glades if still within overall open ground design Increase by 0.5 ha or 5% of area - whichever is less
Approval by exchange of letters and map	Y		10-15% of coupe size.	5 years +	Change of coupe objective that is likely to be consistent with current policy (e.g. from productive to open, open to native species).	Up to 5 Ha	Departures of greater than 60 m from the centre of the road line	Increase of 0.5 ha to 2 ha or 10% - whichever is less Any reduction in open ground
Approval by formal plan amendment	Y	Felling delayed into second or later 5 year period Advance felling into current or 2 nd 5 year period	>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	As above, depending on sensitivity	More than 2 ha or 10% Any reduction in open ground in sensitive areas Colonisation of open Areas agreed as critical



3.0 EIA Screening Determination for forestry projects

3.1 Proposed deforestation

Habitat Restoration

Forestry and Land Scotland felled coupe 41 as per the previous Forest Design Plan in 2019, with the intention of restocking with mixed conifer and mixed broadleaves. However, in advance of our planned restocking, our Regional Peatland Forester identified a significant proportion of the coupe as suitable for restoration to open habitat lowland raised bog. We now intend to restore 4.88 Ha of afforested peatland to lowland raised bog habitat and restock 1.2 Ha of mineral soil using native mixed broadleaves (see [Maps 14 & 15 Habitat Restoration](#))

The area proposed for restoration is classed as a 'Presumption to Restore' within the FCS Practice Guide *Deciding future management options for afforested deep peatland*. Although the site produced a crop of yield class 8-10 in the previous rotation, it had been cultivated by deeply ploughed ridges and furrows and ploughed drains and also is likely to have been heavily fertilised. Therefore, it would be difficult to achieve this crop performance again over the second rotation without causing significant soil disturbance and the release of greenhouse gases.

This proposal meets the requirements of the Scottish Government's Control of Woodland Removal Policy as the deforestation and subsequent restoration will enhance a priority habitat (Annex 1 lowland raised bog) and its (hydrological) connectivity.

A more detailed site description and restoration proposal for this proposal is given in [Appendix V: Peatland restoration site plan and justification](#). Subject to deforestation approval through this LMP, further surveys will be undertaken and a detailed restoration plan will be developed and submitted to Scottish Forestry.

3.2 Proposed forest road works

N/A

3.3 Proposed forest quarries

N/A

3.4 Proposed afforestation

N/A



4.0 Introduction

This management plan will replace and renew the previous Forest Design Plan of Limerigg under a new Land Management Plan. This new plan will synchronise the management approval for these woodlands into a single new 10 year plan, associated not only by their geographic proximity to each other but also due to their similar attributes such as their plateau moorland character and generally peat soils.

4.1 The existing land holding

See [Appendix I: Supporting Information sections 1.0 & 3.0](#)

The current land matrix is as follows:

Table 7 – Current LMP Area Land Use

Land Use	Area (Ha)
Woodland	340.3
Open space	295.1
Agricultural land	9.9
Felled (awaiting restock)	16.4
Open Water	1.4
Total	663.1

4.2 Setting and context

The Limerigg Forests are a collection of several forests and woodlands covering an area a little over 663 Ha located primarily within Falkirk and North Lanarkshire local authority areas near the villages of Longriggind, Limerigg and Standburn. The main woodlands covered within this LMP are - Limerigg (~205 Ha), Longriggind (~96 Ha), Drumbow (~ 87 Ha), Crossrigg (~56 Ha), Lochend (~ 51 Ha), Black Loch (~17 Ha), Barnsmuir (~ 29 Ha), and Barns (~ 116 Ha).

The Forests lie on the Slamannan Plateaux to the south of the town of Falkirk. The forests complement the wider mixture of woodlands and agricultural fields (see [Map 1 – Location](#)).

The forests primarily functions to produce relatively standard timber such as pallet, small round wood and firewood from commercial conifer species for local and national markets.

4.3 LMP Presentation

Limerigg Forests Complex LMP has not been divided into any particular zones and therefore the objectives relevant to the whole plan are referred to in [Section 5](#) with [Sections 6](#) to 8 presenting the analysis of key issues and challenges and the management proposals for the site as a whole.



5.0 Plan Objectives

Following the review of the previous plan (See [Appendix II Section 2.0](#)) and consideration of the initial scoping internal FLS responses, Appendix III details the key issues and challenges faced as well the management objectives identified for the Limerigg Forests Complex.

6.0 Analysis and concept

6.1 Analysis

Through survey work and research, a broad range of factors have been identified which are potentially relevant to the future makeup and management of the land. These have been analysed in order to better understand the way these interact, and to draw out the most important features and trends (see [Map 5 - Key Features Opportunities & Constraints](#)).

6.2 Concept

The analysis was used to develop an initial design concept highlighting general themes and outlining key considerations and activities which are likely to be most relevant during the plan period, and which formed the basis for these plan proposals for consultation with both the general public and key stakeholders (see [Map 6 - Concept](#))



7.0 Long Term Land Management Plan Proposals

7.1 Management

All proposals have been designed in accordance with sound silvicultural and environmental principles, falling within the framework outlined by the UK Forestry Standard, the UK Woodland Assurance Scheme and FC Bulletin 124 Ecological Site Classification for Forestry. This plan has considered the natural and historic environment as well as green network opportunities.

7.1.1 Clear Felling

Patch clear felling will continue to be the most appropriate management approach for the commercially viable forest which is predominantly productive conifer (see [Map 7 – Management](#), [Map 8 - Felling Approval Areas](#) & [Map 11 - Timber Haulage](#))

7.1.2 Thinning

FCS policy generally assumes that all productive crops will be thinned, unless:

- Thinning is likely to significantly increase the risk of wind blow;
- Operations are likely to require an unacceptably large investment in relation to the potential benefits due to access or market considerations;
- Thinning is unlikely to improve poorly stocked or poor quality crops.

Local regional policy is not to thin crops on soft non-mineral soils or in areas with a DAMS score greater than 16; In the case of Limerigg Forests Complex, as described in [Appendix II Section 3.1.3](#), most of the forests are at the limit of this being categorised as 'Highly Exposed' DAMS 16 coupled with the fact much of the site is located on deep peat soils any thinning operations would likely significantly increase the risk of wind throw and significant ground damage and therefore thinning is not proposed in this LMP area for future rotations. An exception is proposed to manage the larch component at Black Loch (see section [7.1.4 Tree health management](#) below)

7.1.3 Alternative to Clearfell Forestry (ATC)

As mentioned in the previous section this site isn't suited for thinning as the intended benefits of enhanced crop stability, increased tree volume and improved regenerative potential would be negated by the risks to the crop from wind throw and therefore not conducive for management through Alternative to Clearfell methods such as LISS or Continuous Cover Forestry (CCF).

7.1.4 Tree health management

In line with FLS's Larch Strategy this plan has considered the distribution and context of the larch component within the plan in view of the threat posed by *Phytophthora ramorum*. As



such we have identified that much of the larch distribution is within crops with good road access however some is situated in areas with limited access. Such areas include Black Loch where Hybrid larch is planted in mixture with Sitka spruce and Japanese larch with Mixed broadleaves/Scots pine respectively. Black Loch management is proposed as Minimum Intervention however despite that we intend to fell to recycle the Japanese larch manually through thinning at an appropriate point (See [Map 9 – Thinning](#))

7.1.5 Woodland Management in Visitor Zones

Visitor Zones have been identified in areas where FLS encourage and manage access or where the woodland managed by FLS interacts with popular visitor sites or access routes (see [Map 10 – Woodland Management in Visitor Zones](#)).

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

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

7.1.6 Other Tree Felling in Exceptional Circumstances

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

However, there are some circumstances requiring small scale tree felling where this may not be possible and where it may be impractical to apply for a separate felling permission due to the risks or impacts of delaying the felling. Felling permission is therefore sought for the LMP approval period to cover the following circumstances:

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

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

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



7.1.7 Restructuring

Phasing the clearfell coupes will gradually diversify the species and age structure.

Table 8 – Predicted Age Structure Changes

Age Class	Area (Ha) Current	Area (Ha) Year 10	Area (Ha) Year 20
0-10 years	43.0	31.1	71.7
11-20 years	112.8	41.6	22.6
21-40 years	131.4	234.5	142.3
41-60 years	12.7	9.3	89.0
61+ years	40.4	32.7	22.0
Total	340.3	349.2	347.6



Table 9 – Predicted Species Composition Changes

Species	Area (Ha) Current	Area (Ha) Year 10	Area (Ha) Year 20
Sitka spruce	146.1	151.5	134.3
Scots pine	49.7	47.9	37.7
Lodgepole pine	34.6	31.6	37.5
Larch	23	21.1	16.8
Norway spruce	6.2	6.1	4.6
Other conifers	1.4	10.9	33.2
Native broadleaves	4.6	5.7	4.9
Other broadleaves	74.7	74.4	78.6
Total	340.3	349.2	347.6

7.1.8 Minimum Intervention and Natural Reserves

For various areas of the forests biodiversity will be the primary objective and we are prepared to commit such areas of land to minimum intervention management or leave as natural reserves. The minimum intervention classification need not apply in perpetuity and these areas may be reviewed and revaluated for alternative management in future plans.

2 Ha of upland birchwood priority habitat in Coupe 09 will continue to be managed as a natural reserve, which means it will be left undisturbed to develop larger diameter trees that will make future deadwood habitat suitable to support many species and increase the biodiversity value at the site.

7.2 Restocking proposals, future habitats and species

Taking into account all the survey and analysis information, and the objectives set out in the brief, a mix of productive conifer, productive and semi-natural broadleaved woodlands are proposed, along with areas of open ground.

This plan has considered the design and location in relation to the natural and historic environment and green network opportunities.

The woodlands will be matched to the soils and ground vegetation, using the guidelines set out in the Forestry Commission’s Ecological Site Classification (ESC) Bulletin 124, which uses climatic zone, exposure, soil moisture, and soil nutrient levels to inform the type of woodland most suited to particular areas within the site. All planted species will be restocked within 2 years as standard or up to 5 years where Hylobius management or natural regeneration is employed.



7.2.1 Proposed Restock Species

Table 10 – Proposed Restock Species

Species	Net area (ha)	%
Mixed conifer	9.83	89
Mixed broadleaves	1.16	11
Total	10.99	

Detailed restocking information is available in [Section 2.4 Table 5 – Restocking of felled areas 2022-2032](#) and [Map 12 - Future Habitats & Species](#) & [Map 13 – Restock Approval Areas](#).

7.3 Prescriptions

7.3.1 Productive Conifers

The primary function of the forest is to produce a significant volume of standard quality softwood timber for the small roundwood market, also providing for the pallet and fire wood markets.

As such and as per the Regional restocking strategy the management input will generally be:

- standard ground prep methods
- restocking at full initial density of 2,700 stems/ha to achieve a final density of between 2,250 and 2,500 stems/ha with an emphasis on achieving overall stocking
- standard top-up spraying and weeding as required
- standard SDA process

7.3.2 Semi-natural woodland

Various areas of the sites are potentially suitable to support Native woodland (as classified in *FC Bulletin 112 Creating New Native Woodlands*), the woodland type, locations and species are listed in Table 11 below:

Table 11 – Native Woodland Type

Woodland Type	Location	Species
W4 (Upland birch woodland)	Poorest ground, typically along riparian corridors.	Downy birch, grey willow
W7 (Alder wet woodland)	On less fertile, predominantly mineral soils where there is little peat accumulation	Alder, silver birch, grey willow, hazel, hawthorn
W9 (Upland mixed broadleaved woodland)	On more fertile soils.	A wide range of broadleaved species including oak, birch, rowan, hazel elm.

Planted broadleaves will be restocked within 2 years to achieve a minimum final target density of 1600 stems/Ha although areas with productive potential will be planted at higher densities. Riparian areas will generally be lower density incorporating around 30% of open space. It is



expected that a conifer component may develop in these areas through natural regeneration; this can be accepted however should be managed to ensure it remains a minor component.

7.4 Biodiversity & Environment

7.4.1 Habitat & Species Management

The various woodland and open priority habitats as well as the species they support will continue to be conserved and developed as per the management detailed below.

Priority habitats in the area are **upland birchwood** and **lowland raised bog**. These habitats will be maintained through bog restoration projects and herbivore management. Reducing grazing on vegetation in native woodlands and bogs ensures that the condition of these habitats is maintained and increases the species diversity.

Future areas planned are Salterhill and further work at Easter Drumclair. This is being funded by Scottish Power Renewables to mitigate the work on the Beaully – Denny power line.

7.4.1.1 Open Habitat Restoration

FLS's Regional Peatland Forester has recently identified coupe 41 as suitable for restoration back to **lowland raised bog** habitat. The existing (open) raised bog habitat and afforested peatland within coupe 41 form one hydrologically connected peatland unit by a continuous link of coplanar peat soil within the same watershed. The afforested part of the site is proposed for deforestation and subsequent peatland restoration as this is a Scenario A peat type and forms part of the Salterhill Moss (Annex 1) raised bog hydrological unit. Overall, the goal of Salterhill Moss is to create one functioning hydrological raised bog complex. More information on the proposals are given in [Appendix V: Peatland restoration site plan and justification](#).

4.4.1.2 Water vole

The numerous burns and ditches within 1.5 km of the identified **water vole** population should be managed to increase habitat suitability for the population. The site should be managed to provide a continuous cover of tall grassy vegetation. Areas of dense scrub/ young trees should be kept to a minimum along the watercourses with clearance up to 10m (20m riparian corridor as a minimum) from the water edge, managed in the autumn/ winter. Scrub/Vegetation clearance should only be complete on one bankside at a time and alternated in consecutive years. To help maintain this species, non-productive areas within the block should be considered for enhancement opportunities to create a mosaic of wetland habitats to safeguard the population in the long term.

7.4.2 Crossrigg & Drumbow - Scottish Forestry Alliance (SFA)

As described in [Appendix II/3.6.3 Partnership Projects](#) these woodlands were not planted as purely native woodlands however neither were they primarily commercial conifer woods. As such their future management is a mixture of retentions for biodiversity as well as felling of the conifer at an



appropriate stage beyond the life of this plan. It is envisaged that when restocking the currently conifer areas, site appropriate native broadleaves are preferred.

7.4.3 Deadwood

The aim is to use natural processes by retaining dead, windblown or snapped stems or those created during previous operations. Deadwood can be trees or limbs in the early stage of decomposition, e.g. veterans or dying individual trees. These should be retained wherever possible to create an even mix of standing, fallen or stacked deadwood.

Deadwood will be concentrated in areas where it will provide the highest ecological benefit, such as;

- Riparian and wet woodland areas
- Natural reserves and long-term retentions
- Ancient semi-natural woodland
- Areas of significant existing deadwood

The UK Woodland Assurance Standard (UKWAS) target is for an average of 20 m³/ha, although it is expected that actual concentrations will vary widely across the site.

Overall, as these sites have significant areas managed as minimum intervention and natural reserve, there is a high deadwood Ecological Potential within the woodland; which will exceed the UKWAS average

7.4.4 Invasive Species

Japanese knotweed has spread from neighbouring houses on to adjacent woodland. This has been treated but may will need to be monitored and potential re-treatment.

7.4.5 Wildlife (Deer Management)

Full details of proposed deer management can be found within Central Region Deer Management Strategy (in conjunction with the Deer Overview Map), but the main objectives within the Limerigg Forests Complex are:

- To enable restocking to take place without the need for deer fencing and to achieve a stocking density of 2500 stems per hectare at year five in accordance with OGB 4.
- The District aim for damage allowance is to keep leader damage levels below 10% on all commercial plantations.
- Ensure all Biological resources on the National Forest Estate remain in favourable condition (as per SNH guidelines).
- To maintain a sustainable deer population.



These objectives will be achieved by the continued monitoring and control by FLS Wildlife Ranger Staff.

7.4.6 Landscape

In producing this LMP FLS has considered the landscape character of the area and the features outlined in NatureScot's landscape character assessment. FLS has also considered the impact our proposals would have on the wider landscape and it is our view that this impact would not be significant given the relatively small coupe sizes and the screening effect of the surrounding woodland and therefore the design is in keeping with the Local Landscape Area characteristics (see [Appendix II section 3.3 Land Use](#)).

7.4.7 Hydrology

All operations will follow best practice as detailed in the current Forest and Water Guidelines. Timber extraction will normally avoid crossing burns or main drains, but, where necessary, each crossing point will be piped or bridged. Branches will be kept out of watercourses and trees will generally be felled away from the watercourses.

7.5 Heritage

The forest design illustrated in **Map 12 - Future Habitats & Species** considered the various heritage features, many under woodland cover and our future management.

Appropriate buffers have been applied by our Environment Forester to all the different features across the sites e.g. banks, dykes, standing stones, wells etc., which are recorded within our heritage database. This is done in accordance with the guidance provided in the Forests and Historic Environment guidelines (2011), the SF policy document: Scotland's Woodlands and the Historic Environment (2008) and the supporting FLS Historic Environment Planning Guidelines. Features generally have buffers ranging from 5-10 metres depending on their nature but these can be wider or even have no buffer. Such constraints are identified and surveyed by Forest Regional staff prior to any work being undertaken in order to ensure that upstanding historic environment features can be marked and avoided. For operations, work prescriptions protect relevant historic environment features apportioning appropriate buffers clear from ground disturbing operations and planting. Opportunities to enhance the setting of important sites are considered on a case-by-case basis.

7.5.2 Non-scheduled Archaeology

Appropriate buffers will be applied and maintained around pertinent non-scheduled archaeological features, these will be kept open and free of trees. All operations in the vicinity of such features will be conducted in accordance with UK Forestry Standard Guidelines on Forests and the Historic Environment, with suitable steps taken to ensure their protection.



7.6 Social Factors

7.6.1 Recreation

FLS will maintain and enhance access opportunities where sustainably viable. Recreation facilities will be managed in line with OGB 42 Managing Recreation or any subsequent Standard Operating Procedures.

7.6.2 Community

FLS staff will engage with local communities and groups to facilitate access and activities on site. This may include education, health and greenspace programmes to encourage users to access Scotland's national forests and land. This will be in accordance with Scottish Government's National Performance Framework, FLS Corporate Plan 2019-2022 and FLS National Visitor Services and Community Strategy (TBC).

8.0 Critical Success Factors

The success of this plan will be based on whether the objectives set out in Section 1.0 Summary of Proposals and in [Appendix III Land Management Plan Brief](#) are achieved. The table which forms [Appendix IV: Objective Appraisal, Monitoring & Evaluation](#) details how each objective will be appraised, where and when each objective will be monitored; by who and where it will be recorded. This will enable an evaluation of success as part of the mid and end of plan reviews.



Appendix I: Land Management Plan Consultation Record

Table 12 – LMP Consultation Record

Consultee	Date contacted	Date response received	Issue raised	Forest District Response
Online Public Consultation Form (24 responses)	Opened 07/09/21	Closed 15/10/21	<i>Please note due to the number of similar comments received we have amalgamated some of these into subject groups with a single response, rather than responding to each comment individually. We hope this captures all the points raised but would be happy for individuals to contact us via the details on our website should any queries remain.</i>	
Question 1: What aspects of the proposed Land Management Plan are you most interested in?			71% Recreation and Access 13% Landscape Impacts 4% Wildlife 4% Tree species choice 4% 'Bridle paths' 4% 'All of the above along with public access'	Noted
Question 2: What do you like most about the plan, and why?			Forest Management <ul style="list-style-type: none"> • Replanting of trees. • Protection of natural environment • Nothing you cut down trees in forest and do not replace them • Maintenance of the areas • The mix of species and ongoing management plan • Sympathetic to wildlife. • There are many positives within the plan ...I like the 2ha of Upland Birchwood with minimum 	Thank you for your comments regarding forest management. FLS seek to manage all forests in a sustainable manner and in compliance with the UK Forestry Standard (UKFS) and the independently audited UK Woodland Assurance Standard (UKWAS). This includes managing areas appropriately for environmental, social, and economic purposes. All proposals are assessed and approved by the regulator, Scottish Forestry, and include legally-binding obligations to replant any felled areas, unless more beneficial



Consultee	Date contacted	Date response received	Issue raised	Forest District Response
			<p>intervention in coupe 09 and the habitat restoration planned for the peatland areas.</p> <p>Visitor access and recreation</p> <ul style="list-style-type: none"> • Allows safe exercise for horses • would be a great asset to the area if paths and access were reinstated. a lovely area going to waste. it is important that local horse riders have a safe enjoyable place to get off the roads . the forrest are appreciated by us . but we have been locked out of one by the peat field contractor. it has been reported some time ago . nothing has changed. • The forrestry is a great place for residents and visitors alike to enjoy nature and the outdoors. Restoring paths etc will benefit all. • The increase of public use. I regularly ride about the Limerigg woods • Safer places to ride roads are very dangerous at the moment • Conservation of the woods with more indigenous trees trails for bikes seperate from horses • It looks as if the possibility of reconnecting routes had been accounted for. It's frustrating 	<p>objectives (such as peatland restoration) are identified.</p> <p>For more information, please see:</p> <ul style="list-style-type: none"> • Sustainable forestry and the UKFS (Scottish Forestry website): https://forestry.gov.scot/sustainable-forestry • UKWAS website: https://ukwas.org.uk/ <p>Thank you for your comments regarding visitor access and recreation. We fully understand users interest and concerns regarding access to these forests and how valuable they are as spaces for people to enjoy nature and the outdoors. Forestry and Land Scotland will maintain access opportunities where sustainably viable and all FLS sites are accessible under the Scottish Outdoor Access Code.</p> <p>We recognise there is an ongoing access issue at Drumbow/Longriggend and are trying to liaise with a neighbouring landowner and the Local Authority Access Officer to resolve the current access restrictions which are impacting both public users and FLS.</p> <p>Motorised vehicles are not permitted on FLS sites. We encourage members of the public to report any incidents to Police 101, or 999 in an emergency. FLS are part of a multi-agency working group to address the ongoing issue of anti-social bike use.</p>



Consultee	Date contacted	Date response received	Issue raised	Forest District Response
			<p>to find a 4 foot x 6 foot deep ditch blocking the Walker or horse rider</p> <ul style="list-style-type: none"> As a horse rider it would be great if we could have access to the forestry to get us off the ever increasing busy roads. Based on the map, if we had access to these interlinked paths there are many areas that we could safely hack. Horses and riders typically work with nature and wildlife, not against it. We used to have access to Drumbow, but this was blocked, it would be good to have this opened up again. To keep Horse riding access routes clear and passable Joined up pathways To be able to safely ride our horses locally The note on maintaining and improving accessibility to the forest for all 	
Question 3: Is there a part of the plan that you would like to see improved, if so how?			<p>Forest management</p> <ul style="list-style-type: none"> Minimise the felling of trees, plant more Replace the trees cut down 	<p>Thank you for your comments regarding forest management. FLS seek to manage all forests in a sustainable manner and in compliance with the UK Forestry Standard (UKFS) and the independently audited UK Woodland Assurance Standard (UKWAS). This includes managing areas appropriately for environmental, social and economic purposes. As part of this, all areas felled will be replanted with appropriate species, unless there are overriding management objectives such as peatland restoration. All proposals are assessed and approved by Scottish Forestry and include legally-binding obligations to replant felled areas, unless more beneficial</p>



Consultee	Date contacted	Date response received	Issue raised	Forest District Response
			<p>Coupe 19 currently due for clear felling and being restocked with conifers to clearfell 40-50 years in the future. I think this area is too close to the settlement of Limerigg ...an area that should potentially be taken over by the community as a buffer zone between themselves and future clearfell operations. It could be managed as a community woodland. Planted partially with Birch Hazel Alder Willow smaller areas could be coppiced every 10 years to produce firewood and craft materials. Whilst other parts of the woodland could be managed with minimum intervention purely for biodiversity and landscape enhancement.</p> <p>Visitor access and recreation</p> <ul style="list-style-type: none"> • Access to Drumbrow from Telegraph was shut off by the owner of the adjacent land. Can something be done about this & maintenance of paths? • Drumbrow to telegraph road be reopened and paths and tracks being maintained. • access and tracks made safer as some really bad boggy parts. 	<p>objectives (such as peatland restoration) are identified.</p> <p>For more information, please see:</p> <ul style="list-style-type: none"> • Sustainable forestry and the UKFS (Scottish Forestry website): https://forestry.gov.scot/sustainable-forestry • UKWAS website: https://ukwas.org.uk/ <p>Thank you for your comment. Regarding coupe 19, this will be somewhat screened from the village of Limerigg by an area of Minimum Intervention woodland. Future restocking of this area is likely to include a fringe of broadleaved trees closest to the village, however this will be identified and planned further at the work plan stage. We would be happy to consider proposals from the community to take over this area of woodland through the Community Asset Transfer Scheme – please see our response below for further information.</p> <p>Thank you for your comments regarding visitor access and recreation. We fully understand users interest and concerns regarding access to these forests.</p> <p>Forestry and Land Scotland will maintain access opportunities where sustainably viable and all FLS sites are accessible under the Scottish Outdoor Access Code.</p>



Consultee	Date contacted	Date response received	Issue raised	Forest District Response
			<ul style="list-style-type: none"> • Access to all paths from horseback and push bike • Improved access for horse riders • Paths made safe for horse riders. • I would like to see more access to pathways for horse and riders with appropriate surfacing. And hopefully more pathways. And I'm sure as most other riders we wouldn't mind a log or so to jump aha. • Looking forward to off road trails • Existing paths/tracks could be maintained & access to Drumbow from Telegraph Road could be opened up again. • Ideally it would also be great to have a few grassy tracks where horses could stretch their legs in canter. Appreciate stones help maintain pathways but not so great for horses. • Creation of a car park for Black Loch. • General access and maintenance • The surface of pathways topped with ash • Yes, I would like you to acknowledge the historic significance and current importance of allowing access for equestrian use. This forest was a key place for safe off road hacking and over the years, the peat extraction operations by Longriggend have unlawfully blocked access to horse riders through the use of impassive barriers. Upon further investigation, the operators claim this is to prevent fly tipping, but this aim could be achieved with the use of horse safe access gates rather than locked impassive 	<p>We recognise there is an ongoing access issue at Drumbow/Longriggend and are trying to liaise with a neighbouring landowner and the local authority access officer to resolve the current access restrictions which are impacting both public users and FLS.</p> <p>Regarding maintenance of forest trails, as outlined in section 7.1.5 and map 10, a series of visitor zones have been identified in areas which includes tree removal to keep trails open and welcoming.</p> <p>The primary purpose of the forest road network is for timber transport, so tracks are designed with long-term sustainability for this purpose in mind and will be periodically maintained to facilitate operations. Timber haulage on upgraded forest roads tends to break down and smooth the track surface over time. Ash is not a suitable or sustainable material for use in track or path maintenance.</p> <p>Many of our sites have seen an increase in visitor pressure resulting in increased vehicle issues around our sites. Black Loch waterbody is not owned by FLS and there are currently no plans to create additional parking facilities for this site on FLS land.</p>



Consultee	Date contacted	Date response received	Issue raised	Forest District Response
			<p>barriers. I note that these locked barriers also pose a significant fire safety risk which has proven problematic on multiple occasions when there has been a fire in the forest and the fire services cannot access to assess / tackle the fire without contracting the peat contractors to unlock the barriers. This is concerning for local villagers and a massive danger to the valuable wood crops in the forest. These concerns have been reported to the local council but so far there is yet to be a resolution with the peat extractors. Please note they are in breach of clauses in their extraction permissions such as storing plant on site and locking access.</p> <p>General The plan is very comprehensive but not too easy to interpret the changes it will effect in specific areas.</p>	<p>Thank you for your comment. We are sorry you found the plan difficult to interpret. By their nature, Land Management Plans are produced at a strategic level and more detail on specific areas will typically be included at the work plan stage for each site. We would, however, be happy to respond to any queries you may have on specific details or areas of the forest.</p>
<p>Question 4: Please add any further comments relating to the plan here.</p>			<p>Visitor access and recreation</p> <ul style="list-style-type: none"> • Develop more routes through the forests for walkers and wildlife enthusiasts • It would be great if msitenance could be done on path 	<p>Thank you for your comments regarding visitor access and recreation. We fully understand users interest and concerns regarding access to these forests. Forestry and Land Scotland will maintain access opportunities where sustainably viable and all FLS</p>



Consultee	Date contacted	Date response received	Issue raised	Forest District Response
			<ul style="list-style-type: none"> • Are there any plans for maintaining or improving leisure access? I ride (horses) in the Longriggend area and off road riding is horribly limited at the same time as the roads are becoming increasingly dangerous. It would be wonderful to have some maintained tracks to ride. • Prohibition of vehicles, quads • if horse gates are being installed for them to be safe and not spring loaded. • Drumbow Woods access from Telegraph Road • As a resident in Upperton/Longriggend area I have noted a deterioration in the nearby forestry. The paths are so over grown that it has become almost impossible to walk. • I also use the forestry in Slamannan and again, lack of maintenance and people using quad bikes have made horse riding impossible in parts. • I would like to see nature trails for schools to use as well as trails for horse riders and mountain bikers it may even open up business opportunities similar to Perth and Falkirk • A few forestry areas where we do have access have been churned up by dirt bikes and quads, so gates or blocks that deter their access would be great. • As an older rider, there were so many bridleways, tracks and greenbelt areas that I could ride safely as a child, but the majority of these are gone, our younger generation are 	<p>sites are accessible under the Scottish Outdoor Access Code. Where any new major infrastructure is planned (e.g. paths), this would be subject to an equality impact assessment.</p> <p>We recognise there is an ongoing access issue at Drumbow/Longriggend and are trying to liaise with a neighbouring landowner and the local authority access officer to resolve the current access restrictions which are impacting both public users and FLS.</p> <p>Regarding maintenance of forest trails, as outlined in section 7.1.5 and map 10, a series of visitor zones have been identified which includes tree removal to keep trails open and welcoming.</p> <p>The primary purpose of the forest road network is for timber transport, so tracks are designed with long-term sustainability for this purpose in mind and will be periodically maintained to facilitate operations. Timber haulage on upgraded forest roads tends to break down and smooth the track surface over time. However, all parts of the forest (including the forest road network) are accessible under the Scottish Outdoor Access Code. Ash is not a suitable material for use in track or path maintenance.</p> <p>Motorised vehicles are not permitted on FLS sites. We encourage members of the public to report any incidents to Police 101, or 999 in an emergency. FLS are part of a multi-agency working group to address the ongoing issue of anti-social bike use. Many of our sites have seen an increase in visitor pressure</p>



Consultee	Date contacted	Date response received	Issue raised	Forest District Response
			<p>faced with unsympathetic traffic on fast moving dangerous roads and the only safe areas require trailer or box to get to. If work is going to be done in and around the area anyway, it would be great to keep horse riders in your consideration. Road users are always harping on about keeping horses off the road (blah blah blah), and trust me 100% of us would prefer somewhere off-road to hack. We ride on the road as a necessity, not by choice. Thank you.</p> <ul style="list-style-type: none"> • Black Loch has become very popular for open swimming but parking is very limited. • Horse access in gateways • Please make more concessions for the installation and improvement of accessible pathways so all users from the local communities can freely use the forests. Adequate parking needs to be factored into this plan as well so that users with limited mobility have the opportunity to access the forest. <p>General Would like to be informed of any consultation processes and meetings with local Limerigg community.</p>	<p>resulting in increased vehicle issues around our sites. Black Loch waterbody is not owned by FLS and there are currently no plans to create additional parking facilities for this site on FLS land.</p> <p>Our consultation process includes stakeholder analysis where interested parties are identified and made aware of consultation. Consultation on any plans or operations are put to local community councils for distribution, however individuals can be added to circulation list for consultation process, subject to appropriate GDPR controls. Please get in touch via the details on our website if you wish to receive more information.</p>



Consultee	Date contacted	Date response received	Issue raised	Forest District Response
			<p>Great ideas that are never carried out in forest at Limerigg I know as I stay next to forest</p> <p>When there is deforestation I would ask that the area is screened by leaving a perimeter of mature trees. While fully comprehending the commercial aspects of forestry I would hope to continue to enjoy looking out to trees and not the sad site of devastation. Also concerned about wild life disruption as I am aware of birds of prey nesting in area</p>	<p>Thank you for your comment. Appendix II: Supporting Information, section II/2.1 Aims of previous plan and achievements provides evidence of progress against the objectives of the previous Land Management Plan for these sites. Appendix IV: Objective Appraisal, Monitoring & Evaluation provides information on how progress on the objectives of this LMP will be measured with this being done at least every 5 years.</p> <p>Thank you for your comment. Please note harvested areas will always be regenerated (typically by planting) following harvesting operations, unless there are overriding objectives such as peatland restoration. Due to potential stability issues, it is not possible to leave a screen of trees around each site – however, our Land Management Planning process does consider landscape sensitivities and felling coupes are designed with this in mind. Where appropriate to do so, broadleaves will be retained and new broadleaved trees planted to soften edges of felling coupes in the future.</p> <p>With regards to wildlife protection, FLS carry out surveys prior to operations and if any species is reported as at risk we implement the necessary mitigation in accordance with best practice guidance and adhering to all relevant legislation and policy.</p>



Consultee	Date contacted	Date response received	Issue raised	Forest District Response
			I'm in communication with Slamannan and Limerigg Community Council about potentially making an approach to yourselves regarding the Community Woodland proposal.	Thank you for your comment. Community organisations have the right to request to take over publicly-owned land or buildings that they feel they can make better use of for local people. These community empowerment rights apply to all land and buildings managed by Forestry and Land Scotland. Our Community Asset Transfer Scheme sets out how groups can acquire land that we manage, for the benefit of their communities – please see the following webpage for more information: https://forestryandland.gov.scot/what-we-do/communities/community-asset-transfer-scheme
The Much Hon. D. W. Paisley of Westerlea (via letter)	As per above	28/09/21	Dear Mrs McGinnes, Thank you so much for forwarding the above plan about the Limerigg area. I will study it in detail but I have to say, what a 'magnum opus' you have put together ~ the concept, detail and the vision. I would be very happy to be informed from time to time, any developments.	Dear Lord Westerlea, Thank you for your comments in response to the Limerigg Land Management Plan. We have now concluded our consultation process for this Land Management Plan and will shortly be submitting the final plan to the regulator, Scottish Forestry, for approval. Consultation on any plans or operations (which are delivered through more detailed 'work plans') are generally put to local Community Councils for comment and/or distribution to local residents as appropriate. However, individuals can be added to our circulation list for consultation, subject to appropriate GDPR controls. If you wish to be added to the circulation list for this site, please could you confirm that you are happy for us to hold your data for this purpose?



Consultee	Date contacted	Date response received	Issue raised	Forest District Response
Statutory Consultees:				
Slamannan and Limerigg Community Council	10/09/21	N/A	No response	N/A
RSPB	10/09/21	N/A	No response	N/A
Scottish Water	10/09/21	22/09/21	<p>Limerigg Forests Complex Land Management Plan</p> <p>Thank you for consulting with Scottish Water regarding the above activity.</p> <p>Drinking Water Protected Areas</p> <p>A review of our records indicates that there are no Scottish Water drinking water catchments or water abstraction sources, which are designated as Drinking Water Protected Areas under the Water Framework Directive, in the area that may be affected by the proposed activity.</p> <p>Scottish Water Assets</p> <p>A review of our records indicates that there are a large number of assets in around the Black Loch and Hillend Reservoir. There are no assets within the Barns/Barnsmuir compartments but there appear to be assets within all the other compartments on this side of the map provided. Gateside (East side of the map) – our GIS indicates there are a number of washouts for the nearby distribution mains which are within the compartment..</p>	Noted.



Consultee	Date contacted	Date response received	Issue raised	Forest District Response
			<p>This should be confirmed however through obtaining plans from our Asset Plan Providers. Details of our Asset Plan Providers are included in the SW list of precautions for assets, which can be found on the activities within our catchments page of our website at www.scottishwater.co.uk/slm.</p> <p>All Scottish Water assets potentially affected by the activity should be identified, with particular consideration being given to access roads and pipe crossings. If necessary, local Scottish Water personnel may be able to visit the site to offer advice. All of Scottish Water's processes, standards and policies in relation to dealing with asset conflicts must be complied with.</p> <p>In the event that asset conflicts are identified then early contact should be made with HAUC Diversions Team via the Development Services portal - https://swastroprodweb.azurewebsites.net/home/default. All detailed design proposals relating to the protection of Scottish Water's assets should be submitted to the HAUC for review and written acceptance. Works should not take place on site without prior written acceptance by Scottish Water.</p> <p>Scottish Water have produced a list of precautions for a range of activities. The list of precautions for assets details protection measures to be taken if there are assets in the area. Please note that site specific risks and mitigation measures will require to</p>	



Consultee	Date contacted	Date response received	Issue raised	Forest District Response
			<p>be assessed and implemented. The document/s and other supporting information can be found on the activities within our catchments page of our website at www.scottishwater.co.uk/slm.</p> <p>It should be noted that the proposals will be required to comply with Sewers for Scotland and Water for Scotland 4th Editions 2018, including provision of appropriate clearance distances from Scottish Water assets</p>	
NatureScot	10/09/21	N/A	No response	N/A
SEPA	09/09/21	14/10/21	<ul style="list-style-type: none"> The UK Forestry Standard is currently under review and landowners may be pushed to propose a more balanced mix of conifer and broadleaf species in their woodland proposals. The LMP appears to show a diverse range of species which is good for forest resilience and when combined with broadleaf trees, greater biodiversity. It is important that when referring to sustainable forest management we see reference to Scotland's Forestry Strategy 2019-2029 in terms of tree planting percentages and providing those percentages show good incorporation of broadleaf species and open ground, then that is acceptable. Reviewing the planting percentages and gradual increase in tree diversity over the lifetime of this Plan, it is clear that broadleaf planting is at a high level and meets sustainable forest management. FLS as a partner in the Riverwoods Initiative, SEPA would welcome inclusion of the principles 	<p>Noted – species compositions and management prescriptions are compliant with UKFS and UKWAS and species choice supported by Ecological Site Classification Decision Support Software (ESC DSS). Appendix III. Land Management Plan Brief – sections 2 and 3 demonstrate how the Land Management plan links to Scotland's Forestry Strategy 2019-2029.</p> <p>Noted – as per section 7.3.2, riparian areas will be planted with native trees and conifer</p>



Consultee	Date contacted	Date response received	Issue raised	Forest District Response
			<p>with regards to all watercourses, tributaries, ponds, and lochans. We would encourage maximisation of riparian zone management which goes beyond UKFS guidance Home Riverwoods</p> <ul style="list-style-type: none"> • SEPA welcomes restoration of lowland raised bog as outlined in section 3.1. • Good site planning is required on pollution prevention, old drains should be well mapped and measures applied if some are directly connected to main watercourses. If so, temporary measures such as drain blocking or insertion of tree stumps into channels to slow the flow and encourage settlements should be adopted on top of the usual raft of good practice measures. For contractors and site managers, reference should be made to the Forestry & Water Scotland Know the Rules Booklet, version 2, and it is imperative that all contractors follow the guidance therein. On-site tools (confor.org.uk) and strive to go beyond those measures. • In accordance with the published Scottish Forestry "Cultivation of Upland Woodland Creation Sites - Applicants Guide", the focus should be to incorporate low risk intrusive techniques to minimise soil and carbon losses to air and water. For new planting & restocking, techniques such as mounding [not trench mounding] and scarification would meet this guidance. 	<p>regeneration managed appropriately. The exception to this is where water vole are known to be present, as outlined in section 7.4.1.2.</p> <p>Noted.</p> <p>All planning and operations will be carried out in compliance with UKFS and UKWAS. Detailed constraints and associated mitigation and control measures will be identified at the work plan stage.</p> <p>Noted – no woodland creation is proposed for these sites. Appropriate cultivation techniques will be identified at the work plan stage and are matched to soil type and species requirements and carried out in accordance with current best practice guidelines.</p>



Consultee	Date contacted	Date response received	Issue raised	Forest District Response
			<ul style="list-style-type: none"> • There are no references to private water supplies but if any are present adjacent to or within the forest areas then great care MUST be taken to protect water quality hence all operations must strive to go beyond compliance with best practice due to this sensitivity. All source areas must be afforded maximum protection from machinery damage, compaction and pollution from all forest activities, including future operations. This also applies to water transfer pipework. The buffer distances highlighted in the Know the Rules Booklet are minimum distances and greater zones should be allocated where source areas are extensive or boundaries unknown. • Any access tracks should ideally avoid areas of shallow and deep peat to avoid disturbance of key habitat and release of organic compounds to surface waters. • SEPA welcomes the bridging and/or culverting at crossing points. • Prior to site departure, all machinery working within the forest block must be power washed as per good practice to avoid the accidental spread of invasive species. This practice also allows machines to be inspected and repairs identified. Photographic record of this wash down should be kept for UKWAS audit inspection. • If the Plan is to use traditional plastic-based tree guards for broadleaf planting protection, 	<p>Noted – FLS endeavour to identify any private water supplies during both the Land Management Plan and workplan processes and will implement the appropriate protection measures accordingly. If there appear to be any private water supplies within this plan area of which we are not aware, please inform us of these via the details on our website.</p> <p>Noted.</p> <p>Noted.</p> <p>Noted – all operations will be carried out in accordance with UKFS and UKWAS requirements.</p> <p>Noted – all waste will be removed in accordance with UKFS and UKWAS requirements.</p>



Consultee	Date contacted	Date response received	Issue raised	Forest District Response
			then it must come with a tree guard removal plan after the trees are established. Leaving the plastic-based guards lying on the landscape is not acceptable and constitutes improper waste disposal.	



Appendix II: Supporting Information

II/1.0 The existing forest and land

II/1.1 History of the land holding

The Limerigg Forests are a collection of acquisitions purchased and planted between 1956 and 2005. The timeline of acquisition of what now make up the Forest complex is:

- Limerigg, Black Loch (1956, 1992)
- Barns (1956, 1972, 1994)
- Barnsmuir (1962)
- Longriggend (1994, 1998, 2005)
- Drumbow (2001)
- Crossrigg (2002)
- Lochend (2004)

Around half of the first rotation has been felled and restocked with the remaining woodland a mix of retentions, or future phased felling.

II/2.0 Analysis of previous plan

The general objectives of the previous plan was to maintain sustainable timber production, increase open habitat, protect wildlife value and the integrity of water features. Each objective was to be achieved by a programme of felling, restocking or restoration diversifying age ranges and habitats.

Further detail and progress on the aims of the previous plan are provided below.



II/2.1 Aims of previous plan and achievements

Table 13 – Previous plan Progress

Objective	Proposed management actions	Progress to date 1 - Little/No progress 2 – Some progress 3 – Progress as per LMP
Maintain productive potential allowing sustained flow of timber to the market.	<p>In the period 2007 - 2016, an average 2 000 tonnes pa will be produced from the Plan area.</p> <p>Conifers will form a major component of restocking but the aim is to diversify species and allow small scale felling and thinning to develop an attractive mixed woodland..</p>	3
Long and short distance views are sympathetic to landform and land use.	Mixed plantings and a move to accepting natural regeneration where suitable should give much more variety and continue the improvements already seen since felling began over a decade ago.	3
Increase opportunities for informal access on foot, bicycle and horseback.	Funds have been obtained from FET to develop new paths and a biodiversity park on the edge of the forest. This will begin later in 2007. Although the initial benefit will be increased access, it will open up a valuable watercourse, currently shaded by conifers. The biodiversity park will manage an area overgrown with willow herb and add features such as wetland, giving opportunities for education.	2



Objective	Proposed management actions	Progress to date 1 - Little/No progress 2 – Some progress 3 – Progress as per LMP
<p>Enlarge open ground habitats within the forest to link external open ground.</p> <p>Maintain and enhance wildlife value.</p>	<p>(Peatland) Areas within Drumbow, Lochend and Crossrigg are in good condition and will not be drained or planted. If funds are available, further drain blocking may go ahead. Tree regeneration will be monitored and managed periodically in line with good practice. A report will be included in the 5-yearly review of this Plan.</p> <p>Some of the planted bogs will be felled within the lifetime of this Plan. Recent surveys have suggested they may be suitable for restoration, so they will have drains blocked at felling and will not be replanted.</p> <p>Bogs where peat has been extracted in the past are recovering well, these will be monitored for tree regeneration as above.</p> <p>Invasion of bogs by scrub will be discouraged</p> <p>Larger peatlands will not be planted and regeneration will be monitored and controlled as necessary. Small isolated areas will be included within the surrounding habitat and managed with that.</p>	<p>3</p>



Objective	Proposed management actions	Progress to date 1 - Little/No progress 2 – Some progress 3 – Progress as per LMP
Protect integrity of watercourses and lochs.	Smaller broadleaf trees and shrubs ... included .. along watercourses and willow regeneration is expected to appear in many areas.	3
Local communities are able to participate in planning process and use the forest for recreation.	Commitment has been given to the local community in Limerigg that they will be involved in the planting decisions beside the Black Loch. Initial discussions show their wishes are in line with FCS.	3
Drumbow – new planting 39.4 Ha, track creation and bog restoration.		3 - Planting is complete and nearly all established satisfactorily. 2700 m of path built. Drain blocking has been carried out on the bog and monitoring is in place. A Red Data Book species of spider has been identified. Adjacent derelict land has been restored by Digit.
Crossrigg – new planting 27.7 Ha, track creation and protection of views.		3 - Planting was designed to accommodate views from the private house surrounded by FCS property and has been successfully completed. Establishment to date is good. 2550 m of path built.
Lochend – habitat protection and derelict land restoration. Path links.		3 - Survey work has identified key habitats and measures have been taken to prevent dumping and damage from fire. A path link to the main block of Limerigg has been built and a small area of restoration completed. Use of



Objective	Proposed management actions	Progress to date 1 - Little/No progress 2 – Some progress 3 – Progress as per LMP
		sewage filter cake on other derelict land was rejected by Falkirk Council.



II/2.2 How previous plan relates to today's objectives

This new revision of the plan generally follows on from the objectives of the previous plans to manage a multi-purpose forest. (see [Appendix III](#)).

II/3.0 Background information

II/3.1 Physical site factors

3.1.1 Geology Soils and landform

The sites sit within a gently undulating landscape of largely glacial till and peat overlying coal formations, resulting in a primarily peaty soil, with surface water gleys. Elevation ranges from around 190m to 230m above sea level.

3.1.2 Hydrology

Several burns run through or adjacent to the site including Shields & Culloch Burns whilst the southern section of Limerigg drains into Black Loch and Crossrigg into Hillend Reservoir.

Most of the forests sit within the Linlithgow Avon River Drainage Area, Avon River Catchment and Scottish Environmental Protection Agency (SEPA) Waterbody Catchment with Crossrigg and Drumbow within the Dalmaroch Drainage Area, River Clyde Catchment and Hillend Reservoir SEPA Waterbody Catchment. Some small areas of the forest also overlap North Calder Water & Drumtassie Burn SEPA Waterbody Catchments.

The forests are situated within the Natural Flood Management Study areas of Slamannan & the wider Linlithgow Avon River. Most of the forests fall within the catchment of the target areas of Bathgate, Blackridge, Linlithgow, and Slamannan. Less than 20% of the drainage area has forest cover and therefore there would not be any significant impact on drainage from operations within the management area.

3.1.3 Climate

The prevailing cool & moist/wet climate is conducive to good conifer tree growth although the soils and exposed topography limits the choice of tree species suitable for continued productive conifer crops. Climate change predictions suggest that the climate will become generally warmer, with drier summers and winters more wet.

II/3.2 The existing forest

3.2.1 Age structure, species and yield class

Table 14 below shows the species make-up of the Limerigg Forests Complex with Figure 1 further illustrating the species composition. Both the table and figure show that the forest is predominantly conifer (~77%), of which Sitka spruce constitutes ~56% (~43% of forest area) (see [Map 4 - Existing Crop](#)).



Table 14 – Current Forest Species by Area

Species	Area (Ha)
Sitka spruce	146.1
Scots pine	49.7
Lodgepole pine	34.6
Larch	23
Other conifer	7.6
Broadleaves	79.3

Figure 1 – Current Forest Species Composition

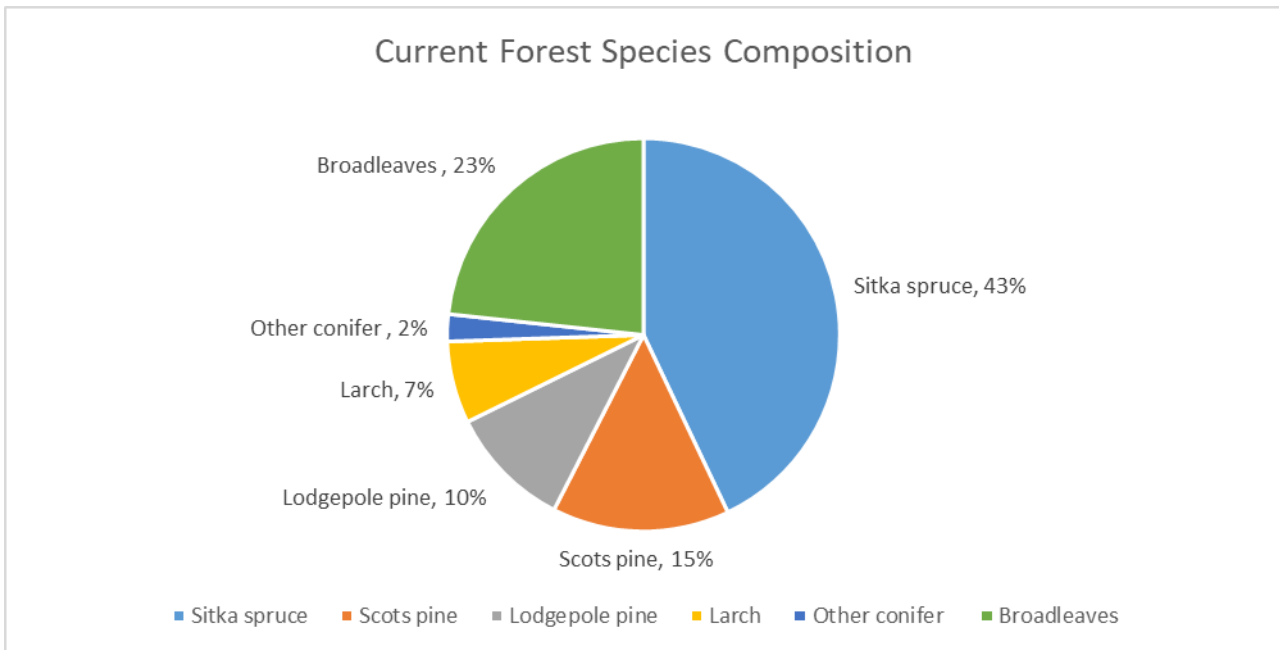
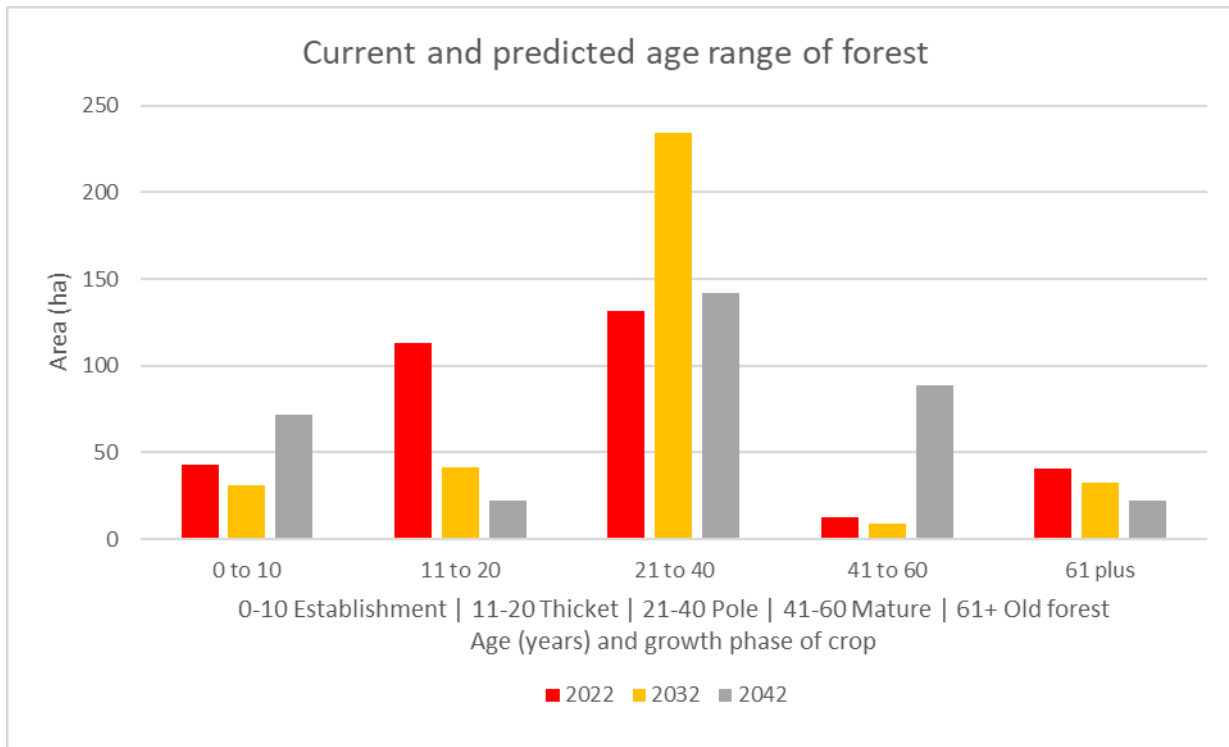


Figure 2 below illustrates that the general picture across the forests is much of the forest is predominantly made up of pole stage Sitka spruce.



Figure 2 – Current Forest Age Structure



Yield classes for conifer reach 18 averaging at 14 in the Sitka spruce which forms the largest species component of the forests. In broadleaves Yield class reaches 8 but is generally around 2.

3.2.2 Operational Access

The forests have a road network totalling approx. 9.4 km, allowing economic operational access (i.e. 500 m or less) for most of the sites although some areas will need consideration for further roading for future harvesting operations beyond the life of this plan.

3.2.3 Alternative to Clearfell (ATC) Systems (CCF/LISS) potential

With the exposed nature of the site along with the poor, wet soils the site is not deemed as suitable for thinning and therefore neither for ATC methods.

3.2.5 Current and potential markets

Future conifer clearfells will predominantly provide small round wood and chip as well saw logs, pallet wood, wood fuel and firewood.



II/3.3 Land Use

3.3.1 Neighbouring landuse

The forests are surrounded by a matrix of farmland and forest, with many old hedgerows as well as extensive peat bogs, open water and urban village settlements of Limerigg and Standburn.

II/3.4 Biodiversity and environmental designations

3.4.1 Designations

No national designations fall within the sites however there are **10 Local Nature Conservation Sites**: Longrigg Wetland; Crossrigg Moss; Shields Burn; Drumbow Moss; Limerigg Ponds; East Drumclair Wildlife Site; Balquhatstone Wildlife Site; Little Black Loch, Drumbroider Wildlife Site and Candie Mire Wildlife Site).

3.4.2 Habitats and species

Priority habitats in the area are **upland birchwood**, and **lowland raised bog**. Species associated with these habitats includes **badgers, newts, cranberry, common sundew** and the **spider *Centromerus levitarsis***. **Goshawk** are a recently identified species breeding in the woodlands.

There are areas of Long Established woodland of Plantation Origin in Limerigg and Lochend.

Limerigg has extensive areas of open peatland, some of which is lowland raised bog priority habitat. The priority habitat areas have had restoration started in the previous 10-20 years and are now in the process of follow up restoration works such as drain blocking and re-profiling to keep the water table at the top of the soil profile thereby ensuring the bog is maintained in good condition and actively accumulates carbon. Lowland raised bog restoration has been completed at Drumbow.

Ponds, and watercourses are also an important feature suitable for **water voles** which receive partial protection under schedule 5 of the Wildlife and Countryside act 1981 (as amended). Currently, the legal protection is restricted to the water vole's places of shelter and not to the animal itself. The species has suffered declines since the 1970's and are currently the most rapidly declining mammal in Scotland. The water vole is included on the Scottish Biodiversity List (SBL). Plants and animal listed within the SBL are those that have been identified by Scottish Ministers to be of principal importance for biodiversity conservation in Scotland, water vole are listed as 'conservation action required' and to 'avoid negative impacts' within the SBL.

Water vole are present along the Culloch burn and have been historically recorded in drains across the site since at least 2003. The Culloch burn population in the far west of the block is



thought to be a 'source population' with territories expanding into the east along the burn and drainage ditches as the season progresses and the population expands.

3.4.4 Invasive species

Japanese knotweed has previously spread from neighbouring houses on to adjacent woodland. This has previously been treated.

3.4.5 Pests and diseases

3.4.5.1 Dothistroma Needle Blight (DNB)

DNB (also known as Red Band Needle Blight because of the colourful symptoms it shows on pine) causes premature needle defoliation, resulting in loss of yield and, in severe cases, tree mortality. DNB is prevalent within Limerigg and therefore the previous plan's proposal to restock using Scots pine as one of several mixed conifer species will no longer be the case.

3.4.5.2 *Phytophthora ramorum* (*P. ramorum*)

P. ramorum is a fungus-like pathogen of plants that is causing extensive damage and mortality to trees and other plants in parts of the United Kingdom. Larch in particular is extremely vulnerable, and high infection and mortality levels are currently causing significant issues in South Region. Several isolated instances of *P. ramorum* have been detected within Central Region forest blocks with Limerigg being one of those. Limerigg Forests Complex falls within Zone E (formerly Zone 3), the SF Less Vulnerable Area, where current research suggests is less climatically suited for *P. ramorum* infection. Although larch only makes up 2% of the woodland cover any infection resulting in a Statutory Plant Health Notice to remove all larch within the affected stand as well as a 250 m buffer surrounding the affected stand could result in significant areas of woodland being felled.

II/3.5 Landscape

3.5.1 Landscape character

The sites sit predominantly within the - Lowland Plateaux – Central Landscape Character Type; and Plateaux Moorland – Glasgow & Clyde Valley Landscape Character Type both described in NatureScot's Landscape Character Assessment of 2019.

Key Characteristics of both character types relevant to the sites are:



Table 15 – Landscape Character Analysis

Landscape Type	151 LOWLAND PLATEAUX - CENTRAL	213 PLATEAU MOORLANDS – GLASGOW & CLYDE VALLEY
Relevant Key characteristics and features	<ul style="list-style-type: none"> • Undulating and rolling plateau landform, dissected by numerous streams and small river courses. • Predominantly open moorland and semi-improved grassland land cover, including important designated areas of grassland and peatland, birch scrub and small wetland habitats and lochans. • Medium and large blocks of coniferous forest form prominent features across plateau. • Small former mining villages at the south of the Slamannan plateau the subject of recent expansion, with occasional remnants of open-cast mining, some screened by surrounding woodland. 	<ul style="list-style-type: none"> • Large scale landform • Undulating hills and sloping ridges in the western areas; a more even plateau landform in the east. • Distinctive upland character created by the combination of elevation, exposure, smooth plateau landform, moorland vegetation. • Predominant lack of modern development. • Extensive wind turbine development, including one of the largest wind farms in Scotland, Black Law. • Sense of apparent naturalness and remoteness which contrasts with the farmed and settled lowlands, although this has been reduced in places by wind energy development.
Summary of relevant key characteristics	The forests are surrounded by a matrix of farmland and forest, with many old hedgerows. The scale is quite small, with the exception of some of the extensive peat bogs and open water, which give broader views.	The forests are surrounded by a matrix of farmland and forest, with many old hedgerows. The scale is quite small, with the exception of some of the extensive peat bogs and open water, which give broader views.
How the key characteristics will be maintained/enhanced	Respect the historic land use pattern. It is appropriate for woodland boundaries, shape and scale to reflect the pattern of existing fields and woodlands across the local area.	Respect the historic land use pattern. It is appropriate for woodland boundaries, shape and scale to reflect the pattern of existing fields and woodlands across the local area.



3.5.2 Landscape designations

The Forest is located within the **Slamannan Plateau and Avon Valley Local Landscape Character Areas** which also encompass **Avonbridge East** and **Avonbridge West Special Landscape Areas**.

Relevant likely future forces for change identified include

Wind energy, solar energy and associated infrastructure; overhead power lines; telecommunication apparatus; tourism development/outdoor recreation facilities; expansion of commercial forestry and new small woodland planting; biomass crops; reversion of some areas of improved pasture to unimproved pasture.

Relevant Sensitivities identified within Special Landscape Area

The land around the upper and middle sections of the Avon Valley is sensitive to change due to the potential for loss of the varied land cover and enclosure pattern and in particular the loss of woodland cover and other landscape features.

Large or tall structures could be distinctly visible on ridges, slopes, or in open areas without tree cover; these may break skylines, and will reduce sense of scale as well as interrupt or block important views. They may also result in the loss of woodland cover.

Inappropriate large scale forestry planting could reduce scale, lead to an undesirable level of enclosure, and result in loss of views internally and externally as well as affect biodiversity value.

Buildings and other large structures may be visually prominent in some areas they could result in the loss of characteristic woodland cover or historic policy woodland planting.

Removal or loss of management of existing landscape features such as trees, woodland cover or boundary hedges and walls can incrementally change the appearance of the landscape over time resulting in an adverse change to the rural character of the area.

Guidelines for Future Development and Opportunities for Landscape Enhancement

Forestry and Woodlands

Improve design of existing forestry plantations at next rotation, particularly at edges, along watercourses and along paths and forest roads.

New forestry planting, restocking/felling and biomass crops must be in accordance with the UK Forestry Standard Guidelines: Forests and Landscape and in accordance with good biodiversity practice.

Undertake further enhancement of native woodland character through planting of appropriate woodland types and sensitive management of existing depleted woodland; encourage creation of strong habitat network linkages between other woodlands, hedges and watercourses for biodiversity enhancement and to reinforce the landscape framework.



3.5.3 Visibility

Situated within the Central Lowland Plateaux and the Glasgow & Clyde Valley Plateau Moorland the site sit within a matrix of farmland and forest, with many old hedgerows. The scale is quite small, with the exception of some of the extensive peat bogs and open water, which give broader views.

II/3.6 Social factors

3.6.1 Recreation

Several Rights of Way and Core Paths run through the sites with a small parking area beside the Black Loch, with a surfaced trail into the village. Falkirk Environment Trust (FET) and Falkirk Council have funded construction of this and others within the central area of the forest. The Scottish Forest Alliance, funded by BP, supported acquisition and planting at Crossrigg and Drumbow, with a network of surfaced tracks. Other areas have grassed paths, making Limerigg largely reasonably accessible by the public.

3.6.2 Community

The villages of Limerigg and Standburn constitute the local communities of the forests with locals using the sites predominantly for general and dog walking, cycling as well as some horse riding.

3.6.3 Partnership Projects

Between 2000 and 2011 the Scottish Forest Alliance (SFA), a unique collaboration between BP, what was then Forest Enterprise Scotland, RSPB Scotland and Woodland Trust Scotland, saw the establishment of > 5000 Ha of woodland across Scotland across 14 sites. Crossrigg and Drumbow are 2 of those woodlands whose establishment was part funded by BP through SFA.

The aims of the Scottish Forestry Alliance (SFA) are:

- The regeneration and expansion of native woodlands in Scotland.
- Contributing to UK targets for forest and woodland biodiversity.
- Promoting social and economic gains for communities and the wider population of Scotland.
- The evaluation, research and demonstration of the contribution of sustainable forest projects to carbon sequestration in Scotland.

Although Drumbow and Crossrigg were not primarily intended as a native woodland, the project did score on improving biodiversity, social and economic gains and opportunities for carbon sequestration research in this key area of Scotland. The initial establishment works, access provision and community work were therefore part-funded by BP via the Scottish Forestry Alliance.



3.6.3 Heritage

There are no scheduled monuments at the sites. Heritage is mainly associated with former coal mining and farming and these local sites are all mapped and protected during operations.

II/3.7 Statutory requirements and key external policies

In addition to those already referenced within the main text the following key policy or guidance documents which have influenced this plan are listed here:

- Central Scotland Green Network Vision
- North Lanarkshire Woodland Action Plan
- Falkirk Forestry and Woodland Strategy
- North Lanarkshire Biodiversity Action Plan
- West Lothian - Planning for Nature: development Management and Wildlife Supplementary Guidance 2014
- Second Nature - A Biodiversity Action Plan for the Falkirk Council Area
- The Adopted West Lothian Local Development Plan 2018
- Falkirk Local Development Plan 2 2020-2040
- North Lanarkshire Local Plan
- NatureScot Landscape Character Assessments Type 151 Lowland Plateaux – Central and Type 213 Plateau Moorland – Glasgow & Clyde Valley
- SEPA Flood Risk Management Maps
- SEPA Water Environment Hub
- Scottish Forestry Bulletin 62 – Silviculture of Broadleaved Woodland
- Scottish Forestry Guidance Note 31: Forest operations and wildlife protection
- Scottish Forestry Guidance Note 32: Forest operations and birds in Scottish forests
- Scottish Forestry Guidance Note 34: Forest operations and European protected species in Scottish forests
- Natural Reserves - Guidance for their selection and management on the NFE in Scotland
- Minimum Intervention Areas - Guidance for their selection and management on the NFE in Scotland
- Long-Term Retentions - Guidance for their selection and management on the NFE in Scotland
- Scottish Forestry Alliance Woodland Drumbow, Crossrigg and Lochend – Management Plan 2014-2024
- Scottish Forest Alliance Crossrigg Project Plan Crossrigg Farm, Lochend, Cokeworks And Shields December 2002
- Scottish Lowlands Forest District Drumbow Management Plan 2003-2008



Appendix III. Land Management Plan Brief

Note – some figures included in the LMP Brief relate to the area before Gateside was removed from the LMP.

Key Background Information

Introduction

- The Limerigg Forests are a collection of several forests and woodlands covering an area a little over 663 Ha located primarily within Falkirk and North Lanarkshire local authority areas near the villages of Longriggend, Limerigg and Standburn. The main woodlands covered within this LMP are - Limerigg (~205 Ha), Longriggend (~96 Ha), Drumbow (~87 Ha), Crossrigg (~56 Ha), Lochend (~51 Ha), Black Loch (~17 Ha), Barnsmuir (~29 Ha), and Barns (~116 Ha). (*Jan 22 - Gateside (~35ha) was originally included in the LMP, but has been removed pending sale of the block.*)
- The Forests lie on the Slamannan Plateaux to the south of the town of Falkirk. The forests complement the wider mixture of woodlands and agricultural fields.
- This management plan will replace and renew the previous Forest Design Plan of Limerigg (SF File Ref 032/07/01) under a new Land Management Plan. This new plan will synchronise the management approval for these woodlands into a single new 10 year plan, associated not only by their geographic proximity to each other but also due to their similar attributes such as their plateau moorland character and generally peat soils.

Silvicultural Potential

- Elevation ranges from around 190m to 230m above sea level. The sites sit within a gently undulating landscape of largely glacial till and peat overlying coal formations, resulting in a primarily peat soils with surface water gleys.
- The prevailing cool & moist/wet climate is conducive to good conifer tree growth although the soils and exposed topography limits the choice of tree species suitable for continued productive conifer crops. Climate change predictions suggest that the climate will become generally warmer, with drier summers and winters more wet.

Existing crop

- Approximately 54% of the site is under woodland cover, with a further 1% having been felled awaiting restocking and the remainder given over to open ground. Sitka spruce accounts for 50% of the woodland. Broadleaves currently account for approx. 29% of the woodland area.
- The current split in terms of age classes structure is approximately 15% establishing crop (0-10 years), 26% thicket (11-20 years), 43% pole stage (21-40 years), 9% mature (41-60 years) and 7% old forest (61+ years). Age diversification is therefore reasonably good, although there is a noticeable absence of mature and old forest stage crops currently.
- Most of the remaining pole stage and mature trees are first rotation forest with a small but increasing area establishing as second rotation forest. Both the first and subsequent rotations of productive forest were



managed as patch clearfell with thinning not suitable due to the relatively exposed nature of the site and predominantly peat soil.

- A reasonably significant element of larch within the forests much of which not currently planned for felling until the late 2030's, 2040's and beyond as well as some mature crops within Minimum Intervention coupes. An SPHN was issued for *Phytophthora ramorum* in 2017 so it is assumed further infections are likely.

Operational Access

- The forests have a road network totalling approx. 9.4 km, allowing economic operational access (i.e. 500 m or less) for most of the sites although some areas will need consideration for further roading for future harvesting operations beyond the life of this plan.

Natural Environment

- Important species present include Water vole, Badger, Heron, Smooth & Palmate Newts, Frog. Habitats include bog, Willow Carr, Fen, Swamp, Ponds, Open water. Designations include **10 Local Nature Conservation Sites**: (Longrigg Wetland; Crossrigg Moss; Shields Burn; Drumbow Moss; Limerigg Ponds; East Drumclair Wildlife Site; Balquhatstone Wildlife Site; Little Black Loch, Drumbrowder Wildlife Site and Candie Mire Wildlife Site). Landscape Designations include the Slammanan Plateau and Avon Valley Local Landscape Character Areas and Avonbridge East and West Special Landscape Areas. There are areas of Long Established woodland of Plantation Origin in Limerigg and Lochend. FLS have identified 2 Ha of mixed broadleaves as Natural Reserve. Japanese knotweed has been recorded and controlled on the site twice a year.
- The Slamannan Plateau has large areas of peatland, varying in condition from drained to favourable. Many have had commercial peat extraction, draining and planting have fragmented those remaining. Extensive Lowland raised Bog restoration was recently completed at Drumbow Moss and continues at Easter Drumclair Moss and Intermediate bog restoration is planned for Salterhill Moss in the coming year.
- Between 2000 and 2011 the Scottish Forest Alliance (SFA), a unique collaboration between BP, what was then Forest Enterprise Scotland, RSPB Scotland and Woodland Trust Scotland, saw the establishment of > 5000 Ha of woodland across Scotland across 14 sites. Crossrigg and Drumbow are 2 of those woodlands whose establishment was part funded by BP through SFA.
- Most of the forests sit within the Linlithgow Avon River Drainage Area, Avon River Catchment and SEPA Waterbody Catchment with Crossrigg and Drumbow within the Dalmaroch Drainage Area, River Clyde Catchment and Hillend Reservoir SEPA Waterbody Catchment. Some small areas of the forest also overlap North Calder Water & Drumtassie Burn SEPA Waterbody Catchments. The forests are situated within the Natural Flood Management Study areas of Slamannan & the wider Linlithgow Avon River. Most of the forests fall within the catchment of the target areas of Bathgate, Blackridge, Linlithgow, and Slamannan. Less than 20% of the drainage area has forest cover and therefore there would not be any significant impact on drainage from operations within the management area. Several burns run through or adjacent to the site including Shields & Culloch Burns whilst the southern section of Limerigg drains into Black Loch and Crossrigg into Hillend Reservoir.



Cultural Environment

- There are no scheduled monuments within the plan area however there are various undesignated features across the sites are recorded in the heritage layer such as reservoirs, collieries, quarries, agricultural features etc.
- Situated within the Central Lowland Plateaux and Lowland River Valleys as well as the Glasgow & Clyde Valley Plateaux Moorland the site sits within a matrix of farmland and forest, with many old hedgerows. The scale is quite small, with the exception of some of the extensive peat bogs and open water, which give broader views.

Community Use

- Several Rights of Way and Core Paths run through the sites with a small parking area beside the Black Loch, with a surfaced trail into the village. Falkirk Environment Trust (FET) and Falkirk Council have funded construction of this and others within the central area of the forest. The Scottish Forest Alliance, funded by BP, supported acquisition and planting at Crossrigg and Drumbow, with a network of surfaced tracks. Other areas have grassed paths, making Limerigg largely reasonably accessible by the public.
- Gateside on disposals list so if sold may not feature in final plan. *(Jan 22 - Gateside removed from final plan pending sale.)*
- Falkirk Council - Local Development Plan identifies 3 areas of potential housing expansion
 - H25 (50 Houses) & H58 (121 Houses (may have elapsed)) planned housing development around Limerigg
- Neighbouring reservoirs/fisheries
 - Black Loch Fishery – Fresh water loch well stocked with trout
 - Hillend Reservoir - A naturalised reservoir established between 1797 and 1799 when the North Calder Water was dammed. It was, at the time, the largest man-made reservoir in the world. The reservoir still supplies water to the Forth & Clyde Canal and the remains of the Monkland Canal.

Wildlife

- Roe deer are the primary herbivore species present, these and other damaging herbivore numbers are monitored and controlled by FLS Wildlife Ranger Staff.



2. Strategic Drivers

To succeed in realising the vision as set out in the Scottish Forestry Strategy 2019-2029, Six priorities for action have been identified for implementation:

- 1. Ensuring forests and woodlands are sustainably managed**
- 2. Expanding the area of forests and woodlands, recognising wider land-use objectives**
- 3. Improving efficiency and productivity, and developing markets**
- 4. Increasing the adaptability and resilience of forests and woodlands**
- 5. Enhancing the environmental benefits provided by forests and woodlands**
- 6. Engaging more people, communities and businesses in the creation, management and use of forests and woodlands**

In order to demonstrate how we will have regard to the Forestry Strategy in our work, we have identified the relevant Forestry Strategy 'Priorities for Action' in our Corporate Outcomes section of the FLS Corporate Plan 2019-2022. Our Corporate Outcomes and the associated Operational Actions to deliver them have informed the objectives for this LMP illustrated in Table 12 below.



3. Draft Management Objectives

Table 16 – Relevant Corporate Outcomes and Operational Actions informing the LMP Objectives

Corporate Outcomes Relevant to LMP	Operational Actions To Deliver Outcome Relevant to LMP	Draft LMP Objectives
<p>Outcome 1: Supporting a Sustainable Rural Economy</p> <p>FLS supports a sustainable rural economy by managing the national forests and land in a way that encourages sustainable business growth, development opportunities, jobs and investments.</p>	<ul style="list-style-type: none"> • Managing the national forests and land in accordance with the UK Woodland Assurance Scheme (UKWAS) to ensure that timber and other products produced by FLS are guaranteed to be from a sustainably managed resource • Developing our forest planning processes to ensure long-term sustainable productivity of the national forests and land • Providing a sustainable supply of timber to Scotland’s timber processing sector • Implementing the Restocking Strategy for the national forests and land and develop a new plant and seed supply strategy • Supporting Scottish tourism and the visitor economy through the provision of visitor attractions • Support the venison processing sector through our deer management 	<ul style="list-style-type: none"> • Maintain Small Round Wood, Pallet log and biomass production (maintained timber income, clearfell/restock) • Plan roads to access less accessible crops.



Corporate Outcomes Relevant to LMP	Operational Actions To Deliver Outcome Relevant to LMP	Draft LMP Objectives
<p>Outcome 2: Looking after Scotland’s national forests and land</p> <p>Scotland’s national forests and land are looked after; biodiversity is protected and enhanced; and more environmental services are provided to people.</p>	<ul style="list-style-type: none"> • Managing the national forests and land to further the conservation and enhancement of biodiversity • Maintaining and enhancing our work on peatland restoration • Collaborating with partners on integrated landscape-scale approaches to habitat management and restoration • Continuing to implement the Larch Strategy in order to reduce the rate of expansion of <i>Phytophthora ramorum</i> 	<ul style="list-style-type: none"> • Continue to restore and maintain areas of bog habitat (reduce carbon release, diversify habitat) • Protect historical features • Mitigate against excessive water runoff in catchments. • Pre-emptively remove larch where appropriate adhering to FLS National Strategy.
<p>Outcome 3: National forests and land for visitors and communities</p> <p>Everyone can visit and enjoy Scotland’s national forests and land to connect with nature, have fun, benefit their health and wellbeing and have the opportunity to engage in our community decision making.</p>	<ul style="list-style-type: none"> • Maintaining walking and biking trails to promote fun in the outdoors, focussing on improving entry level experiences for everyone to enjoy and gain health benefits • Continuing to remove barriers to ensure that people from all backgrounds can and do access the full range of benefits of the national forests and land • Enabling outdoor learning and encouraging schools and community groups to make use of the national forests and land • Continuing to engage communities in decisions relating to the management of the national forests and land • Continuing to support community empowerment by 	<ul style="list-style-type: none"> • Provide for potential increased use by local community (proposed settlement expansion, fire risk).



Corporate Outcomes Relevant to LMP	Operational Actions To Deliver Outcome Relevant to LMP	Draft LMP Objectives
	enabling communities to make use of the national forests and land to benefit their communities	



Appendix IV: Objective Appraisal, Monitoring & Evaluation

Table 17 - Objective Appraisal, Monitoring & Evaluation

Objective	Assessable Criteria	Appraisal Method	Monitoring Method	Monitor Where	Monitor When	Monitor Who	Record Monitoring Where	Evaluation. <i>How does the Appraisal and Monitoring method inform current & future proposals? If you cannot answer this question then the methods may not be appropriate.</i>
Maintain Small Round Wood, Pallet log and biomass production (maintained timber income, clearfell/restock)	Timber volumes	Forester Web Query against LMP	Production Forecast SPR	SRP	After operations and at appropriate intervals e.g. mid-term and 10 year reviews	Programme Manager / Harvesting Forester	Against the LMP	Monitoring the volumes and quality of timber produced and levels of income received will allow the Programme Manager & Harvesting Manager to gauge what returns might be expected from future interventions and which customers would most likely be interested. This monitoring also allows the Planning Forester to gauge the quality of conditions and whether future crops might fetch improved revenues if managed differently.
Plan roads to access less accessible crops.	Forest roads	Do planned coupes have adequate accessible roading within 500m	Forester Web Management Coupes & Roads layers	Planned roads layer	At LMP, before operations and at appropriate intervals e.g. mid-term and 10 year reviews	Planning Forester / Programme Manager / Civil Engineer	Against the LMP	Monitoring as described will determine whether required roading has been constructed as per LMP.
Pre-emptively remove larch where appropriate adhering to the FLS National Strategy	Tree species	Changes in species types, ages, proportions & distributions	Site survey SCDB Query	Onsite SCDB	After operations and at appropriate intervals e.g. mid-term and 10 year reviews	Planning Forester / Programme Manager	Against the LMP	Monitoring the diversity of species and structure of the canopy will allow for comparisons to be made overtime which will inform the planning forester as to whether the plan is working and whether adjustments are required allowing the district to adjust expectations and business plan for alternative management methods.



Objective	Assessable Criteria	Appraisal Method	Monitoring Method	Monitor Where	Monitor When	Monitor Who	Record Monitoring Where	Evaluation. <i>How does the Appraisal and Monitoring method inform current & future proposals? If you cannot answer this question then the methods may not be appropriate.</i>
Continue to restore and maintain areas of bog habitat (reduce carbon release, diversify habitat)	Species, Open Space & Habitat	Changes in land use over time	Site survey SCDB query Forester Conservation Layer query	Onsite Aerial photos	At mid-term and 10 year review	Environment Advisor	Forester Conservation Module	By monitoring any changes in land use it can be determined whether there have been any unforeseen impacts from implementation of the plan.
Protect historical features	Historic features	Changes in condition	Site survey	Onsite Aerial photos	At mid-term and 10 year review	Environment Manager	Forester Heritage Module	Monitoring the condition of heritage features allows the Environment Manager and Visitor Services Manager to evaluate whether implementation of the plan has adversely affected any features e.g. has increased visitor numbers increased pressure on features or have operations damaged features? Any issues can be captured and mitigated against in future.
Mitigate against excessive water runoff in catchments.	Run off effects	Visual reference	Site evaluation	Onsite	After operations and at appropriate intervals e.g. mid-term and 10 year reviews	Harvesting Forester / Stewardship Manager	Against the LMP	By effects of run off particularly after operations Stewardship Manager can evaluate what affect these have both within and out with our ownership and also learn where further improvements can be made and if necessary factored in to future business plans. By monitoring this and liaising with the local flood management officer FLS can evaluate if action is required and if necessary plan budgets for subsequent operations.
Provide for potential increased use by local community (proposed settlement expansion, fire risk).	Local community involvement	Contact lists numbers. Event & Project activity	Contact list check, number of events / projects progressing	Within the local community	On-going engagement with local stakeholders	Area Visitor Services Manager	Against the LMP & Site contact list	By monitoring when and who we have contacted as well as what events and projects are being progressed the VS Manager can evaluate how active we have been in engaging with local community as well as being better able to plan budgets for upcoming events/projects.



Appendix V: Peatland restoration site plan and justification

Site Description

Salterhill Moss is a Lowland Raised Bog (LRB), which is an Annex 1 peatland habitat (H7120) under the EU Habitats Directive, a UKBAP priority habitat, and a Local Wildlife Site. Salterhill Moss is artificially divided into two areas: the north part (open raised bog) was drained but never afforested, while the south part (afforested raised bog) was ploughed and drained to establish a productive conifer crop. These two areas essentially split coupe 41, with the difference clearly visible on aerial photography of the site. The existing (open) raised bog habitat and afforested peatland within coupe 41 together form one hydrologically connected peatland unit by a continuous link of coplanar peat soil within the same watershed. The afforested part of the site is proposed for deforestation and subsequent peatland restoration as this is a Scenario A peat type and forms part of the Salterhill Moss (Annex 1) raised bog hydrological unit. Overall, the goal of Salterhill Moss is to create one functioning hydrological raised bog complex. The area proposed for restoration is classed as a Presumption to Restore within the FCS Practice Guide Deciding future management options for afforested deep peatland. Presumption to Restore peatlands are edaphically unsuited to woodland and restoration would therefore prevent the significant net release of greenhouse gases (GHG). This proposal meets the requirements of the Scottish Government's Control of Woodland Removal Policy as the deforestation and subsequent restoration will enhance a priority habitat (Annex 1 lowland raised bog) and its (hydrological) connectivity. Re-wetting the site will benefit the peat soils as it will stop oxidisation and further degradation and erosion, ultimately improving the water quality of the local area by reducing run-off from the peatland.

Previous crop

To establish a productive conifer crop on a raised bog (FC soil classification 10 peat type), the site was cultivated by means of deeply ploughed ridges and furrows and ploughed drains. The site is likely to have been heavily fertilised, however despite this the yield class of the previous rotation was generally low (8-10). Therefore it would be difficult to achieve this crop performance again over the second rotation in line with the UKFS, without causing significant soil disturbance and the subsequent release of greenhouse gasses.

Restoration Proposal

Deforestation and peatland restoration is proposed over 4.88ha of coupe 41 which was conventionally felled in the last plan period. The coupe is currently retaining water despite heavy drainage with key bog indicator vegetation present across the site. Rewetting of coupe 41 is essential to return Salterhill Moss to a functional bog habitat which will allow the hydrology, and eventually



the vegetation, to be restored to an intermediate-lowland raised bog habitat. There is sufficient existing seed source for sphagnum and other bog species on site to make this successful. Re-wetting of the existing (open) raised bog is also planned to be delivered in 2022.

Preliminary walkovers across coupe 41 were conducted by the local Peatland Restoration Forester on 15/7/21 and 9/11/21 to establish the condition of the peatland, level of the water table, vegetation indicator species, and the connectivity and extent of the bog. The walkover identified the main afforestation modifications and feasibility of restoration, confirming that full restoration will be possible. The main findings of the walkovers were as follows:

- The site was mostly deep peat with associated habitats which indicates that it is hydrologically connected and part of the lowland raised bog (Annex 1 habitat). This encompasses part of the adjacent (open) raised bog where key bog indicators, such as wild cranberry (*Vaccinium oxycoccos*), was recorded.
- There is a deep east/west drainage ditch with perpendicular drains running north/south which bisects coupe 41 and separates the open (drained) bog from the drained and afforested bog. This can be seen on aerial photography and Ordnance Survey maps. The drainage ditch has a peat base confirming hydrological connectivity between the two parts of the coupe. Although these drains are still running with water and negatively impacting the bog habitats, the water table is only approximately 10-15 cm from the surface. This is a positive indicator for restoration given the level of forestry modifications. There is also abundant sphagnum cover with cotton grasses present throughout the afforested part of the coupe, indicating the bog is already beginning to recover.
- Previous forestry modifications have resulted in disturbance of the peat, however this can be reversed using standard restoration techniques, such as drain blocking, stump flipping and ground smoothing. The restoration of this site would be straightforward and no operational or ecological constraints were identified.

A further survey will be undertaken to establish a detailed restoration plan for the purpose of, and to meet the requirements for, the funding application. This survey will be undertaken once LMP approval for deforestation of the site has been granted.

As the original crop has already been felled, the next stage of the restoration will be to re-wet the site. A combination of standard re-wetting techniques will be used to re-instate the natural water table across the site to ensure it is optimal for appropriate bog vegetation recovery. A combination of drain blocking, ground smoothing, and potentially backfill trenches, will be used following standard techniques as developed by NatureScot (Peatland Action Fund) and FLS. FLS have a long-term commitment to the Scottish Government to reduce greenhouse gasses across the National Forest Estate and the re-wetting will be funded through the Scottish Government Climate Crisis Fund.



The following restoration methods will be used:

- Block all drains and, where necessary, plough furrows using peat dams or composite dams to disperse water across the peatland.
- Undertake stump flipping and ground smoothing across the previously afforested area to unmodify the pattern of ploughed ridges and furrows. If left in situ, the plough/furrow pattern will suppress the water table and development of peatland vegetation, and will promote regeneration of negative indicators such as native or non-native tree species.
- Where there is suspected peat cracking, install backfill trenches to retain water on site. Backfill trenches counteract the excessive lateral flow of water within the peat, which can result from the ploughing and draining carried out during afforestation, and the subsequent drying and suppressing effect of the mature trees on the peat and water table.
- Re-profile hags to repair excessive erosion of peatlands and stop the development of artificial drains caused by excessive water run-off.
- Monitor and remove any tree regeneration as this a negative indicator and undesirable vegetation on a lowland raised bog.

The delivery of re-wetting operations in coupe 41 will be undertaken within the first five years of plan approval and in line with the UKFS and UKWAS standards. Monitoring of the site (vegetation quadrats) will take place at year 5 following re-wetting. The remaining area of this coupe consists of organo-mineral soils and will be planted with native broadleaves as an associated habitat of the peatland. An evaluation of the restoration works will be completed and submitted to Scottish Forestry as part of the LMP mid-term review.