Forestry and Land Scotland
Coilltearachd agus Fearann Alba

Callander Forests

Land Management Plan 2024-2034 Central Region

Plan Reference No:
Plan Approval Date: May 2024
Plan Expiry Date: May 2034

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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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A.2 Location and Background

The Callander Forests Land Management Plan (LMP) covers a total of ~ 780 Ha located around the town of Callander in Stirlingshire. The LMP area is divided into four woodland areas comprising three forest blocks. These being the Milton block (~158 Ha) on Loch Venachar; the Torrie block (~469 Ha) south of Callander and the Callander Crags block (~152 Ha) which comprises two separate woodland areas with Coilhallan lying to the south west of Callander and The Crags lying to the north east of Callander. Torrie lies just outside The Loch Lomond and the Trossachs National Park (LLTNP) with all of the other woodlands lying within the Park and having a high recreational/landscape impact.

See **Map M1 Location**.

The four forest blocks are very different in character but share similar issues.

Milton has a high landscape impact but supports relatively low levels of recreational activity, except for the Great Trossachs Path which crosses the forest. The forest lies within the Trossachs Forest National Nature Reserve and the felling of the conifer crop on the lower section in 2009 has been followed by restocking with native species. Larch removal is a priority in this forest with a Statutory Plant Health Notice (SPHN) in effect due to Phytophthora ramorum. The remaining mature conifers will be clearfelled and restocked with native species. Constraints include Hydro infrastructure Scottish Water intake and infrastructure and the catchment for Loch Venachar which is a public drinking water supply.

Torrie has low levels of recreational use in terms of visitor numbers but is an important and well used recreational resource for local residents. The block is predominantly commercial with a mixed age class and range of species. Areas of Larch will be removed during the next ten years. An area of diverse productive broadleaves and conifers was established on the north eastern side of the block in 2011. The Torrie area has been identified as having potential for peat restoration, with significant deforestation proposed during the first ten years of the plan. The remaining areas will be managed to produce commercial timber for which the site is well suited.

Coilhallan has been extensively restructured with a mixture of planted and natural regeneration. While the establishment of native broadleaves was the objective, mixed conifer regeneration is abundant. Small areas of mature mixed conifers remain with Larch being a large element. The objective is to restore most of the woodland to native broadleaves over time, however targeted areas of mature mixed conifers will be retained for landscape and biodiversity. As at Milton, Larch removal will be a priority and an SPHN is in place for this woodland.

The Crags has been extensively restructured with mixed species. There are no Plantation on Ancient Woodland Sites (PAWS) areas on site, but the area is identified as being Long Established of Plantation Origin (LEPO), indicating a long history of woodland management using mixed species. Drainage and the impact of felling and road formation are important issues for residents. Many of the mature conifer areas are self thinning and stable. The proposals include the clearfelling of an area of mainly windblown Larch with more sensitive management across the remaining woodland.

A.3 Existing Schemes & Permissions		
Type (e.g. Felling Permission)	Ref. No.	Details
Milton LMP	LMP-04-2017	Current LMP covering Milton Block expires 01/11/2027
Callander LMP	033/LMP/C&T/2015	Current LMP covering Callander Crags and Coilhallan expires 27/05/2026
Torrie FDP	033/CT/T/11(9)	Current FDP covering Majority of Torrie Block expired 27/01/2021
Wester Torrie FDP	033/CT/WT/14(6)	Current FDP covering woodland creation expires 27/01/2025
EIA SOR	143-146, 154, 156-169	Callander Crags screening - Upgrade and extension of an existing forest road to provide the necessary access for harvesting and haulage. Consent not required 10/12/2014 - 10/12/2019
EIA SOR	595	Callander Crags screening - Harvesting Ramp coupe 85123 Consent not required – 15/08/2023 – 15/08/2028
Prior Notification	19/00113/NAG	Torrie ATV Track coupe 84002 expires 03/06/2025

A.4 Stakeholder Engagement	
Scoping – Main Points	LMP Reference (section/page):
Flood risk at The Crags and Coilhallan	A.6.4 Page 9 & C.2.7 Page 33
Tree Health	A.8 Page 20 & C.2.14 page 35
Visitor experience	A.7.1 Page 15 & C.2.18 Page 36
Access	A.6.7 Page 10 & C.2.10 Page 33
Ecology	A.6.9 Page 11 & C.2.13 Page 35
Peatland restoration	A.6.2 Page 8 & Appendix 4

A.5 Long Term Vision and Management Objectives

Vision
Woodlands providing benefits for community, biodiversity, climate and landscape.

Management Objectives		
No.	Objectives	Indicator of objective being met
1	Protect water quality in relation to both private and public water supplies and reduce flood risk by limiting felling within flood sensitive catchments.	No incidents during operations and increased in soil stabilizing native broadleaves.
2	Prioritise the removal of Larch to help reduce the spread of *Phytophthora ramorum*.	Reduction in area of larch during plan period.
3	Continue to liaise with the local community on the management of the Forestry and Land Scotland (FLS) woodlands around Callander.	Record or meetings and engagement with community.
4	Maintain key recreational infrastructure and improve internal and external views through design, species choice and management.	Record of species planted and management interventions.
5	Identify and prioritise Ancient Woodland Sites (AWS) for restoration and protection	Record of management interventions and species planted.
6	Remove invasive species to protect and enhance cultural assets and key wildlife species/protected habitats.	Reduction of INNS and continued monitoring of species, habitats and opinions.

A.6 General Site Description

A.6.1 Topography

Milton lies within the LLTNP and is classed as Forested Glenside and Forested Hill. The landscape character type (LCT) of the woodland is defined by its poor fit and prominence in the landscape. The ongoing restructuring to convert the woodland to Native broadleaves (NBL)/ Scots pine (SP) will enhance the landscape fit and complement the woodland creation efforts of the Woodland Trust. Mixed conifer regeneration provides winter colour and visual diversity. Milton forest has a high visibility across a wide area of countryside south of Loch Venachar. The steep slopes emphasise the impacts from forest management.

A.6.1 Topography
Coilhallan lies within the LLTNP and is classed as Forested Parallel Ridge. The surrounding landscape is characterised by policy type areas with specimen trees which extend into Coilhallan. Coilhallan is surrounded by mixed tree cover and lies on flat terrain. The visual impacts are limited even from The Crags where tree cover often obscures views along the path in this direction. **The Crags** lie within the LLTNP and are classed as Wooded Parallel Ridge. The woodland occupies a bowl shaped landform bounded by The Crags ridge to the west. The woodland is visually linked with Callander and forms a backdrop to the town. **Torrie** lies out with the LLTNP and is classed as Forested Moorland Hills with Pastures. This LCT is characterised by gentle smooth slopes with low domed hills. The landcover is typically mixed woodland with extensive plantations. The experience is secluded/diverse/rough textured. Torrie is visible from The Crags in profile and at distance but has limited overall visibility. The roadside views of Torrie from the B822 are important. There are no other landscape designations.

A.6.2 Geology and Soils
Coilhallan & The Crags The Land Management Plan Area lies on the southern margin of the Highland Boundary Fault and is underlain by Devonian sediments, mainly sandstones and conglomerates. There are thin and discontinuous superficial deposits derived from and overlying the solid geology. These are largely of glacial or alluvial origin and typically consist of poorly sorted sands and gravels. The Highland Boundary Fault imposes a linear structure on the landscape and Callander Crags provide a dramatic backdrop to the town and there are frequent small rock outcrops throughout the LMP area. Elevation ranges from 70 m at the Eas Gobhain (Coilhallan) to 330 m on Callander Crags. **Map M2 Soils** shows the data on soil types across the site. The data is inaccurate for The Crags where brown earths, localized gleys and rankers are likely to occur. **Milton** The Land Management Plan area lies immediately north of the Highland Boundary Fault and is underlain by metamorphic rocks derived from sandstones and finer grained sedimentary rocks. These rocks are hard, break down only slowly and provide a relatively poor nutrient source. There is a very limited amount of superficial deposits of glacial or fluvio-glacial origin, largely derived from the solid geology. These superficial deposits are concentrated mainly along burns but there are also thicker deposits of hummocky moraine on some less steep slopes. Slopes rise steeply from the shore of Loch Venachar at about 80 m above sea level and there are several steep rock faces. Above 250 m the south east ridge of Stuc Odhar and the Milton Glen Burn combine to create an uneven landscape of

A.6.2 Geology and Soils
steep cliffs, peaty basins and incised burns. The Milton Glen Burn is steep with several waterfalls. Maximum elevation is about 380 m. **Torrie** Wester Torrie lies to the south of the Highland Boundary Fault and is underlain by Old Red Sandstone sedimentary rocks of the Devonian Period. The area was influenced by the advance and retreat of glaciers towards the end of the Ice Age, which have left a distinctive "kame and kettle" landform. This consists of a series of elongated mounds (kames or drumlins) between which are poorly drained, more or less enclosed, hollows (kettles). The latter are interconnected by narrow burns and seepage lines. Although the bedrock is close to the surface in places, and some of the drumlins may have rock cores, much of the site is covered with superficial deposits of poorly sorted sands, gravels and glacial till, all of which contain large boulders. There are small, discontinuous areas of alluvium and river terrace deposits near to the River Teith. Elevation ranges from 56 m near the River Teith to 123 m at the highest point near the B822. A 2020 soil survey of Torrie identified ~169 Ha of afforested deep peat with ~54 Ha of that on peat type where there is a presumption to restore these rather than restock. (Please see **Appendix 4 EIA SOR** for further details)

A.6.3 Climate
Using the measures of warmth and wetness defined in the Ecological Site Classification (ESC, see Forestry Commission Bulletin 124) the Callander LMP area is categorized as warm and moist. The higher parts of The Crags above about 175 m become cool and wet. Most of the area is sheltered, only the very highest parts becoming slightly to moderately exposed.

A.6.4 Hydrology
Coilhallan and The Crags The plan area is divided by the River Teith and its tributaries the Eas Gobhain and Garbh Uisge. Large areas of open moorland are drained by the various burns running through the plan area into the Teith system. In The Crags and Balameanoch several of these burns are steep and incised into the superficial sands and gravels. There are also many intermittent streams and sub-surface flow seems to be an important feature of all of the woodlands. Some of the burns appear to have been artificially modified in the past. Local residents have voiced concerns over recent years on the impact heavy rain events have on flooding particularly around Ancaster Road and there is a perception that it is linked to the surrounding woodland. **Milton** The burns in the plan area drain directly or indirectly into Loch Venachar which is part of the Teith Special Area of Conservation (SAC). Loch Venachar is dammed and is used to regulate flow in the Teith System. The burns are generally steep and deeply incised on the middle slopes. Milton Glen Burn has a rocky base and there are numerous waterfalls along its length. The latter is also a Drinking

A.6.4 Hydrology
Water Catchment and there is a water offtake within the plan area; a pipeline takes water to a reservoir just to the south of the plan area. More recently a weir has been constructed from which water is fed to a generator at Milton of Callander. **Torrie** The woodland lies on the watershed with small burns on the east side draining to Loch Rusky and the Goodie Water (a tributary of the Teith). Small burns on the west side drain directly into the River Teith, with Salmon and Seatrout spawning on the lowest reaches. Deep peat is a feature of the southern part of the site due to impeded drainage. However these areas of poor drainage are interspersed with well drained knolls.

A.6.5 Windthrow
There are windblown pockets at The Crags coupe 85002 Coilhallan coupe 85108 and Milton coupe 25001 which are all predominantly composed of larch.

A.6.6 Adjacent Land Use
The woodlands are all well linked with existing woodland which varies from native woodland to policy type specimen trees. **Milton** marches with rough grazing and native woodland areas leased by the Woodland Trust. **The Crags** is adjacent to Callander and an area of mature oak owned by Stirling Council. Mixed woodland lies to the west and east of the forest and scrub woodland occurs across the march on Drummond Estate to the north. **Coilhallan** lies adjacent to Callander with wooded farmland, commercial forestry and policy type woodlands in other areas. **Torrie** is mainly adjacent to commercial forestry with open ground and a deer farm to the south. The new woodland creation area features an area of agricultural grazing.

A.6.7 Access
The forest is generally well accessed by forest road, however many of the areas to be felled in the next ten years are difficult to access and agreement with neighbours on road linkages will be required to harvest some of these areas.

A.6.8 Historic environment
Heritage features are limited within the LMP area with no designated features (see **Map M Heritage**)

A.6.9 Biodiversity
Designations See **Maps M1 Location** and **M6 Key Features** for the location of designations. All of the woodland except for Torrie lie within the LLTNP, all fall within the catchment of The River Teith SAC. The Loch Venachar catchment and the Milton burn are a designated drinking water supply. Torrie lies within the Great Trossachs Forest National Nature Reserve. **Habitats and species** The LMP area supports a wide range of woodland and edge habitat species. Red squirrel are particularly abundant. Specimen conifers and stands of mature timber provide nesting habitat for a range of birds including Goshawk at Torrie. The intimate and extensive mix of tree species and the varied forest structure provide an ideal habitat for many bird species including Redstart and Pied Flycatcher. The River Teith, Garbh Uisge and Eas Gobhain are important for their fish assemblage, including three species of lamprey, and are designated Special Areas of Conservation. The Eas Gobhain is an important Seatrout spawning river. All the burns running through the woodlands feed ultimately into the Teith system. Callander Crags and Coilhallan have a strong community engagement, this has largely been through the Callander Landscape Partnership, working with the LLTNP. Volunteers have been involved with numerous environmental projects such as erecting and monitoring nest boxes and bat boxes. Volunteers have also contributed to INNS control work in both Callander Crags and Coilhallan Woods over a number of years. This work is ongoing, and the community are now looking at pond creation within the Coilhallan block. **Riparian habitat** The Milton Burn carries areas of mature Birch woodland with a high biodiversity value. This area is designated in the plan as a non intervention area. Future restructuring will seek to expand and enhance this buffer via natural regeneration and the planting of more diverse NBL. A small area of Coilhallan which lies between the public road and Eas Gobhain comprises of mainly naturally regenerated Birch. This area has been respaced and provides a valuable buffer to the river. Adventitious food for fry/parr is derived from the woodland cover and tree roots within the river provide refugia for adult and juvenile salmonids.

A.6.10 Invasive Species
Rhododendron and Piri-piri burr are present on site and the proximity of gardens increases the possibility of colonisation by new invasive species. Rhododendron has been controlled successfully on site. Ongoing monitoring is important.

A.7 Woodland Description

Considering each block in turn.

Milton 159 Ha.

Formerly a productive conifer forest planted in two blocks during the 1950's and 1980's. The forest is located within the Great Trossachs Forest National Nature Reserve. The 1950's planting which constitutes around half of the forest has been felled and restructured to restore native woodland including Scots pine. Abundant natural regeneration of Native Broadleaves (NBL) and Mixed Conifers (MC) occurs across the restock site. The remaining mature (1980's) timber has a high proportion of windblown Larch and Statutory Plant Health Notices (SPHN) have been issued for *P.ramorum*.

Access to the remaining mature crop is problematic with a new road access via the Hydro road to the east being negotiated. Hydro infrastructure requires active operational consideration. SW intakes and infrastructure are present on the site. The Milton Glen burn feeds Loch Venachar which is a public water supply and part of the River Teith SAC.

The Milton is located within The Loch Lomond and the Trossachs National Park (LLTNP). The forest has a high landscape impact from the south shore of Loch Venachar. Milton sits within NatureScot's Forested Glenside and Forested Hill Landscape Character Type defined by its poor fit and prominence in the landscape. The ongoing restructuring to convert the woodland to NBL/SP will enhance the landscape fit and complement the woodland creation efforts of the Woodland Trust. Mixed conifer regeneration provides winter colour and visual diversity. The Great Trossachs Path traverses the area, but other recreational activity is very limited within the forest.

The Woodland Trust is a neighbour to the north and west. The management of deer populations post felling will require a collaborative approach. Moray Estate lies to the east.

The soils are generally good for growing a wide range of timber species and the site benefits from a southerly aspect. There are areas of thinner soils and rankers on the upper slopes and a small pocket of deep peat.

Coilhallan 83 Ha

Extensive restructuring of the previous mixed conifer crop has taken place with the restocking being dominated by native broadleaves with some Scots pine (SP). There is abundant mixed natural regeneration with high densities of semi mature Larch and Sitka Spruce. Respacing of some of the established broadleaved areas has proven effective in establishing the desired NBL species with low regeneration under the fairly dense canopy.

Areas left for Continuous Cover Forestry (CCF) have suffered from extensive windblow, however the regeneration of mixed species has been very successful once the canopy was opened up. Unfortunately while this demonstrates a successful application of CCF, the end result is dominated by Larch and Sitka Spruce which is contrary to the goal of restoring PAWS areas. The Larch regeneration

A.7 Woodland Description

also complicates *P.ramorum* measures. The site has a Statutory Plant Health Notice (SPHN) in place due to extensive infection.

Many of the mature mixed conifers play an important role in providing ideal habitat for Red squirrel, raptor nest sites and biodiversity benefits. They also have landscape and amenity value.

Access to the woodland is generally good although the windblown area of Sitka Spruce/Larch on the south side (proposed Phase 1 felling) is best extracted via the neighbouring road network to the south.

The site is well used mainly by local residents, but it is also a starting point for access to the wider path/cycle route network which is used by visitors as well. There are a number of desire lines and semi formal paths/mountain bike routes which have been impacted by endemic windblow. There are small areas of exotic species planted by the Community as representations of trees from the Worlds continents. The Community is fully involved with FLS in the management of the woodland and the parties enjoy a good working relationship.

Trees along the march in the proximity of houses and gardens were raised as a concern by residents. The LMP can facilitate potential remedial tree works by gaining permission for thinning, but specific actions would require an arboriculture survey and report.

Coilhallan is located within The Loch Lomond and the Trossachs National Park (LLTNP). The forest has a fairly modest landscape impact with views from The Crags being screened by adjacent tree cover and the flat terrain reducing impacts. Coilhallan sits within NatureScot's Forested Parallel Ridge Landscape Character Type characterised by policy type areas with specimen trees which extend into Coilhallan. The internal landscape is dominated by newly established broadleaves and natural regeneration with the more mature mixed conifers being screened from view on the main path network. Larch in the proximity of the car park have a high internal landscape value, but these areas will be felled under the SPHN. In consequence the visual diversity in the wood will be further reduced in the medium term.

Deer browsing in gardens is an issue for local residents.

The soils are generally good for growing a wide range of timber species.

Site drainage during high rainfall has raised concerns in specific areas as culverts and drains struggle to cope in places.

The Crags 70 Ha

A.7 Woodland Description

The Crags sit within NatureScot's Wooded Parallel Ridge Landscape Character Type located within the LLTNP and forms the visual backdrop to Callander. The woodland has a high visual impact across the wider landscape and attracts large numbers of visitors and residents. The recreational, landscape and aesthetic value of the woodland is therefore paramount.

As with Coilhallan the Community is involved with FLS via the Community Woodland Group in the management of The Crags. The site is well served with a range of footpaths for a range of abilities.

The woodland has been restructured and carries a diverse tree cover in terms of both species and age class. A range of conifer species are present as a result of restocking and natural regeneration with planted European Silver fir showing good growth on the south facing sheltered slopes. There are pockets of mature Norway spruce and other conifers which play an important landscape and biodiversity role. Many of these areas are self thinning and well suited to retention in the long term. To the east of the wood, across the minor road, Beech is dominant with mature trees of great character. Oak is more prevalent to the west, but Beech regeneration is widespread. Over time a European montane woodland type is likely to from via natural processes.

Harvesting access to some areas of the site is difficult and a short section of new road is required to fell and area of windblown conifers which includes Larch. The proposed Phase 1 coupe to the west occupies a difficult to access ridge with numerous constraints. Access to this area needs to cross neighbouring land to the east.

The south facing sheltered slopes and deep brown earths provide an ideal site for a wide range of species. The soil map (M2) indicates that the area is mainly podzols, but this is incorrect with brown earths being the dominant soil type.

Flooding from roading and felling is of concern to residents and this favours a sensitive approach with an emphasis on CCF.

Torrie 469 Ha

The woodland lies outside the LLTNP within NatureScot's Forested Moorland Hills with Pastures Landscape Character Type characterised by gentle smooth slopes with low domed hills. Torrie has a fairly limited landscape impact due to the terrain. There is a visual impact on drivers using the B822 from the forest edge.

In recreational terms the woodland is valued by local people who regularly walk in the wood and have established a number of informal paths. The woodland is lightly used by visitors. The area of young new mixed woodland to the east of the B822 is also lightly used and would benefit from better access and signposting.

A.7 Woodland Description

Torrie is predominantly a commercial woodland and has been extensively restructured. The area of younger woodland creation has the potential to provide multiple benefits including timber production of mixed species in the long term.

Areas of the site have potential for CCF and in the proximity of the main site entrance and small car park an area of mature and majestic Sitka spruce provides a good example of a specimen tree stand. Other thinned areas of commercial timber have potential as CCF but have been designated as Long Term Retentions on the felling map subject to suitability appraisal in the next plan review.

Along the southern areas of the forest there are areas of deep peat and pockets of poor growth. The intention is to restore appropriate areas to peatlands in line with guidance. Areas of Native broadleaves and Scots pine as a matrix with the peatland would enhance the landscape and biodiversity value of the area. Controlling vigorous Sitka spruce regeneration on restored peatland is likely to be an ongoing management issue.

Roading within Torrie is good, but the large Phase 1 coupe along the southern march requires an extraction route to link with the neighbouring forest road system.

A grazing let is in place adjacent to the woodland creation site in Torrie. This extends to circa 36 Ha.

A.7.1 Community & Recreation

The Local Community Woodland Group is active and plays a vital role in ensuring that FLS is aware of issues and concerns. These often relate to recreational issues, but can cover such subjects as drainage and flooding. The good working relationship between FLS staff and the Community helps any issues of concern to be dealt with rapidly.

Milton is lightly used for recreation with the exception of the Great Trossachs Path which passes through the woodland.

Coilhallan is used mainly by local residents and has a good path network, supplemented by numerous informal paths. The wood is immediately adjacent to Callander with path linkages. The entrance to the wood close to the Town could be relocated to an area with better sight lines. The Car Park at the west end allows people to access the wider path networks in neighbouring woodland.

The Crags have a very high recreational value. Consultation by the Community Woodland Group suggests that users are very happy with the current access provision.

Torrie is mainly used by local residents often on a regular basis. The road network and small carpark facilitate access which is supplemented by numerous informal routes which often create circular

A.7.1 Community & Recreation
walking routes. Consultation suggests that the gate access and signposting of the new woodland creation area could be improved to facilitate access. The main path networks are shown on **Map M6 Key Features**

Table 1 - Area by species

This shows the current and future species composition within the entire Land Management Plan area.

Area by species						
Species	**Current***		**Year 10***		**Year 20***	
(Add relevant species groups, or OG/OL)	**Area (ha)**	**%**	**Area (ha)**	**%**	**Area (ha)**	**%**
Sitka spruce	260.2	33	119	15	115.4	15
Norway spruce	41.3	5	34.4	4	35.9	5
Other conifers	38.8	5	10.9	5	39.9	5
Larch	32.9	4	7.6	1	7.4	1
Scots pine	19.6	3	16.4	2	15.5	2
Native broadleaves	98.2	13	228.2	29	232.1	30
Other broadleaves	63.9	8	67.6	9	66.1	8
Open/other	224.9	29	265.7	34	267.5	34
Total	**779.8**	**100**	**779.8**	**100**	**779.8**	**100**

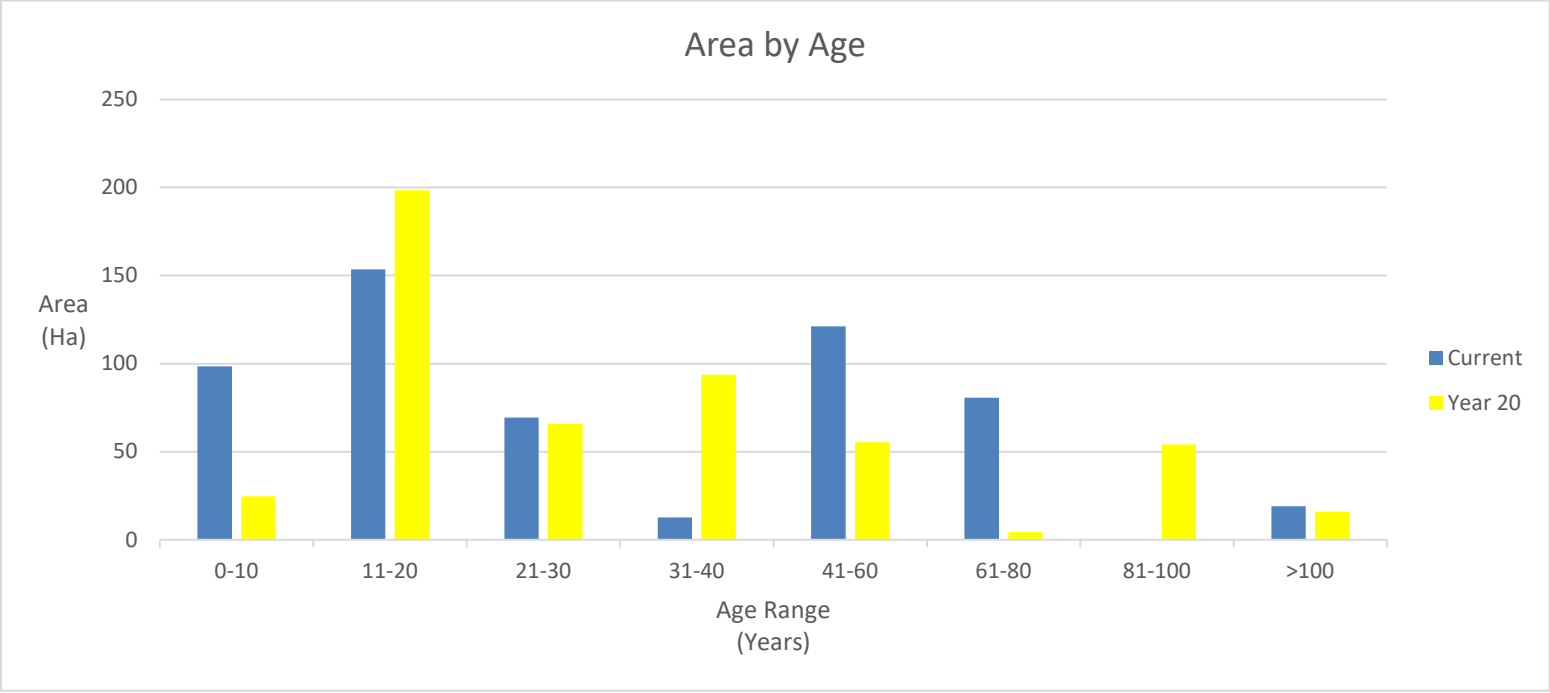
* Of whole LMP area (including open ground (OG)). Any mixtures such as Mixed Conifer (MC) should be broken down and included as an individual species component where a species occupies more than 10%.

Table 2 – Area by age

This shows the woodland area broken down by age class and will show how well the woodland is distributed across the age classes. This information can be provided as a chart below.

See **Map M4 Planting Years**

Age class (years)	Current	Year 20
	Area (ha)	Area (ha)
0-10	98.5	24.6
11-20	153.6	198.4
21-30	69.3	65.8
31-40	12.6	93.7
41-60	121.2	55.3
61-80	80.7	4.3
81-100	0	54.2
100+	19	16
Total	554.9	512.3


Area by Age
250
200
150
100
50
0
Area
(Ha)
0-10
11-20
21-30
31-40
41-60
61-80
81-100
>100
Age Range
(Years)
Current
Year 20

A.8 Plant Health

Phytophthora ramorum and Ash Die Back are present within the LMP area and have had an impact on felling phasing and restocking options. Both Milton and Coilhallan have recently been served Statutory Plant Health Notices (SPHNs)

The impact of *P.ramorum* is that Larch removal is a priority over a short time period. This unavoidable requirement has a range of adverse impacts on forest structure/diversity, biodiversity, landscape and aesthetics. It also creates knock on problems for production programming, budgeting and work scheduling.

In both Milton and Coilhallan there is an added complication in that there is abundant mixed aged Larch regeneration across many of the younger crop areas. Removal of all Larch is therefore problematic and destructive of stand integrity in some places. Ongoing regeneration of Larch post clearfelling further complicates the picture.

Coupe design and phasing are one of the key outputs for any LMP but the presence of *P.ramorum* greatly reduces the options available and will result in a distorted felling phasing with a concentration of felling within the Phase 1 period. This leads in turn to reduced age class diversity post felling/restocking.

B. Analysis of Information

B.1 Constraints and Opportunities		
Factor	Constraint	Opportunity
Access	Roading access for many of the Phase 1 coupes requires new access agreements with neighbours to link with their road networks.	The forest has intrinsic properties that promote fast growth in a range of species. Access and roading in many areas is good.
Tree health	The large areas of Phase 1 fellings will reduce opportunities to create a more diverse age class.	The high proportion of Phase 1 fellings removes the Larch at risk of P.ramorum and allows restructuring with diverse species.
Bog restoration	Long extraction distance from existing road network is less than ideal.	Extensive areas in Torrie are suitable for peatland restoration and currently carry crops of low yield class. A mix of targeted peat restoration, broadleaved buffers and productive conifers on mineral soils would optimise production, environmental and carbon delivery. Working with neighbours could reduce extraction distances and enhance collaboration.
Cultural heritage	Retaining some stands of unthinned mature timber can become impractical where windblow impacts are severe and progressive. Low levels of invasives can induce complacency, active monitoring is required.	Archaeology is limited across the site. Site managers and contractors should be made aware of the potential for unrecorded archaeology. In many respects the Cultural Heritage is invested in the stands of mature trees and the recreational infrastructure, for instance the trail along the top of The Crags. The continuation and promotion of both these features is an integral part of all aspects of forest management. Many of the mature conifer stands provide multiple biodiversity benefits including raptor nest sites and Red squirrel habitat. Maintaining these stands of trees preserves a cultural asset and a biodiversity feature.

B.1 Constraints and Opportunities		
		Invasive species are present in low numbers which enables prompt action to be effective when monitoring is in place.
Visitor experience	The high recreational footfall can make the management of forestry operations difficult, particularly where path closures are required. CCF is associated with higher operational/management costs, lower output and a lower economic return. Access is a prerequisite for effective CCF and in many areas access is difficult. In places this is complicated by the existing path infrastructure and recreational expectations.	The forest has a good recreational infrastructure and the good working relationship with the Community ensures that any issues are quickly brought to the attention of FLS. Extensive restructuring with broadleaves has taken place in all the main recreational areas. These areas and the remnant mature conifer areas can be managed under CCF to deliver multiple benefits where site/crop/access conditions are suitable.
Community relations	The representativeness and enthusiasm of Community groups and State organisations can change over time.	FLS has a good working relationship with the Community and the intention is to maintain this.
PAWS restoration	Broadleaves over large areas can create a homogeneous landscape with no winter colour. A mix of conifers and broadleaves can provide enhanced biodiversity and landscape. Red squirrel habitat may be diminished by the removal of conifers. Mature conifers are good nest sites for a wide range of species including raptors. Many of the AWS areas also provide an ideal environment for the natural regeneration of conifer species and the management/removal of this regeneration can be very difficult.	Ancient Woodland Sites are often very suitable for the establishment of broadleaves by both planting and natural regeneration, possibly by the retention of older mycorrhizal associations in the soil ecology. The AWS areas are located in Coilhallan and the lower parts of Milton. Many of these areas have already been restored.
Landscape	The high volume of Phase 1 Larch fellings limits the options for taking a selective and sensitive approach to coupe design and felling timing.	The previous restructuring of the forest created many predetermined coupe margins which are sympathetic to landform.

B.1 Constraints and Opportunities		
		The forest is suitable for a wide range of species. Good natural regeneration is present across the forest and would be expected to play a role in the restoration of any clearfell sites.
Water	Extreme flood events are likely to occur in spite of best practice in relation to catchment management.	Opportunity to enhance water quality and reduce flood risk by adopting good operational standards, restructuring to improve riparian buffers and adopting CCF. These actions can deliver multiple benefits for many factors including biodiversity (River Teith SAC), health (drinking water catchment), economic infrastructure (Hydro schemes and roads), and housing (reduced flood risk).

Concept

The concept for the LMP area in terms of specific locations is shown on **Map M7 Concept**

Access – Work with neighbours to agree arrangements to access difficult coupes.

Tree health - Remove Larch in line with SPHN and proactively outside the action zones. Remove Larch regeneration during thinning. Fell to waste any infected trees that can't be harvested.

Bog restoration – Following felling restore suitable areas of priority bog habitat and establish native broadleaved buffers from surrounding conifer.

Cultural heritage - With the Larch felling programme diminishing the mature conifer element and the older age class, it is desirable to seek to retain the remnant stands of other mature conifer timber.

Visitor experience - Maintain and enhance recreational infrastructure in partnership with the Community. Facilitate projects which source external funding.

Seek to apply CCF in The Crags, Coillhallan and targeted areas in Torrie. Consider ameliorating access pinch points which may constrain the adoption of CCF. Manage the mature conifer stands as CCF where feasible. Accept that self thinning stands on windfirm sites can deliver stands of specimen trees with a high ecological and landscape value. Target clearfell silviculture, with its higher economic yield to areas of lower recreational potential such as Torrie.

B.1 Constraints and Opportunities
Community relations - Continue to work at maintaining a good working relationship with the Community that delivers benefits for both parties. Consider the facilitation role and how this can help the Community access external funding. **PAWS restoration** - Restore the area of PAWS and link theses with wider broadleaved establishment. Manage conifer regeneration within the AWS areas. Consider removing the conifer regeneration as a utilisable product at first thinning where feasible. **Landscape -** Use the existing forest structure to create sympathetic coupes where possible. This will also reduce adjacency issues. Diversify the stand structure at restocking on large clearfell sites. **Water -** Maintain high operational standards in relation to water. Buffer water courses in LMP design. Promote CCF where appropriate and limit clearfells in flood sensitive catchments (The Crags).

C. Management Proposals

C.1 Silvicultural Practice

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, FC Bulletin 112 Creating New Native Woodlands, FC Bulletin 115 Alternative Silvicultural Systems, FC Bulletin 124 Ecological Site Classification for Forestry and the current SF edition of Forest & Water Guidelines. This plan has considered the natural and historic environment as well as green network opportunities.

Our experience from managing these woodlands demonstrates that Alternative to Clearfell (ATC) methods are suitable and should succeed in these woodlands.

The LMP seeks to follow the UKFS in all aspects. The dominance of Phase 1 felling is driven by environmental and disease management considerations which override normal best practice relating to felling phasing.

The 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://forestryandland.gov.scot/what-we-do/planning.

C.2 Prescriptions

C.2.1 Felling

See **Maps M8 Management** and **M10 Felling Approval**

P. ramorum management is the determining factor in the adoption of clearfelling in potential CCF areas and in the phasing, with 18% of the forest area being proposed for felling in the first Phase. This necessary approach is at odds with normal planning practice.

A clearfell harvesting approach will be utilised where economics, access or soil conditions preclude Continuous Cover Forestry. Coupe design will seek to work with the landform and scale will vary with larger coupes on the upper slopes scaling to smaller coupes on the lower slopes. Building on the current age class diversity will be an objective.

The presumption is that no felling will take place until the neighbouring restock areas have reached 2 m, although delayed restocking may be an appropriate alternative. Adjacency issues are not a factor due to the past restructuring.

C.2.1 Felling
Clearfelling provides more flexibility for restructuring. Large coupes can be restructured with more diverse species and new internal windfirm boundaries to provide an enhanced landscape in the second rotation and more coupe options. Large clearfells also offers an enhanced area for deer control and the potential to establish deer sensitive species without fencing.

C.2.2 Thinning
Maps M9 Thinning and **M10 Felling Approval** show the proposed thinning areas over the next ten years. This covers ~139 Ha or ~ 18 % of the forest area. FLS 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. Thinning encompasses silvicultural thinning, tree management in recreational areas, tree management along the march and respacing/removal of undesirable regeneration. CCF areas have been designated for thinning, together with wider areas where crop features, soils, slope, access and drainage indicate that thinning has potential. The decision to thin these areas should be taken after a full site evaluation to consider wind blow risk on a microsite basis and to ensure that operations are economically and silviculturally desirable. Where soil conditions are variable or slope is a constraint then a matrix of thinned and unthinned areas is appropriate provided thinned areas can form viable connections to facilitate operations. Thinning will 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. Thinning can address issues such as the regeneration of conifers in NBL designated areas. Respacing allows early intervention, but thinning at a later stage to produce a commercial return can be effective as the expectation of ongoing regeneration may be lower in older stands.

C.2.3 LISS
Irregular shelterwood and selection systems are the most appropriate methods for the LMP area proposed for CCF. The success of natural regeneration across the LMP area suggests that CCF has good potential where access and site conditions are suitable.

C.2.3 LISS
There are two main applications for CCF within the LMP area. The first is a traditional silvicultural approach to produce a final timber crop with a following crop present at the time of clearfelling. The area of CCF proposed is 46 Ha or 6% of the LMP area. The second is a selection management approach that seeks to meet ecological or recreational objectives; this may not have timber production as a priority but may still produce timber. Respacing to remove undesirable species or create a more pleasant path environment may produce a product or be felled to waste. Clearly where this thinning activity can produce a useful product this may be desirable for economic and carbon considerations, however thinning to waste can also play a role in enhancing biodiversity by providing deadwood and enriching the soil carbon/nutrition. Traditional CCF aimed at producing a final timber crop is appropriate for the management of existing diverse conifer areas. There are also stands of mid rotation SS within Torrie which have CCF potential. The impacts of storms and the evolution of stands means that considerations relating to CCF suitability and approach need to adapt and be responsive to the dynamic environment. Natural regeneration is also an unpredictable process which can create both challenges and opportunities. Stand monitoring within CCF areas is essential.

C.2.4 Long Term Retentions (LTR) / Minimum Intervention (MI)
For various areas of the forests biodiversity will be the primary objective and we are prepared to commit such areas of land to Long Term Retention (LTR), minimum intervention (MI) management or leave as natural reserves (NR). This plan contains 8 long term retention coupe where thinning will be implemented with eventual removal of the overstorey long beyond the plan period. There are 3 minimum intervention coupes which have been chosen based on FLS Guidance on assessing and assigning MI's. There are no Natural reserves in the plan area.

C.2.5 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:

C.2.5 Other Tree Felling in Exceptional 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.

C.2.6 Restocking Proposals / Natural Regeneration
See **Map M11 Future Species and Habitats** and **M12 Restocking Approval** The LMP proposals build on the past UKFS compliant restructuring programme to create a multi-purpose forest. Timber production and carbon sequestration are important objectives and as a result reductions in productive areas have been avoided where possible, with open ground creation being targeted where it can deliver most benefits. ESC indicates that a wide range of species are potentially suitable for the site with climate, aspect soils and climate being benign. Climate change models suggest that the general trend will be towards a significantly warmer climate with higher winter rainfall and lower rainfall in the summer leading to a partial soil moisture deficit during the summer months. Increased rainfall and sudden heavy downpours may exacerbate the potential for slope instability in vulnerable areas, and future forest cover and species choice will take this into account. In terms of provenance recent research in relation to Birch provenance suggests that due to post glaciation warming then sourcing seed from around 200 miles to the south may be the best adaptive approach; and this may apply to other broadleaves and suggests an acceptance of the role of Beech as an element in UK deciduous forests is overdue. A number of other factors have been considered in addition to ESC data, and these include: • Current actual growth rates. • Economic value & physical volume production. • Landscape.

C.2.6 Restocking Proposals / Natural Regeneration

- Ecology and linkages.

The impact of tree diseases has guided species choice. Phytophthora ramorum in Larch; Dothistroma needle blight (DNB) & Ash Dieback have all had an impact on species choice and crop management across the UK. Within the LMP area Larch and Ash would have played a key role in both landscape and production, but these species are currently unavailable as restocking options. This situation should be reviewed at intervals in light of prevailing guidance.

Semi-Natural Woodland

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

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.

Productive conifers

The woodlands will continue to produce softwood timber for the saw log market, also providing for the pallet, small round 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

Table 3 – Felling

This shows the scale of felling within the felling phases in the context of the whole LMP. This includes any areas of 'LISS – Fell' (i.e. removal of final overstorey).

SCALE OF PROPOSED FELLING AREAS (including LISS final fell areas)												
Total LMP Area:		780	hectares									
Felling	Phase 1	%	Phase 2	%	Phase 3	%	Phase 4	%	Long Term Retention	%	Area out-with 20yr plan period	%
Area (Ha)	140.3	18	0	0	8.02	1	8.72	1.1	0	0	55.79	7.2

Table 4 – Thinning

This shows the area of thinning over the first 10 years of the LMP.

Species	Thinning (ha)
Sitka spruce	88.06
Other conifer	18.42
Larch	7.21
Norway spruce	4.39
Scots pine	4.39
Other broadleaves	13.71
Native broadleaves	2.15
Total	**138.89**

Table 5 – Restocking

This table provides information on the restocking proposals for the first 10 years of the LMP.

Felling Phase	Map Identifier(s)	Species to be planted	Area (ha) to be planted
1	25001	Native mixed broadleaves	58.86
1	84001	Downy birch	12.35
1	84001	Native mixed broadleaves	16.46
1	84003	Downy birch	0.51
1	84003	Native mixed broadleaves	0.68
1	84010	Norway spruce	2.43
1	84010	Douglas fir	1.82
1	84010	Western red cedar	1.82
1	84010	Other mixed broadleaves	0.64
1	84010	Mixed conifer	0.38
1	85002	Mixed conifer	1.82
1	85002	Other mixed broadleaves	2.71
1	85005	Other mixed broadleaves	1.93
1	85005	Mixed conifer	1.26
1	85108	Native mixed broadleaves	5.44
		Total Restocking Area	**109.11**

C.2.7 Hydrology
Callander and other areas surrounding the woodlands lie within the Stirling drainage area of which FLS land makes up ~14% of the catchment and the LMP area only 0.6%. Therefore the contribution to flood flows from the plan area could be considered relatively minor. However we were aware, and our consultation process has confirmed, that there is a perception among the community that local flooding issues below Coilhallan and Callander Crags are linked to these particular sites. As such we have commissioned a Hydrological survey of Coilhallan and Callander Crags which will include an assessment of the impact operations could have on neighbouring properties. The resulting survey report will inform what additional mitigation is necessary over and above our standard observance of UK Forest and Water Guidelines. We will also share the report with Stirling Council's Senior Flood Officer and Drainage Engineer and work with them on this issue. **Private Water Supplies** We have identified a handful of properties around Easter Gartchonzie, Callander Holiday Park, Torbeag, Torrie Cottage, West, East, Mid Torrie & Torrie House which potentially may abstract water from within the LMP area. These properties will be contacted in the near future to confirm if this is the case or whether they have private connections to nearby public water supplies. We would also be in touch with these properties about any private supplies as part of the work plan process in advance of any operations such as harvesting or peatland restoration.

C.2.8 Protection
See **Appendix 3 Deer Management Plan**

C.2.9 Fence erection / removal
N/A

C.2.10 Road Operations
See **Map M13 Timber Haulage** While the forest is generally well accessed, sections of new road will be required to fell some of the Phase 1 areas. At Milton discussions are underway with Moray Estate and the Woodland Trust to extract down the existing hydro road. Adjustments to the road line, gradients and bends may be required. Avoiding any adverse impacts on the existing hydro scheme, Scottish Water (SW) infrastructure and maintaining water quality in the drinking water catchment will be essential. At Coilhallan most of the timber can be extracted using the existing road network with possible temporary access restrictions being required to ensure safe working. The small block of windblown timber to the south is partially landlocked and is best moved to the south onto the Cambusmore road

C.2.10 Road Operations
network. Discussions are being undertaken with the Estate, additional road formation is unlikely to be required here. On the Callander Crags the Phase 1 felling on the west side of the woodland will require a road formation of ~301 m, but this can only be worked when a new access across the Leny Estate woodlands has been created. The coupe on the north east side of the wood will require a short internal section of new forwarder track of 374 m in length. At Torrie the road network is generally good but it is proposed to enter into discussion with Cambusmore to create a short spur (145 m) to connect with the Estates existing road network in order to extract the large Phase 1 Coupe lying on the south west side of the forest. New road connections may enhance recreational opportunities by creating circular routes. For any access we agree with our neighbours where new roading is required we will submit future EIA SOR's for these as well as PN's to LLTNP.

C.2.11 Public Access
Visitor Zones Management of the tree cover in the visitor zones is facilitated by the LMP enabling thinning to take place. CCF can also lead to a stable path environ not subject to abrupt changes such as clearfelling. The level of detail required for manging visitor zones is best considered using site specific small scale operational plans with the LMP providing context and enabling thinning activity to take place.

C.2.12 Historic Environment
The forest design illustrated in Maps **M11 - Future Species and Habitats** & **M12 Restocking Approval** 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.

C.2.12 Historic Environment
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.

C.2.13 Biodiversity
PAWS Restoration Much of the PAWS area is in the process of being restored. The proposed Larch clearfells in Coilhallan will accelerate this process. The removal of conifer regeneration within the areas undergoing restoration is recommended, although the timing of this operation needs to be considered. Where possible commercial thinning to remove the conifer element may be the best option. Thinning at circa 20 years into a rotation can help to ensure that all the conifer regeneration on site is present and controllable rather than having to repeat operations as new regeneration becomes established. Expanding and linking NBL cover around the PAWS areas is desirable to improve ecological linkages and increase resilience. PAWS areas at various stages of recovery occur in Milton and Coilhallan. In The Crags there are no PAWS areas with most of the area being Long Established of Plantation Origin (LEPO).

C.2.14 Tree Health
The felling this plan proposes will remove larch from the sites reducing the potential spread north and east (See Section C.2.1 and Table 3 above)

C.2.15 Invasive species
Invasive species will continue to be monitored and removed.

C.2.16 Wildfire
FLS's approach to wildfire management can be viewed here - -https://forestryandland.gov.scot/what-we-do/health-safety-wellbeing/wildfire-prevention

C.2.16 Wildfire
At these particular sites there is not a history of wildfires however the design of the forest has been informed by the following guidance • Forestry Commission (2014) Practice Guide 22: Building Wildfire Resilience into Forest Management Planning - https://forestry.gov.scot/component/edocman/99-building-wildfire-resilience-into-forest-management-planning/download?Itemid=0 • Information Note: Forest Planning to minimise wildfire risk in Scotland - https://forestry.gov.scot/component/edocman/1427-forest-planning-to-minimise-wildfire-risk-in-scotland/download?Itemid=0

C.2.17 Other:	Open Land
See Maps M3 Current Species & M11 Future Species and Habitats The main open land area within the LMP area is currently the agricultural grazing in Torrie. This will continue to be managed as agricultural land, but woodland creation or biodiversity management options will be kept under review. The success of natural regeneration across the site can create problems in relation to the maintenance of open ground. However in many cases diverse successional habitats can have a very high landscape and ecological value. The requirement to actively maintain open ground by interventions therefore depends on site specific circumstances. Powerline wayleaves, path routes and sight lines along timber haul routes will require the active removal of regeneration. In the peat restoration zones control of natural regeneration, particularly SS, will be required. Many of the areas already deforested in Torrie over peat will require the ongoing removal of SS regeneration.	

C.2.18 Other:	Community and Recreation
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). **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.	

C.3 Environmental Impact Assessment and Permitted Development Notifications

Please see Appendix 4 – EIA SOR for deforestation at Torrie. Future new access requirements will see additional EIA SOR's and PN's to LLTNP.

C.4 Tolerance Table

	Map Required (Y/N)	Adjustment to felling period*	Adjustment to felling coupe boundaries**	Timing of Restocking	Changes to Restocking species	Changes to road lines	Designed open ground ***	Windblow Clearance****
FC Approval normally not required	N	Fell date can be moved within 5 year period where separation or other constraints are met	Up to 10% of coupe area	Up to 2 planting seasons after felling	Change within species group e.g. evergreen conifers or broadleaves		Increase by up to 5% of coupe area	
Approval by exchange of email and map	Y		Up to 15% of coupe area	Between 2 and 5 planting seasons after felling subject to the wider forest and habitat structure not being significantly compromised		Additional felling of trees not agreed in plan Departures of more than 60m in either direction from centre line of road	Increase by up to 10% Any reduction in open ground within coupe area	Up to 5 ha
Approval by formal plan amendment may be required	Y	Felling delayed into second or later 5 year period Advance felling into current or 2nd 5 year period	More than 15% of coupe area	More than 5 planting seasons after felling subject to the wider forest and habitat structure not being significantly compromised	Change from specified native species Change between species group	As above, depending on sensitivity	More than 10% of coupe area Colonisation of open areas agreed as critical	More than 5 ha

Note

*Felling sequence must not compromise UKFS in particular felling coupe adjacency. Felling progress and impact will be reviewed against UKFS at 5 year review.

** No more than 1 ha, without consultation with Scottish Forestry, where the location is defined as 'sensitive' within the Forestry (Environmental Impact Assessment) (Scotland) Regulations 2017.

*** Tolerance subject to an overriding maximum of 20% designed open ground.

****Where windblow occurs, Scottish Forestry must be informed of extent prior to clearance and consulted on clearance of any standing trees.

D. Production Forecast

N/A – FLS provide this nationally to Forest Research as per agreement with Scottish Forestry.

Appendices

Item number	Title
1	Consultation Record
2	Visualisations
3	Deer Management Plan
4	EIA SOR

Maps

Item number	Title
M1	Location
M2	Soils
M3	Current species
M4	Planting Years
M5	Heritage
M6	Key Features
M7	Concept
M8	Management
M9	Thinning
M10	Felling Approval
M11	Future Species and Habitats
M12	Restocking Approval
M13	Timber Haulage