



Finlas

Land Management Plan

2024-2034

South Region

Plan Reference No:

Plan Approval Date: 23/02/2024

Plan Expiry Date: 23/02/2034

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



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1.0 Objectives and Summary

1.1 Plan overview and objectives

Plan name	Finlas
Forest blocks included	Finlas
Size of plan area (ha)	900.31 ha
Location	NX 4829 9848 See Location map (Map 1)

Long Term Vision
<p>Carefully managed silvicultural interventions will sustain a healthy and productive coniferous woodland, and increased species diversity and age class will provide a range of ecosystem services including timber supply, greater habitat diversity, increased biodiversity and improved water quality. The woodlands and open hillsides will continue to support and provide habitat for nationally important species such as Black Grouse and Red Squirrel.</p> <p>Broadleaf riparian zones will create important buffers to protect water quality of the Loch Finlas public water supply, the Garpel Burn and the Loch Doon SSSI.</p> <p>The forest block will continue to offer access to local communities and visitors through informal walking and cycling trails and forest roads, and the core path on the eastern edge of the block. Silvicultural management will enhance the experience of time spent in the forest and associated wellbeing benefits.</p>
Management Objectives
<ol style="list-style-type: none">1. Management of plantation area within Loch Finlas catchment to protect water quality of the public water supply. Enhance riparian and aquatic zones by restocking with native broadleaves and increasing open space.2. Maintain sustainable coniferous timber production.3. Enhance structural diversity of the woodlands and manage open hillside habitats, to benefit biodiversity and priority species (Black Grouse and Red Squirrels).4. Enhance visitor experience in the vicinity of recreation routes by increasing age and species diversity.

Critical Success Factors
<ul style="list-style-type: none"> • Water quality will be protected through adherence to forestry guidance regarding catchments sensitive to acidification and the UK forestry standard. • Continued coniferous timber supply. • Protection of soft conifers and broadleaves from damage to ensure successful establishment. • Riparian zones, broadleaf areas and open areas are monitored and managed with regard to natural regeneration of non-native conifer species.

1.2 Summary of planned operations

Table 1

Summary of Operations over the Plan Period	
Clear felling (gross)	44.5 ha
Thinning (potential area)	41.9 ha
Restocking (gross)	44.5 ha
Afforestation	0 ha
Deforestation	0 ha
Forest roads	0 m
Forestry quarries	0 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**.

Below lists the objectives for the site and how the key features present opportunity or constraint. The Analysis of these form the concept for this Land Management Plan.

Objective 1: Management of plantation area within Loch Finlas catchment to protect water quality of the public water supply. Enhance riparian and aquatic zones by restocking with native broadleaves and open space.

- Opportunities:
 - Broadleaf colonisation along riparian corridors would help protect water quality and reduce water run-off, provide habitat for wildlife and enhance aesthetics of the block
 - Key productive area is in centre of the block allowing for broadleaf / open buffers protecting watercourses
- Constraints:
 - Conifers planted close to drinking-water source (Loch Finlas)
 - Scheduling constraints may apply due to additional risk of working near Loch Finlas during wet weather
 - Deer browsing pressure on establishment of broadleaf species
 - Natural regeneration of undesirable coniferous species in open / riparian ground
- Concept:
 - Increase area of buffered riparian/aquatic zones
 - Focus BL restock / habitat development around riparian/aquatic areas and areas with good access for deer control
 - Group restock species sensitive to deer browsing into areas with good access for deer control

Objective 2: Maintain sustainable coniferous timber production

- **Opportunities:**
 - Central area of productive crop
 - Good forest road network
 - Suitable soils and conditions for various species
 - Develop potential areas for the regional thinning programme to enhance timber quality, and to improve forest structure and forest resilience
- **Constraints:**
 - Finlas block lies within an 'acid sensitive catchment', Loch Finlas public water catchment, Loch Doon SSSI and salmonid breeding sites
 - Recent clearfell coupes for larch removal have reduced age diversity
 - Some of the productive zone is within high windblow risk areas and climate change may increase this risk further
 - Buffer zones for water quality and wildlife habitat improvements may reduce productivity
- **Concept:**
 - Minimise area of clearfell within plan period to ensure that some mature crops remain for age diversity and smoothed timber production during subsequent plan periods
 - Redesign coupes in sympathy to the topography to reduce negative visual impacts caused by hard edges on hillsides following clearfell.
 - Group restock species sensitive to deer browsing into areas where deer control is possible

Objective 3: Enhance structural diversity of the woodlands and manage open hillside habitats to benefit biodiversity and priority species (Black Grouse and Red Squirrels)

- **Opportunities:**
 - Large area of open hillside within Finlas block
 - Retain levels of cone bearing mature crop for Red Squirrel and creation of additional and connected habitat for Black Grouse
 - Species diversification and provision of a mosaic of habitats
- **Constraints:**
 - Undesirable non-native natural regeneration may occur in areas of planned open space
 - Limited areas of mature crop to provide food source for red Squirrels
 - Maintenance of open ground habitat for Black Grouse

- Successful establishment and effective deer management of broadleaves and alternative conifer
- **Concept:**
 - Control undesirable natural regeneration
 - Thin second rotation crops where possible to improve stand resilience and extend rotation lengths
 - Focus habitat improvement around riparian zones, visitor zones and woodland edge

Objective 4: Enhance visitor experience in the vicinity of recreation routes

- **Opportunities:**
 - Improve age and species diversity, and create some open views to enhance visitor experience
 - By focusing broadleaf and open habitats around the Riparian- and Visitor-zones, these areas can provide for biodiversity and visitor experience without significantly reducing productivity of the woods.
- **Constraints:**
 - Recreational access can constrain deer control
 - Anti-social behaviour inc. fire-raising and littering has been evidenced in Finlas block
- **Concept:**
 - Retain informal trail network access to Loch Finlas and external open ground
 - Enhanced species diversity/open space within recreation corridors

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)	Adjacent	Finlas block is adjacent to Loch Doon SSSI
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)	No	
Tree Preservation Order (TPO)	No	
Biosphere reserve	Yes	Galloway & Southern Ayrshire Biosphere
Local Landscape Area	Yes	Doon Valley
Ancient woodland	No	
Acid sensitive catchment	Yes	Garpel Burn including Pollcrayvie Burn 10447
Drinking Water Protected Area (Surface)	Yes	DWPA 13_486 Loch Finlas

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	Gross Area (ha)
1	71012	6.0
1	71021	9.7
1	71001	12.2
1	71018	8.2
2	71014	8.4
		Total 44.5

Table 4

Clearfell by Species													
		Net Area (ha) by Main Species >20% (or MC, MB)											
Coupe Number	Fell Phase	CP	DF	EL	HL	JL	LP	NS	SP	SS	MC	MB	Coupe Total
71012	1					4.4					0.2	0.2	4.8
71021	1				6.6		0.2			2.6			9.4
71001	1					1.6	3.5		0.3	5.9			11.3
71018	1									7.9			7.9
71014	2						0.8		0.8	6.0		0.8	8.3
Plan Area Total					6.6	6.0	4.5		1.1	22.4	0.2	1.0	41.7

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			350 ha							
Felling	Phase 1	%	Phase 2	%	Phase 3	%	Phase 4	%	Long Term Retention	%
Net Area (ha)	33.4	9.5	8.3	2.4	0	0	12.2	3.5	0	0

3.3 Thinning

Potential sites for thinning are identified on the Thinning map ([Map 5](#)).

Many crops within Finlas have passed their thinning window and have been designated as no-thin areas during this rotation. Coupes with potential for thinning during the plan period cover an area of 41.9 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 75 cubic metres per calendar year.

A record of the volume felled in this way will be maintained and will be considered during the five year Land Management Plan review.

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

3.5 Restocking

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

Table 6

Restocking					
Phase †	Coupe Number	Net Area (ha)	Species	Method *	Minimum stocking Density (s/ha)
1	71012	3.5	Native Mixed Broadleaves	R	1600
1	71021	9.7	Scots Pine; SS/LP (70:30); SP/BI (80:20); NMB/BI (80:20)	R	2500 / 1600
1	71001	10.8	SS/LP/SP (70:20:10); NMB; SS/NF (60:40); SP	R	2500 / 1600
2	71018	6.7	Native Mixed Broadleaves	R	1600
3	71014	7.5	NMB; SS/LP (70:30); SP; NMB/SP (70:30)	R	2500 / 1600
Total		38.2 **			

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

** Balance to gross area will be made up of Designated Open Ground

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 2 m. 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 : Clear felling.

Table 7

Plan area by species						
Species	Current		Year 10		Year 20	
	Area (ha)	%	Area (ha)	%	Area (ha)	%
Sitka spruce	208.2	58.7	196	55.3	153	43.2
Other conifers	79.1	22.3	67.2	18.9	68.8	19.4
Native broadleaves	18.3	5.2	31.3	8.8	35.1	9.9
Other broadleaves	1.4	0.4	1.3	0.4	1.3	0.4
Open ground	47.5	13.4	50.4	14.2	51.1	14.4
Fallow	0	0	8.4	2.4	45.2	12.8
Total	354.5 *	100	354.5	100	354.5	100

*n.b. Finlas block is 900.3 ha in size however this includes c.500 ha of permanent open land in coupes 71603 and 71601, and some open water in Loch Finlas. These permanent open spaces have been excluded from the figures above, giving a Managed Forest Unit of 354.5 ha.

Chart 1

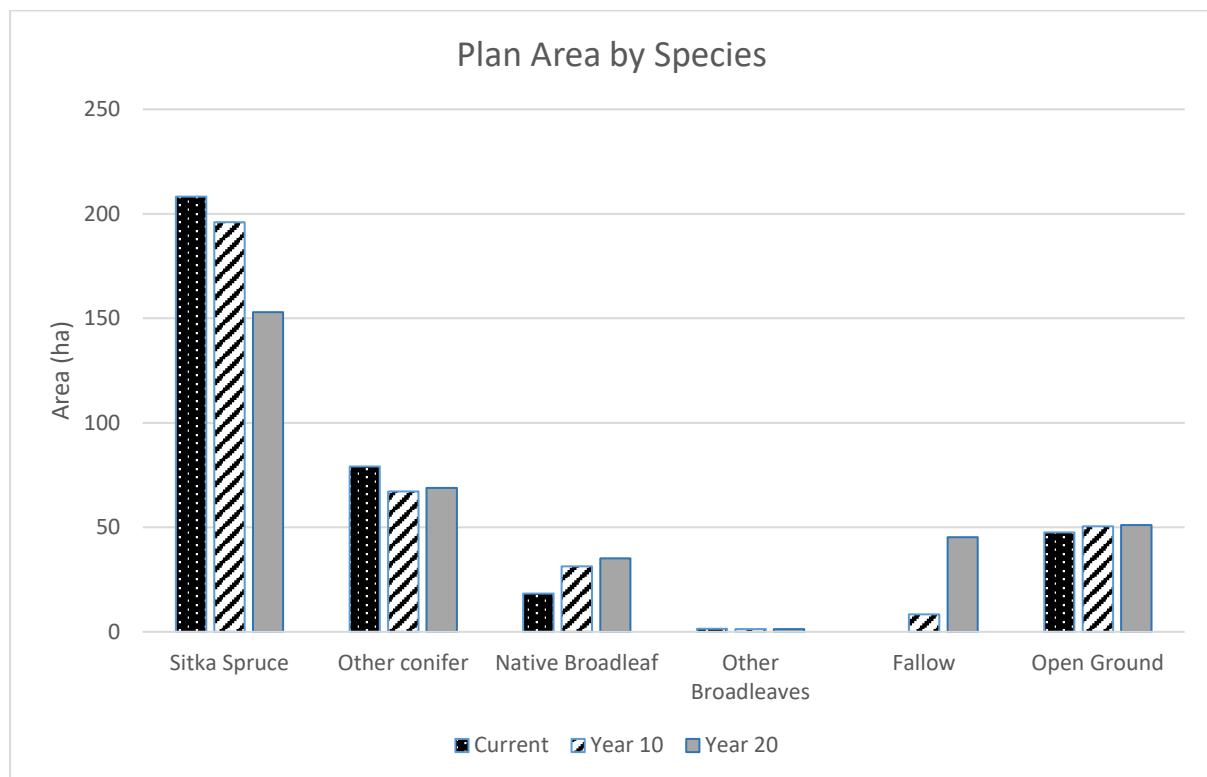
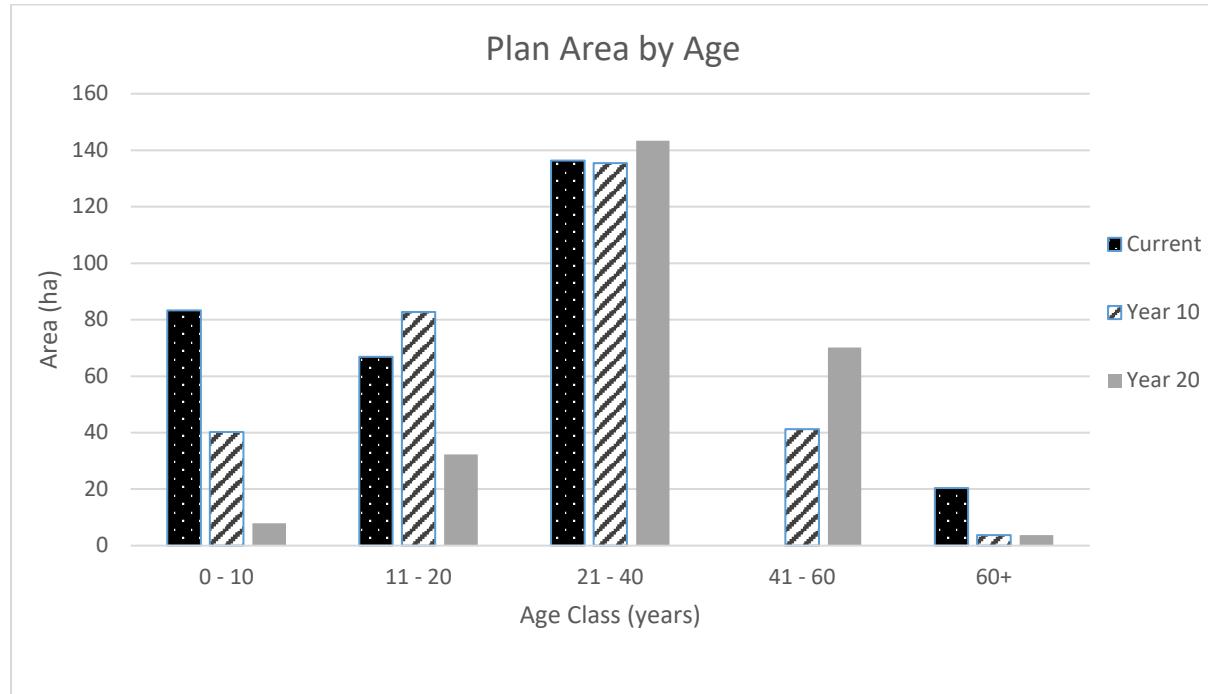


Table 8

Plan area by Age						
Age Class (years)	Current		Year 10		Year 20	
	Area (ha)	%	Area (ha)	%	Area (ha)	%
0 – 10	83.3	27.1	40.2	13.3	7.9	3.1
11 – 20	66.9	21.8	82.7	27.3	32.3	12.5
21 – 40	136.3	44.4	135.4	44.7	143.4	55.7
41 – 60	0	0	41.2	13.6	70.1	27.2
60+	20.4	6.6	3.7	1.2	3.7	1.4
Total	306.9	100	304.2	100	304.3	100

Chart 2

3.7 Road Operations and Quarries

There are no new roads or upgrades, or new quarries proposed during the period of this plan. All timber will be removed via Carrick Forest Drive to the south of Finlas. Timber haulage routes are shown on the Road Operations and Timber Haulage map ([Map 7](#)).

3.8 Environmental Impact Assessment (EIA)

There are no operations requiring an EIA screening opinion during the period of this plan.

Table 9

EIA projects in the plan area		
Type of project	Yes / No	Note
Afforestation	No	
Deforestation	No	
Forest roads	No	
Forestry quarries	No	

3.9 Tolerance table

Working tolerances agreed with Scottish Forestry are shown in [Appendix IV](#).

4.0 Management Proposals – guidance and context

4.1 Silviculture

4.1.1 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](#)).

71012 2024/25 6.04 ha (4.8 ha net)

This coupe bounded by the Garpel burn and a public walking / cycling route mainly comprises infected Japanese Larch to be felled as per FLS Larch Strategy (2022). Viable broadleaf should be retained to supplement the proposed native BL restock.

71021 2024/25 9.65 ha (9.4 ha net)

The main crop in this coupe is infected immature Hybrid Larch to be felled as per FLS Larch Strategy (2022).

71001 2025/26 12.15 ha (11.3 ha net)

Significantly windblown mature crop coupe that also contains infected larch. A public walking / cycling trail bounds the coupe to the north and west. Restock is mainly core productive conifer with native BL to the open hillside.

71018 2028/29 8.15 ha (7.9 ha net)

Crop of mixed age-structure due to previous fire in this area, with some infected larch in NE corner. Much of the crop is checked by poor (wet) ground conditions and is bordered by watercourses at the north and south edges of the coupe. This coupe is very visible to neighbouring residential properties and from public road / core path. Restock with suitable broadleaf species.

71014 2033/34 8.41 ha (8.3 ha)

Mature crop. Some windblow in coupe, while other areas appear to still be firm. Very visible from public road / core path and other recreational trails. Restock in Phase 3 with NMB and Scots Pine in visitor zones and productive conifers elsewhere.

Generally coupes will have a minimum of 7yrs, often more, between proposed fell dates. 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 an average height of at least two metres. In South Region we normally expect this to be achieved in 5 years following planting however any unforeseen reduction in separation during the period of the plan will be formally agreed with Scottish Forestry by amendment.

4.1.2 Thinning

Potential thinning coupes are detailed on **Map 5**.

4.1.3 Low Impact Silviculture Systems (LISS) / Continuous Cover Forestry (CCF)

There are no coupes proposed for management under Low Impact Silvicultural Systems (LISS) or Continuous Cover Forestry (CCF).

Opportunities for such systems, targeted towards the eastern section of the plan area should be explored in future plan iterations.

4.1.4 Long term retention (LTR) / Minimum intervention (MI) / Natural reserve (NR)

Refer to [Map 4](#).

Coupe 71503 is bordered by both Loch Finlas on one side and the Garpel Burn on another. The loch is a public drinking water supply while the Garpel Burn is an important salmonid breeding site; and a popular informal walking trail passes through this coupe. The coupe will continue to be Long Term Retention for the benefit of water quality, biodiversity and visitor experience.

4.1.5 Tree species choice / Restocking

Much of the Finlas block lies within an acid sensitive catchment, and the SSSI in the neighbouring Loch Doon is home to rare Arctic Charr and other salmonid species which may be sensitive to acidification of waters. Future restock plans must take water protection into account and ensure that acidification and siltation of watercourse does not occur; while aiming to diversify species choices to improve resilience against climate change, pests and diseases. Riparian buffers, of open land and some native broadleaf planting, have been extended throughout the block.

Whilst Sitka spruce remains the primary timber species within the plan area, restock within the plan period focuses on species diversity and increases in broadleaf coverage (see [Table 6](#)). Restock plans during this plan period include 16.7 ha of broadleaf planting, 8.13 ha of Scots pine, 3.77 ha of alternative conifers and 2.45 ha of Sitka spruce.

Forest Research's Ecological Site Classification (ESC) tool and local site knowledge have been used to identify site suitability and appropriate species choice for restocking. Restocking proposals are detailed in [Map 6](#). All proposed 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. As per **4.2.2**, broadleaf planting will be targeted to promote improvements in water quality and to assist with future-proofing aquatic habitats; though landscape considerations, habitat provision and visitor experience has also dictated the inclusion of mixed broadleaf planting in some areas.

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.

4.1.6 Natural regeneration

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.

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.

Where natural regeneration is occurring, these areas will be monitored and recorded in the FLS sub-compartment database. Where this is the desired species, we will endeavour to use it to achieve the required stocking density. 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 natural regeneration is not the desired species it will be considered against the plan objectives and agreed tolerance and either accepted (with a plan amendment if necessary) or removed.

4.1.7 New planting

There is no new planting proposed within the plan area.

4.1.8 Protection

Deer

Red and Roe are present within Finlas block, Roe being the predominant of the two. Red deer can be expected to utilise or travel through Finlas from adjacent blocks as well as the open hill for various reasons throughout the year.

Within Finlas, restock areas have been chosen primarily on the basis of site suitability in addition to accessibility for protection. Frequent monitoring of these areas and necessary interventions will be taken to assist establishment of palatable species. Should potential browsing occurrence be high, and where protection via deer population control alone is likely to prove difficult, alternative protection measures may be need to be considered. Establishment will be assessed at year five after restocking has been completed. If used, plastic tree guards will be removed and recycled once trees are satisfactorily established and less susceptible to browsing pressure.

At the work planning stage, FLS will re-assess the forest design alongside site specific deer management requirements. Consent will be sought for restocking alterations beyond agreed tolerance.

Refer to [Appendix VI](#) for the Finlas Deer Management Plan (DMP).

Tree Pests and Diseases

Finlas lies within the current Management Zone for *Phytophthora ramorum* and infected Larch has been historically felled to comply with Statutory Plant Health Notice (SPHN) requirements. A minor component of diseased Larch remains present in both distinct and intimately mixed stands. Management interventions set out in this plan will remove remaining Larch in accordance with Scottish Forestry's *P. ramorum* Action Plan (2021) and the FLS Larch Strategy (2022).

Dothistroma Needle Blight (DNB) (*Dothistroma septosporum*) has been identified on Corsican and Scots Pine crops across the region. There may be infection within this block though the effects of mortality is currently minimal.

Large pine weevil (*Hylobius abietis*) can cause extensive damage to young crop (particularly conifers). FLS employ a *Hylobius* Management Support System (HMSS) to measure weevil numbers on clearfell sites and to establish the optimum time for restocking. This requires a flexible fallow period between felling and restocking, which can result in restocking taking place outwith agreed tolerances.

FLS guidance for biosecurity will be adhered to throughout operations: measures include removing debris, mud, soil and needles from equipment, vehicles and footwear before entering and leaving the site. This will apply to all staff and contractors and requirements will be included in all work plans.

Continued risk posed by pests, disease and other tree health threats is expected due to a changing climate and the globalisation of trade and travel. To assist with mitigating such risk, a range of tree species have been matched to suitable restocking sites, efforts have been made to diversify the forest structure over time, and FLS encourage biosecurity best practice during the planning and delivery of all forestry operations.

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. FLS's primary objective is always to protect people's health, safety and wellbeing.

FLS in South Region are a member of the Ayrshire Partnership And Rural Crime (APARC) group. This group is made up of Police Scotland, FLS, local farmers, relevant councils, The Horse Society, local estates, and private forestry groups all working together in an attempt to tackle Anti-Social Behavior (ASB), including that of fire-raising.

4.1.9 Road operations, Timber haulage and other infrastructure

Forest road access throughout the plan area is generally good and no new roads are required during the term of this plan. If any road maintenance is required then stone material will be sourced locally from the small quarry on site. To avoid diffuse pollution arising from rainfall derived leaching, appropriate soakaways are in place in our main quarries and all construction work will comply with the general binding rules specified in the Water Environment (Controlled Activities) (Scotland) Regulations 2011.

Map 7 shows the existing forest road network. Main egress points and agreed Timber Transport routes. While access to Finlas is most commonly gained from the A713 (south of Dalmellington) and the U759 which runs down the western side of Loch Doon, part of the U759 north of Finlas is an 'excluded route' for timber haulage. Timber is therefore extracted south on the U759 to Carrick Forest Drive and then to the public C1 Straiton Road.

4.2 Biodiversity

4.2.1 Designated sites

Loch Doon SSSI borders the eastern edge of the Finlas block. Loch Doon is designated for its population of Arctic Charr (*Salvelinus alpinus*). This population is the last naturally occurring population of *S.alpinus* in South-West Scotland and is thought to now be genetically distinct from other populations in UK. NatureScot's Sitelink classify the population to be Unfavourable Declining according to the most recent assessment (2017). Water Quality within Loch Doon and within Garpel Burn must be protected for the benefit of salmonid species and other biodiversity.

4.2.2 Native woodland

This plan seeks to protect and enhance existing areas of Native Woodlands and, where appropriate, expand the area to maximise habitat connectivity. Efforts to extend or establish native woodlands will focus on riparian zones across the plan area and some woodland edge broadleaf planting to benefit Black Grouse near the open hillsides, where this can feasibly be accessed and protected by the wildlife rangers.

Broadleaves within the plan area are currently at 5.6 % of the forested area and implementation of this plan will see this rising to 10.3 % at Year 20.

Where appropriate along watercourses, FLS intend to establish a light open-broadleaf woodland mosaic to improve overall water quality, assist with bank stabilisation, and to help protect aquatic habitats from the effect of climate change through the provision of light dappled shade over the watercourses. Broadleaves present across the site are generally vulnerable to browsing by deer and sheep, therefore more resilient species such as Downy Birch and Hawthorn may be planted where suitable and in line with UKFS best practice. Alder will be avoided within the acid-sensitive catchment area within Finlas. Monitoring will be carried out in riparian and broadleaf zones to ensure that coniferous regeneration does not compromise the establishments of these areas.

4.2.3 Ancient woodland / Plantation on Ancient Woodland sites (PAWs)

There are no ancient woodlands or PAWS within the plan area.

4.2.4 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. Following felling operations, planting will be re-designed around any priority habitats that are revealed. (This includes species rich groundwater dependent terrestrial ecosystems (GWDTE) which will be protected as per current best practice). Deviations beyond tolerance will be referred to Scottish Forestry for consideration.

Black Grouse *Lyrurus tetrix*

The importance of connectivity between leks was highlighted in the *RSPB Galloway Glens Black Grouse Project Habitat Management Plans 2021* report which has also been used to inform the design of open areas for this LMP revision. The Finlas block forms part of the core area for Black Grouse in Galloway Forest Park. The LMP will build on previous work by

maintaining habitat linkages between internal open space and the moorland edge and by establishing stands of native broadleaf species for winter browsing on adjacent sites favoured by Black Grouse.

Red squirrel *Sciurus vulgaris*

This area is not a stronghold though the species is present within the area and efforts have been made to further encourage the species through habitat provision, retaining mature trees including Scots Pine, and increasing areas of small seeded broadleaved species. FLS has a single licence 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 licence.

Arctic Charr *Salvelinus alpinus*, **Atlantic Salmon** *Salmo salar* and other salmonids

Loch Doon is a designated SSSI for its rare indigenous population of Arctic charr. Other salmonids are also present in the Loch and associated watercourses. Water quality is a significant environmental factor in the plan area with the main watercourses, including the Garpel Burn, important for breeding salmonids. Riparian zone improvements, often in excess of basic guidelines proposals, should benefit these species.

Badgers *Meles meles*

Badgers are present in the block. Before any operations site surveys are carried out and species licenses from NatureScot will be obtained should they be required. Forestry Practice Guide 9 Forest Operations and Badger Setts is followed as appropriate.

Invertebrates

Open ground (including bog, heritage features, priority habitat, rides and forest road corridors) has been incorporated into the design to ensure suitable habitat is available to support a range of invertebrates. Road and ride management will be carefully planned to minimise disturbance to these species.

4.2.5 Open ground

Permanent open ground external to the plantation core constitutes a significant element of the plan area (around 65.9%) and includes Loch Finlas, open ground lying between the public road and Loch Doon to the east, and an area of open hillside that is part of the Craiglee

Uplands Local Nature Conservation Site. Within the plantation riparian zones, rides, glades and the quarry provide additional open ground.

Some natural regeneration will be tolerated as long as it is compatible with the plan objectives and does not consist of more than 20% within the managed open space.

Removal of non-native conifer regen from the riparian zones near Loch Finlas and the Garpel Burn will be a priority, and approval by amendments will be sought, when required, prior to this work commencing.

4.2.6 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. Areas of natural reserve will offer some of the best opportunities for the development of standing and fallen deadwood. Where it is safe to do so, standing mature dead trees will be retained as these offer excellent potential for a range of species.

4.2.7 Invasive species

While there are no known invasive non-native species within the plan area, FLS will endeavour to control incursions as per the FLS Invasive Non-Native Species (INNS) policy FLS will also continue to support the control of Grey squirrel *Sciurus carolinensis* being coordinated by Saving Scotland's Red Squirrels.

4.3 Historic Environment

Refer to Map 12.

Our key priorities for archaeology and the historic environment are to undertake conservation management, condition monitoring and archaeological recording at significant historic assets; and to seek opportunities to work in partnership to help to deliver Our Place in Time: the historic environment strategy for Scotland (2014) and Scotland's Archaeology Strategy (2015). Significant archaeological sites will be protected and managed following the UK Forestry Standard (2017) and the FCS policy document Scotland's Woodlands and the

Historic Environment (2008). Harvesting coupes, access roads and fence lines will be surveyed prior to any work being undertaken in order to ensure that upstanding historic environment features can be marked and avoided. At establishment and restocking, work prescriptions remove relevant historic environment features from ground disturbing operations and replanting. Where appropriate, significant historic assets are recorded by archaeological measured survey, see active conservation management and may be presented to the public with interpretation panels and access paths. Opportunities to enhance the setting of important sites and landscapes will be considered on a case-by-case basis (such as the views to and from a significant designated site).

The Regional Historic Asset Management Plan includes conservation management intentions for designated historic assets on the National Forest Estate. Details of all known historic environment features are held within the Forester Web Heritage Data and included within work plans for specific operations to ensure damage is avoided. Significant historic environment features will be depicted on all relevant operational maps.

Areas of historic environment interest should be checked both on FLS's internal historic environment records and also with the Council's HER prior to the commencement of forestry activities. Any upstanding features should be clearly marked, both on the ground and on operational maps. Care should be taken to avoid any damage to surviving structural elements.

4.3.1 Designated sites

There are no Scheduled Monuments within the plan area.

4.3.2 Other features

There are a number of heritage features within the plan area and details of all known historic environment features are held within FLS's internal historic environment records and are listed in **Appendix V**. These are included in work plans, operational maps, and will be clearly identified on the ground during operations to ensure that they are appropriately protected.

4.4 Landscape

4.4.1 Designated areas

Finlas sits within the Doon Valley Local Landscape Area where rugged exposed crags and boulders, and a sense of seclusion give the area a natural, unspoilt character. The proposed design has been carefully developed in consultation with FLS Landscape Architects to reflect landform, landscape scale, and achieve best fit with the Landscape Character Types (LCT): Foothills - Ayrshire (LCT 76) and Rugged Upland - Ayrshire (LCT 88).

Refer to [Map 11](#) and [Appendix I](#)

4.4.2 Other landscape considerations

Land directly north of Finlas block is mostly open hillside which provides habitat for several species of wildlife, and rough hillside grazing for sheep. To the south and west lie FLS Carrick Forest Drive and Tairlaw blocks, and there is some private forestry on the opposite bank of Loch Doon. The Merrick Hills range provides a scenic backdrop to the south of Loch Doon. The Finlas forest block is also visible from the A713 as it passes Eriff (between Dalmellington and Carsphairn) 3km east of Finlas.

4.5 People

4.5.1 Neighbours and local community

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.

Anti-Social Behaviour (ASB) issues including fire-raising, tree damage and littering were raised by stakeholders during the consultation for this plan revision.

FLS actively support the Ayrshire Partnership And Rural Crime (APARC) group and constantly take steps to address local ASB issues to protect our forest users and the forest environment.

4.5.2 Public access

Core path DV11: Loch Doon Forest Road follows the route of the minor public road on the east of Finlas block. There are no formal walking trails within Finlas but there are some informal walking routes and an informal cycle route linking to Tairlaw forest block and beyond.

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.

Woodland Management in Visitor Zones

Visitor Zones have been identified in areas where FLS encourage and manage access or where the woodland managed by FLS interacts with popular visitor sites or access routes. Visitor Zones are mapped on **Map 13**. In these areas, single trees or small groups of trees will be removed when necessary to protect facilities, infrastructure and trails, or to enhance the setting of features, or to maintain existing views. Woodland in these zones will also be thinned, or trees re-spaced, for safety reasons (including to increase visibility to ensure that sites are welcoming and feel safe) and where it is necessary to enhance the experience of the forest setting, through the development of large trees, or preferential removal of trees to favour a particular species.

4.5.3 Renewables, utilities and other developments

Renewables

There are no renewables developments within Finlas LMP unit and no proposed developments for renewables are currently submitted.

Utilities

Utilities, including overhead power lines and underground water pipes, generally follow the route of the public road on the eastern side of the block and are associated with neighbouring residences. The mains water supply runs alongside coupes 71014 (Phase 2) and 71021 (Phase 1). Access to these coupes will be from the forest road network and no operational machinery will need to cross the water supply pipelines, other than to access the Finlas block at approved crossing points. During operations appropriate buffers as detailed by liaison with Scottish Water will be implemented when working near Scottish Water assets, and best practice guidance including “Guidance on Forestry Activities near Scottish Water Assets” will be consulted to ensure that FLS comply with Scottish Water’s current process, guidance, standards and policies in relation to such matters.

All utilities will be covered by servitude rights on the National Estate and all necessary precautions will be taken to locate services on the ground at the work planning stages. This will include robust preparation, liaison with relevant stakeholders and dissemination of emergency and work planning particulars before any operations begin.

Other

There is a minor public road which runs down the eastern side of the Finlas forest block providing access to a handful of residential properties, and for visitors to Loch Doon Castle and recreational areas on the west bank of Loch Doon. This road is also the access route for Carrick Forest Drive which, at present, is closed to public access but may reopen in the future. The timber haulage route follows the minor public road and Carrick Forest Drive. There is one small quarry in Finlas LMU unit found at NX 485 973. No new quarries or extensions to the existing quarry are planned.

4.5.4 Support for the rural economy

FLS supports a sustainable rural economy by managing the national forests and land in a way that encourages sustainable business growth, development opportunities, jobs and investment.

4.6 Soils

4.6.1 Protection and Fertility

There will be minimal soil disturbance and machine movement on sites with clayey soils to reduce the risk of compaction or damage to the soil structure. Brash mats (or alternative measures) will be used to protect sensitive soils. Felling residue will usually be left on site to allow nutrient recycling, with consideration for the practicalities of restocking.

4.6.2 Cultivation

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

4.6.3 Deep peats

FLS is preparing a Peatland Restoration Strategy. In the interim, we will take a precautionary approach to restocking on deep peat soils, following 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).

As evidenced in Map 9, Finlas LMU has only one small area (1.66 ha) of Scenario A soils (10b Upland Sphagnum Bog) which can be found in coupe 71008 on the southern bank of the Garpel Burn. This area is not programmed to be clearfelled during the term of this LMP revision and will therefore be reassessed during the next revision of the Finlas Land Management Plan; with the presumption that restock will be Open Ground / low-density native broadleaf (Downy Birch being the most suitable broadleaf species) as is indicated in Map 6: Future Habitats & Species.

4.7 Water

4.7.1 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. There are no private water supply points within, or affected by, the plan area.

Loch Finlas catchment is designated as a Drinking Water Protected Area (DWPA) – Surface Water. This catchment contains the following management coupes: 71001, 71002, 71003, 71004, 71007. Sections of coupes 71005 and 71006 are also in the Loch Finlas catchment.

This waterbody and its catchments are protected in the plan through careful design of the restocking, felling and any nearby forestry operations. Prior to operational commencement,

a pollution prevention plan and site management rules will be established. Roles and responsibilities will be assigned with clear instructions on protocols and contactable people in the event of an incident. Forestry and Land Scotland will contact Scottish Water prior to all planned operations near SW assets and drinking water sources. All operations within these catchments and buffers will meet the requirements of the UKFS Guidelines on Forests and Water and follow the good practice guidance for Public Water Supplies such as guidance-on-forestry-activities-near-sw-assets-final.pdf (confor.org.uk) and Forestry and Water: <https://www.confor.org.uk/resources/forestry-water-scotland/guidance-documents/>.

4.7.2 Watercourse condition

Management of waterbodies and catchments is a key environmental issue and FLS aim to comply with best practice in minimising sediment release and preventing further deterioration in the current water quality. In many instances FLS will provide enhanced riparian buffer zones that exceed minimum guideline recommendations. All forestry operations will meet the requirements of the UKFS Guidelines on Forests and Water, Forestry and Water Know the Rules (2nd edition) handbook, and Managing Forests in Acid Sensitive Catchments best practice.

Operations will also comply with FLS South region's Pollution Control Plan and additional mitigations detailed within specific risk assessments undertaken as part of the work planning process.

The Garpel Burn catchment, including the Pollcrayvie Burn, is an acid sensitive catchment. The river waters are at risk and were classified as failing during the 2019 review, while Loch Finlas and Loch Doon are not deemed to be at risk. Further details regarding watercourses on site can be found in Appendix I.

The proposed scale and timing of felling in the forest, along with increases in open ground and broadleaf cover in riparian zones, seeks to reduce the significant negative impact within these catchments as per the Managing Forests in Acid Sensitive Water Catchments guidance. Refer to **Appendix VII**.

Efforts to improve water quality will be realised through continued implementation of riparian zones along watercourses that increase open ground and broadleaf woodland.

Principles of the Riverwoods initiative have been incorporated into the LMP where possible to promote and provide valuable habitat corridors.

4.7.3 Flooding

There are no specific flood prevention considerations within the plan area at this time (see Description of Woodlands). 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.

For enquiries about this plan please contact:

Catriona Hawthorn
Planning Forester
Forestry and Land Scotland
South Region
Straiton Office
Dalmellington Road, Straiton
South Ayrshire
KA19 7NG

catriona.hawthorn@forestryandland.gov.scot

Appendix I: Description of Woodlands

Description of woodlands
Topography and Landscape
<p>The Finlas forest block lies between Loch Doon and Loch Finlas in Ayrshire. Within the forested areas of the block the highest hill reaches 309m however approx. 60% of the block is open hillside with several peaks including Craiglee at 523m.</p> <p>The block lies within the Doon Valley Local Landscape Area. Loch Doon is a popular destination for tourists most of whom pass through the eastern side of Finlas, while some visitors explore more of the block by bicycle or on foot due to some informal recreation routes which run mainly along the forest roads within Finlas.</p>
<p>Map 11 shows the NatureScot Landscape Character Types relevant within Finlas:</p> <ul style="list-style-type: none">• LCT 76: Foothills – Ayrshire with valleys surrounded by rounded ridges and plateaus. Peaks are gently sloping with lower slopes of pastoral fields and rough grazing at higher altitudes. Forested areas mostly feel remote as they are enclosed with foreshortened views• LCT 83: Rugged Uplands – Ayrshire where the Merrick range extends to near Loch Doon with craggy, mountainous scenery. Land cover is dominated by heather moorland, rough grassland and areas of exposed rock outcrops.
Geology and Soils
<p>Map 9 shows the Soil Types within the Finlas plan area. There is one small quarry within the site at NX 4849 9733.</p> <p>The bedrock within Finlas is almost entirely KKF-Kirkholm Formation Wacke. These sedimentary rocks are marine in origin. There are also small sills of igneous rocks (SCAD Microdiorite, Porphyritic) within the site.</p> <p>There are fluvial deposits at the Garpel Burns, peaty deposits of accumulated organic matter in the open land on the south bank of Loch Finlas, and detrital deposits of glaciogenic origin in coupes 71502, 71606, 71018 & 71019 near the residential properties on the eastern side of the block.</p>

Description of woodlands

Climate

Accumulated temperature (day-degrees above 5°C)

Min: 959, Max: 1231, Mean: 972

Moisture Deficit (mm)

Min: 39, Max: 87, Mean: 70

The climate of the LMP area is highlighted pink on the table below

Accumulated temperature (day-degrees above 5°C)										
		>1800	1800-1475	1475-1200	1200-975	975-775	775-575	575-375	375-175	<175
Moisture Deficit (mm)	>200									
	180-200	Warm	Dry							
	160-180									
	140-160									
	120-140	Warm	Moist			Cool	Moist			
	90-120									
	60-90		Warm	Wet						
	20-60					Cool	Wet		Sub-Alpine	
	<20									Alpine

Climatic Zones in Great Britain (shading indicates combinations not present)

Hydrology

Maps 2 & 14 show all watercourses, open water, and recorded water supplies.

Water Catchments

The plan area lies within the River Doon catchment as defined by SEPA

Water quality

Bodies of surface waters (as identified by SEPA) in the plan area:

Name: Garpel Burn **Overall Condition:** Moderate

Heavily modified. Overall ecology poor.

Catchment vulnerable to acidification - failing

Name: Pollcrayvie Burn **Overall Condition:** Moderate (improved status in past decade)

Water quality / moderate ecological status

Catchment vulnerable to acidification - failing

Name: Loch Finlas **Overall Condition:** Moderate

Heavily modified for public water storage. Bad overall ecology.

Description of woodlands
<p><u>Water body adjacent to block:</u></p> <p>Adjacent to block:</p> <p>Name: Loch Doon Overall Condition: Moderate</p> <p>Heavily modified for hydroelectric scheme. Bad ecological status.</p> <p>The groundwater catchment of South Ayrshire Hills covers the LMP area and is in good condition.</p>
<p><u>Flooding</u></p> <p>No specific risk to properties</p>
<p><u>Water supplies</u></p> <p>Loch Finlas: Public water supply</p>
<p><u>Windthrow</u></p> <p>Map 10 illustrates the DAMS measurements for the Plan area.</p>
<p><u>Adjacent land use</u></p> <p>To the north of Finlas is rough grazing for sheep, while the southern parts of Finlas are mostly open hillside moorland. FLS's Carrick Forest Drive lies directly south and Tairlaw forest block (also FLS) lies to the west. Across the loch is some private forestry.</p>
<p><u>Public access</u></p> <p>Map 2 and Map 13 show the location of informal trails and visitor zones.</p>
<p><u>Historic environment</u></p> <p>Historic environment records for the forest are shown in Appendix V and on Map 12.</p>
<p><u>Biodiversity</u></p> <p>Designated Sites – None within the LMP boundary. Loch Doon SSSI is adjacent.</p> <p>Priority Habitats - Salmonid breeding ground (Garrel Burn). Woodland fringe and open hillside for Black Grouse and other species. Small area of 10b upland sphagnum bog.</p> <p>Priority Species – Black Grouse, Red Squirrel, Badgers and Hen Harriers</p> <p>Ancient Woodland / PAWS - none</p> <p>Natural Reserves - none</p> <p>Deadwood potential – Some areas of standing deadwood have been retained after forest fires in the LMU, and other areas for retention of trees past MMAI have been identified.</p> <p>High deadwood potential around riparian zones</p>

Description of woodlands	
Open ground – see 4.2.5	
Invasive species	
No invasive species have been reported in the block.	
Woodland composition	
<p>The current species composition of the forest is illustrated on Map 8. Yield Class varies across the block up to YC 18. 19.8% of the forested area is First Rotation crops while 80.2% is 2nd or subsequent rotation crops. Clearfell is the main management type across the plan however opportunities to provide alternative areas of LISS will be explored in future LMP revisions.</p>	
Plant health	
<p><i>Phytophthora ramorum</i> - The block lies within Management Zone where there is a requirement to removal at least 50% of larch by April 2027 including removal of all mature larch in same period. Sanitation felling in the neighbouring blocks is underway and Finlas was programmed for targeting of larch soon. Larch areas have been added in to Phase 1 coupes to ensure that removal is prioritised.</p> <p><i>Dothistroma</i> Needle Blight – Likely to be present as now widespread in Galloway.</p> <p><i>Hylobius</i> – Common pest on clearfell sites including those in Finlas</p>	
Infrastructure	
<p>There are well-established Class A and Class B roads through the plan area, providing adequate access to coupes. There are no bridges. There is a small quarry within the productive zone.</p> <p>A minor public road runs down the side of Loch Doon and passes through Finlas to the east of the productive woodland area.</p> <p>Utilities - overhead power lines, and underground water pipes - follow similar lines down the eastern side of the block alongside the minor public road.</p> <p>Laybys at the entrances to the forest roads are often used by public as car parking or camping spots, but there are no official carparks at Finlas.</p>	

Appendix II: EIA screening opinion request form

No EIA screening is required for this LMP review.

Appendix III: Consultation record

Consultee	Date contacted	Date of response	Issues raised	FLS response
Ayrshire Rivers Trust	04/07/2023	05/07/2023	No comments received	
Ayrshire Roads Alliance	04/07/2023	(04/07/2023)	Automatic response only / receipt of email	
Botanical Society of Britain & Ireland	04/07/2023	(04/07/2023)	Automatic response only / receipt of email	
CONFOR	04/07/2023	No response		
Dalmellington Community Council	04/07/2023	No response		
Dalmellington Parish Development Trust (DPDT)	04/07/2023	14/08/2023 (site meeting at Finlas entrance)	<p>Drew Filson, local councillor and member of DPDT, raised the following points</p> <ul style="list-style-type: none"> • Visitor pressures at Loch Doon • Safety issues of parking in passing places • Suggestion that a carpark is developed at Finlas entrance gate + possible compostable toilet • DPDT could take on responsibility for carpark area • Perception by locals that FLS do not care 	Referred the carpark suggestion to Visitor Services (VS) however visitor numbers to Finlas is low and VS do not see this as a priority right now.

Consultee	Date contacted	Date of response	Issues raised	FLS response
			much or invest much in Ayrshire / Loch Doon area	
East Ayrshire Council (Development Planning & regeneration)	04/07/2023	01/08/2023	<ul style="list-style-type: none"> Any closure of Core Path requires notification under the Land Reform Act Disturbance to peat areas should be avoided Threatened habitats on site (inc Acid Grasslands and Heathlands) should be preserved, protected and enhanced Work on site should not adversely affect the habitat site (wet heath / blanket bog) or any protected wild bird species New planting should fully consider landscape implications 	<p>Timber removal from coupes will be onto forest roads inside Finlas block and core path / minor public road should not be affected.</p> <p>The one area of Scenario A soil (peat) will not be worked during the term of this plan. See section 4.6.3</p> <p>Protection and improvement of habitats is an objective of this land management plan. The proposed restock design evidences an increase in species diversity and habitat linkage across the block (Map 6). FLS will comply with the UKFS, the latest guidance, and the FLS South Region Pollution Control Plan to avoid detrimental impact during site works. See sections 1.1, 4.1.5 and 4.2</p> <p>FLS Landscape Architects were consulted during the design of this LMP, and landscape implications have been considered throughout. Coupe shapes have been altered to fit topography and landscape more naturally, and restock in visible areas has been sympathetic to aesthetic impacts.</p>
East Ayrshire Environmental Health	04/07/2023	(04/07/2023)	Automatic response only / receipt of email	
Galloway & Southern Ayrshire	04/07/2023	No response		

Consultee	Date contacted	Date of response	Issues raised	FLS response
Biosphere				
Historic Environment Scotland	04/07/2023	17/07/2023	No scheduled monuments.	See 4.3 Historic Environment
Loch Doon Residents Association	04/07/2023	14/08/2023 (site meeting at Finlas entrance)	<p>Dr Preston (chairman)</p> <ul style="list-style-type: none"> Visitor pressures at Loch Doon Anti-social behaviour near residential homes Safety issues of parking in passing places Suggestion of new carpark at Finlas entrance Concerns over possible reopening of Carrick Forest Drive next year Some members of community would like coupe 71014 felled soon Perception that FLS cares more for, and invests more in, other areas of Scotland than Ayrshire / Loch Doon Wishes to discuss habitat enhancement opportunities near castle Suggestion of provision of toilets / compostable toilet near Finlas 	<p>Referred the carpark suggestion to Visitor Services (VS) however visitor numbers to Finlas is low and VS do not see this as a priority right now.</p> <p>Coupe 71014 is programmed for felling towards the end of Phase 2. Crop is mature but nearby areas of infected larch will take priority and are programmed in Phase 1.</p> <p>Concerns over possible reopening of Carrick Forest Drive have been noted. FLS are considering all pros and cons of the proposals, including implications on local residents.</p>
NatureScot	04/07/2023	10/08/2023	<ul style="list-style-type: none"> Loch Doon SSSI is designated for its Arctic Char population Acidification of Loch Doon could lead to extinction of Arctic Char Increased buffer areas around water courses and lochs would be beneficial Low Impact Management approaches 	<p>Riparian buffers have been extended and improved to protect watercourses. Requirements of salmonid (including Arctic Char) in Garpel Burn and Loch Doon have been considered. FLS will comply with all legislation and best practice guidance regarding working near water sources.</p> <p>See sections 1.1, 4.1.9, 4.2, 4.7</p>

Consultee	Date contacted	Date of response	Issues raised	FLS response
			<p>should be explored</p> <ul style="list-style-type: none"> • Nature Scot recommend that conifers are removed within 20m buffer around Loch Finlas • NatureScot advise that CCF and LISS are employed throughout riparian zone to reduce nitrate release from the soil • NatureScot advise that habitat requirements for Black Grouse and Red Squirrel should be considered and connectivity of habitats enhanced • Freshwater Pearl Mussels are in decline in River Doon and all forestry works in area should adhere to UKFS forest and water guidelines to minimise risks to this species and other wildlife 	<p>Opportunities for CCF and LISS will be explored in future iterations of this plan. See sections 4.1.2 and Map 5 for Thinning plans, and section 4.1.3 for comments regarding CCF/LISS opportunities.</p> <p>Key species, including Black grouse and Red squirrel, have been considered. See section 4.2.4</p>
Small carnivore specialist at Vincent Wildlife Trust (Dr Steve Carter)	04/07/2023	No response		
River Doon Fisheries Board	04/07/2023	No response		
RSPB	04/07/2023	17/07/2023	<ul style="list-style-type: none"> • The site is a strategic location for Black Grouse • Numbers are in steep decline but our LMP design should aim to enhance habitat for grouse. • Recommend exploring opportunities to 	<p>Habitat requirements of key species, including Black grouse and Red squirrel, have been considered and enhancement or extension of habitats have been planned wherever possible. See section 4.2.4</p>

Consultee	Date contacted	Date of response	Issues raised	FLS response
			soften forest edge habitat adjacent to open ground habitats, including small-leave native broadleaves and Scots Pine where possible.	
Saving Scotland's Red Squirrels	04/07/2023	No response		
Scottish Badgers	04/07/2023	21/08/2023	<ul style="list-style-type: none"> Strongly recommend a survey is completed by a competent person prior to any works being undertaken on the site. If any setts are located, then consideration should be given to licensing requirements. Depending on findings, a Badger Protection Plan should be developed and implemented. The status of the ground be checked again no more than 2 weeks before the start of works to make sure that the findings are not changed. Access routes, timber and equipment storage should also be considered 	See section 4.2.4
Scottish Forestry	04/07/2023	No response		
Scottish Power Energy Networks	04/07/2023	No response		
Scottish Water	04/07/2023	17/07/2023	<ul style="list-style-type: none"> Finlas lies mostly within a DWPA linked to Bradan WTW 20" steel water main runs through open ground at the east edge of Finlas block 	Protection of watercourses and the public water supply is the primary objective laid out in Section 1.1 of this plan.

Consultee	Date contacted	Date of response	Issues raised	FLS response
			<ul style="list-style-type: none"> • 600mm iron water main runs from Loch Finlas to Loch Derclach (NW border of Finlas block) • Scottish Water assets should be protected and SW notified of conflicts between access roads or forestry activities & SW assets. • FLS should adhere to all guidance included in Scottish Water's 'List of Precautions for Drinking Water and Assets' document, including the measures listed below: • A detailed, site-specific Construction Method Statement must be submitted at least 3 months prior to work commencing within DWPA • Historic drains and ditches that discharge into a watercourse in the drinking water catchment should be blocked and slowly discharged to a buffer area. • Mitigation methods should be planned to prevent pollution to watercourses 	<p>FLS will comply with all legislation and best practice guidance regarding working near water sources and pipelines.</p> <p>FLS will produce site-specific plans for all operations and will contact SW regarding any planned works in, or close to, this location prior to any works commencing.</p> <p>The management plans, including the restock options, have been designed with protection of watercourses and drinking water as the highest priority in Finlas.</p> <p>See sections 1.1, 4.1.9, 4.2, 4.7, 4.7.1</p>
Scottish Wildlife Trust	04/07/2023	No response		
SEPA	04/07/2023	04/07/2023	<ul style="list-style-type: none"> • Look for opportunities to improve riparian zones following the principles of the Riverwoods Initiative • Follow guidance from Forestry & water Scotland to minimise risk of environmental pollution 	As per responses to Nature Scot and Scottish Water (above): protection of watercourses has been key objective and should be achieved through good management, extension of riparian zones, and planned restock of sensitive areas with native broadleaf / open space.

Consultee	Date contacted	Date of response	Issues raised	FLS response
			<ul style="list-style-type: none"> Minimise soil and carbon losses by incorporating low-risk ground preparation techniques Contact the local authority Environmental Health Department to enquire about PWS and adhere to buffer zones and good practice around any PWS on site. No coniferous species should be planted near water sources Access routes should avoid peat Good biosecurity should be practiced (e.g. washing of machinery prior to departure from site). Machines used on site should not be oversized for the job, to minimise pollution risk Settlement sumps and natural soakaways should be employed if there is drainage water from quarries on site during works. Log bridges must be used if heavy machinery has to cross watercourses Waste materials must be removed from site for reuse, recycling or disposal upon completion of work. 	<p>FLS are a partner organisation and follow Riverwoods Initiative principles</p> <p>See sections 1.1, 4.2, 4.7</p> <p>There are no PWS in Finlas block</p>
Timber Transport Forum – Ayrshire & South Lanarkshire	04/07/2023	No response		
Visit Scotland	04/07/2023	(04/07/2023	Automatic response only / receipt of email	

Consultee	Date contacted	Date of response	Issues raised	FLS response
	3)		
Local community / general public (online survey on FLS consultation page)	July 2023	July 2023	<p>One response to online survey:</p> <p>Member of public (MOP) appreciates the walks through the forest roads in Finlas for physical and mental health benefit. No comments regarding woodland or land management</p>	n/a
Local Community drop-in event	25/07/2023 3	25/07/2023	<ul style="list-style-type: none"> One MOP voiced concern over amount of Sitka Spruce and clearfell affecting landscape around Loch Doon, though he was mostly referring to non-FLS land across from Finlas. He would like landscape / visual impact of our work to be considered to benefit visitors. One MOP voiced that he enjoys views from cleared areas / along rides while walking at Finlas and suggested more open viewing areas to appreciate landscape Two MOPs interested in wildlife and suggested a viewing hide looking out over hills, advocated habitat enhancement throughout area, one has recorded Hen Harriers and Pine Martens on site. Other comments received related to non-FLS land (other parts of Loch Doon area) rather than the LMP 	<ul style="list-style-type: none"> MOP was referring to private forestry land on east bank of Loch Doon over which FLS have no influence. Landscape considerations and visitor amenity have been considered throughout the development of this LMP FLS notes the suggestion of creating a wildlife hide in Finlas.

Consultee	Issues raised from SF and LMP being on public register	South Region Response to consultee	SF Consideration
Nature Scot	Raised concerns about adequate buffer zones around Loch Finlas and Garpel Burn	<ul style="list-style-type: none"> Coupes which have been recently restocked have had wide buffers implemented. Where regen has occurred in open riparian areas this will be targeted to maintain coverage of <20% For coupes containing older stock, riparian buffers will be created to meet UKFS when crops mature to harvesting age. 	
SEPA	Requested that FM must produce a Water Management Plan or Diffuse Pollution Plan prior to commencement of work.	<ul style="list-style-type: none"> FLS will produce site-specific plans for all operations which may have an impact on water courses, water bodies or environmentally sensitive areas; and will liaise with relevant stakeholders on any such planned works, including SW with regards to protection of the public drinking water supply within Finlas. 	

Appendix IV: Tolerance table

	Maps Required (Y/N)	Adjustment to felling period * • Fell date can be moved within 5 year period where separation or other constraints are met.	Adjustment to felling coupe boundaries ** • Up to 10% of coupe area.	Timing of Restocking • Up to 3 planting seasons after felling.	Changes to Restocking species • Change within species group e.g. evergreen conifers or broadleaves.	Changes to road lines	Designed ground ** • Increase by up to 5% of coupe area	open	Windblow Clearance ****
FC Approval normally not required	N	• 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

Larch Tolerance Table

	Adjustment to Felling period	Timing of Restocking and species component	Felling of larch within a mixed coupe	Changes to Road Lines
FC Approval normally not required	Fell date for phase 2 can be moved forward where larch comprises 50% or more of the coupe species component.	changes to restocking proposal that exclude larch and closely related species in the same genus, eg Sitka and Norway Spruce. Up to 3 planting seasons after felling		
Approval normally by exchange of letters and map	Felling moved between phases 1 and 2 where larch comprises less than 50% of the coupe species component	Changes to restocking proposals that include larch or closely related species in the same genus, eg Sitka and Norway Spruce. Between 3 and 5 planting seasons after felling	Areas of pure larch up to 20% of coupe area within phase 1 and 2 can be felled to remove the sporulating host, with restocking deferred until the rest of the crop is felled. Where the Larch constitutes more than 20% of the coupe component, then the whole coupe must be felled and restocked together.	New road lines (subject to EIA screening opinion) or tracks within existing approved plans necessary to allow the extraction of Larch material. Where necessary Prior Approval should be dealt with directly with the relevant Regional Council
Approval by formal plan amendment is required	Advance felling into current or 2 nd phase for pre-emptive larch removal			Where a new public highway entrance or exist is required. Where necessary Prior Approval should be dealt with directly with the relevant Regional Council

Larch felled in the autumn and winter, when the presence of *P ram* cannot be assessed visually must be treated as infected and will therefore require a movement license. When carrying out operations where the clearance has not been on the Public Register or through the consultation procedure it is important that due diligence is undertaken to identify sites that will require to be protected.

Appendix V: Historic Environment records

Refer to Map 12

Historic Environment Records				
Designation	Name	Feature Description	Grid Reference	Importance
No	Loch Doon Gunnery School	Military Airfield. First World War	NX48909840	Low
No	Spindle Whorl	Spindle Whorl found near Lamdoughty Farm. Acquired by museum in 1930	NX49009700	Low
No	Loch Finlas Reservoir	Reservoir	NX46019809	Low
No	Loch Doon Reservoir	Reservoir	NX49539820	Low
No	Loch Finlas dam	Dam	NX46909783	Low
No	Sheepfold	Sheep pen	NX47909791	Low
No	Loch Doon	Building (possible), Sheepfold(s) (Period unassigned)	NX49139627	Low
No	Garpel Bridge	Road Bridge (period unassigned)	NX48199859	Low

Appendix VI: Deer management plan (Finlas)

The Deer management plan (DMP) should be read in conjunction with the Finlas land management plan (LMP) and with the FLS Deer Management Strategy. This document was authored by Steven Hearton, Wildlife Ranger Manager for FLS South Region.

1.0 Introduction

Finlas Forest is approx. 900Ha in size although only 350Ha is managed for forestry. The forest block is sited on the north and east facing slopes of Craiglee and Craigmulloch, close to Loch Doon which has SSSI status. There is some unofficial path networks utilised by walkers, fishermen and campers. This is a popular area for DofE expeditions. The forest has a varied and diverse age structure ranging from Felling, replanting and protection of commercial conifers as well as more diverse tree species.

The area currently stands as a separate block due to landscape considerations. The Finlas plantation is surveyed for estimated deer utilisation and deer browsing impacts as part of the collective Galloway North West block.

Priority wildlife species within the plan area include; Salmonoids in adjacent burns, black grouse, otter, bats, pine marten, water vole.

Soils are reported to be mainly peaty gleys and flushed peat bog, there is limited areas consisting of brown earths which could potentially limit future tree species choice and establishment success. Some areas have previously been classed as unsuitable for producing crops (*ref Finlas Forest Design Plan 2013*).

A decent forest road system is the main Infrastructure in regards to accessing areas for deer control rendering some areas lacking in open space within the crop as well as access with ATV for carcass extraction. Open internal rides may also be utilised for access and carcass extraction.

2.0 Deer management objectives

- Maintain and enhance coniferous timber production.

- Immediate and long-term protection of planted broadleaves within the Loch Finlas water catchment area to improve water quality, bank stabilization and shade provision for aquatics such as Salmonids.
- Protect open hillside and woodland habitats to benefit biodiversity within the forest.

2.1 National objectives

Contribute to Scottish Forestry's Forestry Strategy¹ (also includes climate change).

- Contribute to Scottish Forestry's Forestry Strategy² (also includes climate change).
- Adherence to the FLS Deer Management Strategy³.
- Contribute to the Scottish Government's Scottish Biodiversity Strategy⁴.

2.2 Local objectives

- Protect the National Estate from unacceptable impacts by deer (e.g. less than 10% leader browsing damage by deer on all 1 to 5 year planting coupes, and minimise bark stripping/fraying to all crop age classes.)
- Aim for total deer densities to be in the range of 3-7 deer/km².
- Meet tree stocking density targets per hectare at year 5.
- Protect all biological resources on the National Estate from the negative impacts of browsing/grazing herbivores. This includes all tree crops, SSSI's, Planted Ancient Woodland Sites (PAWS), Low Impact Silvicultural Systems (LISS), National Nature Reserves (NNR), and other locally designated areas.
- Contractor and authorised controllers ensure good relationships with members of the public, other forestry customers, and FLS staff.

3.0 Deer species, other herbivores and feral pigs

¹ Forestry Strategy: <https://forestry.gov.scot/forestry-strategy>

² Forestry Strategy: <https://forestry.gov.scot/forestry-strategy>

³ Deer Management Strategy: <https://forestryandland.gov.scot/what-we-do/who-we-are/corporate-information/deer-management-strategy?highlight=deer%20strategy>

⁴ Scottish Biodiversity Strategy: <https://www.gov.scot/publications/scottish-biodiversity-strategy-2045-tackling-nature-emergency-scotland/>

Red and Roe are present within this block, Roe being the predominant of the two. Red deer can be expected to utilise or travel through Finlas from adjacent blocks as well as the open hill for various reasons throughout the year.

4.0 Management to date

Strath Caulaidd spring mean deer densities for **Galloway North West** in 2021 were reported as circa 10-15 /km². Given the +/- 42.8% confidence figure quoted in their report, FLS are confident the true density is at the lower end of the confidence giving a spring population of **4 Roe/km²** and **2 Red/km²** (totaling 6/km²).

60 Roe and **12** Red Deer have been Culled within the Finlas block between **1st April 2017 – 31st MARCH 2023**.

5.0 An evidence based approach

FLS use an information based decision making process to set its deer management operations with the data received from various internal and external reports. All data is then combined as best possible and applied to a population model which is used to set culls. Data used to create this DMP can be found in the FLS Deer Dashboard. (Currently only available to FLS staff, however, it will be made publicly available soon.)

Sources include:

- Thermal drone counts
- Herbivore dung counts
- Historical cull data
- Sighting data
- Ranger daily/monthly reports
- Deer Management Contractor daily/monthly reports
- Helicopter counts
- WRM surveys
- Strath Caulaidd survey data, independently obtained (i.e. deer density figure, impacts - NN/HIA, SDA, etc).

6.0 Population modelling and future culls

Finlas falls within the Galloway Main Block North West population model. The models are used to ascertain a recommended cull for a greater area, with cull and impact data used to support the distribution of culls across forest blocks within the model area. Finlas annual cull is currently set at 15 Roe deer and 5 Red deer for 2022/23. Future culls will remain high to

ensure that pressure is maintained across the whole forest area. These culls will fluctuate along with the forest structure which is a key factor in influencing deer carrying capacity.

Deer culls will continue to be monitored via FLS Wildlife management system, this along with updating population modelling annually will allow for evidenced based culls to be allocated. The *minimum* annual deer cull for Finlas is set to be circa **15 Roe and 5 Red** for the next 3-5 years.

7.0 Resources to deliver deer culls

The Deer population in Finlas is currently being managed by direct FLS Wildlife Ranger staff. Future Deer control in Finlas may be undertaken by either contract or direct FLS Wildlife Rangers depending on various factors however contractual agreement keeps contractors and rangers from sharing areas..

All controllers are qualified to Deer Stalking Certificate levels 1 and 2. In addition, all are required to carry out an annual firearms skills test, ensuring the highest levels of safety and competency when undertaking their duties. Rangers also complete additional self-checklists and training at set intervals that are part of the resumption system. FLS Wildlife Rangers are supported by a Wildlife Ranger Manager and Area Wildlife Manager.

Wildlife contractors are a vital resource in the FLS deer management tool box. Wildlife contractors are selected after satisfying FLS of their competence via a competitive tender. This work is arduous and critical to the success of the impact reduction strategy and only very experienced and appropriately qualified contractors are considered. All Wildlife contractors have the same qualifications as FLS Wildlife Rangers and compliance and health and safety are continually monitored by the Wildlife Ranger Manager.

Out of season shooting is an essential tool in the protection of vulnerable tree crops and natural habitats. This is conducted either under the General License issued by NatureScot for enclosed woodland or by 5(6) authorization on application to NatureScot for un-enclosed woodland. Male deer of all species will be shot year round on the National Estate and, following permission, the shooting of females out of season will be limited to the periods 1st September to 20th October and 16th February to 31st March. When early out of season shooting of females is carried out any dependent young will be shot first.

Night shooting is permitted by the Deer (Scotland) Act 1996 as amended by the Wildlife and Natural Environment Act 2011 (WANE Act), under section 18(2) authorizations granted by NatureScot. Applications for night shooting will only be made where unacceptable levels of damage would occur, and where the use of all other legal means of control, including out of season shooting have been considered. Operational dates for night shooting will be kept under review and can be changed should circumstances dictate. All operations will conform to current best practice guidance and a copy of these will be held at the district office and issued to wildlife rangers as necessary. Night shooting is a valuable tool in areas of high deer management pressure where the population has become wise to deer management practices.

8.0 Infrastructure

Infrastructure and access across certain coupes within Finlas is minimal, the use of existing strategic deer glades and natural openings within the block are essential to utilize as culling areas. New infrastructure is installed at the restock stage via workplans and Foresters consult with the Wildlife team to decide the best location for access tracks. There are some areas within Finlas that will require future consideration due to the terrain and deer species present.

Natural regeneration on deer glades and ATV tracks restricts wildlife management access. Future plans for the block involve infrastructure maintenance which will restore access and shooting opportunities. Requirements will be addressed by the FLS Wildlife team as part of the work planning process for individual sites. Flailing of the road's edge (which can increase visibility of deer) and vegetation clearance that coincides with the forest road maintenance program will be explored.

All FLS Wildlife Rangers have the following kit as standard:

- 4 x 4 vehicle with either a winch or loading crane attached to the back to aid in loading carcasses safely.
- Capstan rope to aid in extraction when far away from roads.
- 4 x 4 ATV with winch.
- Trailer to transport ATV.
- Sledge/hill trailer to aid in extraction using the ATV.
- .270 calibre rifle with high magnification scope. Some rangers have smart scopes where applicable.
- Binoculars.
- Handheld thermal imager to increase herbivore detection.
- Various knives, saws and PPE.

- Access to thermal drone and pilot.

The Straiton Deer larder is the primary appointed Larder for processing deer from Finlas.
(Larder capacity equals 60 red deer.)

9.0 Collaborative working opportunities

Currently there are no active collaborative culling agreements in place. FLS seek to work with neighbors where there is a mutual benefit in managing herbivore populations at a landscape scale wherever possible.

Deer Management Group; The local South West Scotland DMG is currently inactive.

10.0 Venison

FLS subscribes to the Scottish Quality Wild Venison (SQWV) scheme with all venison quality assured and currently sold to Highland Game Ltd. based in Dundee for the provision of a natural, sustainable, healthy product for the food industry. All animal by-products are sold to Highland Game along with the venison. All waste from larders is removed by a licensed waste disposal contractor.

Steven Hearton

Wildlife Ranger Manager

South Region

20/06/2023

Appendix VII: Finlas LMP Acid sensitive catchments

The purpose of this document is to demonstrate that felling and restock proposals for Finlas are compliant with the 'Managing forests in acid sensitive water catchments' FC practice guide (2014). The acid sensitive catchment relevant to Finlas is assessed as follows:

- 1.0 Critical loading is considered for water bodies with a 'failing' status: restocking proposals are evaluated to determine if the area of closed canopy forest (age > 15 years) will exceed 30% of the (sub-)catchment in 15 years' time.
- 2.0 Potential felling impacts on the site are assessed for catchments with a 'failing' or 'at risk' status: the scale of planned felling in any three year period is checked against a 20% (sub-) catchment threshold.

The relevant catchments are described below and shown in maps (3.0) at the end of this appendix:

- The Garpel Burn inc. Pollcravie Burn catchment is a 'failing' acidified catchment (as per Forest Research's Acid Vulnerable Catchments 2020 dataset). It has a catchment area of 1414 ha. It overlaps Finlas by 610 ha. There are no other woodlands within the catchment. This catchment contains 5 sub-catchments shown on Map (3.0).

Catchments and sub-catchments were generated using ArcMap and their accuracy checked against the approach described in practice guidance. Felling and restocking information for the National Estate was accessed via FLS' s internal geographic information system.

1.0 Assessment of restock proposals

Garpel Burn including Polyclavie Burn

As shown in the table below, there is one sub-catchment (SUB 5) where the estimated area of closed canopy forest (age >15 years) in 15 years' time exceeds the 30% threshold, meaning this sub-catchment is vulnerable to a forestry acidification effect. As a heavily-forest it is unlikely that compliance within the 30% threshold will ever be achieved in Sub-catchment 5. Given that deforestation is not really an option, efforts to mitigate the

forestry acidification effect have been considered in the Future Restock plans which will see an increase in buffered riparian zones, some targeted reduction of conifer plantation and increased areas of native broadleaf planting. The threshold is not exceeded across the Garpel Burn including Pollcrayvie Burn catchment as a whole.

Assessment of restock proposals in the Garpel Burn inc. Pollcrayvie Burn Acid Sensitive Catchment		
Catchment	Estimated area of closed canopy forest (age > 15 years) in 15 years' time	
	Hectares (ha)	Percentage (%)
SUB 1	-	-
SUB 2	-	-
SUB 3	22.0	12.7
SUB 4	27.1	26.0
SUB 5	78.6	67.2
Total catchment	173.4	12.3

2.0 Assessment of felling proposals

Water of Garpel Burn including Pollycravie Burn catchment.

As shown in the table below, proposed felling within the sub-catchments directly interacting with the Garpel Burn / Pollcrayvie Burn is unlikely to have a significant effect on the freshwater environment and proposed felling across the entire catchment does not exceed the 20% threshold in any three year period.

Felling site impact for the Garpel Burn inc. Pollcrayvie Burn Catchment

3 year period	Estimated proposed felling in catchment (%)					Entire Acid Sensitive Catchment
	SUB 1	SUB 2	SUB 3	SUB 4	SUB 5	
2022/24	-	-	-	-	-	-
2023/25	-	-	7%	-	-	0.9%
2024/26	-	-	7%	-	-	1.8%
2025/27	-	-	7%	-	-	1.8%
2026/28	-	-	-	-	-	0.9%
2027/29	-	-	-	-	-	-
2028/30	-	-	-	-	-	-
2029/31	-	-	-	-	-	-
2030/32	-	-	-	-	-	-
2031/33	-	-	-	-	-	-
2032/34	-	-	-	-	-	0.6%
2033/35	-	-	-	-	-	0.6%
2034/36	-	-	-	-	-	0.6%

3.0 Acid sensitive catchment maps

