



Forestry and  
Land Scotland  
Coilltearachd agus  
Fearann Alba

# Dalrulzion Land Management Plan 2025 - 2035

LMP-11-2025



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

Our land management plans bring together key information, enable us to evaluate options and plan responsibly for the future. We welcome comments on these plans at any time.



The mark of  
responsible forestry



Applicant:	<b>Forestry and Land Scotland (FLS)</b>
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Agent's position:	Forestry Consultant
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I hereby apply for a permission to fell the trees described in this application and I certify that:

I have notified all stakeholders that may be affected by the felling in this application and sought their views prior to submitting this application.

I am authorised to sign legal contracts on behalf of Forestry and Land Scotland.

Any necessary consents from any other person(s) if required, have been obtained.

I have made the necessary checks with the local planning authorities regarding Tree Preservation Orders and Conservation Areas.

I hereby acknowledge that Scottish Ministers may process any of my personal data contained in or relating to this application in accordance with the terms of Scottish Forestry's Privacy Notice, a copy of which is available at [www.forestry.gov.scot](http://www.forestry.gov.scot).

Where applicable and appropriate I have submitted an EIA screening opinion form for operations contained within this application under the Forestry (Environmental Impact Assessment) (Scotland) Regulations 2017.

I have read and understand this application fully and, to the best of my knowledge and belief, the information given in this application is complete, true, and accurate.

I accept that any false or misleading information provided in this application constitutes an offence and may result in any felling permission based on this application being revoked at any time.

I have read and understand Scottish Forestry's Privacy Notice, a copy of which is available at <https://forestry.gov.scot/privacy-complaints-freedom-of-information-and-requests-for-information>.

Signed, Pp Regional Manager		Signed, Pp Conservator	
FLS Region		SF Conservancy	
Date		Date of Approval	
		Date Approval Ends	
		Plan Ref. No.	

## A. Description of Woodlands

### A.1 Property Details

Property (LMP) Name:	<b>Dalrulzion</b>
Grid Reference (main entrance):	NO 1365 5726
Nearest town or locality:	Dalrulzion
Local Authority:	Perth & Kinross

### A.2 Location and Background

The Dalrulzion Land Management Plan (LMP) area is situated in Glen Shee, south of the Cairngorms, where the plateau starts to give way to the lower, more fertile, lands of Perthshire (see **Map 1 – Location & Viewpoints**). The block sits due south of Dalrulzion and west of the Black water, which meets the river Ericht four miles south at Bridge of Cally. The block is approximately 365 hectares in size and consists of a majority productive conifer forest. The block is important for timber production, water quality and local recreation and contains a key scheduled monument (SM).

### A.3 Existing Schemes and Permissions

Type: Felling Permission

Ref. No: FPA 10804

Details: Felling Permission for felling of coupes 43100/43101/43102, totaling 89.80 ha, in response to windblow. Expires on 12-Sep-2025.

### A.4 Stakeholder Engagement

Summary of the main points raised by stakeholders during Scoping (and where they are addressed in the plan). The full consultation record can be found in Appendix 1.

1. Private Water Supply presence (Section C.2.15)
2. Larch (Section C.2.12)
3. Scheduled monument (Section C.2.10)
4. Core path (Section C.2.9)

## A.5 Long Term Vision and Management Objectives

### Vision

Over the next 20 years the forest will be transformed to a more diverse and resilient forest block whilst retaining its values for production, the historic environment and water supply.

The storm damage from the last five-years will have been removed along with most of the larch. The felled areas will largely be replaced by productive and climate resilient species. The share of native broadleaved species will have increased, particularly along watercourses, to benefit biodiversity and water quality. Within the wider landscape, the forest will be tied into adjacent woodland creation schemes to compliment landscape value. The setting of the scheduled monument will have been improved by integrating more open ground and a buffer of low-density native planting.

### Management Objectives

#### **Objective 1:** Removal of significantly windblown crops

Indicator of objective being met: By the end of Phase 1 the coupes in the north of the block, containing the worst windblow, will have been felled and restocked to allow for subsequent felling of adjacent coupes early in Phase 3.

#### **Objective 2:** Preparations for larch removal

Indicator of objective being met: Provisions will have to have been made to facilitate potential Special Plant Health Notice (SPHN ) felling of larch including providing access.

#### **Objective 3:** Improve setting of scheduled monument

Indicator of objective being met: Restocking adjacent to the scheduled monument (SM) will pull back from the monument by 20 meters, adjacent planting will consist of species that complement the setting of the monument.

#### **Objective 4:** Protect water quality

Indicator of objective being met: Restocking along watercourses during the plan will consist of riparian buffers. At water supply intake points, minimum intervention buffers will be established after felling of commercial crops and subsequent establishment of riparian woodland.

#### **Objective 5:** Increase broadleaved component

Indicator of objective being met: Within 20 years the broadleaved component will increase to above 5%.

#### **Objective 6:** Improve landscape quality

Indicator of objective being met: In the north of the block the existing hard lines in the landscape will be redesigned at restock to ensure the forest compliments the landscape.

## A.6 General Site Description

### A.6.1 Topography and Landscape

Dalrulzion lies within Glen Shee on largely east facing slopes. The topography is a mixture of relatively steep slopes along the northern and western edges intermixed with flat areas in the center which create a variance in drainage patterns. Most of the block is part of the Landscape Character Assessment (LCA) 377: *Transitional Moorland and Forest* with LCA 371: *Mid Upland Glens* and LCA 372: *Lower Upland Glens* found in two strips, one above the other, along the A93. In none of these the forest is a particularly strong characteristic. The block is particularly visible when driving south on the A93.

### A.6.2 Geology and Soils

The forest contains a variety of different soils and fertility ranges (**Map 8 – Soils**). A large part of the block consists of upland brown earths allowing for reasonable growth and rooting. To the southwest of the block ironpans inhibit rooting resulting in reduced stability and nutrient availability. Where landform retains water and/or slows drainage, gleys and bogs are found.

The underlying geology is formed by psammities of the Dalradian supergroup with an overlying glacial deposit in the glens resulting in moderate nitrogen availability.

### A.6.3 Climate

The current local climate is highlighted on the figure below. As a result of the changing climate, it is expected that over the next decades the accumulated temperature (AT) in the block will increase. After 2050 the AT in Dalrulzion will be like that of present-day South Wales. Annual precipitation in the block will change marginally but due to the increased temperature it is likely moisture deficit will increase; it is also expected that precipitation will decrease in summer and increase in winter. Extremes in the block are expected to increase leading to higher chances of flooding and storm events.

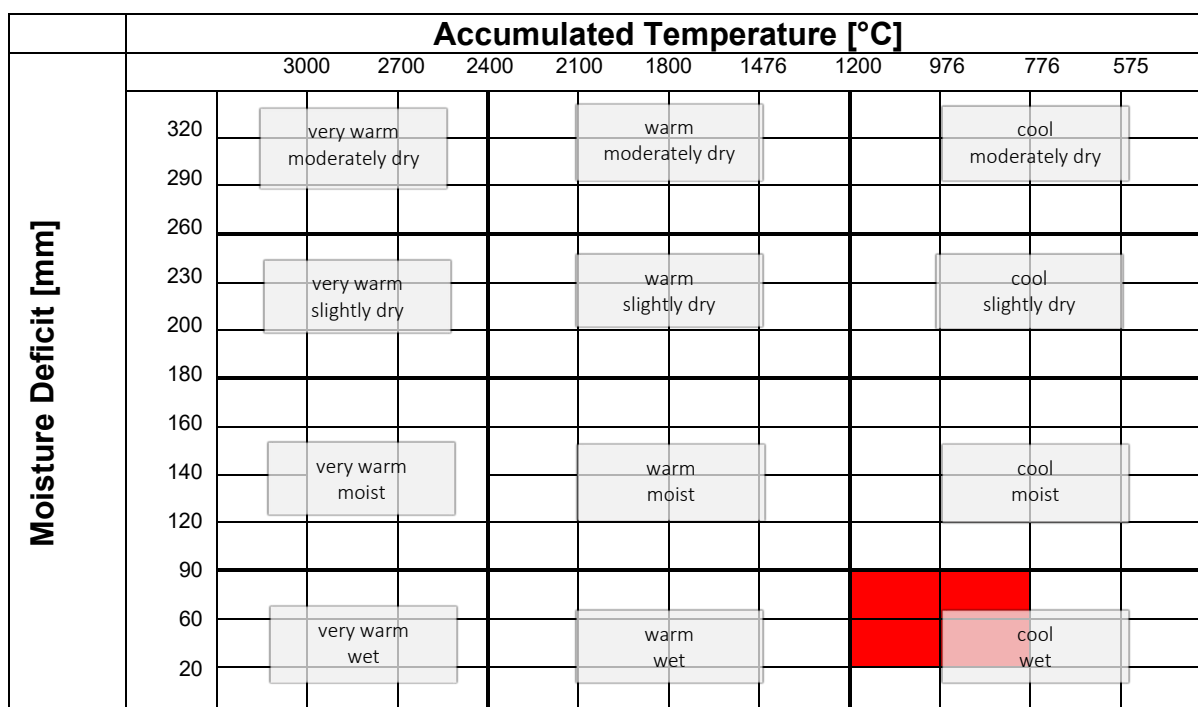


Figure 1: Climatic zone of Dalrulzion highlighted red.

#### A.6.4 Hydrology

The forest is key to several private water supplies. The block contains several private water supply intakes and their infrastructure.

The area is also upstream of the Blairgowrie and Rattray Objective Target Area (OTA) however, this OTA has no catchment associated with it as it is rainwater fed.

The Scottish Environment Protection Agency (SEPA) flood risk maps demonstrate a localized risk of surface water flooding within the forest block.

The only waterbody currently classified in the Water Classification Hub in the area is the Black Water (ID 6540) which is found 100 meters downstream from the block. The Blackwater currently has a 'Moderate' classification because of the presence of North American signal crayfish.

#### A.6.5 Windthrow

The forest contains a small percentage of historic windblow (pre-2021) but has sustained significant windblow during winter storms in the period from 2021-2024. In response to this windblow felling has taken place in the south of the block. The remaining mature forest in the north-west still contains a high percentage of windblow with well over 20% of the coupes entirely windblown with further windblow throughout the crop (see **Map 3 – Concept**). DAMS in the block ranges from 16 on the high ground in the west to 10 in the

glen. The relatively low DAMS scores normally indicate there is a good opportunity for thinning and Continuous Cover Forestry (CCF). In Dalrulzion the limited rooting and historic records of windblow mean that thinning applications need to be planned and carried out in a careful and timely manner.

#### A.6.6 Adjacent Land Use

Adjacent land use consists of a mixture of open hill and recent woodland creation schemes. These schemes consist of a mix of native broadleaved, native Scots pine and conifer planting with a claim year of 2023. The reference numbers for the sites are 23FGS70494 and 22FGS67790. Open hill is found to the west of the block which is grazed and managed for grouse. The area is not part of a Deer Management Group.

#### A.6.7 Access

Public access in the forest is limited mainly to local usage. There are no promoted sites or waymarked trails in the block. A core path which is well used by the local community runs through the block along the scheduled monument and over the hill into Strath Ardle. This path is also a Historic Footpath. A second Historic Footpath is found on the northeastern edge of the forest west of Craigton. This path follows the existing track visible on the OS map. See **Map 3 – Concept** and **Map 9 – Historic Environment**

#### A.6.8 Historic Environment

The forest contains an important scheduled monument (SM5777). According to Historic Environment Scotland (HES) this concerns ‘a settlement of the later Bronze Age, some 2500 to 3000 years old, comprising the remains of seven houses and fragments of a field system and clearance cairns within a clearing in a forest’ (Historic Environment Scotland, 2024). It contains the ‘type site’ for the ‘Dalrulzion double walled hut circle’ that can be found across northern Perthshire

The forest also contains several unscheduled heritages features such as dykes, a rocking stone and stone circles of which the locations are highlighted in **Map 9 – Historic Environment**.

#### A.6.9 Biodiversity

The forest does not contain any designated conservation sites however, the Glen Shee Special Area of Conservation (SAC) lies approximately 100 meters downstream from the block.

Within the forest there are no long-established plantation origin (LEPO), or plantation on ancient woodland sites (PAWS). Several priority open habitats are found which are demonstrated on **Map 3 – Concept**.



Both red squirrel and otter are regularly sighted within the forest as well as several raptor species. Badgers and their sets and bats have been recorded in and along the forest.

#### A.6.10 Invasive Species

There are currently no records of invasive non-native species in the forest.

### A.7 Woodland Description

See **Map 2 – Current Species** which shows the current tree species composition and pattern.

Table 1: Area by species.

Species	Current Area (ha)	%	Year 10 Area (ha)	%	Year 20 Area (ha)	%
Scots pine	97.7	27%	130.1	36%	164.9	45%
Sitka spruce	71.0	19%	75.2	21%	69.5	19%
Larches	51.9	14%	24.1	7%	17.3	5%
Other conifers	42.5	12%	18.3	5%	12.8	4%
Broadleaves	5.9	2%	12.7	3%	23.5	6%
Open ground	36.1	10%	47.8	13%	61.3	17%
Felled (including within CCF areas)	55.8	15%	52.8	14%	11.8	3%
Other	4.6	1%	4.5	1%	4.4	1%
<b>Total</b>	<b>365.5</b>	<b>100</b>	<b>365.5</b>	<b>100</b>	<b>365.5</b>	<b>100</b>



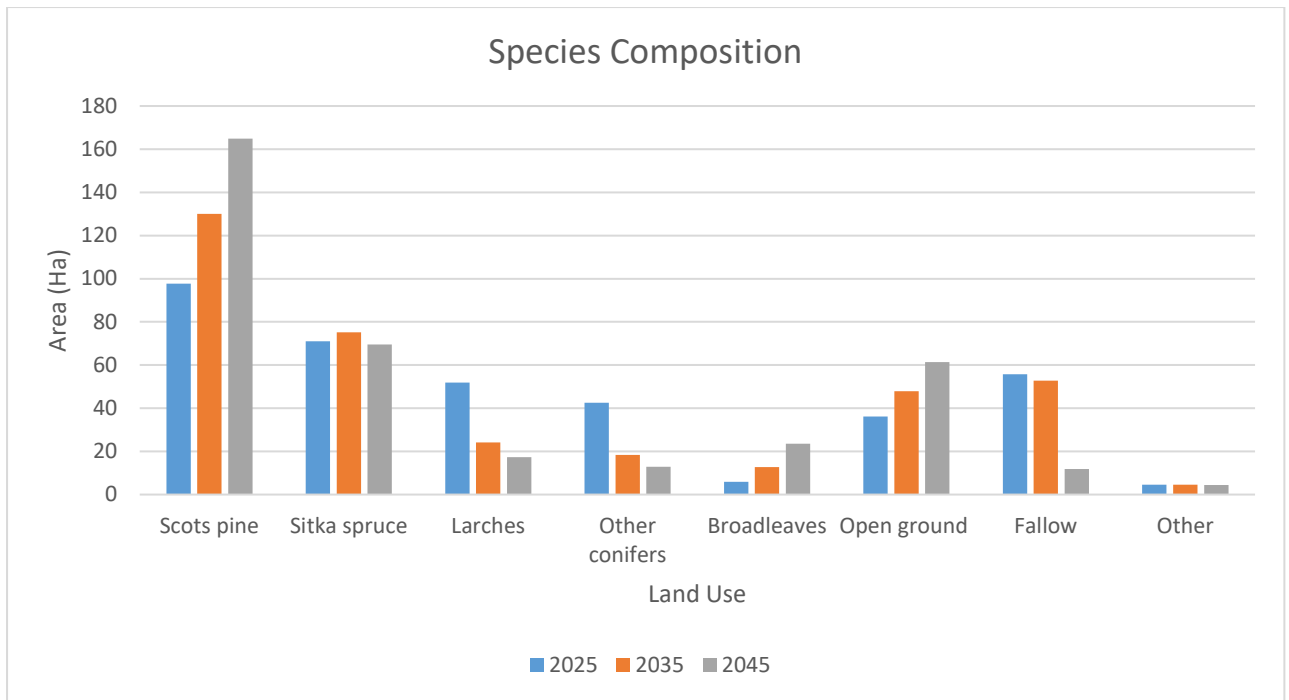


Figure 2: Area by species.

Table 2: Plan area by age

Age Class (years)	Current		Year 10		Year 20	
	Area (ha)	%	Area (ha)	%	Area (ha)	%
0 – 10	37.1	10%	114	31%	74.2	20%
11 – 20	23.6	6%	36.8	10%	113.7	31%
21 – 40	1.0	0%	24.4	7%	60.1	16%
41 – 60	0.0	0%	0.0	0%	1.0	0%
60 - 80	207.1	57%	85.4	23%	0.0	0%
80+	0.0	0%	0.0	0%	39.4	11%
Not applicable	96.6	26%	105	29%	77.4	21%
<b>Total</b>	<b>365.5</b>	<b>100</b>	<b>365.5</b>	<b>100</b>	<b>365.5</b>	<b>100</b>

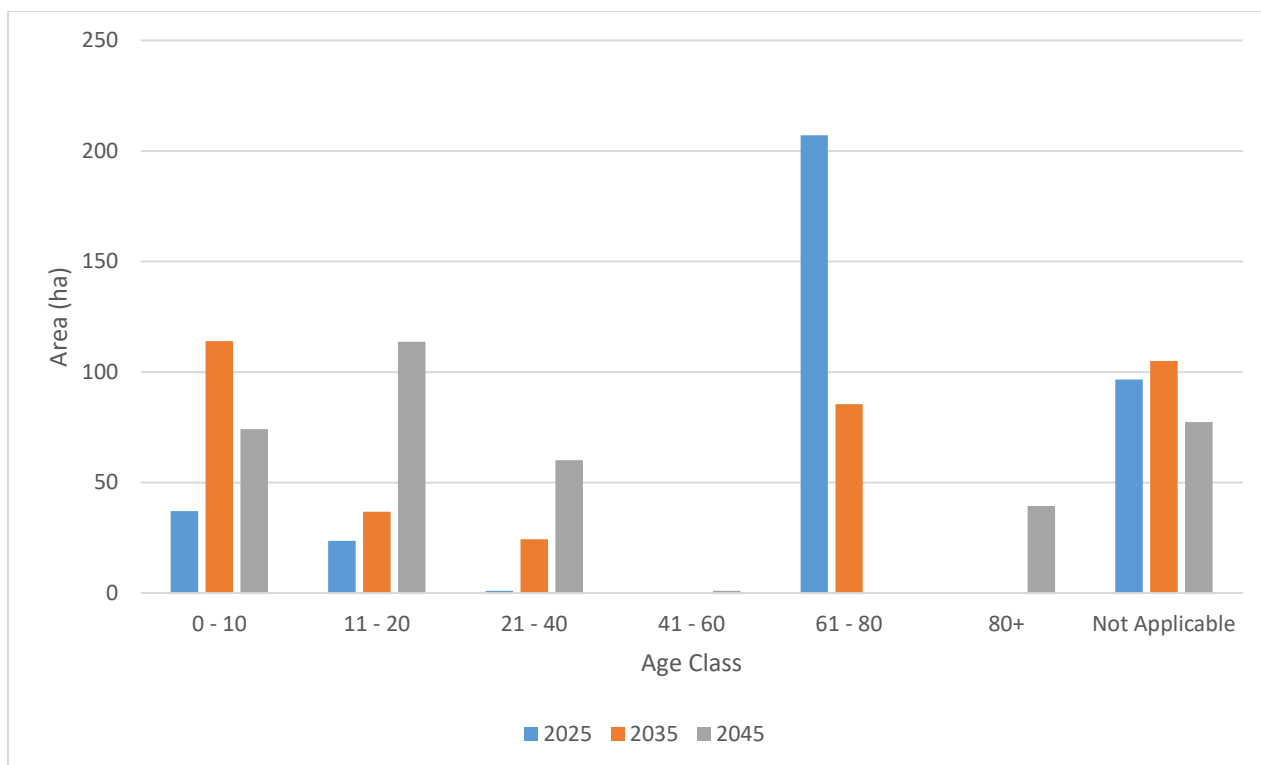


Figure 3: Area by age.

## A.8 Plant Health

Several plant health issues are impacting the management of the forest. The most prevalent and acute problem is *Phytophthora ramorum* on larch. This disease has not yet been found on larch within the forest, but Strath Ardle, the strath to the West and South of Dalrulzion, has had several instances of *P. ramorum* in 2015, 2017 and 2018. More recently (2020 and 2022) forests to the east have also seen infection of *P. ramorum*.

According to the Scottish Forestry Action Plan (2021) and Forestry and Land Scotland's Larch Strategy (2022) the block sits within the 'Priority Action Zone – More Vulnerable'. This means that within the Priority Action Zone (in all forests west of the A9 and in previously flagged forests in the Angus Glens) at least 20% of larch is to be removed and access constructed to at least 80% of all mature larch by April 2027. LMP revisions in the more vulnerable area of this zone should prioritise removal of all mature larch within 10 years.

The second important pest impacting this plan area is *Dothistroma septosporum* or Dothistroma Needle Blight (DNB). DNB is a fungal pathogen which infects pine species causing needle discoloration and loss resulting in reduced vigour and in extreme cases mortality. Out of the two pine species in the forest, the Lodgepole pine has suffered more from DNB than the Scots pine. FLS is currently not planting pure Lodgepole pine because of its relative susceptibility to DNB.

*Dendroctonus micans* or, the Great Spruce Bark Beetle, has not yet been identified in or near the block but it is likely that over the next decades *D. micans* will migrate into the area. If so, its natural predator, *Rhizophagus grandis* will be introduced to prevent number of *D. micans* rising to problematic levels.

## B. Analysis of Information

### B.1 Constraints and Opportunities – and Concept

Table 3: Constraints and Opportunities by factor

Factor	Constraints	Opportunities
Wind damage	Removal of windblow crops will need to happen as soon as possible to maximise recovery	Restock creates opportunity for diversification of species and facilitates work around private Water Supplies (PWS) and SM post harvesting.
Tree health	In the event of an SPHN, larch removal will need to take place at short notice	Restock creates opportunity for diversification of species and facilitates work around PWS and SM post harvesting
Roads/Access	<ul style="list-style-type: none"><li>• No access into north of block.</li><li>• Access constrained by PWS.</li><li>• Access constrained by SM.</li><li>• Access constrained by organic soils.</li></ul>	Construction of a new road will facilitate access to several currently isolated coupes for future management.
Historic Environment	Constraints working in and around SM.	Felling of windblow adjacent to SM will allow for improvements to setting and longer-term protection from invasive tree regeneration.
Landscape	Windblow coupes are visible in the landscape from key viewpoints along the A93.	Planned felling allows for remediation works along northern edge.
Water	PWS presence constraining felling and restocking.	Restock proposals will provide permanent protection around abstractions and along riparian corridors against future felling operations.

Factor	Constraints	Opportunities
Soils	Presence of peaty soils limits options for road access into currently isolated larch crop.	Potential to restore peat.
Deer	Transient red deer population constraining species choice.	Control deer effectively to increase species choices available.

## Concept

**Map 3 – Concept** illustrates how the plan concept incorporates the important constraints and opportunities into the management objectives.

The most pressing management objectives in the block are the removal of windblown crops and reducing the impact of future SPHNs in larch. These objectives point to constraints as well as giving rise to opportunities.

The biggest constraint for the removal of these crops is the lack of access into the coupes in the north combined with the presence of key PWS, organic soils and the SM which further reduce access opportunities.

The second important constraint for the removal of these crops is the pace of felling. To resolve this, a road line is planned which avoids the SM and any organic soils and protects the PWS. This road line will improve access into the severely blown coupe in the north as well as providing future access in the most central coupe. The larch in the northeast of the block will be retained in the hope that *P. ramorum* infection will not take place in the coming plan period. However, in case of an SPHN, the larch will be extracted both to the new road and to the main haul road.

The restocking of felled coupes and proposed felling coupes provides an opportunity to enhance landscape value, biodiversity, the setting of the SM and water quality. This will be done through the establishment of riparian buffers along watercourses and appropriate choice of establishment at forest edges and alongside the SM. Species choice is however constraint by herbivore levels and therefore palatable species will only be planted in proximity to good access tracks and/or within small scale enclosures to ensure successful establishment.

## C. Management Proposals

### C.1 Silvicultural Practice

Most of the block is managed for productive purposes and is and will be restocked at productive densities (2,500 stems per ha) with a majority conifer species. Considering the terrain and exposure large parts of the forest will be thinnable and access using harvester/forwarder combinations is possible throughout, except for areas of steep and exposed ground in the northwest of the block. Most of the block is too exposed for CCF and therefore clear felling and replanting will be the preferred silvicultural method. In the east of the block the soils and shelter enable CCF, which will be attempted in the Scots pine and larch using a group shelterwood system. In this area timber operations will take place, but the focus will be on biodiversity and nativeness aiming to reduce the larch percentage to reduce the risk of infection of *P. ramorum*.

Restocking will in general require ground preparation in the form of hinge or inverted mounding. Lower density planting of broadleaved species will be conducted along watercourses and to establish windfirm edges. A focus of the restock is to divide the forest into windfirm, manageable units to reduce impacts of climate change and improve long term forest structure.

### C.2 Prescriptions

#### C.2.1 Felling

Sites proposed for clear felling in the plan period are identified as Phase 1 and Phase 2 management coupes on **Map 4 – Management Coupes**. Refer to **Table 4** for scale of felling.

Stands adjoining felled areas will be retained until the restocking of the first coupe has reached a minimum height of 2m. Phase 1 and 2 clearfell coupes identified in this plan with known adjacency issues are listed below with the planned approach to achieving height separation. For any future clearfell coupes where adjacency is not possible, and there is no exemption under the Scottish Forestry Act, an amendment will be discussed and agreed with Scottish Forestry before the coupe is felled.

43101 and 43049: Both coupes have sustained severe windblow as can be seen in **Map 3 – Concept**. The adjacency issue will be resolved through delayed restock of coupe 43049 by five-years which will separate the planting year of both coupes by seven-years. A riparian buffer will be established between the coupes further improving forest structure and windfirm edges of the future forest.

43045 and 43102: The coupes are separated by a 10-year gap in felling. Felling of 43045 will not take place unless the restock in 43102 has achieved an average of 2 m in height.



Table 4: Scale of proposed felling.

Total Plan Area 365.5 ha										
Felling	Phase 1	%	Phase 2	%	Phase 3	%	Phase 4	%	LTR	%
Area (ha)	44.1	12.1	39.7	10.9	34.1	9.4	0	0	0	0

#### Other tree felling in exceptional circumstances

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

However, there are some circumstances requiring small scale tree felling where this may not be possible and where it may be impractical to apply for a separate felling permission due to the risks or impacts of delaying the felling.

Felling permission is therefore sought for the LMP approval period to cover the following circumstances:

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

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

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

[N.B. Trees may be felled without permission if they are of less than 10 cm diameter at breast height (1.3 m); pose immediate danger to persons or property; are completely dead; or are part of Authorised Planning Permission works or wayleave agreements].

#### C.2.2 Thinning

Areas which are potentially suitable for thinning in the plan period are identified on **Map 10 – Thinning Approval Area**. Due to the small scale of this LMP area, the entire block will be treated as one thinning coupe, as shown in **Map 5 – Thinning Coupes**. **Table 5** indicates the potential thinnable area by species.

Thinning will normally be carried out at, or below, the level of marginal thinning intensity (i.e. removing no more than 70% of the maximum MAI, or YC, per year). Higher intensities (no more than 140 % of maximum MAI, or YC, per year) may be applied where thinning has been delayed, larger tree sizes are being sought or as part of a LISS prescription. In all cases work plans will define the detailed thinning prescription before work is carried out and operations will be monitored by checking pre and post thinning basal areas for the key crop components.

Table 5: thinning.

Thinning over the first 10 years of the plan	
Species	Thinning (ha)
Birch	2.3
Alder	1.7
Larch	39.0
Lodgepole Pine	15.6
Mixed Broadleaves	0.1
Norway Spruce	13.0
Serbian Spruce	0.5
Oak	1.8
Scots Pine	79.4
Sitka Spruce	64.4
<b>Total</b>	<b>217.7</b>

### C.2.3 Low Impact Silvicultural Systems (LISS)

Areas identified for LISS management are shown on **Map 4 – Management Coupes**.

The only LISS or CCF coupe in the forest is coupe 43037. This coupe will be managed as group shelterwood considering the light demanding species it contains. This system regenerates a mature stand by cutting small holes within the original stand. Depending on the shade tolerance of the species, holes are between 1 and 3 tree lengths but potentially bigger depending on landform, aspect, and species. When working with light demanding species such as larch and pine, 3 tree lengths is usually most appropriate. As a rule, gaps within Group Shelterwood systems will not exceed 0.5 ha to ensure the maximum benefit of

the CCF system is maintained. Considering the risk of *P. ramorum* infection and the desire to move this area to more native species focussing on biodiversity the removal of larch will be prioritised over Scots pine.

Regeneration might be promoted through ground disturbance using a scarifier or digger. If regeneration has not reached the required stocking by year 5 after felling supplementary planting will take place. Full regeneration of the stand will take place over 4 phases.

#### C.2.4 Long Term Retentions (LTR) / Natural Reserves

Stands identified as LTR are shown on **Map 4 – Management Coupes**. There are no Natural Reserves in the forest.

Opportunities for long-term retention within Dalrulzion are limited due to the stability and larch issues. Most of the forest has a windfirm edge consisting of larch which, when removed, leaves the rest of the forest unstable and at risk of windblow. Therefore, areas of native conifers within the more sheltered area in the centre have been identified as long-term retention along with a pocket of mature conifers next to the loch. Long-term retentions are selected to improve forest structure which directly and indirectly benefits biodiversity. Within the forest, particular care has been taken to ensure several different conifer species are found in long-term retentions to safeguard the benefit they have to red squirrel.

#### C.2.5 Restocking Proposals / Natural Regeneration

Planned restocking of felled areas, and proposals for the future habitats and tree species over the whole plan area are shown on **Map 6 – Future Habitats and Species**. See **Table 6** and **Appendix 4** for areas, establishment, and mix proportions. Timing of restocking will comply with the plan tolerance table shown in **Appendix 3**.

Where required, the choice of ground cultivation technique will consider the short-term benefits for establishment against any long-term side effects on tree stability, access for future forest operations and the environment. There will be a preference for the least intensive technique.

Stocking densities and species breakout are detailed in **Appendix 4 – Restock Prescriptions**. If restock or natural regeneration should fail to reach these levels the site will be beaten-up to the required planting density. This will be assessed at year three and year five after planting with beat-up by at least year five.

There will be a preference for natural regeneration of native woodland areas. Any non-productive broadleaf planting will be native to the area and will complement existing naturally growing scrub and woodland to give the most ecological value.

The Restocking Strategy for Scotland's National Forests and Land explains that we will minimise chemical usage in restocking (insecticides and herbicides) by considering options at the site scale and using tactics such as delayed planting to achieve this.

For landscape purposes the forest edges have been redesigned resulting in a small increase in designed open space.

Table 6: restocking

<b>Coupe Number</b>	<b>SS</b>	<b>SP</b>	<b>NMB</b>	<b>Open</b>	<b>Total (ha)</b>
43102	25.6	17.1	1.4	8	<b>52.1</b>
43101	0.9	25.4	1.1	2	<b>29.4</b>
43100	0	3.6	0.9	2.6	<b>7.1</b>
43049	0.6	30.0	1.7	7.7	<b>40</b>
43045	0	32.5	0.5	6.7	<b>39.7</b>
<b>Total (ha):</b>	<b>27.1</b>	<b>108.6</b>	<b>5.6</b>	<b>27</b>	<b>168.3</b>

### C.2.6 Protection

Management of deer is an underpinning activity essential for the delivery of benefits from Scotland's National Forests and Land. The aim is to manage healthy wild deer populations and manage deer impacts across the Estate consistent with the carrying capacity of the land and successful delivery of FLS land management objectives. Deer Management Plans direct the priorities for management and are available on request.

Roe deer are known to be present in the block with significant numbers of red and fallow deer migrating in and out depending on weather conditions. As the block is stock fenced there is no physical barrier stopping migration. Deer management will therefore be done using culling and facilitated through providing good access to restock sites. Both day and nighttime stalking will be used. To improve the chances of survival of palatable species these have been planned along watercourses and roads ensuring sightlines from the road to facilitate shooting.

Blocks of broadleaves will either be placed where deer control is easiest or small-scale fencing will be used to protect them, see detail in the next paragraph.

Tree guard uses will be recorded and inspected annually. When tree guards are no longer necessary, they will be removed and reused where possible. If reuse is not possible they will be disposed of through appropriate waste disposal channels.

More details on deer numbers currently present and future deer management within the LMP area can be found within **Appendix 7 – Deer Management Plan**.

Table 7: woodland deer density indicators.

<b>Evidence</b>	<b>Low Density (0-6 deer per km<sup>2</sup>)</b>	<b>Medium Density (6-12 deer per km<sup>2</sup>)</b>	<b>High Density (12+ deer per km<sup>2</sup>)</b>
<b>Tracks</b>	Difficult to find deer slot marks or defined paths.	Defined paths: slot marks easy to find in areas of soft ground.	Many well-defined tracks and paths often black with constant use.
<b>Dung</b>	Difficult to find with just the odd isolated pellet group.	Pellet groups relatively easy to find, particularly on woodland edges and good feeding areas.	Pellet groups very easy to find. Highly concentrated on favoured feed areas.

Evidence	Low Density (0-6 deer per km <sup>2</sup> )	Medium Density (6-12 deer per km <sup>2</sup> )	High Density (12+ deer per km <sup>2</sup> )
<b>Browsing of Vegetation</b>	Natural regeneration of broad-leaved trees taking place with no or little damage to current year's incremental growth	Broad-leaved saplings present but showing significant damage.	No seedlings growing above dominant vegetation height. Often well-defined browse lines on established shrubs and plants.

### C.2.7 Fence erection / removal

There are currently no plans for perimeter fencing of the block. However, considering the browsing pressures and the limited control over the deer population because of the current stock-fence, small scale enclosures will be used to ensure the establishment of palatable/broadleaved species. These enclosures will be of temporary nature and will be removed once the broadleaves have sufficiently established. The enclosures will be sited where the access and construction is easiest and where the benefits of broadleaves are highest. Because of their temporary nature a low specification fence will be used to keep costs to a minimum. FLS will regularly check fences to ensure they provide sufficient protection from herbivores and species inside the fence are establishing.

### C.2.8 Civil Engineering Operations

Map 7 shows the existing forest road network and any associated quarries, timber haulage egress points, and any local 'Agreed Timber Transport Routes'. Any planned new roads or quarry expansions in the plan period are also indicated on this map. The lengths of planned new roads and quarry expansion details are given on the map and in the points below.

- Road extension for coupe 43045, 170m, 2032/2033
- Road extension for coupes 43049, 43052 and 43049, 925m, 2025/2026
- Quarry expansion, 0.3ha

The only planned road to be built during Phase 1 of the plan is the extension towards coupes 43049/52/54. The road does not traverse any sensitive areas and amounts to less than 1ha meaning it is under EIA Scoping Opinion threshold. The road does cross a burn at NO 1204 5785 which feeds several PWS downstream. The reason for the proposed road is to minimise impact of forest operations on the soil and water quality. The proposed road will significantly reduce forwarding distances and will provide an engineered solution across a sensitive burn. This in turn will minimise damage to the soil thereby minimising the risk of siltation of water courses.

The existing culvert across the watercourse is not fit for purpose. FLS believes that forwarding the timber from coupe 43049 across the existing crossing, or building a temporary log bridge, would create a risk of pollution of the watercourse and potentially the private water supplies downstream.

The building of the proposed forest road will be done to the appropriate specification with machinery more capable at managing water run-off than timber harvesting equipment. Care will be taken in designing culverts and settlement ponds to minimise the risk of siltation incidents. To mitigate against the risk of siltation during the road construction several measures will be taken. Forestry and Water Guidelines, SEPA regulations and the Timber Transport Forum: Design and Use of Structural Pavement of Unsealed Roads will be adhered to. Run-off from forest roads drainage will be carefully managed into settlement ponds. The last section of existing forest road will be upgraded and settlement ponds along the burn brought up to the highest standards. As mentioned, machines used during road building are more appropriate for ground and silt movement than harvesting machinery and are therefore more able to mitigate the risk of siltation.

Prior to the replacement of the culvert SEPA will be contacted to ensure the proposals have their approval. Flow analysis will be carried out to ensure the new culvert is of appropriate size to withstand increasingly severe flood events. The new culvert will be installed during low flow conditions and out with fish spawning periods. Exact time restrictions will be agreed with SEPA.

Considering the above FLS believes the likely significant effect of the proposed road is positive and will lead to the long-term safeguarding of water and soil quality.

Felling operations to facilitate the building of the forest road might disturb breeding activity of protected species if works are taking place within the breeding season. Pre-operation surveys and monitoring for all protected species will be conducted as per FLS's workplan process to ensure correct timing restrictions are imposed on the works.

An extension of the quarry will be required to provide the material for the road extension and road maintenance. The quarry will be extended south and east by a maximum of 0.3ha bringing the quarry size to a maximum of 0.8ha. There is no existing forest cover on this area. Water in the quarry will be carefully managed in settlement ponds and sumps to prevent water entering surface water systems in the vicinity.

Timber will be extracted from the access at NO 1365 5725 onto the A93 which is an assumed agreed route.



### C.2.9 Public Access

Visitors are welcome to explore FLS land and will only be asked to avoid routes while certain work is going on that will create serious or less obvious hazards for a period (e.g. tree felling). Scotland's outdoors provides great opportunities for open-air recreation and education, with great benefits for people's enjoyment, and their health and well-being. The Land Reform (Scotland) Act 2003 ensures everyone has statutory access rights to most of Scotland's outdoors, if these rights are exercised responsibly, with respect for people's privacy, safety and livelihoods, and for Scotland's environment. Equally, land managers must manage their land and water responsibly in relation to access rights, and FLS will only restrict public access where it is necessary and will keep disruption to a minimum. In all cases the Forestry Commission guidance on "Managing Public Safety on Harvesting Sites" and "Managing Woodland Access and Forest Operations" will be adhered to.

Closure of the core path will be kept to an absolute minimum and a suitable alternative will be provided in agreement with the local authority access officer. During operations appropriate signage will inform the public of the closure and the alternative route in line with guidance on 'Managing Public Safety on Harvesting Sites' (Forestry Commission, 2013) and 'Managing Woodland Access and Forest Operations' (Forestry Commission, 2013). After operations the core path will be reinstated to ensure its usability and any brash used to protect the path during operations will be removed from the path and its vicinity. Crossing points will only be created from brash and or logs and no stone will be used to cap the surface of the core path. Long term proposals along the core path will result in a diverse mixture of productive conifer, broadleaved riparian zones and open ground at the SM.

As mentioned previously a historic path is found to the northeast of the block. This is currently used as an access by the adjacent farm. Long term proposals will ensure retention and development of open ground and broadleaved forest along this path.

### C.2.10 Historic Environment

The Regional Historic Asset Management Plan includes conservation management intentions for designated historic assets on Scotland's National Forests and Land. Details of all known historic environment features are held in FLS's Heritage Dataset and included within work plans for specific operations to ensure damage is avoided. Significant historic environment features will be depicted on all relevant operational maps. At establishment and restocking, work prescriptions remove relevant historic environment features from ground disturbing operations and replanting. Areas of historic environment interest will be checked both on FLS's records and with the Council's HER prior to the commencement of forestry activities. Any upstanding features will be clearly marked, both on the ground and on operational maps. Care will be taken to avoid any damage to surviving structural elements.

For any works that have the potential to impact the SM Scheduled Monument Clearance will be applied for with HES. Works will not commence until clearance has been granted from HES. A 20-meter open buffer will be established at restock adjacent to the SM.

**Map 9** and **Appendix 2** provide more information about the historic environment features within and adjacent to the plan area.

#### C.2.11 Biodiversity

UK Forestry Standard guidance is to manage a minimum of 15% of the forest management unit with conservation and the enhancement of biodiversity as a major objective. The figure for this plan is 29%. This consists of CCF areas, LTR's and open areas. Over time it is expected the riparian corridors will become the main arteries through the block for biodiversity along with open ground and the CCF area to the east.

Prior to operations environmental checks will be carried out to determine presence of protected species and/or habitats. Appropriate mitigation will be agreed upon with the FLS environment team. If necessary, licenses will be acquired through NatureScot to ensure operations comply with all legislation.

Opportunities for retaining or creating deadwood will be identified during the planning of all felling and thinning works, favouring areas with the highest deadwood ecological potential such as along watercourses. Where it is safe to do so, standing mature dead trees will be retained as these offer excellent potential for a range of species. Deadwood will be managed in accordance with the Scottish Forestry Practice Guide 'Managing deadwood in forests and woodlands' (Humphrey & Bailey, 2012) and the FLS document 'Deadwood Management – Guidance for staff' (FLS,2021).

#### C.2.12 Tree Health

As stated in section A.8, the larch component in the block leads to a significant risk of *P. ramorum* infection. To reduce the impact of an infection and to comply with the FLS and SF strategies the plan has assessed the larch on the landholding in detail. The proposed plan will remove a significant percentage of larch by removing the proposed felling coupes. As all felling coupes, besides significant windblow, also contain strips and edges of larch.

Beyond the proposed felling coupes, most of the mature larch is found in coupe 43037. CCF operations within this block will therefore focus on reducing the percentage of larch which also aligns with a move to a more native forest focused on biodiversity in this area. In case of an infection the larch can be extracted to the main forest road and the proposed road detailed in this plan.

A stand of young larch is found in the centre of the block. Thinning will be carried out to improve airflow through the crop to reduce the risk of infection. This area is well rounded and in case of infection can be easily cleared.

#### C.2.13 Invasive Species

Not applicable.

#### C.2.14 New Planting

Not applicable.

#### C.2.15 Other

##### Wildfire

FLS continues to work closely with Scottish Fire and Rescue Service (SFRS) to prevent and tackle wildfires that threaten Scotland's National Forests and Land. FLS support SFRS in their lead role for fire prevention and suppression through creating annual fire plans, maintaining a duty rota, and providing additional logistical support. FLS's primary objective is always to protect people's health, safety and wellbeing.

##### Soils

Brash mats (or alternative measures) will be used to protect sensitive soils. There will be minimal soil disturbance and machine movement on sites with clayey soils to reduce the risk of compaction or damage to the soil structure. Felling residue will usually be left on site to allow nutrient recycling, with consideration for the practicalities of restocking. Where required, the choice of ground cultivation technique will consider the short-term benefits for establishment against any long-term side effects on tree stability, access for future forest operations and the environment. There will be a preference for the least intensive technique.

It is acknowledged that in coupe 43052 there is a significant area of deep peat with a mixture of Sitka spruce and Lodgepole pine on it. An assessment of the site demonstrates that the yield class in the majority of the coupe is well above the threshold as set out in the Practise Guide 'Deciding future management options for afforested deep peatland' (Forestry Commission Scotland, 2015). Pockets within the coupe will likely be under the threshold which would justify peatland restoration. As the felling of this coupe is not planned until phase 3 of the plan no detailed restock prescription is given. At the revision of the plan in 2034 this area will be carefully assessed and any changes to the guidance considered. As this area is close to and within the catchment of the PWS, extreme care will to be taken during

felling operations to safeguard PWS. Appropriate machinery and timings will be essential to prevent incidents.

### Landscape

As detailed in **Section A.4, Map 1 – Location and Viewpoints** and **Map 3 – Concept** the block is highly visible from the north. To resolve the current landscape issue along the northern edge, the restock proposal has been carefully considered. The proposals consider the neighbouring woodland creation and the landform. Details of the proposals can also be found in the visualisations (**Appendix 5**).

### Hydrology / Private Water Supplies

There are Type B PWS located within the forest, as defined below.

- Type A supplies – serving more than 5 people or used as part of a commercial or public activity (e.g. holiday accommodation). Such supplies are subject to wider reaching statutory controls and must be risk assessed by the local authority every 12 months.
- Type B supplies – All other private water supplies being the large majority of those on land managed by FLS. These supplies are subject to different Regulations and whilst they must be registered with the local authority, it is not a statutory requirement for them to be risk assessed.

Duty of care extends to all PWS including those not registered.

The beneficiaries of a PWS owe a duty of care to themselves to safeguard the PWS through adequate and effective maintenance, repair, and renewal. However, where a registered PWS is on land managed by FLS we share a duty of care to protect the original water source and the supply network (pipes, tanks, lades etc.) to safeguard the quality and quantity of water.

FLS is required to comply with good practice water and PWS management standards set out in the following:

- [UK Forestry Standard \(UKFS\)](#)
- Confor: [Forest and Water Scotland Initiative](#) and [Know the Rules 2<sup>nd</sup> Edition](#).

As per [Managing Forest Operations to Protect The Water Environment](#), all PWS will be protected by a 50 m and water pipelines by a 20 m (10 m either side) operational buffer, managed as open with an allowance of 20% native mixed broadleaves. PWS that is either surface fed or shallow (spring fed) will have a catchment identified, machine trafficking and brash heaps will be minimised within the catchment boundary.

### C.3 Environmental Impact Assessment (EIA) and Permitted Development Notifications

Table 8: EIA projects (in Phase 1)

Total area (hectares) for each project type and details by sensitive or non-sensitive area.					
Type of Project	Sensitive Area		Non-sensitive Area		Total
Afforestation	%Con	%BL	%Con	%BL	ha
Deforestation	%Con	%BL	%Con	%BL	ha
Forest Roads	ha		0.9ha		0.9ha
Quarries	ha		0.3ha		0.3ha
Provide further details on your project if required.					
Forest roads and quarry works under threshold for Scoping Opinion Request.					

## Appendices

Map 1 – Location

Map 2 – Current tree species

Map 3 – Concept

Map 4 – Management (Felling)

Map 5 – Thinning

Map 6 – Future habitats and species (Restock)

Map 7 – Timber haulage

Map 8 – Soils

Map 9 – Historic environment

Map 10 – Thinning Approval Area

Map 11 – Private Water Supplies (Confidential)

Appendix 1 – Consultation record

Appendix 2 – Historic environment records

Appendix 3 – Tolerance table

Appendix 4 – Restock Prescriptions

Appendix 5 – Visualisations

Appendix 6 – Private Water Supplies (Confidential)

Appendix 7 – Deer Management Plan