



Forestry and
Land Scotland
Coilltearachd agus
Fearann Alba

Dalmacallan

Land Management Plan 2021-2031 South Region V1.3

Plan Reference No:

Plan Approval Date: 27/07/2021

Plan Expiry Date: 27/08/2031

We manage Scotland's national forests and land 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



Property Details			
Property Name:	Dalmacallan		
Grid Reference (main forest entrance):	NX 796 876	Nearest town or locality:	Moniaive, Dumfries
Local Authority:	Dumfries and Galloway		

Applicant's Details			
Title:	Mr	Forename:	Tom
Surname:	Harvey		
Position:	Planning Forester		
Contact Number:	07990627644		
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Address:	Forestry and Land Scotland, Weavers Court, Forest Mill, Selkirk		
Postcode:	TD7 5NY		

Owner's Details (if different from Applicant)	
Name:	
Address:	

1. I apply for Land Management Plan approval for the property described above and in the enclosed Land Management Plan.
2. I apply for an opinion under the terms of the Forestry (Environmental Impact Assessment) (Scotland) Regulations 2017 for afforestation / deforestation / roads / quarries as detailed in my application.
3. I confirm that the scoping, carried out and documented in the Consultation Record attached, incorporated those stakeholders which the FC agreed must be included. Where it has not been possible to resolve specific issues associated with the plan to the satisfaction of the consultees, this is highlighted in the Consultation Record.
4. I confirm that the proposals contained in this plan comply with the UK Forestry Standard.
5. I undertake to obtain any permissions necessary for the implementation of the approved Plan.

Signed, Pp Regional Manager		Signed, Conservator	
FLS Region	South	SF Conservancy	South
Date	15/3/21	Date of Approval	27.07.2021
		Date Approval Ends	27.07.2031

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1.0 Objectives and Summary

1.1 Plan overview and objectives

Plan name	Dalmacallan
Forest blocks included	Dalmacallan
Size of plan area (ha)	703.4 ha
Location	See Location map (Map 1)

Long Term Vision
Dalmacallan generates a reliable, steady supply of timber products to meet market demands. Timely thinning operations help to increase the quality of these products. Dalmacallan has adapted and mitigated the impacts of climate change with the species composition having been steadily diversified. A range of natural habitats are connected through the area. Wildlife is protected and benefits from sustainable forest management. A viable population of red squirrels also live in the forest.
Management Objectives
1. Maintain a steady flow of quality timber production to compliment the regions timber outputs, whilst also mitigating and adapting to the effects of climate change with fast growing conifer species to sequester carbon and where appropriate diversifying forest crop species. 2. Expand and enhance environmental features and habitats within the site to better serve protected species and mitigate and adapt to a changing climate.
Critical Success Factors
• Broadleaves and soft conifers must be protected from damage, and beaten up where required, to ensure successful establishment. • Thinning interventions must be timely to maintain the sites productivity. • Stands of mature Norway spruce should be retained as a food source for red squirrels, with potential future stands identified for succession.

1.2 Summary of planned operations

Table 1

Summary of Operations over the Plan Period	
Clear felling	92.08 ha
Thinning (Potential areas)	255 ha
Restocking	43.7 ha
Afforestation	0 ha
Deforestation	0 ha
Forest roads	420 m
Forestry quarries (expansion)	1.1 ha

The forest is managed to the UK Woodland Assurance Standard – the standard endorsed in the UK by the *Forest Stewardship Council and the Programme for the Endorsement of Forest Certification*. Forestry and Land Scotland is independently audited to ensure that we are delivering sustainable forest management.

2.0 Analysis and Concept

The planning process was informed by collecting information about the woodland, which is presented in **Appendix I** and on the Key Features map (**Map 2**). During the development of this plan we have consulted with the local community and other key stakeholders, and a Consultation Record is presented in **Appendix III**.

Different management options for achieving the plan’s objectives were considered against the constraints and opportunities identified during scoping and consultation. The preferred approach is summarised on the Concept map (**Map 3**).

3.0 Management Proposals - regulatory requirements

This land management plan was produced in accordance with a range of government and industry standards and guidance as well as recent research outputs, recognised at the time of its production. A full list of the current standards and guidance which guide the preparation and delivery of FLS Land Management Plans can be found using the link [HERE](#).

3.1 Designations

The plan area forms part of, includes, or is covered by the following designations and significant features.

Table 2

Designations and significant features		
Feature type	Present	Note
Site of Special Scientific Interest (SSSI)	No	
National Nature Reserve (NNR)	No	
Special Protection Area (SPA)	No	
Special Area of Conservation (SAC)	No	
World Heritage Site (WHS)	No	
Scheduled Monument (SM)	No	
National Scenic Area (NSA)	No	
National Park (NP)	No	
Deep peat soil (>50 cm thickness)	Yes	See key features map, soils map and text within Appendix I – <i>Geology and soils</i> and 4.0 Management proposal text – <i>Deep peats</i>
Tree Preservation Order (TPO)	No	
Biosphere reserve	Yes	Within the 1023 Galloway and Southern Ayrshire Transition area
Local Landscape Area	Yes	See key features map and text within Appendix I – <i>Topography and Landscape</i>
Ancient woodland	Yes	See key features map and text within Appendix I – <i>Biodiversity</i>
Acid sensitive catchment	No	
Drinking Water Protected Area (Surface)	Yes	See key features map and text within Appendix I – <i>Hydrology</i>

The Key Features map (**Map 2**) shows the location of all designated areas and significant features. Any deep peats are indicated on the Soils map (**Map 9**).

3.2 Clear felling

Sites proposed for clear felling in the plan period are identified as Phase 1 and Phase 2 coupes on the Management map (**Map 4**).

Table 3

Clearfell Summary by Phase and Coupe Number			
Phase	Coupe Number	Fell Year	Gross Area (ha)
1	48018	21/22	39.31
2	48021	29/30	52.77

Total	92.08
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Table 4

Clearfell by Species													
		Net Area (ha) by Main Species >20% (or MC, MB)											
Coupe Number	Fell Year	C P	D F	E L	H L	JL	LP	NS	SP	SS	MC	MB	Coupe Total
48018	21/22									38.6			38.6
48021	29/30									49.56			49.56
Plan Area Total													88.16

NB Coupe totals: Table 3 shows gross coupe area / Table 4 shows net area of species

Table 5

Scale of Proposed Felling Areas											
Total Woodland Area				703.4		ha					
Felling	Phase 1	%	Phase 2	%	Phase 3	%	Phase 4	%	Long Term Retention		
Net Area (ha)	38.6	5.49	49.56	7.05	32.59	4.63	71.11	10.11	50.91	7.24	

3.3 Thinning

Potential sites for thinning in the plan period are identified on the Thinning map (**Map 5**).

This covers an area of 255 ha

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.

3.4 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 40 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].

3.5 Restocking

Proposed restocking is shown on the Future Habitats and Species map (**Map 6**).

Mixed broadleaf planting will consist of site suitable native species.

Table 6

Restocking							
Phase †	Coupe Number	Gross Area (ha)	Proposed Restock Year	Species	Method *	Minimum stocking Density (s/ha)	Note
F	48019	3.7	2022	NF/SS	R/NR	2500	30% SS natural regeneration tolerated within the NF areas
F	48081	4.79	2022	NF/SS	R/NR	2500	
F	48005	0.6	2022	NF/SS	R/NR	2500	
F	48024	2.32	2022	SP	R	2500	100% pure crop
F	48013	1.91	2022	SS	R	2500	
F	48791	2.04	2022	SP	R	2500	
1	48018	39.31	2023	SS NS	R	2500	Pure NS- 70% Pure SS- 30%
1	48809	16.35*	2023	SOK	R	*	*Enrichment planting around existing natural regeneration (Not included in total)

3	48021	52.77	2032	SS, SS LP	R	2500	Pure SS 90% SS LP 10% @ 50:50 mixture
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Total	107.44
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† recently felled awaiting restock (F) / Phase 1 (1) / Phase 2 (2)

* replant (R) / natural regeneration (NR) / plant alternative area (ALT) / no restocking (None)

If the Restock by natural regeneration should fail to reach 1600 per hectare (Native Broadleaves) or 2500 per hectare (productive Conifers) the site will be beaten-up to the required planting density. This will be assessed at year 3 and year 5 after felling with beat up by year 5.

3.6 Species diversity and age structure

The following tables show how the proposed management of the forest will help to maintain or establish a diverse species composition and age-class structure, as recommended in the UK Forestry Standard. The current woodland composition is shown on **Map 8**.

Stands adjoining felled areas will be retained until the restocking of the first coupe has reached a minimum height of 2m. Where this is not possible (e.g. due to windblow risk), the planned approach to achieving height separation between adjacent coupes is outlined in section 4.1 – Clearfelling.

Table 7

Plan area by Species						
Species	Current		Year 10		Year 20	
	Area (ha)	%	Area (ha)	%	Area (ha)	%
Sitka spruce	467.19	66.42%	395.9	56.28%	344.6	48.99%
Other conifers	72.71	10.34%	101.13	14.38%	96.1	13.66%
Native broadleaves	47.7	6.78%	46.8	6.65%	58.7	8.35%

Other broadleaves	2.3	0.33%	2.3	0.33%	1.7	0.24%
Open ground (incl. Fallow)	113.5	16.14%	157.27	22.36%	202.3	28.76%
Total	703.4	100	703.4	100	703.4	100

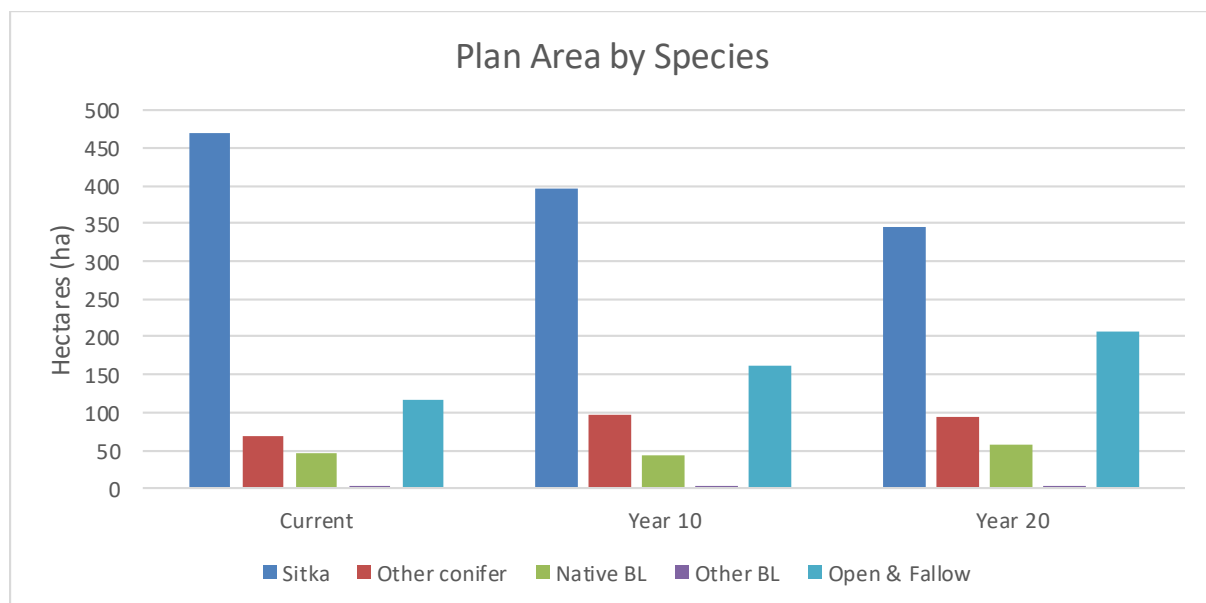


Figure 1- Plan area by species

Table 8

Plan area by Age						
Age class (years)	Current		Year 10		Year 20	
	Area (ha)	%	Area (ha)	%	Area (ha)	%
0 – 10	99.5	14.15%	32.9	4.68%	100.6	14.30%
11 – 20	100.7	14.32%	110	15.64%	31.9	4.54%
21 – 40	337.6	48.00%	344.2	48.93%	207.2	29.46%
41 – 60	35.2	5.00%	36.3	5.16%	143	20.33%
60+	16.9	2.40%	20.9	2.97%	18.4	2.62%
Open Ground (incl. Fallow)	133.5	16.14%	159.1	22.62%	202.3	28.76%
Total	703.4	100	703.4	100	703.4	100

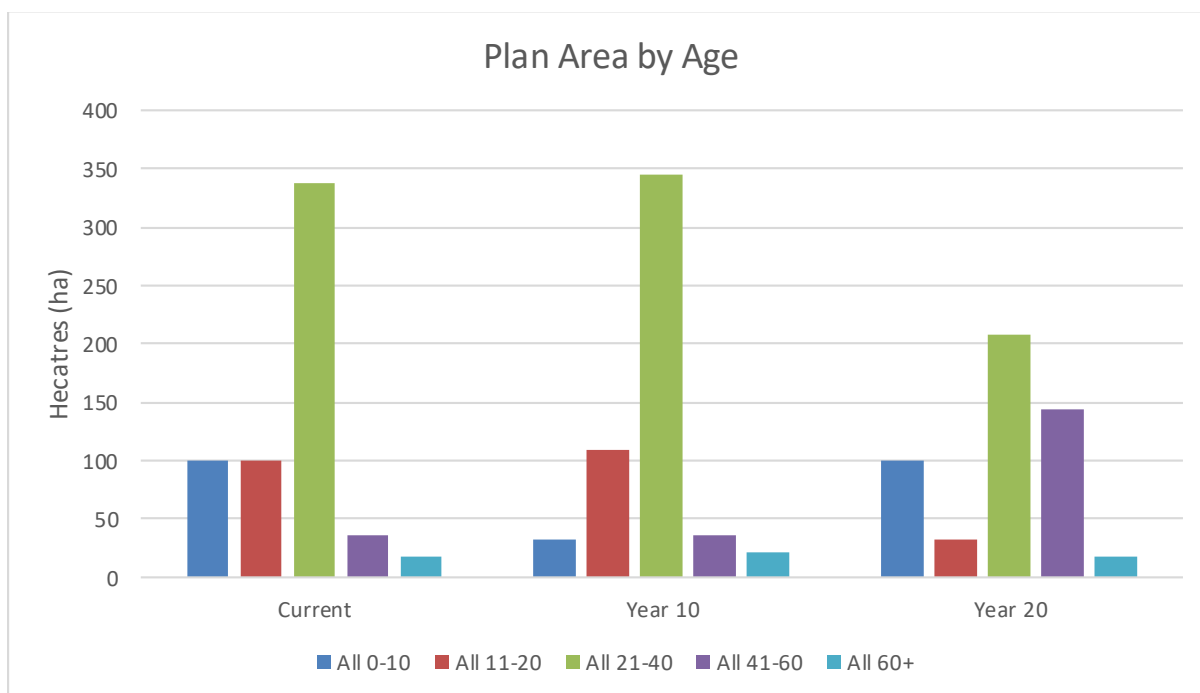


Figure 2, Plan area by age

3.7 Road Operations and Quarries

Planned new roads, road realignments, road upgrades, new quarrying, and timber haulage routes are shown on the Road Operations and Timber Haulage map (**Map 7**).

Table 9

Forest Road Upgrades, Realignments, New Roads and New Quarrying				
Phase	Name / Number	Length (m)	Year	Operation
1	Dalmacallan Hill Quarry NX 7907 8755		21/22	Quarry expansion of 1.12 ha to accommodate planned road and future road maintenance
1 2	D468	420 m	21/22	New road to service coupe 48021. Corridor felled in phase 1 alongside 48018, road built in Phase 2.

3.8 Environmental Impact Assessment (EIA)

Any operations requiring an EIA determination are shown in the table below. If required, the screening opinion request form is presented in **Appendix II**.

Table 10

EIA projects in the plan area		
Type of project	Yes / No	Note
Afforestation		
Deforestation	Yes	Please see attached EIAd request form
Forest roads	Yes	Please see attached EIAd request form
Forestry quarries	Yes	Please see attached EIAd request form

3.9 Tolerance table

Working tolerances agreed with Scottish Forestry are shown in **Appendix IV**.

4.0 Management Proposals – guidance and context

Table 10 – Management Proposals

Silviculture
1. Clearfelling
Clearfell and restock has been chosen as the appropriate management type where: Opportunities to convert to Continuous Cover Forestry (CCF) have been missed; CCF is not an appropriate option due to high winds or other climatic factors; and where it is the most efficient option and does not compromise the other objectives of the plan. Coupes for clearfelling during the plan period (refer to Map 4): 48018 (2021/2022) The coupe comprises primarily P1981 SS on the lower slopes of Girharrow Hill. A large scallop to the north-east is to be retained and felled in phase 4 to aid with internal landscape interlocking and species age class re-structuring. An historic farmstead and associated cists and cairns are located to the north and west of the coupe, 10 m machine

buffer zones will apply and the farmstead shall remain as open within the restocking. The remainder of the coupe will be restocked with SS and NS. Where watercourses are present through the coupe open successional areas will be applied as the preferred management type.

During the felling of this coupe a roadline corridor will also be felled through the southern coupe 48021 to accommodate a proposed road within phase 2 (see EIA determination request form attached to this LMP)

48021 (2029/2030)

A large coupe incorporating the summit of Girharrow Hill, this coupe has been expanded to achieve an appropriate landscaping coupe design which, moving through the later phases, will be consistent with Dalmacallan Hill and Skelston Hill. Managed open space will be allocated to the southern areas to reduce future seed source pressure on adjacent Upland Heath priority habitat types and open successional areas allocated to where water courses run through the coupe. The primary restock will be SS and where soils dictate a requirement for a nurse crop a 50:50 mixture of LP will be used.

Restocking coupe 48018 directly after felling will give 6 years gap between the adjacent clearfell site, 2 m height should be achieved at this point however, the height will be assessed of the 48018 crop before felling coupe 48021 with felling delayed if required.

To achieve the UK Forestry Standard of separation between adjacent crops, adjoining coupes should not be felled before the restocking of the first area has reached and average height of at least two metres. We expect this to be achieved in 5 years following planting.

Any unforeseen reduction in separation during the period of the plan will be formally agreed with Scottish Forestry as an amendment. Felling will be undertaken once trees in adjacent restocked coupes have reached 2 m height.

2. Thinning

A programme of thinning has recently taken place across the Dalmacallan block primarily allocated within the eastern and central coupes. Within these areas DAMS scores are generally moderate to low (≤ 16). Thinning interventions will be planned for all productive stands where site conditions allow, this is likely to be restricted on the exposed hill tops and western edges.

The approach to thinning will be influenced by each stand's species composition, structure and management objectives. Thinning regimes will be applied accordingly, and monitored through pre and post thinning basal area surveys. 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.

Thinning practice will contribute to the production of high quality timber products. It will also help to create a more 'open' woodland that will enhance the visitor experience.

Refer to **Map 5** which indicates the areas which may be thinned during the plan period.

3. LISS

No LISS is implemented within the lifespan of this plan. However, with maintained thinning regimes future LISS operations may potentially become more viable.

4. Long term retentions / minimum intervention / natural reserves

There are seven areas where Long Term Retention (LTR) is the chosen management type: **48809** has an increasingly diverse structure with felled areas naturally regenerating with native broadleaf around mature conifer, primarily Norway spruce. This structure is providing good raptor nesting potential, red squirrel habitat and a diverse and interesting landscape vista from the dominant viewpoint (viewpoint 3) outside of the forest block. A recent survey showed the felled areas had a stocking density of a little under 1600 stems per hectare of primarily successional species, it is the intention within the life span of this LMP to enrich these areas with sessile oak and remove the Sitka spruce seed sources within this LTR area.

48017, 48026, 48028 & 48032 contribute to the mixed conifer and broadleaf entrance through Jarbruck Wood and into the newly establishing main central block of Dalmacallan. These areas will remain under LTR providing habitat for raptors and red squirrel whilst also reducing operational impact on local residents.

48038 & 48048 will be retained past the crops MMAI and economic rotation and felled alongside coupe 48004 for operational efficiency.

The minimum intervention (MI) management coupes have been chosen as being the most suitable management for areas primarily where an already established broadleaf network exists such as throughout the Crawfordton Burn. Where low levels of disturbance will benefit soil, water quality and wildlife MI will be employed such as riparian areas and areas where water supplies are present.

Where non-natives seed in and are deemed inappropriate these will be removed when an adjacent clearfell coupe is being removed. The exception to this is **48033**; where it is proposed selected non-native conifer removal will be targeted within the lifespan of this LMP.

Referto **Map 4**.

5. Tree species choice

The objective of the plan is to develop a woodland with a diverse mix of tree species for timber products alongside environmental and internal amenity benefits.

Growing conditions are variable across the forest, with best conditions both in terms of soil nutrient and moisture status located alongside climatic factors such as exposure are found through the central northern and north-eastern areas. These are areas where diversification will be focused to adapt and mitigate the effects of climate change.

Through the lifespan of this plan the richness and evenness (Shannon Index) of tree species increases and dependency on a single species decreases (See table 10.1 below).

Table 10.1 Plan area tree species diversity

	Species richness	% of dominant species (planted)	Shannon Index score
Current (2021)	17	66%	0.9
Year 10 (2031)	18	56%	1.1
Year 20 (2041)	19	49%	1.2

Using Ecological Site Classification data (2020), species suitability has been assessed. All future restock species fall within either the suitable or very suitable category and where this is a replacement to Sitka spruce, the associated Yield Classes are either matching, increased or within a minimum of 75% of the previous crop.

All broadleaf planting will be native to the area and should complement and/or enrich existing naturally growing scrub and woodland to give the most ecological value.

The Restocking Strategy for Scotland's National Forest Estate 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.

6. Natural regeneration

There are some sites where Sitka spruce natural regeneration is occurring. These will be monitored and recorded in the FLS sub-compartment database. Where this is the desired species or an acceptable component to a species mix (such as with the noble and grand fir components), we will endeavour to use it to establish the required stocking density with an initial composition target of 70% fir - 30% spruce. If stocking density is too low it will be beaten up by year 5. If the natural regeneration is too dense it may be necessary to clear and restock. Where the natural regeneration is not the desired species or proposed land use (e.g. on managed open ground), it will be considered against the plan objectives and tolerance table and either accepted (with a plan amendment if necessary) or removed.

There should be a preference for natural regeneration of broadleaf areas (to maintain provenance and improve the chances of establishment) but where this is unlikely or has not been successful then these areas should be planted/beaten up to the required stocking density and site requirements.

If the Restock by natural regeneration should fail to reach 1600 per hectare (Native Broadleaves) or 2500 per hectare (productive Conifers) the site will be beaten-up to the required planting density. This will be assessed at year 3 and year 5 after felling with beat up by year 5.

It is expected that some of the riparian zones, designed open ground and broadleaf areas will fill in with natural regeneration of both conifers and broadleaves. This will be managed in such a way as to ensure that, where practicable, it does not significantly impose a negative impact upon the objectives of the plan or create a negative impact upon the watercourse in terms of shading and acidification. Should monitoring of natural regeneration reveal a necessity to change plan objectives during the plan period a formal amendment will be issued to Scottish Forestry.

7. New planting

N/A

8. Protection

Deer

There is a significant challenge to establishing broadleaves and soft conifers due to the impacts of deer, especially on the smaller/secluded SPHN felled sites. One of the critical success factors of the plan is to ensure young trees are protected from browsing damage.

The plan sits within the Upper Nithsdale Deer Management Unit (DMU). Roe deer are the prevalent species, but Red, Fallow and Sika have also been recorded.

The main objectives within the DMU are:

- To enable re-stocking to take place without the need for deer fencing and to achieve the appropriate stocking density at year five.
- To maintain a sustainable deer population.
- To monitor the Red population and limit their spread from the west.

An agreed target of maintaining deer populations at sustainable levels and maintain impact levels in accordance with regional policy of less than 10% on all commercial tree species. However, currently the three year average browsing impacts across this DMU are slightly above target objectives in the 11 – 20% range.

The population dynamics in this DMU have changed considerably between 2004 to 2020. In terms of Dalmacallan, the neighbouring private forest woodland creations may reduce deer numbers locally throughout the establishment period if effective deer management is implemented. However, as crops grow on this surrounding land and habitat reaches its optimal age for holding deer, by a combination of vegetation height, tree growth, cover and continued availability of food source within the boundaries of the establishing crop, deer populations will inevitably (often rapidly) grow.

Annual cull targets for roe deer will be set at 230 from 2020 to 2025 and will be revised after this point. However, should impact levels rise during this period; cull targets may be revised to reduce population levels below estimates. This figure has been chosen based on population modelling to ensure the objectives of the DMU are met.

A selection of areas for restocking with soft conifers and broadleaves are based primarily on site conditions, but also on ease of access for protection. Most sites are close to forest roads and are not hidden by older stands. All restock areas will be assessed at the work planning stage to determine deer management infrastructure requirements. For the enrichment planting of broadleaves this will also include the requirement for use of tubes and stakes.

Pests and Diseases

Larch will not be planted during the period of this plan due to the presence of *Phytophthora ramorum*. This position will be reviewed at the next revision of the plan. Restocking of larch felled areas will follow current best practice and policy on timing and species choice.

Dothistroma spp. has been recorded in the forest. Scots pine has been included in the future species mix, and is intended to be a productive crop alongside internal amenity value, inclusion within the future thinning programme will assist with minimising the risk from the disease. However, the sites to be planted with SP within the next 10 years are relatively small and easily accessible for monitoring.

Hymenoscyphus fraxineus is present within Dalmacallan, focused along the forest road within Jarbruck Wood. These are receiving on going monitoring.

Dendroctonus micans has also been suspected in the forest and reports have been submitted to Forest Research to determine if *Rhizophagus* release is required.

Hylobius abietis (weevil) damage has occurred with recent restocking. The use of the Hylobius Management Support System will help direct future decisions on the timing of restocking, the use of treated trees, and requirements for top up spraying.

Fire

FLS continues to work closely with the 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.

9. Road operations

Map 7 shows the existing forest road network, planned new roads, main egress points, and agreed Timber Transport Routes.

A new road (420 m) will be required to service coupe 48021. This will extend from the existing forest road network (Road #D468) and will provide future machine access and stacking space for the clearfell programmed in 29/30.

The roadline corridor will be felled alongside coupe 48018 and built within phase 2 of the plan. To maintain existing forest roads and provide material for the new road a quarry

extension will be required; an expansion approximately equivalent to a 140 m x 80 m rectangle or 1.12 ha. It is proposed this expansion would be carried out in phase 1.

The egress of the Dalmacallan forest road network falls onto a consultation timber transport route -C116N, it is also likely that haulage will use road number B729, another consultation route. Consultation with the Dumfries and Galloway council regarding use of these timber transport routes will be carried out before any haulage of timber has commenced.

Biodiversity

10. Designated sites

There are no designated sites for nature conservation.

11. Native woodland

The plan seeks to protect and enhance existing areas of native woodland. Future new planting of mixed broadleaf are strategically located where there will be maximum habitat connectivity, and where it will enhance the landscape and also where protection from deer will provide minimal limitations.

By the end of the 20 year plan period native woodland will make up 8.3% of Dalmacallan (currently 6.7%). This will be predominantly mixed broadleaf (site suited according to the appropriate National Vegetation Classification) alongside open space. Once established the broadleaf areas will be managed under minimum intervention. Monitoring will ensure that these areas are maintained in good condition.

The existing broadleaf/open space network running alongside the Crawfordton Burn will also be managed under minimum intervention.

12. Ancient Woodland/PAWS/LEPO

The ASNW/PAWS area located around Snabhead Wood (coupe **48809**) will be managed as under LTR (management described in section 4. Long term retentions / minimum intervention / natural reserves).

The LEPO area beyond this (comprising coupes **48022, 48025, 48037, 48030, 48206, 48333**) will be managed under a patch clear fell system with the existing program of thinning being maintained. The closer areas (**48025, 48037**) to Snabhead Wood will be restocked/retained to provide better connectivity to the composition within Snabhead Wood, both from a landscape viewpoint but also ecologically.

13. Protected and priority habitats and species

All forest management operations involve a planning process before work commences which includes checks for wildlife and important habitats. Work plans will be adjusted if necessary to avoid disturbance, and opportunities to further protect species or enhance habitats will be identified.

Red squirrel

Conservation of this species is within the scope of the objectives of this plan, but can only be successful if there is a reliable food supply. Of particular importance is Norway spruce, a tree species regularly utilised for feeding (and sometimes drey building). Maximum seed production

occur when trees are over 50 years old, and so an area of over 35 ha where trees over this age have been identified and retained in areas of LTR. These are distributed throughout the north and eastern side of the forest with future restocking aiming to increase the connectivity of this habitat. There will also be an increase in the proportion of Norway spruce over the next 20 years (2.2%>5.2%), with new restocking already identified as future LTR.

FLS has a single license to cover forest management activities that may affect red squirrels on the national forest estate (NFE). This is in accord with the Scottish Biodiversity Strategy's aim to resolve species management issues. All works within the Plan area will follow the assessment and mitigation actions set out as conditions of this license.

Raptors

Stands of LTR throughout the forest will offer nesting sites for raptors including goshawk, buzzard, and potentially golden eagle. Opportunities for further LTRs should be considered during the delivery of this plan.

Black grouse

There are historical records of black grouse from areas to the west of the site. As much of this side of the site is now connected by a woodland creation there is little practical requirement for a woodland edge habitat to accommodate black grouse, however a fringe of open successional and managed open land will be allocated to the western boundary to provide connectivity with the adjacent Girharrow woodland creation scheme.

Priority habitats

The priority habitats identified in the plan area (see Appendix I – Biodiversity) are all incorporated into networks of open ground or native woodland, ensuring protection and

improving ecological connectivity, managed as open or minimum intervention. Any non-native colonisation will be managed during felling operations; when a priority habitat is adjacent to a CF coupe, sizeable non-native regeneration will be removed along with the CF coupe. After felling operations, planting schemes will be designed around any priority habitats that are revealed. This includes species rich groundwater dependent terrestrial ecosystems (GWDTEs), which will also be protected during road building and any other forest operations using the current best practice.

14. Open ground- Managed and successional

Currently open ground contributes to 11% of the plan area, over the next twenty years this is expected to increase to 14%. This is primarily focussed alongside riparian areas integrated with pockets of native broadleaves and on Priority habitats. Where managed open is allocated there is an expectation that resources will be allocated to maintaining it as open. A combination of techniques will be used to maintain the open condition, including vegetation management and scrub removal.

Additionally over the next twenty years 3% of the plan area is identified as successional open, where natural regeneration will be tolerated. This is located within rides, upper margins and along riparian zones of side tributaries, where deer control will be very challenging. Monitoring of these areas will allow us to identify any significant changes, and Scottish Forestry will be notified if these require amendments to the plan.

Fallow clearfell sites will contribute to transitional open space throughout the forest.

15. Dead wood

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. Valuable deadwood and deadwood areas will be marked on contract maps. Where it is safe to do so, standing mature dead trees will be retained as these offer excellent potential for wildlife.

16. Invasive species

All works carried out will adhere to strict biosecurity following the guidelines laid out in the 'Forestry and Water Scotland - Know the Rules' booklet. Alongside this, should any Statutory Plant Health Notices be issued biosecurity protocols from internal and Scottish Forestry guidelines will be followed.

FLS will continue to support the control of grey squirrels being co-ordinated by Saving Scotland's Red Squirrels.

We will endeavour to control known patches of invasive non-native plants. Within Dalmacallan a small element of snowberry is present within Jarbruck Wood (<100 stems), which will be monitored.

Historic Environment

17. Designated sites

No designated scheduled historic sites are present within Dalmacallan.

18. Other features

A number of unscheduled, locally important archaeological features are scattered throughout the block consisting of primarily cairns and farmstead infrastructure. The workplan process will highlight these features before operation commencement and appropriate machine buffers will be marked out and allocated during operations. The farmstead located within coupe **48018** will be managed as open ground to further maintain the feature.

We will continue to work with HES, the D&G Council archaeologist, and the local community to protect, monitor, record and promote the local historic environment within the plan area.

Refer to **Map 2** which shows all heritage features and **Appendix V** details all features in text.

Landscape

19. Landscape considerations

The main landscape considerations within the lifespan of this plan relate to the Girharrow Hill coupe (**48021**) where this will be treated as a larger coupe to be more in-keeping with the local landform. Throughout the next twenty years this theme will be continued across Skelston Hill, and further into the lifespan of the forest, both Bogrie and Dalmacallan Hill will be treated as single units to benefit the landscape.

Within the latter stages of the twenty years coupe **48025** is proposed to be felled and restocked with species designed to blend in and interlock with the lower slopes of the LTR coupe **48809**.

Refer to **Map 2** which shows all landscape designations and **Appendix I – Topography and Landscape** details all features in text.

People

20. Neighbours and local community

Due to local and national restrictions a face-to-face consultation was not viable therefore a press release along with letter drops to local residents and signage was used to reach the local community to gather thoughts and comments on draft proposals. This was captured via emailed correspondence and an online consultation survey which ran for approximately 2 months.

Some of the local residents and neighbours have taken an active interest in the development of the plan and their aspirations have been incorporated where they do not conflict with the objectives of the plan and are consistent with FLS's approach to land management.

See **Appendix III – Consultation Record** for both statutory and non-statutory feedback and FLS response to these. **Map 2** indicates neighbours and residents who were contacted via letter drop.

21. 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 have to manage their land and water responsibly in relation to access rights and FLS will only restrict public access where it is absolutely necessary, and will keep disruption to a minimum.

A core path runs through Dalmacallan from the eastern banks of Skelston Hill and then follows the forest road to the central main drive of Jarbruck Wood. Internal viewpoints along this route towards the northern end will be retained and improved with further species diversity adding arboreal interest.

Refer to **Map 2** for core path location.

Soils
22. Ground preparation The choice of ground cultivation will consider the short term benefits for establishment, as well as the longer term side effects on tree stability, future forest operations and the environment. There will be a preference for the least intensive technique.
23. Deep peats FLS is preparing a Peatland Restoration Strategy which will be published in April 2022. (incorporating the 'FES Lowland Raised Bog and Intermediate Bog Strategy', 2013). In the interim, we will take a precautionary approach via the principles laid out in the FCS practice guide 'Deciding future management options for afforested deep peatland', in particular where there is a 'presumption to restore'. Sites for which there is a 'Presumption to restore' are defined as: • Habitats designated as qualifying features in the UK Biodiversity Action Plan, or on Natura sites, Ramsar sites, Sites of Special Scientific Interest (SSSI) or National Nature Reserves (NNRs); • Sites or parts of sites where restocking is likely to adversely affect the functional connectivity (hydrology) of an adjacent Annex 1 peatland habitat (as defined in the EU habitats Directive) or a habitat associated with one; • Sites where deforestation would prevent the significant net release of greenhouse gases Some peat types (8a, 8d, 9a, 10a, 10b, 14, 14h, 14w) are classed as 'Scenario A' soils: edaphically unsuited to woodland. Additionally, 10a and 10b peat types are associated with raised bog habitats. Lowland raised bog and blanket bog are UK BAP priority habitats and therefore a presumption to restore. In the LMP process, by default we will not commercially restock areas where Scenario A peat types dominate, and will include such areas for further assessment for either peatland restoration, or manage as native broadleaf or peatland edge woodland (PEW). After areas for which there is a presumption to restore are identified, the remaining afforested peatlands will be investigated, looking for evidence to support replanting, as per the FCS Practice Guide. If evidence is found that they will clearly support good growth of Yield Class 8 or more, then they will be restocked. If no evidence is found, they will

either be restored, if this is considered to be achievable, or if not, e.g. on slopes of greater than 5%, have a low density native woodland established (PEW).

Refer to **Map 9** for soils distribution and text description within **Appendix I – Geology and Soils**.

Map 2 highlights the 10b soil types within the plan area.

Water

24. Drinking water

All private drinking water supply points (and pipes) are recorded as a layer in our Forester Web GIS (included in **Map 2**). This is consulted during the work plan process for all forest operations to ensure their protection. Affected neighbours will be consulted prior to any works commencing. Features will be clearly marked on all contract maps, as well as on the ground. The design of the future forest has incorporated an open space or broadleaf buffer of at least 50m around these supply points to minimise future disturbance.

25. Watercourse condition

All forestry operations will meet the requirements of the UKFS Guidelines on Forests and Water.

The main water courses running through the site (Jarbruck Burn and Crawfordton Burn) will be buffered with broadleaf and open space and the associated tributaries to these are either buffered with the same, open ground or open successional ground.

26. Flooding

There are no specific flood prevention considerations within the plan area at this time. The scale and timing of felling in the forest, along with an increasingly diverse age structure is likely to have a beneficial impact on downstream flood risk and may contribute to flood alleviation.

Dumfries is a location vulnerable to flooding downstream. Normal Forests and Water guidelines measures including slowing the flow and the evapotranspiration benefit of trees will provide some mitigation for flooding, but given the very large size of the catchment compared to the size of Dalmacallan forest the mitigation will be limited. Of course the effect of all the forests in a very large catchment have a cumulative positive effect.

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Appendix I: Description of Woodlands

Table 11, Description of Woodlands

Topography and Landscape	Dalmacallan, located in Dumfries and Galloway, is situated approximately 3 km south-east of the small village of Moniaive and lies between three privately owned forestry plantations; Girharrow woodland creation to the west, Torrwood woodland creation to the East and Bogrie forest to the South. Dalmacallan lies predominantly within a northerly aspect overlooking the approach road to Moniaive. The site, at its highest point, rises to 432 m (a.s.l.) this incorporates the northern slopes of Bogrie Hill, Girharrow Hill slopes (appx 365 m), Skelston Hill slopes (336 m) and the entirety of Dalmacallan Hill (319 m). Collectively these form the southern features of the site that incorporate a large scale, simple, rounded character to the landform. The more northerly and especially the north-east of site lies lower (250 – 150 m) and has a smaller scale, intimate and enclosed setting within the landform. The lower western and central aspects to the site are for the most part screened from view with Poundland Hill and Castlehill dominating within the foreground. The entrance including Jarbruck Wood and the eastern PAWS; Snabhead Wood, are both unscreened but display a diverse mix of species and varied canopy structure complimenting the surrounding landscape. The wider local landscape is made up of rolling hills and smooth slopes predominantly managed as pasture with corridors of broadleaf along riparian areas and roadsides, fragmented pockets of broadleaf woodland exist on lower slopes with productive coniferous forestry above on higher elevations. The site falls within two Nature Scot Landscape Character Types (LCT); LCT 161 – Pastoral Valley with key characteristics of medium scale, diverse landscape and extensive pattern of broadleaf woodland separating pastures.
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	LCT 175 – Foothills with key characteristics of undulating rounded peaks, semi improved pasture, rough pasture and heath on higher ground and trees in sheltered pockets with copses on top of hills. The north eastern corner containing Snabhead Wood lies within the local Special Landscape Area; Thornhill uplands, along with Regional Scenic Area classification. Opposite Dalmacallan across the Cairn Water Maxwellton is designated as a Gardens and Designed Landscape with significant architectural features, parkland, woodland and gardens. These along with other land based designations are detailed on Map 2 The key viewpoints of the forest can be seen on Map 1 and digital visualizations can be seen in Appendix VI.
Geology and Soils	The site is primarily represented by the lithology of Silurian Greywacke sandstone/siltstone/mudstone, typical for the area. There exists minimal to no till deposits within the site boundary mainly due to the topography. The parent material has a strong influence over the mineralogical content of the above soils and to some degree the texture, stoniness and permeability. With Greywacke it is typical for soils to be fairly fertile, be consistent with a stony loam or sandy loam and often weakly indurated. Podzols are considered rare on this bedrock. The predominant primary soil types comprises; Typical peaty surface water gleys [6] at 32.4% primarily located in association with the slopes of Skelston Hill, Dalmacallan Hill and Bogrie Hill. Typical surface water gley [7] at 21.9% primarily confined to the east and Typical brown earth [1] at 19.2% primarily located centrally and north within the block. The remaining soil types present are all <5% with the exception of some shallow peaty rankers [13p] present to the west on the northerly slopes of Girharrow Hill which comprise 7.4% of the site. Although a minor compositional element to the site, (2.6%) there are fragmented raised upland bog [10b] components that are currently growing productive conifer, these are categorised as Scenario A

	peatland types and are edaphically unsuited for future productive restocking. Across the site Soil Moisture Regimes (SMR) vary from very wet to slightly dry and Soil Nutrient Regime (SNR) values vary from very poor to rich. See Map 9 for soils distribution.
Climate	The site has a warm, moderately exposed and moist climate. The climate station based at Glenlee- 20 km from Dalmacallan, records the summer and winter temperature and precipitation averages as 12 °C & 102.5 mm and 5.1 °C and 184.2 mm respectively. The ecological Site Classification gives the accumulated temperature (day degrees above 5 °C) ranging from 1025 - 1290 (cool – warm) and a moisture deficit range of 50 – 100 (wet - moist). Based on data from the UK climate projections (2019) by the 2070s Scotland is likely to have warmer drier summers with warmer wetter winters (data summarized from the 10th-90th percentile range for the 2060-2079 period relative to 1981-2000).
Hydrology	Map 2 shows all water courses. There are 6 water supply points within the plan area which are all, according to our records, active. The Drinking water Quality Regulator has been contacted (29.10.20) but with no response to date. The forest sits in the Solway Tweed River Basin District and forms a part of the Cluden Water/Cairn Water water body catchment. Three streams flow through the site south-north; Jarbruck Burn to the west; Crawfordton Burn to the east and an unnamed burn sourced from Dalmacallan Hill running centrally. All of these feed into the Cairn Water. At this point the Cairn Water is classified as being poor in its overall status linked to hydro-morphology and morphology.

	Dalmacallan is upstream of Dumfries, an area prone to flooding and as such all operations within Dalmacallan will adhere to the UKFS principles of slowing the flow with appropriate water management including separation of drains to watercourses.
Windthrow	Map 10 illustrates the DAMS measurements for the forest. The greatest exposure is on top of Bogrie Hill, Girharrow Hill, Skelston Hill and Dalmacallan Hill where DAMS ranges from 18 - 20. The lowest score is 11 in the more sheltered eastern areas with 16 being the average throughout the site.
Adjacent land use	Two private woodland creation sites march on the Eastern and Western boundary. To the east Torr Wood (approved 2018) and to the west Girharrow (approved 2017), both primarily comprise of Sitka spruce with the latter being planted in two phases. Another woodland creation site; Ell Rennie Sheep and Trees is located close to the north western corner of Dalmacallan and is also primarily comprised of Sitka spruce. The south marches with Bogrie Forest; a privately managed plantation. The remainder of the surrounding land is mixed grades of improved pasture It is not anticipated that any adjacent land use will impact upon or be impacted by the operations detailed within this LMP.
Public access	Two houses are occupied within the forest block both receive a private water supply from within the Forest. Dalmacallan receives little recreational activity, likely due to the long access road from the main Jarbruck entrance. The primary public users of the site are the local residents. All of the existing forest road network runs off a central spine road with dead end secondary roads which makes recreational development unsuitable. A core path runs from Bogrie, through the neighboring southern plantation and ends 1 km short of the forest entrance at Jarbruck.

	The core path can be seen on Map 2 .
Historic environment	A number of archaeological features are present within and along the march of Dalmacallan. These consist of cairns, burnt mounds, farmsteads, walls, cists, hut circles and a commemorative monument. All these features are undesignated however, where regional importance is noted a 10 m impact buffer has been established. Historic environment records can be seen in Appendix V and all heritage buffers can be seen in Map 2.
Biodiversity	Few biodiversity sightings have been recorded within Dalmacallan however a number of important species are resident and recorded including Red Squirrel, Badger, Tawny owl, Barn owl and Buzzard. There are a number of barn owl boxes located within the site and these are suspected active. Dalmacallan lies within the Nith Valley Priority Areas for Red Squirrel. The area of Snabhead Wood to the north east is a designated Plantation on Ancient Woodland Site (PAWS) and the area to the south of this (predominantly coupes 48025 and 48022) are designated Long Established Of Plantation origin (LEPO). Priority UKBAP habitats are scarce within the site however there does exist small fragments of Blanket Bog, Fen Marsh & Swamp, Upland Birch, Upland Heathland and Wet Woodland.
Invasive species	Non-native conifer and broadleaf feature within the Snabhead Wood PAWS area. Snowberry has been recorded within the northern area of Jarbruck Wood.
Woodland composition	There is a moderate diversity of tree species, with a forested area Shannon Index score of 0.9. This comprises 66.4% of Sitka spruce, open

	space is at 11.2%, alternative conifer comprises 10.3% and broadleaf is currently 7.1%. A 5% fallow landbank is also present. Average yield classes throughout the site are generally quite productive. See table 11.1 below. Table 11.1, Yield class distribution <table border="1"> <thead> <tr> <th>Species</th><th>Average yield class</th></tr> </thead> <tbody> <tr> <td>Sitka spruce</td><td>19</td></tr> <tr> <td>Norway spruce</td><td>16</td></tr> <tr> <td>Larch spp.</td><td>10</td></tr> <tr> <td>Grand fir</td><td>16</td></tr> <tr> <td>Douglas fir</td><td>17</td></tr> <tr> <td>Scots pine</td><td>9</td></tr> </tbody> </table> Age class distribution across the site is largely un-even aged however there is weighting toward trees planted in the late 1990's. See section 3.6 for Dalmacallan's current species and age composition and structure in tables and figures along with the proposed changes with the implementation of this plan. The current species composition and distribution is also illustrated on Map 8.	Species	Average yield class	Sitka spruce	19	Norway spruce	16	Larch spp.	10	Grand fir	16	Douglas fir	17	Scots pine	9
Species	Average yield class														
Sitka spruce	19														
Norway spruce	16														
Larch spp.	10														
Grand fir	16														
Douglas fir	17														
Scots pine	9														
Plant health	The forest is within the <i>Phytophthora ramorum</i> 'management zone' and is therefore exempt from Plant Health notices, although the majority of larch has been pre-emptively removed with a few small pockets remaining (1.16 ha in total). Ash dieback (<i>Hymenoscyphus faxineus</i>) has been monitored within Dalmacallan and is prevalent within the Jarbruck woodland areas to the north. Suspect evidence of great spruce bark beetle (<i>Dendroctonus micans</i>) has been recorded in the area but as yet has not officially been confirmed. If														

	these reports are confirmed, release of <i>Rhizophagus grandis</i> will be assessed and co-ordinated alongside Forest Research.
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Appendix II: EIA screening opinion request form

See overleaf

Appendix III: Consultation record

Consultee	Date contacted	Date of response	Issues raised	FLS response
Nature.Scot Area Officer	17.11.20	18.11.20	No issue	-
Dumfries and Galloway Council Countryside Access Officer	17.11.20	20.11.20	No issue	-
Dumfries and Galloway Council Archaeologist	17.11.20	24.11.20	House of Joseph Cairn not represented on map.	This feature is illustrated on the key features map.
Scottish Forestry Woodland Officer	17.11.20	15.12.20	No comment at this time	-
SEPA Forestry Sector Lead Officer	17.11.20	01.12.20	All work carried out adheres to the Forest and Water Guidelines 5th edition. Minimise ground disturbance during restocking.	Forest and Water Guidelines will be strictly adhered to throughout. The least impactful ground preparation technique will be used following harvesting. This will be informed by site walk overs and captured within the work plan process.

			Biosecurity is carried out on machinery and equipment arriving to site. Appropriate disposal of forest waster such as tree guards. Pollution of watercourses. PWS are marked on maps and mitigated.	Biosecurity will be adhered as per the Forestry and Water Scotland – Know the Rules booklet. Where tree guards are appropriate these will be maintained and when necessary removed and disposed of sustainably. Forest and Water Guidelines will be strictly adhered to throughout.
Galloway Fishery Trust	17.11.20	22.12.20	Outwith GFT consultation areas	-
Glencairn Community Council and members of public via the online scoping survey	17.11.20	Survey closed 11.01.2021	Welcome proposals to introduce species diversification, particularly native broadleaf plantings, natural regeneration opportunities, and potential areas of bog restoration. We note the potential benefit to local wildlife, particularly our red squirrel	-

			population, which is under increasing pressure from ingress of grey squirrels. We also note that these proposals will lessen the current visual impact of areas of single-species planting. Diversify the environments and species within [the plan area] creating more varied habitats for flora and fauna. Care taken in the area of water supplies and ii) that the area to the E, S and W immediately around [property names] is kept clear giving access to light.	
RSPB Conservation Officer - Scottish Lowlands and Southern Uplands	17.11.2020	15.01.2021	Having looked at the neighbouring schemes, we would suggest that consideration is given to planting some low-density native broadleaved trees along the northern boundary of the LMP, particularly around the area that have been highlighted for bog restoration in the north-west of the site	Retention of northern broadleaves along with increase in broadleaves within the north west already a feature to the proposed plan

Dumfries and Galloway Council Project Development Team Economy and Development	17.11.2020	05.02.2021	It should be noted that the north east of the block (Snabhead Wood/Fox Plantation) is located within the Thornhill Uplands Regional Scenic Area. Core Path 43 Bogrie to Jarbuck passes through Dalnacallan forest and consideration should be given to provide a welcoming and attractive environment for path users so that the experience of walking in the forest is enhanced. Welcome proposed actions: Increase use of natural regeneration in restocking where the site allows	This will be added into the plan text. Species diversity along the walking trail will assist with this. All other comments support existing plan proposals.
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			Incorporate alternative tree species to diversify the block and assist resilience Enhance PAWS and LEPO habitats with enrichment of native species and removal of undesirable non-native species Manage priority habitats appropriately and where suitable consider non re-stock and restoration of peatland habitats Manage coupes at the landscape level and redesign where appropriate to be sensitive and in keeping with the local topography	
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			Consult and engage the local community and stakeholders in the consultation process and explore added value options, including opportunities for community woodland schemes.	
Comments via online survey	17.11.2020	17.11.20	Community engagement via face to face events.	Due to local and national restrictions a face-to-face consultation was not viable therefore a press release along with letter drops to local residents and signage was used to reach the local community to gather thoughts and comments on draft proposals. This was captured via emailed correspondence and an online consultation survey which ran for approximately 2 months.

	17.11.2020	30.11.20	Increase in diversity of environments within the block. Care of water supplies Open space maintained around internal properties	Diversity of land use is set to be increased detailed as per section 3.6. See section 4 Management guidance sub section 24 drinking water. Open successional and open space and broadleaves are allocated around internal resident boundaries.
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Appendix IV: Tolerance table

	Maps 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 3 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 letters and map	Y	Advance felling of Phase 2 coupe into Phase 1	Up to 15% of coupe area	Between 3 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 > 60m in either direction from centre line of road	- Increase by up to 10% of coupe area - Any reduction in open space of coupe area by planting.	Up to 5ha
Approval by formal plan amendment may be required	Y	- Felling delayed into second or later 5 year period. - Advance felling (phase 3 or beyond) 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.	- In excess of 10% of coupe area. - Colonisation of open space agreed as critical.	More than 5ha.

NOTES:

* Felling sequence must not compromise UKFS, in particular felling coupe adjacency

** No more than 1ha, without consultation with FCS, where the location is defined as 'sensitive' within the Environmental Impact Assessment (Forestry) 1999 Regulations (EIA)

*** Tolerance subject to an overriding maximum 20% open space

**** Where windblow occurs FCS should be informed of extent prior to clearance and consulted on where clearance of any standing trees is required

Table of Working Tolerances Specific to Larch

	Adjustment to felling period	Adjustment to felling coupe boundaries	Timing of restocking	Changes to species	Changes to road lines
FC Approval not normally required	Fell date for all larch can be moved and also directly associated other species	Larch areas can be treated as approved coupes. Other conifers directly associated with larch being felled, may also be removed up to an equivalent of 20% of the area occupied by the larch or 5 ha, whichever is greater	To be undertaken within the overall plan approval period.	Replacement as per the agreed restock plan, but where this is not specified or is larch this may be replaced with either another diverse conifer (not SS) or Broadleaves.	
Approval normally by exchange of letters and map. In some circumstances Approval by formal plan amendment may be required		Removal of areas of other species in excess of the limits identified above.	Restocking proposals outwith the plan approval period.	Restocking proposals for other species which do not meet the tolerances identified above.	New road lines or tracks directly necessary to allow the extraction of larch material.

Appendix V: Historic Environment records

Name	Designation	Feature Description	Site Description	Grid Reference	Impact Zone (m)	Importance
SKELSTON BURN	Undesignated	BURNT MOUND	This oval burnt mound is overlain by a drystone wall. It measures 5.2m from NE to SW by 3.8m transversely and 0.4m in height, with a small indentation on the SE.	NX814871	10	Regional Importance
CASTLEHILL	Undesignated	BURNT MOUND	Two burnt mounds. The N one is C-shaped and measures 6m from WNW to ESE by 5m transversely and 0.3m in height, opening out on the SSW. The S mound is 5m in diameter and 0.3m in height with what may be a hollow on the E.	NX810885	10	Regional Importance
HOUSE OF JOSEPH	Undesignated	WALL; CAIRN	A cairn and stone walls.	NX802871	10	Regional Importance
GIRHARROW	Undesignated	CAIRN(S) (POSSIBLE)	Four cairns 9ft in diameter, lie 200 yards W of Girharrow farm. They could not be located in 1977.	NX782879		Uncategorised
JARBRUCK (Outside plan area)	Undesignated	COMMEMORATIVE MONUMENT	The Previous Forest Design Plan records a monument to writers (four poets?) at NX 802 894.	NX802894		Uncategorised
DALMACALLAN	Undesignated	BUILDING	One unroofed building is depicted on the 1st edition of the OS 6-inch map (Dumfriesshire 1860, sheet xxxix).	NX799883	10	Regional Importance

GIRHARROW BURN	Undesignated	CAIRNFIELD	A group of about 25 small cairns averaging 4.5m in diameter and standing to a maximum height of 1.3m.	NX779876	10	Regional Importance
GIRHARROW	Undesignated	CIST	A cist was found at Girharrow (NX 783 879) about 1854, probably at a site formerly occupied by a cairn.	NX784879		Uncategorised
GIRHARROW	Undesignated	FARMSTEAD; FIELD SYSTEM	Former farmstead, shown as in use on Ordnance Survey maps from 1860 up to the mid-20th century, with associated small enclosures and four enclosed small fields.	NX783879	10	Regional Importance
GIRHARROW	Undesignated	CAIRN(S)	Two groups of cairns. The SE group of four irregularly shaped clearance cairns the largest of which is 7.0m by 2.0m. The NW group comprises three small clearance cairns 3.0m in diameter and up to 0.6m high.	NX785880	10	Regional Importance
GIRHARROW	Undesignated	CAIRN(S) (POSSIBLE)	A group of about twelve cairns, from 12 to 14ft in diameter, lie in a sheltering hollow some 800ft OD, about 1/4 mile E of Girharrow. They could not be located in 1977.	NX787879		Uncategorised
DALMACALLAN	Undesignated	FARMSTEAD	A farmstead comprising one unroofed T-shaped building, one roofed long building and five enclosures is depicted on the 1st edition of the OS 6-inch map (Dumfriesshire 1860, sheet xxxix).	NX797881	10	Regional Importance
SKELSTON BURN	Undesignated	BURNT MOUND(S)	Three burnt mounds. The W mound 9.8m from 9.8m from NE to SW by 8.3m and 1m high, opening out on the NW. The middle mound is 11.4m from E to W by 4.3m and 0.8m in high, opening to N. The E mound comprises two low mounds 9m by 5.2m overall.	NX811870	10	Regional Importance

CRAWFORDTON MOSS	Undesignated	BUILDING	One unroofed building is depicted on the 1st edition of the OS 6-inch map (Dumfriesshire 1860, sheet xxxix).	NX807873	10	Regional Importance
SKELSTON BURN	Undesignated	HUT CIRCLE(S)	Two hut circles. The NE one measures 8.8m in diameter within a stony bank spread to 3m in thickness and 0.4m in height. Entrance in SSE. The SW hut is no more than a slight platform 7m in diameter.	NX812871	10	Regional Importance
CLEUGHSIDE	Undesignated	CAIRN	Within a 100m square is a cairn which measures 13m in diameter and 1.5m in height and has been supplemented by clearance.	NX814884		Uncategorised
SKELSTON BURN	Undesignated	BURNT MOUND	A kidney-shaped burnt mound measures 8.4m from NE to SW by 3.2m transversely and 0.2m in height, opening out on the NW.	NX815873	10	Regional Importance

Appendix VI – 3D Visualisations

See overleaf