Forestry and Land Scotland
Coilltearachd agus Fearann Alba

Southend Composite Block, Arran

Long Term Plan (LTP) 2027 – 2037

V1.0

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

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Version History

Version	Date	Comments
V1.0		

A Description of Woodlands

A.1 Property Details and Declaration

A.1 Property Details			
Property Name:	Southend Composite Block		
Grid Reference: (e.g. NH 234 567)	Main entrance: NS 0335 2590 South entrance: NR 9736 2199	Nearest town or locality:	Whiting Bay, Kildonan & Kilmory
Local Authority:		North Ayrshire Council	
LTP plan area (hectares):		3323.6	

Applicant Details			
Regional Manager:	John Dougan		
Planner:	Catriona Hawthorn		
Organisation:	Forestry and Land Scotland	Position:	South Region
Primary Contact Number:	07887 308129	Alternative Contact Number:	N/A
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Postcode:	KA19 7NG	Country:	Scotland

Approval - to be completed by Scottish Forestry staff:			
LTP Reference Number:			
Plan Period: (ten years) (day/month/year)	From:	To:	
Operations Manager Signature:		Approval Date: (dd/mm/yyyy)	

Declaration

I hereby apply for a permission to fell the trees described in this application and I certify that:

- I am authorised to sign legal contracts on behalf of Forestry and Land Scotland.
- I undertake to obtain any permissions necessary for the implementation of the approved Plan.
- I have made the necessary checks with the local planning authorities regarding Tree Preservation Orders and Conservation Areas.
- I confirm that the scoping, carried out and documented in the Consultation Record attached, incorporated those stakeholders which SF agreed must be included.
- I hereby acknowledge that Scottish Ministers may process any of my personal data contained in or relating to this application in accordance with the terms of Scottish Forestry's Privacy Notice.
- Where applicable and appropriate I have submitted an EIA screening opinion request form for operations contained within this application under the Forestry (Environmental Impact Assessment) (Scotland) Regulations 2017 for road building /quarries /afforestation /deforestation.
- I have read and understand this application fully and, to the best of my knowledge and belief, the information given in this application is complete, true, and accurate.
- I accept that any false or misleading information provided in this application constitutes an offence and may result in any felling permission based on this application being revoked at any time.
- I have read and understand Scottish Forestry's Privacy Notice.

Do you give consent for Scottish Forestry to access your land? Delete as appropriate.	**YES**	
You are not obliged to give us consent to enter your land, however if we are denied access to your land, and cannot carry out an assessment because of this, we may reject your application. **This consent is for access to assess this application as well as monitor compliance with any subsequent approval, where applicable**		

Signed, Planning Manager:		Print:	Ed Turner	Date:	28/10/2026
Signed, Area Manager		Print:	Mark Johnson	Date:	10/11/26

A.2 Location and Background

Southend Long Term Plan (LTP) Area comprises the Aucheleffan, Garbad and Glenashdale Forest Blocks lying near Whiting Bay, Kildonan and Kilmory on the south of the island of Arran. The LTP area is 3,324 hectares of which approximately 70% is afforested and 30% is Open.

The Glenashdale area lies close to Whiting Bay and is the most frequently visited area on site due to the natural beauty and heritage features.

See **Map 1**.

A.3 Existing Schemes & Permissions

The purpose of the Long Term Plan (LTP) is to outline felling and thinning proposals over 20 years with the first 10 years (2027-2037) in detail; along with restocking proposals for the whole plan area. This first 10-year period is particularly important because it relates to the part of the LTP that requires specific approval from Scottish Forestry (SF), including operations which may require screening for a determination on whether Environmental Impact Assessment (EIA) is necessary. Where plans include woodland creation, deforestation, roads and quarries, an accompanying Screen Opinion Request will be submitted to SF. Longer term management of Southend is included in the plan but to provide an indication of the direction of travel and to provide context.

The plan will be reviewed after five years to ensure the objectives set out in the LTP are still appropriate for the management of the forest in the current conditions. All operations, both planned and completed, will also be reviewed to ensure they are still necessary to achieve the stated objectives.

The management of the woodland is certified and will always adhere to the UK Forestry Standard (UKFS) and the UK Woodland Assurance Standard (UKWAS).

This LTP has been produced in accordance with a range of government and industry standards and guidance as well as recent research outputs. A full list of these standards and guidance can be found on our website.

Table: Existing Schemes & Permissions		
Type	Ref. No.	Details
LMP 2016-2026	032/15/03	Expiry date 31st September 2026

A.4 Stakeholder Engagement

A full record of comments raised during public consultation is available in Appendix I.

Stakeholder Engagement Summary		
Scoping – Main Points	LTP Reference (section/page):	
Designated Sites (SPA, SSSI, Ancient Woodland): NatureScot: provide mosaic of habitats. Consider implementing a Predator Control Plan for corvids. Broadleaf buffers between SSSI/SPA and plantations would be appropriate	A.6.9 C.2.4 C.2.11 Map 3	Biodiversity Natural reserves, LTRs, Minimum Interventions Biodiversity Concept Map
Historic Environment: Members of Public (MOPs): Preserve old whisky stills and old dwellings. Open up or preserve views from sites of Scheduled Monuments	A.6.8 B.1 C.2.10 Map 9 Appendix II	Historic Environment Constraints & Opportunities Historic Environment Historic Environment Historic Environment record

Stakeholder Engagement Summary		
Water Management / Water quality: SEPA: Follow Riverwoods Initiatives principles. Maximise riparian zones, identify Private Water Supplies (PWS) and protect. Produce water management or diffuse pollution plans where appropriate. Remove waste from site. MOPs: Consider potential flood risk to Whiting Bay when planning operations. Ensure that PWS are protected.	A.6.4 B.1 C.2.16 Appendix V	Hydrology Constraints & Opportunities Hydrology & Private Water Supplies Private Water Supplies
Biodiversity / Habitats: NatureScot: Riparian zones - broadleaf buffers are encouraged. Explore opportunities for wetland creation or bog restoration. Saving Scotland's Red Squirrels / SWT: Provide mix of conifers and broadleaf species, aim for habitat connectivity. Retain mature trees where possible. Aim for diverse age structure. MOPs: Protect fragments of rainforest, consult with Arran Rainforest CIC. Increase diversity, reduce commercial monocultures for wildlife and people. Improve habitat connectivity. Concern over Sitka spruce near SPA resulting in regen. Neighbouring landowner: requests native / broadleaf planting near their landholdings south of the block	A.5 A.6.9 B.1 C.2.3 C.2.4 C.2.11 Map 6	Management Objectives Biodiversity Constraints & Opportunities LISS Natural reserves, LTRs, Minimum Interventions Biodiversity Future Habitats & Species

Stakeholder Engagement Summary		
BSBI Recorder & Arran Rainforest CIC: protect important rainforest zone in Kilmory Glen		
Recreation & Access: British Horse Society: Maintain access for riders. Create circular routes where possible. Consider riders' requirements when installing gates and barriers. Vehicle drivers onsite must drive considerately. MOPs: Safety concern regarding shared usage of forest roads (haulage & recreation). Improve views from key visitor sites. Extend recreational routes if possible - connectivity. Maintain routes and reopen iron age fort area.	A.6.7 C.2.9 Map 11	Access Routes Public access Access & Recreation
Deer Management: SWT / Saving Scotland's Red Squirrels: control deer populations MOPs: Deer populations perceived to be high by some MOPs	C.2.6	Protection (deer)
Landscape Impact: MOPs: Maintain and, where possible, improve views from scheduled Monuments and key visitor areas. Hotplant to reduce negative impacts on landscape.	C.2.10	Historic Environment

A.5 Long Term Vision and Management Objectives

Vision

Southend will continue to provide sustainable timber volumes from a range of conifers while continuing to support and provide habitat for nationally important species such as Hen harriers and Red squirrels. Over time the woodland's age structure and species composition will become more diverse, consequently increasing the woodland's resilience to the effects of pests, diseases and climate change.

Management Objectives		
Number	Objectives (including environmental, economic and social considerations)	Indicator of objective being met
1	Maintain sustainable timber production	Delivery of felling and restocking programmes. Ensuring that the forests contain a diverse range of species and structures with timely silvicultural interventions to realise crop potential.
2	Management for priority species	Increase in the area of low-density forest edge habitat, and ensure that a mosaic of other habitats provide for a range of wildlife species.
3	Improved crop resilience to extreme weather events	Areas with windblow and areas of exposed mature crops are prioritised for felling. Windfirmness is encouraged through restocking design and future management.

A.6 General Site Description

A.6.1 Topography and Landscape

The topography within the plan area is varied ranging from areas which are relatively flat or have gently rolling hills, to areas with craggy hillocks and some steep-sided gorges. The land rises from around 130m elevation at the edges closest to the coastline, through to 370m elevation within afforested areas, and 458m in the open hillsides.

Southend LTP area is mainly characterised as Landscape Character Type 80: Rugged Moorland Hills and Valleys which is typified by rounded hills and moors with exposed red sandstone dykes, sills and intrusions. Land within this LCT is largely undeveloped.

A.6.2 Geology and Soils

The underlying geology is Permian and Triassic mud & sandstones with acidic and basic sills. Glenashdale Falls is formed by one of these sills.

The soils are a gradation from surface water gleys on the lower slopes rising through upland brown earths and peaty gleys to deep peats. There is an area of peat in the SE part of the plan area near Loch Garbad.

A.6.3 Climate

The climate data for Southend was obtained from the Ecological Site Classification system (ESC). The results of interrogating this system gave the following data.

AT5 (Accumulated Temperature) is the accumulated total of the day-degrees above the growth threshold temperature of 5º, which provides a convenient measure of summer warmth. The AT ranges from 1256 to 1709. Results for AT5 place the entire block in the warm zone.

MD is the Moisture Deficit for the area. Moisture deficit reflects the balance between potential evaporation and rainfall and therefore emphasises the dryness of the growing season (rather than the wetness of the winter or entire year). MD ranges from 37 to 78 across the site, placing the block in the wet zone.

The wind throw risk is measured by the DAMS score for the forest area. DAMS is the Detailed Aspect Method of Scoring. This represents the amount of physically damaging wind that forest stands experience in the year. Windiness is the limiting factor to tree growth at higher elevations in Britain.

Only one coupe in the block, coupe 43025 in Glenashdale glen, is sheltered (DAMS <12). Around 35% of the afforested area in Southend is moderately exposed (DAMS 12 – 15) with the rest of the site being highly exposed (DAMS 16 – 19) or Severely Exposed (DAMS 20 – 22). Opportunities for thinning within these exposed areas will be limited due to the risk of windblow. See **Map 10**.

Each tree species has tolerances for these, and other factors, and they can be used to identify species suitable for the site conditions. The results above will be used to help assist in the choice of tree species for restocking in this plan.

Further information on these criteria and the application of ESC can be found in Forestry Commission Bulletin 124 - An Ecological Site Classification for Forestry in Great Britain.

A.6.4 Hydrology

Kilmory Water is the most significant watercourse in the area.
SEPA water classification data:
Kilmory Water: ID 10186 Condition: High quality

Various other watercourses drain from Southend block including Glenashdale Burn, Allt Mor (which originates from Loch Garbad) and Allt Mor Cloined. See **Appendix III** for details.

Flood risk areas:
The residential streets of Montrose Terrace and Ashdale Way in Whiting Bay face a "High Likelihood of flooding" risk from the Glenashdale Burn. SEPA categorise a 'High Likelihood' as a 10% chance of flooding each year. The levels of felling within the catchment have been calculated and deemed to be appropriate and unlikely to increase flood risk in the area. See **Appendix III** for details.

No other residential properties near Southend LTP area are thought to be at risk of flooding from watercourses according to SEPA flood risk maps.

Private Water Supplies:
Several local properties use Private Water Supplies with catchments which interact with Southend LTP area. See **Appendix V** for details.

A.6.5 Windthrow

The Southend LTP area is highly exposed due to its position on the southern end of the island of Arran. The majority of the afforested zones are Highly Exposed (DAMS 16 – 19). Some afforested areas, such as the coupes of mature crops on Auchenhew Hill, are Severely Exposed (DAMS 20-22). This results in windblow occurring fairly frequently in brown edge areas, and restricts the options for silvicultural practices such as Thinning.

See **Map 10**

A.6.6 Adjacent Land Use

The Southend LTP area borders the Dyemill and Glenscorrodale forest blocks to the north. However, there is no direct forest or road network connectivity between Southend and Glenscorrodale. In contrast, Dyemill is directly connected to Southend in the Glenashdale area through both the forest road network and contiguous areas of woodland planting.

Elsewhere the LTP area is predominantly surrounded by open moorland and rough grazing. To the south of the LTP area, around Levencorroch and Kilmory, are some farms and managed agricultural land.

The only significant community bordering Southend is the village of Whiting Bay which lies near Glenashdale forest.

A.6.7 Access

A network of core paths and other recreational routes connect the Southend LTP area with nearby communities.
Core Paths AR235, AR246, AR263, AR265, AR266, AR268, AR269 and AR270 are partially within the LTP area mainly using the Forest Road network and therefore providing recreational routes which are suitable for walkers, cyclists and horse riders. The Arran Coastal Path (one of 'Scotland's Great Trails') crosses part of the Garbad forest block between Kilmory and Largybeg. FLS provides additional walking routes from Whiting Bay to Glenashdale Falls and Giant's Graves, connecting with core path network; walking trails to Loch Garbad can be accessed north of Kildonan near Eas Mor waterfall and a small recreational trail from the forest road at coupe 41065 provides access to the Carn Mor scheduled monument.

See **Map 11**.

A.6.8 Historic Environment

There are a large number of recorded features including five Scheduled Monuments (SM): the Glenashdale Wood Fort, the 4-post stone circle at Allt nan tighean, and 3 sites with chambered cairns: Carn Ban, Torr an Loigste and Giant's Graves. These heritage features will be conserved using the principles in the Forestry and Archaeology Guidelines.

See **Appendix II** for details and **Map 9** for locations of all registered heritage features withing the plan area.

A.6.9 Biodiversity

Designated sites (see **Map 3**):
The Arran Moors Site of Special Scientific Interest (SSSI) covers an area of 8413 ha of which 462 ha is within Southend, mostly in the open hillsides north of the afforested areas. This SSSI has been designated for upland habitats assemblage, breeding birds assemblage and Hen harriers (breeding) and has been assessed by NatureScot as 'favourable' for breeding birds including Hen harriers, and unfavourable (unchanged) for upland habitats.

The Arran Moors Special Protection Area (SPA) covers 10,801 ha of land (25% of the island of Arran) and the same 462 ha of open hillsides are also within the SPA. It is designated for Hen harriers and assessed as 'favourable'.

Priority habitats:

A 6.5 ha area of Ancient woodland (of semi-natural origin) can be found within Kilmory Glen, and there is 42.3 ha of LEPO in the Glenashdale area. All PAWS areas have now been restored.

Deadwood Ecological Potential is high in the Glenashdale and Kilmory glens and along most riparian zones. Coupes 41071, 41025, 41039, 41069 , 42059, 42065, 43011, 43016 and 43025 all also have high deadwood ecological potential and have all been retained as Natural Reserves, LTRs or Minimum Intervention coupes.

Priority species:
The block hosts a wide range of species including Red squirrels, Hen harriers, and various other birds of conservation concern. A full list can be found in section C.2.11.

A.6.10 Invasive Species

Japanese knotweed has been identified in one location within the LTP area and is currently undergoing chemical eradication.

No other invasive species have been recorded on site.

A.7 Woodland Description

1282 ha of first-rotation conifer crops can be found within the plan area. Large contiguous areas of the Garbad and Glenashdale blocks contain 1960s and 1970s conifers, predominantly Sitka spruce and Lodgepole pine, and windblow has occurred in many areas where nearby felling has resulted in brown edges in highly exposed land.

Within the Aucheleffan block, 49% of the afforested area is managed under Low Impact Silvicultural Systems (LISS) and is predominantly composed of native woodland species. This is

particularly evident around Kilmory Glen, where broad corridors of native woodland and open habitat create an important ecological link between the designated SPA and SSSI at Kilbride Hill, to the south of Aucheleffan, and the more extensive designated open hill habitats to the north. The area also retains remnants of ancient semi-natural woodland, contributing to its ecological and landscape value.

See Map 2 Current Species which shows the existing tree species composition and pattern.

Table 1 - Area by species

This shows the current and future species composition within the entire plan area.

Area by species *Figures in brackets are indicative of % forest area when the open hill ground (coupe 41000) is excluded*						
Species	**Current**		**Year 10**		**Year 20**	
(Add relevant species groups, or OG/OL)	**Area (ha)**	**%**	**Area (ha)**	**%**	**Area (ha)**	**%**
Sitka spruce	1487.8	44.8 *(51.0)*	1461	44.0 *(50.1)*	1313	39.5 *(45.0)*
Other conifers	376.7	11.3 *(12.9)*	432	13.0 *(14.8)*	465	14.0 *(15.9)*
Mixed broadleaves	243.1	7.3 *(8.3)*	314.7	9.5 *(10.8)*	355.3	10.7 *(12.2)*
Fallow	217	6.5 *(7.4)*	97.8	2.9 *(3.3)*	172.6	5.2 *(5.9)*
Open ground – within forest area	586.6	17.6 *(20.1)*	605.7	18.2 *(20.8)*	606.3	18.2 *(20.8)*
Open ground – open hillsides (coupe 41000)	404.8	12.2	404.8	12.2	404.8	12.2
Other land use (e.g. quarries, built facilities)	7.6	0.2	7.6	0.2	7.6	0.2
Total	**3323.6**	**100**	**3323.6**	**100**	**3323.6**	**100**

Table 2 – Area by age

This shows the woodland area broken down by age class and will show how well the woodland is distributed across the age classes.

Age class (years)	Current	Year 20
	Area (ha)	Area (ha)
0-10	282.2	524
11-20	363	647.2
21-30	169.4	351.2
31-40	28.1	257.4
41-50	330.1	138.3
51-60	640.2	8.5
61-70	280.2	1.0
71-80	0	149.3
81-90	0	63.5
91-100	9.3	0
100+	5.9	11.6
Total*	**2108.4**	**2152**

* Differences between report and LTP area are due to presence of multiple storeys in the sub-compartment database resulting in a correct double count of species. Difference between current and Year 20 areas are due to inability to account for multiple storeys in the future restock areas layer.

A.8 Plant Health

Phytopthera ramorum infection of larch has been recorded throughout Arran and many areas of infected larch have been removed from Southend. A small component of larch still exists onsite and will be targeted for removal, if access allows, during the term of this plan.

B. Analysis of Information

B.1 Constraints and Opportunities

B.1 Constraints and Opportunities		
Factor	Constraint	Opportunity
Timber production	• High DAMS / wind exposure restricts silvicultural options on site, and increases risk of windblow to exposed edges • Generally poor-quality soils and high rainfall reduce diversification options • Designated sites (SPA and SSSI) directly bordering productive areas • Presence of protected species may restrict operational scheduling • Any remaining larch areas should be addressed as per the Arran Larch Strategy • Adjacency risks due to large contiguous area of very mature conifers	• Consider the coupe shapes and phasing of operations and aim to mitigate risk of windblow by felling to windfirm edges • Manage designated sites according to the Designated Sites Management Plans • Aim to create fringe / forest edge transitional zone between designated sites and productive areas • Plan additional roading to enable access to mature crops

	• Roaded access is required for some coupes	
Water	• Forest operations could have an impact on watercourses and associated riparian areas • Flood risk zones in Whiting Bay must be considered and efforts made to mitigate risk through appropriate timing of felling • Private Water Supply catchments must be considered during planning of ops and adequately protected	• As coupes are felled and restocked there are opportunities to widen and enhance riparian corridors to reduce risk of siltation from forest operations, aid wildlife and improve water quality. • Careful planning of the scale and scheduling of felling near flood risk zones may mitigate flood risks
Biodiversity	• Natural regeneration of non-target tree species • Difficulty of establishing broadleaved species in remote areas • Browsing pressure from deer • Operational constraints due to the presence of European Protected Species and Schedule 1 birds	• Where site conditions allow, retain some mature trees and deadwood to benefit wildlife • Felling and restocking brings opportunities to expand riparian zones, increase the range of habitats on site, and improve connectivity between habitat areas • Ensure that wildlife team can access new planting areas to control deer populations • Careful planning of operations can minimise disturbance of sensitive wildlife species
Plant health	• Larch infected by *Phytopthera ramorum* is still present within the plan area • Larch is not available as an alternative conifer species	• Create opportunities to remove larch through reviewing coupe shapes and felling phases.

Access/ recreation	• Core paths and various recreational trails run through the site, sometimes interacting with haulage routes	• Opportunity to increase diversity of tree species planted in visitor zones to improve amenity value
Historic environment	• Several scheduled monuments and other heritage features across the block must be accurately mapped and adequately protected during forestry operations	• Protect heritage features and improve visitor experience around them, by ensuring that buffer zones are in place around SMs

Concept

Phase 1 and 2 felling prioritises areas of over-mature conifers where windblow has started to occur. A sustainable timber supply will be ensured by continuing to diversify both the age and the mix of species within the block.

A varied age structure and range of tree species will provide a mosaic of habitats for a range of wildlife species. The restock plans for the site will include extended riparian zones, and key broadleaf and open areas aiming to create additional habitat corridors within Southend. Transitional woodland edge habitat zones between open hillsides and the core plantation will have been created or extended.

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

C. Management Proposals

C.1 Silvicultural Practices

The prevailing silvicultural practice used within the block will be clearfelling, as per the previous plan, however several areas are managed under Low Impact Silvicultural Systems (LISS). High DAMs scores / high exposure on site restricts the opportunities to carry out productive thinnings within plantation areas however some coupes will be stocked with self-thinning mixes to promote good timber quality.

Several coupes have been set aside as Natural reserves to benefit key wildlife species and to provide deadwood habitat, and a couple of small Long Term Retention coupes aim to retain mature conifers of mixed structure to benefit Red squirrels.

C.2 Prescriptions

C.2.1 Felling

Sites proposed for clear felling in the plan period are identified as Phase 1 and Phase 2 management coupes on **Map 4**. Refer to Table 3 for scale of felling. Any other planned tree felling (e.g. selective felling, felling of individual trees, or felling of coppice) is shown on **Map 5**.

Other tree felling in exceptional circumstances

FLS will normally seek to map and identify all planned tree felling in advance through the LTP 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 LTP 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 plan review.

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

C.2.2 Thinning and Respacing

Thinning opportunities are constrained within Southend due to the highly exposed nature of the site as demonstrated by **Map 10**. Potential sites for thinning in the plan period are identified on **Map 5**. Table 4 indicates the areas where commercial thinning or conservation thinning could be applied during the term of the LTP.

Opportunities for timely thinning will be assessed as crops reach pole stage. Commercial 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.

Conservation thinning. These areas will be managed to remove invasive or aggressive non-native conifers and promote/retain planted native broadleaves. The main objectives are conservation, amenity and in some cases low output hardwood timber production. They include minimum intervention areas, riparian zones, visitor/amenity zones, heritage and designed landscape features and a sensitive water supply area. Some thinning of broadleaves may be undertaken to improve views, protect slower growing native species, protect or enhance heritage features and

vary light levels along riparian zones. Retention of deadwood will be a key priority in these areas and every opportunity should be taken to retain both standing and fallen deadwood where safe to do so.

C.2.3 Low Impact Silvicultural Systems (LISS)

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

Several coupes have been identified for management via LISS utilising a group shelterwood system. While some areas of mature conifers dating from the 1960s have been retained, most land within these shelterwood coupes have been restocked over the past 25 years with a diverse mix of native species - predominantly broadleaves - alongside some open habitats. The coupes should be managed for biodiversity and visual amenity, contributing to both ecological resilience and landscape quality. They should provide a mosaic of habitats due to the diverse range of species and structures within the woodlands. The main interventions in these coupes during the term of this LMP will be the removal of SS regen from broadleaf areas and control of invasive species where resources allow; whilst opportunities for thinning on a Group Shelterwood system should be explored once crops reach minimum of 10 – 12 m top height.

Group Shelterwood generally encompasses:

- progressive thinning
- clearance of windthrow patches
- and small-scale felling of patches of 0.5 ha up to 2.0 ha to stimulate restructuring and promote regeneration of target tree species.

The Group Shelterwood coupes within Aucheleffan block all have Medium or High Deadwood Ecological Potential and the retention of 1960s conifers may therefore be beneficial to wildlife even if trees start to blow or become standing deadwood.

If there is a management requirement for any coupe greater than 2.0 ha to be felled, then that prescription will be initially agreed per the Tolerance Table in Section C.4

C.2.4 Long Term Retentions (LTR) / Natural Reserves (NR) / Minimum Intervention (MI)

Stands identified as LTR and Natural Reserve are shown on **Map 4**.

Total of 130.3ha of afforested areas have been designated as Natural Reserves (NRs) for the benefit of wildlife, this is 4.5% of the total Woodland Management Unit.

Within Aucheleffan block coupes 41025, 41039, 41069 and 41071 are Natural reserves with the aim of retaining areas of mature conifers for varied structure, supply of deadwood, and seed source. These NRs aim to provide for nesting Schedule 1 birds, and provide habitat and food source for Red squirrels. These areas have also been designated as areas of High Deadwood Ecological Potential.

Further areas of Garbad (coupe 42059) and Glenashdale (43001) have also been retained as NRs to prove habitat and food sources for Red squirrels.

Coupe 43025 has been designated as an NR as it is mature semi-natural wet woodland with variable structure. This area also has High deadwood Ecological Potential.

Coupe 43016 is a Long Term Retention coupe for the benefit of Red Squirrels and amenity value of the varied structure in this coupe. The Mountain Bothy Association has applied for a CAT of a portion of this coupe and the long-term management plans for this area will be reviewed at a future date.

Minimum Intervention coupe 41084 has been enlarged from 9.3 ha in previous plan to 18.5 ha to better protect the rainforest zone in Kilmory Glen from cooling, drying winds when the neighbouring mature conifers in 41079 are felled.

C.2.5 Restocking Proposals / Natural Regeneration

Planned restocking of felled areas, and proposals for the future habitats and tree species over the whole plan area are shown on **Map 6**. See Table 5 for areas, establishment, and mix proportions. Timing of restocking will comply with the plan tolerance table shown in section C.4.

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

Stocking densities will be at least 2,500 stems per ha (sph) for conifers and 1,600 sph for broadleaves unless justified elsewhere in this plan. If the restock or natural regeneration should fail to reach these levels the site will be beaten-up to the required planting density. This will be assessed at year 3 and year 5 after planting with beat-up by at least year 5.

Where non-native plantations adjoin designated sites within the Arran Moors SPA and SSSI, opportunities will be taken to pull back the plantation edges and establish buffers of low-density native woodland. This will help reduce the encroachment and regeneration of non-native tree species onto adjacent designated open habitats.

Opportunities to extend native planting in land adjacent to Levencorroch Hill were explored in response to suggestions during stakeholder engagement with the neighbouring landowner. A large native planting area is proposed on the east side of Levecorroch where 34.4ha of coupe 42046 will be restocked with native species (broadleaf planting adjacent to Levencorroch Burn, and Scots Pine / birch mix elsewhere). On the other side of Levencorroch hill the restock will be mostly Sitka spruce to meet timber production objectives, with a 50m low-density broadleaf buffer between the designated open hillsides and the non-native plantation areas.

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

Table 3 – Felling

This shows the scale of felling within the felling phases in the context of the whole LTP. This includes any areas of 'LISS – Fell' (i.e. removal of final overstorey).* (see Map 4).

SCALE OF PROPOSED FELLING AREAS (including LISS final fell areas)												
Total LTP Area:		3323.6	hectares									
Felling	Phase 1	%	Phase 2	%	Phase 3	%	Phase 4	%	Long Term Retention*	%	Area out-with 20yr plan period	%
Area (Ha)	260	7.8	324.1	9.8	336.1	10.1	104.1	3.1	0	0	827.9	24.9

* As all areas of proposed LISS management will have some overstorey trees retained over the next 20 years, no areas of 'LISS – Fell' are listed.

Table 4 – Thinning

This shows the area of thinning over the first 10 years of the LTP (see Map 5).

Thinning over the first 10 years of the plan			
Thinning Type	Prescription	Total Area (Ha)	Thinning by Species
LISS/ Conservation	Conservation Thinning (see section C.2.2). Removal of non-native conifers from broadleaf and open areas	363	SS: 26 ha
Commercial	Commercial Thinning (see section C.2.2). Survey around Year 17. Thin when crown height reaches 10 – 12m. Line thin to ensure a good final crop. Intermediate thin, cycle of approx. 5 years	30.5	SS: 4.3 ha DF: 1.1 ha NS: 0.5 ha

Table 5 – Restocking

This table provides information on the restocking proposals for the first 10 years of the LTP listed on a coupe-by-coupe basis (see Map 6).

Felling Phase	Map Identifier(s)	Species *	Area (ha) to be planted**
Currently fallow	42001	DF SS MB	10.2 10.9 11.1
„	42039	SS NS MB 70% / Open 30%	39.3 10.6 10.1
„	42041	SS MB 70% / Open 30%	12.7 3.0
„	42064	SP MB 40% / Open 60%	20.6 2.9
„	43007	SS	33.5
„	43035	SS MB 60% / Open 40%	11.3 2.0
„	43037	SS	18.2
1	41006	SP SS MB	1.3 1.2 0.4
1	41012	SS MB	25.7 5.7
1	41023	SP	11.3

Felling Phase	Map Identifier(s)	Species *	Area (ha) to be planted**
1	41040	SS MC BI 40% / ROW 40% / WWL 20% MC 60% / MB 40% MB	24.8 11.5 8.6 3.2 0.8
1	41062	SS MB	16.4 3.5
1	42045	SS 70% / LP 30% NS MB	21.3 14.5 0.2
1	42050	SS MB	22 0.2
1	42053	SS SP MB	23.2 10.0 2.4
1	43027	MB	3.4
1	43030	NS MB	7.3 0.8
2	42012	SS MB	75.0 3.0
2	42034	SS NS MB	29.2 6.7 2.2

Felling Phase	Map Identifier(s)	Species *	Area (ha) to be planted**
2	42046	SS SP 70% / BI 30% MB SS 70% / LP 30%	48.6 19.6 14.2 1.9
2	42063	NS SS MB	18.4 6.4 3.9
2	43003	SS	20.9
2	43021	SS RF MB SP 50% / MB 50%	14.2 4.4 2.7 2.8
2	43022	SS	16.5
Total Restocking Area			706.0

*Establishment is expected to be by planting unless otherwise stated.

**net area to be planted excluding designed open ground

C.2.6 Protection

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

Red Deer are the only species on the island and there are no wild goats or pigs present. Spring mean deer density for 2026 were approximately 6.6 Deer per km^2. In the last full five year culls from April 2021 to April 2026, FLS have culled 636 Red Deer from the Southend blocks. Culling is ongoing with targets set based on population modelling, cull data and site evidence.

C.2.7 Fence Erection / Removal

It is expected that for the establishment of new restock on site, deer will be managed via culling. However for the coupes to be planted/regenerated with broadleaves fencing may be required. This decision will be made jointly by the wildlife ranger manager and the delivery forester. If deemed necessary, this will be maintained for the period required to achieve successful establishment and subsequently removed.

Any fence erection will not impinge on access, and gates will be installed to facilitate this if required.

No fence erection or removal is currently planned for silvicultural activities.

C.2.8 Road Operations and Timber Haulage

Map 7 shows the existing forest road network and any associated quarries, timber haulage egress points, and any local 'Agreed Timber Transport Routes'.

Any planned new roads or quarry expansions in the plan period are indicated on **Map 10** (Environmental Impact). The lengths of planned new roads are given on the map and are reflected in the EIA Screening Opinion Request submitted with the plan.

Timber will be exported through Dyemill block and then travel north on the A841 public road through Lamlash to Brodick.

FLS maintains forest roads along haulage routes to an appropriate standard for harvesting operations, timber extraction, and staff access. Access roads serving the three residential properties within the Southend area will also be kept clear of obstructions, such as windblown trees, to ensure safe and reliable access.

C.2.9 Public Access

FLS welcome responsible public access in accordance with the Scottish Outdoor Access Code.

Where trails are affected by forestry operations, appropriate temporary closures will be implemented and, where possible, suitable diversions provided to maintain access while ensuring public and operator safety. Access to key routes such as core paths and rights of way will be maintained and restored as required after operations. Liaison with the Local Authority Access Officer will continue to be carried out as appropriate.

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. The most popular visitor zone in Southend is centred around a network of recreational routes which connect Whiting Bay , Glenashdale Falls and the Giant's Graves. See **Map 11**.

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.

C.2.10 Historic Environment

The Regional Historic Asset Management Plan includes conservation management intentions for designated historic assets on Scotland's National Forests and Land. Details of all known historic environment features are held in FLS's Heritage Dataset and included within work plans for specific operations to ensure damage is avoided. Significant historic environment features will be depicted on all relevant operational maps. Areas of historic environment interest will be checked both on FLS's records and also with the Council's HER prior to the commencement of forestry activities. Any upstanding features will be clearly marked, both on the ground and on operational maps. Care will be taken to avoid any damage to surviving structural elements. FLS also has a protocol for actions to be taken if any previously-unidentified heritage features or archaeological artefacts are found on site which involves reporting the find to our FLS Archaeologist and contacting relevant authorities.

There are five Scheduled Monuments within Southend: the Glenashdale Wood Fort, the 4-post stone circle at Allt nan tighean, and three sites with chambered cairns: Carn Ban, Torr an Loigste and Giant's Graves. The asset management plans dictate that no planting can take place within 20m of the scheduled area, and that bracken and bramble control may be required. The Giant's Graves site also offers views over to the ocean and these should be maintained by timely interventions if surrounding vegetation blocks views. The Carn Ban site is managed by Historic Scotland, while FLS have the responsibility to maintain the land around the other 4 scheduled monuments.

Map 9 and Appendix II provide more information about the historic environment features within the plan area.

C.2.11 Biodiversity

UK Forestry Standard guidance is to manage a minimum of 15% of the forest management unit with conservation and the enhancement of biodiversity as a major objective. In this plan area, approximately 35% of the forest will be managed for biodiversity.

At least 48 species of birds of conservation concern have been recorded within Southend (see Appendix IV). One of the most notable species is Hen harrier for which the Arran Moors SPA has been designated to protect the nationally important breeding population on Arran.

Hen harrier: require a mosaic of habitats ideally including rough grasslands, health/ shrub, bogs and forest edge habitats to provide a range of nesting and foraging opportunities. Enhancement of forest edge structure will take place after harvesting which will improve foraging opportunities for harriers. Bracken and other invasive plant species should be controlled, and deer and sheep numbers must be controlled to manage the grazing pressure. Deer numbers will be managed by maintaining current levels of cull as per the Arran Deer Management Plan. Operations must be carefully planned in accordance to stipulations within the Habitats Regulation Appraisal (HRA) for the site to avoid disturbance especially during the breeding season and a Breeding Bird Protection Plan (BBPP) should be implemented for some operations within breeding season of Hen harriers. Whilst predators, including corvids, can be a threat to ground nesting birds it will not be feasible to carry out a predator control project at this time.

Deadwood: Opportunities for retaining or creating deadwood will be identified during the planning of all felling, favouring areas with the highest deadwood ecological potential. Valuable deadwood and deadwood areas will be marked on contract maps. Areas of minimum intervention and riparian corridors 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.

Designated sites: Areas of Southend within the Arran Moors SPA and Arran Moors SSSI will be managed according to relevant best practice guidance and the Designated Site Management Plans.

Red squirrel: *Sciurus vulgaris* are designated as Near Threatened in Scotland. The design aims to retain some mature crop and establish diverse woodland catering to the resident Red squirrel population. FLS has a single licence to cover forest management activities that may affect squirrel on the National Estate. All works within the plan area will follow the assessment and mitigation actions set out as conditions of this licence.

C.2.12 Tree Health

A total of 11.9 ha of larch remains within the LTP area, spread across the site, some of which is in intimate mixes with other species. A few accessible small stands of larch have been highlighted for removal within the first phase of the new plan.

C.2.13 Invasive Species

Forestry and Land Scotland will explore opportunities to work with local conservation organisations, adjacent landowners and stakeholders to achieve common objectives to protect and enhance priority species and habitats wherever possible.

Control of invasive non-native species will be carried out as budgets and resource allocation allows with areas for control being identified and prioritized by FLS Planning and Environment staff on a regional basis. The area where Japanese knotweed was previously recorded will be monitored on an annual basis.

C.2.14 New Planting

No new planting is planned within the LTP area.

C.2.15 Wildfire

FLS work closely with the Scottish Fire and Rescue Service (SFRS) to ensure a safe and consistent approach to help tackle wildfires on 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.

The general approach to managing fire risk will be to maintain suitable access to key areas of the woodland for fire control purposes and to avoid management actions which would further exacerbate fire risk, especially where the threat to key assets is particularly high. Fire risk has been assessed in accordance with *Forestry Commission Practice Guide 22: Building Wildfire Resilience into Forest Management Planning*; including consideration of forest management and restocking proposals.

C.2.16 Other

Soils

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

Hydrology

As per section A.6.4, a small area of Whiting Bay is subject to increased flood risk. Efforts have been taken to phase operations appropriately to mitigate risk by following the UKFS Practice Guide “Designing and managing forests and woodlands to reduce flood risk”.

See **Appendix III**

Private Water Supplies (PWS)

There are several Private Water Supplies (PWS) located near the Southend LTP area. See **Appendix V** for details pertaining to planned forestry operations.

C.3 Environmental Impact Assessment and Permitted Development Notifications

Total area (hectares) for each project type and provide details as requested by sensitive or non-sensitive area.

Type of Project	Sensitive Area		Non-sensitive Area		Total
Afforestation	%Con	%BL	%Con	%BL	ha
Deforestation	%Con	%BL	%Con	%BL	0ha
Forest Roads	0.0ha		5.32ha		5.32ha
Quarries	0ha		0ha		0ha

C.4 Tolerance tables

C.4 Tolerance Table

	Map Required (Y/N)	Adjustment to felling period*	Adjustment to felling coupe boundaries**	Timing of Restocking	Changes to Restocking species	Changes to road lines	Designed open ground ***	Windblow Clearance****
FC Approval normally not required	N	Fell date can be moved within 5 year period where separation or other constraints are met	Up to 10% of coupe area	Up to 2 planting seasons after felling	Change within species group e.g. evergreen conifers or broadleaves		Increase by up to 5% of coupe area	
Approval by exchange of email and map	Y	Advance felling of phase 2 coupe into phase 1	Up to 15% of coupe area	Between 2 and 5 planting seasons after felling subject to the wider forest and habitat structure not being significantly compromised		Additional felling of trees not agreed in plan Departures of more than 60m in either direction from centre line of road	Increase by up to 10% Any reduction in open ground within coupe area	Up to 5 ha
Approval by formal plan amendment may be required	Y	Felling delayed into second or later 5 year period Advance felling (of 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	More than 10% of coupe area Colonisation of open areas agreed as critical	More than 5 ha

Note

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

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

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

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

Larch Tolerance Table

	Adjustment to Felling period	Timing of Restocking and species component	Felling of larch within a mixed coupe	Changes to Road Lines
SF 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 2 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 2 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 2nd 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 assessed visually must be treated as infected and will therefore require a movement licence. 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

D. Management Proposals

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

Maps

Item number	Title
Map 1	Location
Map 2	Current tree species
Map 3	Concept
Map 4	Management (Felling)
Map 5	Thinning
Map 6	Future habitats and species (Restock)
Map 7	Timber haulage
Map 8	Soils
Map 9	Historic Environment
Map 10	DAMS / Exposure
Map 11	Environmental Impact
Map 12	Access & Recreation

Appendices

Appendix I – Consultation Record
Appendix II – Historic environment records
Appendix III – Flood risk assessment - Glenashdale Burn catchment
Appendix IV – Birds of Conservation Concern, Southend LTP area
Appendix V – Private Water Supplies (CONFIDENTIAL)

Appendix I: Consultation record

See section A.4 for a summary of the main points raised below by stakeholders and where they are addressed in the plan.

Issue	Raised by	Requirement / Recommendation / Concern / Aspiration
Designated Sites	Naturescot	HRA required. Breeding Birds surveys and Breeding Birds Protection Plans (BBBP) required for many operations. Provide mosaic of habitats and forest edge transitional zone. Recommendation that a Predator Control Plan is implemented to control corvid numbers. **Refer to A.6.9, C2.4 & C.2.11.**
Water Management / Water Quality	SEPA Members of Public Private Water Supply users	• Follow Riverwoods Initiatives principles. Maximise riparian zones, identify Private Water Supplies (PWS) and protect. Produce water management or diffuse pollution plans where appropriate. Remove waste from site. • Potential flood risk to Whiting Bay caused by removal of trees combined with heavy rainfall • Increasing storms affect trees, fewer trees mean more waterlogged areas. Concern raised. • Ensure that Private Water Supplies (PWS) are protected. **Refer to A.6.4, B.1, C.2.16, Appendix V**
Historic Environment	Members of public (MOPs)	• Preserve old dwellings and old whisky still sites in Southend. • Preserve or enhance views from Scheduled Monuments **Refer to A.6.8, B.1, C.2.10, Appendix II, Map 9**

Issue	Raised by	Requirement / Recommendation / Concern / Aspiration
Recreation & Access	British Horse Society MOPs	• Maintain access for riders. Create circular rec routes where possible. Ensure that any access points with gates and cattle grids are designed with horse access in mind. Advice provided regarding requirements for horses and suggestions of designs of gates and barriers which can be used. Guidance for vehicle drivers around horses. • Improve views from Iron Age Fort to Glenashdale falls. Preserve views from Carn Ban. Preserve and improve views from Giant's Graves and Torr An Loisgte. Choose native tree species with shorter mature heights for these areas. • Hope that the bridge between Glenashdale falls and the fort will be reinstated. Request for extended walking paths. • Tourism is very important to island. Try to connect walking routes and provide more rec opportunities. Local community perceive that FLS operations do not benefit them. • Glenashdale walking trail needs maintenance work • MOPs suggested leaflet of walking trails would be great Refer to **A.6.7, C.2.9, Map 11**
Deer Management	SWT Saving Scotland's Red Squirrels MOPs	• Control of deer populations would be beneficial to Red squirrels • Deer populations are perceived to be high by local residents who voiced concerns and requested that FLS do more to control deer Refer to **C.2.6**
Biodiversity (wildlife & habitats)	NatureScot	• Broadleaf planting along watercourses is encouraged. Buffers between conifers and watercourses. Explore opportunities for creation of wetland habitats / bog restoration.

Issue	Raised by	Requirement / Recommendation / Concern / Aspiration
	SWT Saving Scotland's Red Squirrels Arran Rainforest CIC BSBI Recorder MOPs Neighbouring landowner	• Provide a mix of native conifers and broadleaf species. Aim for habitat connectivity. Retain mature trees where possible. Control deer populations. Aim for diverse age structure and consider periodic thinning of stands of trees. • Fragments of temperate rainforest need to be protected, and broadleaf areas also. Consult with Arran Rainforest CIC before plans are finalised • MOP urges us to increase diversity and get away from commercial monocultures for benefit of wildlife and people • Issues with SS and regen on SPA, MOP suggests a move away from Sitka. Do more for habitat connectivity (not just riparian corridors). Suggests improving connectivity between Cnoc Claughog, Tanga Fhraoich and other areas. • Landowner at Levencorroch (SPA/SSSI) plans some woodland creation on their land. Requested that we restock adjacent areas to their land with native / broadleaf planting Refer to **A.5, A.6.9, B.1, C.2.3, C.2.4, C.2.11, Map 6**
Landscape Impact	MOPs	• Request by member of public that we maintain or, where possible, improve the views from the scheduled monuments and key visitor areas. • Suggestion that hotplanting should be preferred restock method in visitor areas to reduce period of time that the land looks "ugly" Refer to **C.2.5, C.2.10**
Other	MOPs	• Perception my some that FLS do not benefit the island community, however other locals voiced support for the support of the jobs in the timber industry on the island • Better maintenance of forest roads as vehicles (legally accessing properties within Southend) are being damaged by potholes

Issue	Raised by	Requirement / Recommendation / Concern / Aspiration
		• MOP suggests that there is a need for ecology and environment to be prioritised over profits Refer to **C.2.8**
The following stakeholders were contacted during initial scoping but did not respond: NAC Environmental Health, WoSAS, CONFOR, Butterfly Conservation Scotland, Scottish Badgers, Timber Transport Forum. SWT Ayrshire & Galloway group did not respond, however SWT's Saving Red Squirrels did provide a response		

Appendix II: Historic Environment records

Refer to **Map 9.**

Map Ref	Designation	Name, Location or ID	Description	Grid Reference	Importance	Mitigation
A	Scheduled monument	Carn Ban SM90051	Chambered Cairn	NR991262	National Importance	This Scheduled Monument is managed by Historic Environment Scotland who maintain buffer zones around the monument. Forestry and Land Scotland ensure that access routes and appropriate signage are in place to ensure that visitors can reach the site SMs must be shown, with appropriate buffer also annotated, on all relevant operational maps. Buffer zone around SMs should be marked out on the ground prior to operations commencing.
B	Scheduled monument	Allt nan tighean / Auchelleffan SM4433	4-post stone circle	NR978250	National Importance	The site will be monitored annually. The 20m buffer zone should be kept clear of vegetation and this may require the removal or control of regenerating trees, bracken and scrub. SMs must be shown, with appropriate buffer also annotated, on all relevant operational maps. Buffer zone around SMs should be marked out on the ground prior to operations commencing.

C	Scheduled monument	Glenashdale Wood Fort SM5657	Remains of an Iron Age fort .400 sq m	NR030252	National Importance	As per the designated site management plan, the site will be monitored annually. The 20m buffer zone should be kept clear of vegetation and this may require the removal or control of regenerating trees, bracken and scrub. SMs must be shown, with appropriate buffer also annotated, on all relevant operational maps. Buffer zone around SMs should be marked out on the ground prior to operations commencing.
D	Scheduled monument	Torr an Loisgte SM7267	Chambered Cairn	NS040248	National Importance	As per the designated site management plan, the site will be monitored annually. The 20m buffer zone should be kept clear of vegetation and this may require the removal or control of regenerating trees, bracken and scrub. SMs must be shown, with appropriate buffer also annotated, on all relevant operational maps. Buffer zone around SMs should be marked out on the ground prior to operations commencing.
E	Scheduled monument	Giant's Graves SM398	Two chambered cairns	NS043246	National Importance	As per the designated site management plan, the site will be monitored annually. The 20m buffer zone should be kept clear of vegetation and this may require the removal or control of regenerating trees, bracken and scrub. SMs must be shown, with appropriate buffer also annotated, on all relevant operational maps. Buffer zone around SMs should be marked out on the ground prior to operations commencing.

Other (non-designated) Heritage Features:

Forest Bock: AUCHELEFFAN				
Name, Location or ID	Description	Grid Reference	Importance	Mitigation
Kilbride Hill	Turf dyke	NR977224	National Importance	**The following mitigations to all heritage features:**
Kilbride Hill	Possible cairn	NR973220	National Importance	
High Cloined GD000516	Farmstead	NR970232	Regional Importance	
Carn Ban	Shieling hut	NR989261	Regional Importance	
High Cloined	Roofless ruined houses & enclosures	NR969226	Regional Importance	All heritage features should be shown on operational maps.
High Cloined GD001385	Buildings	NR967227	Regional Importance	
High Cloined	Cairn (possible)	NR966231	Regional Importance	
Torr Dubh Beag GD000517	Farmstead, field system	NR983230	Regional Importance	
Allt an t-Sluice	Shieling hut	NR989262	Regional Importance	Any upstanding features should be also clearly marked on the ground prior to commencement of operations.
High Cloined	Cairn	NR966231	Regional Importance	
Aucheleffan 51903./04 7.1.2	Enclosure	NR985250	Local Importance	
Kilmory Water	Enclosure	NR982234	Local Importance	
Cloined	Sheep shelter	NR964234	Local Importance	
Kilmory Water	Standing Stone	NR982241	Local Importance	Care will be taken to avoid any damage to surviving structural elements.
Kilmory Water	Flint scatter	NR985234	Local Importance	
Clachan Salach	Shieling hut	NR972250	Local Importance	
Kilmory Water	Dyke	NR981227	Local Importance	
Allt an t-Sluice 51008/32 7.6	Lambing Pen	NR993253	Local Importance	
Aucheleffan Farm 7.1.1	Dry stane dyke	NR983244	Local Importance	
Aucheleffan GD001672	Mound	NR993253	Local Importance	
Carn Ban	Shelter stone used by planters in 1960s & carved with their initials	NR991263	Local Importance	
Aucheleffan	Flint scatter	NR981225	Local Importance	
Aucheleffan 41031 7.2	Dry stane dyke	NR978241	Local Importance	
Allt an t-Sluice. An Ros 51004 7.1.1	Dyke	NR993257	Local Importance	
Aucheleffan 41031 7.1 & Aucheleffan Farm 7	Dry stane dyke	NR979240	Local Importance	
Aucheleffan 51903./04 7.1.2	Enclosure	NR985250	Local Importance	
Kilmory Water. Aucheleffan 03, 04 & 07	Dyke	NR981238	Local Importance	
Kilmory Water. Auchleffan 14	Dyke	NR983231	Local Importance	

Allt an t-Sluice. An Ros 51004 7.1.2	Cairn	NR993255	Local Importance	
Kilmory Water	Dyke	NR978227	Local Importance	
High Cloined 51039 7.1.5	Dyke	NR974229	Local Importance	
Aucheleffan GD001674	Dyke	NR986243	Local Importance	
High Cloined 51029 7.1.1	Dyke	NR966233	Local Importance	
Aucheleffan Farm	Dry stane dyke	NR980244	Local Importance	
Kilmory Water	Shieling hut	NR980235	Local Importance	
Aucheleffan Farm	Dry stane dyke	NR981243	Local Importance	
Kilmory Water	Dyke	NR979231	Local Importance	
An Ros	Sheep shelter	NS000256	Local Importance	
High Cloined 51039 7.1.3 & 4	Dyke	NR970225	Local Importance	
Clachan Salach	Shieling hut(s)	NR972250	Local Importance	
Aucheleffan Farm 7.1.3	Dry stane dyke	NR980245	Local Importance	
High Cloined 51029 7.1.4	Enclosure	NR968225	Local Importance	
Aucheleffan GD001669	Mound	NR989260	Local Importance	
Aucheleffan	2 circular structures	NR979245	Local Importance	
Aucheleffan	Flint Scatter	NR981226	Uncategorised	
Aucheffan GD000515	A reported four poster (possibly natural feature)	NR981249	Uncategorised	
Torr Dubh GD001327	Fort (possible)	NR984233	Uncategorised	
Auchareoch GD000065	Mesolithic occupation site	NR995247	Uncategorised	
Kilmory Water	Rig & furrow areas	NR982240	Uncategorised	
Aucheleffan GD001673	Structure	NR991261	Uncategorised	
High Cloined 51039 7.1.1	Track	NR968228	Uncategorised	
Kilmory Water	Flint	NR985234	Uncategorised	
HLA Relict Area	RCAHMS HLA data; 18th Century-Present Rectilinear Fields and	NR983227	Uncategorised	
HLA Relict Area	Farms	NR968225	Uncategorised	
HLA Relict Area	"	NR981243	Uncategorised	
HLA Relict Area	"	NR965233	Uncategorised	

Forest Bock: GLENASHDALE				
Name, Location or ID	Description	Grid Reference	Importance	Mitigation
Allt Dhepin GD00533	Shieling hut(s) (possible)	NS016265	Regional Importance	**The following mitigations to all heritage features:**
Allt Dhepin GD00534	Shieling hut(s) (possible)	NS017256	Regional Importance	
Bealach Gaothar GD000126	Enclosure	NS044237	Regional Importance	
Allt Dhepin GD000520	Shieling hut(s) (possible)	NS017254	Regional Importance	All heritage features should be shown on operational maps.
Allt Dhepin	Shieling hut	NS016255	Local Importance	
Glenashdale 53001 7.4	DYKE	NS044241	Local Importance	
Allt Dhepin 53012 7.1	Shieling hut	NS025248	Local Importance	
Cnoc Mor GD000413	Possible standing stones.	NS021256	Local Importance	Any upstanding features should be also clearly marked on the ground prior to commencement of operations.
Glenashdale	Dry stane dyke	NS045243	Local Importance	
Cnoc na Garbad	Shieling hut(s) (possible)	NS024241	Local Importance	
Cnoc Mor	2 standing stones	NS020257	Local Importance	
Glenashdale GD001383	Field boundary	NS030253	Local Importance	
Allt Dhepin 53012 7.2	Shieling hut	NS025248	Local Importance	
Glenashdale GD001384	Dry stand dyke, field boundary	NS033255	Local Importance	Care will be taken to avoid any damage to surviving structural elements.
Glenashdale 53012 7.3, 53001 7.6 & 53010	Dry stane dyke	NS033250	Local Importance	
Allt Dhepin, Glenashdale 53117 7.1.1	Cairn	NS024250	Local Importance	
Glenashdale 53010 7.1.2	Turf dyke	NS035249	Local Importance	
Glenashdale GD001382	Dyke	NS027254	Local Importance	
Glenashdale 53101 7.1.1	Turf dyke	NS035246	Local Importance	
Largybeg GD000370	Bloomery	NS040230	Uncategorised	
Beag Og GD000117	Cist	NS040230	Uncategorised	
HLA Relict Area	RCAHMS HLA; Medieval/Post-medieval Settlement and Agriculture	NS046238	Uncategorised	
Glenashdale 53001 7.5	Peat road	NS045241	Uncategorised	
Glenashdale GD000109	Bloomery	NS029252	Uncategorised	
Glenashdale	Turf dyke	NS033255	Uncategorised	
Cnoc Mor GD000412	Four standing stones plus three recumbent stones.	NS021256	Uncategorised	
Cnoc Mor GD000414	Possible shaped stone.	NS020257	Uncategorised	

Forest Bock: GARBAD				
Name, Location or ID	Description	Grid Reference	Importance	Mitigation
Smuraig burn	Still	NS008241	National Importance	**The following mitigations to all heritage features:**
Smuraig burn	Sheiling hut	NS000237	National Importance	
Smuraig burn	Sheiling hut	NS009242	National Importance	
Smuraig	Turf dyke	NR994231	National Importance	All heritage features should be shown on operational maps.
Ballymeanoch 2 GD000113	Cairn	NS020234	Regional Importance	
Cnoc na Garbad GD000485	Cairn (possible)	NS022234	Regional Importance	
Cnoc na Garbad GD000484	Cairn	NS020234	Regional Importance	
Levencorroch GD000532	Farmstead	NS009225	Regional Importance	Any upstanding features should be also clearly marked on the ground prior to commencement of operations.
Smuraig GD000518	Farmstead, kiln	NR998236	Regional Importance	
Baile Meadhonach GD000111	Chambered cairn	NS019235	Regional Importance	
Bally Meanoch Glen GD000122	Cairn	NS022229	Regional Importance	
Levencorroch	Building	NS010225	Local Importance	
Auchenhew	Founds of rectangular building with an internal wall	NS018222	Local Importance	
HIGH KILDONAN	Dry stane dyke	NS035219	Local Importance	Care will be taken to avoid any damage to surviving structural elements.
Allt na Ceardaich. Garbad 53031/33 7.2	Sheiling hut	NS030224	Local Importance	
Torran Clachach	Section of turf dyke	NS039234	Local Importance	
Auchenhew	Section of well-defined tuft & stone dyke	NS018222	Local Importance	
HIGH KILDONAN	Section of turf dyke	NS037222	Local Importance	
Mayfield. Garbad 53031/33 7.1	Section of dry stane dyke	NS043229	Local Importance	
Dippin GD001531	Drain(s), pit, rug & furrow	NS039221	Uncategorised	
HLA Relict Area	RCAHMS HLA data. Early Prehistoric Ritual and Funerary Site	NS021234	Uncategorised	
Largybeg GD000370	Bloomery	NS040230	Uncategorised	
Beag Og GD000117	Cist	NS040230	Uncategorised	
HLA Relict Area	RCAHMS HLA; RELIC TYPES 18th-19th Century Plantation Enclosure	NS038221	Uncategorised	
Auchareoch	Turf dyke	NR989231	Uncategorised	

Appendix III: Hydrology catchment assessments

Table 1: Flood risk catchment assessment.
Scale of planned felling within each 5-year phase of the forest plan (including any fallow land + restock <10 years old)

Catchment Assessment	Unit	Catchment - Glenashdale Burn
Total catchment area upstream of nearest property(ies) or asset(s) at risk of flooding	ha	932.2
Total forest cover in catchment	ha	517
Proportion of forest cover in catchment (no consideration needed if <40%)	%	(517/932.2) x 100 = 55.5
Forest cover under FLS ownership	ha	513
Proportion of forest cover under ownership in catchment	%	99.2
Extent of 40% felling level applying to ownership	%	0.4 x 99.2 = 39.7
Felling allowance for forest under FLS ownership	ha	0.397 x 932.2 = 370.1
Extent of felling within 5-year phases of the plan, the carry-over effect of fallow land and young restocked trees (less than 10 years old) over the next two phases (in brackets), and the total loss of forest cover (the effect of felling in the previous 10 years are carried forward to the first period of the new forest management plan, starting in 2016)		
2017 - 2021	ha	30.4 (10.5+39.1) = 80
2022 - 2026	ha	59.9 (30.4 +10.5) = 100.8
2027 - 2031	ha	16.3 (59.9 + 30.4) = 106.6
2032 - 2036	ha	81.6 (16.3 + 59.9) = 157.8
2037 - 2041	ha	61 (81.6 + 16.3) = 158.9
2042 - 2046	ha	44.1 (61 + 81.6) = 186.7
2047 - 2051	ha	16.3 (44.1 + 61) = 121.4

Table 2: Scale of felling within all catchments

Watercourse	Catchment area (hectares)	Catchment area within Southend (hectares)	% of catchment within Southend	Proposed Felling within catchment
Kilmory Water	1827	1564	85.6%	Phase 1: 111.3 ha Phase 2: 119.6
Allt Dhephin / Glenashdale Burn	932	609	65.3%	Phase 1: 13.8 ha Phase 2: 60.1ha
Allt Mor Cloined	654	357	54.5%	Phase 1: 47.8 ha Phase 2: 0.0 ha
Allt na Caerdaich	146	88	60.3%	Phase 1: 34.5 ha Phase 2: 0.0 ha
Allt Mor	352	219	62.2%	Phase 1: 21.9 ha Phase 2: 15.8 ha
Levencorroch Burn	158	89	56.3%	Phase 1: 24.5 ha Phase 2: 47.5 ha
Struey Water	274	102	37.2%	Phase 1: 0.0 ha Phase 2: 7.4 ha

Appendix IV: Birds of Conservation Concern, Southend LTP area

Binomial	Common name	UK Conservation status	IUCN Red List category
Rissa tridactyla	Black-legged Kittiwake	Red	Critically Endangered
Chloris chloris	Greenfinch	Red	Endangered
Numenius arquata	Curlew	Red	Endangered
Gulosus aristotelis	European shag	Red	Endangered (breeding)
Vanellus vanellus	Northern lapwing	Red	Endangered (breeding), Vulnerable (non-breeding)
Larus argentalis	Herring gull	Red	Endangered (non-breeding), Least Concern (breeding)
Larus marinus	Great black-backed gull	Red	Endangered (non-breeding); Least Concern (breeding)
Cuculus canorus	Common cuckoo	Red	Vulnerable
Delichon urbicum	House marten	Red	Vulnerable
Scolopax rusticola	Eurasian woodcock	Red	Vulnerable
Turdus viscivorus	Mistle thrush	Red	Vulnerable
Charadrius hiaticula	Ringer plover	Red	Vulnerable (non-breeding); Near Threatened (breeding)
Sturnus vulgaris	Starling	Red	Vulnerable (breeding); Least Concern (non-breeding)
Aquila chrysaetos	Golden eagle	Red	Near threatened
Linaria cannabina	Common linnet	Red	Near threatened
Alauda arvensis	Skylark	Red	Least Concern
Anthus trivialis	Tree pipit	Red	Least Concern
Circus cyaneus	Hen harrier	Red	Least Concern
Muscicapa striata	Spotted flycatcher	Red	Least Concern
Passer domesticus	House sparrow	Red	Least concern

Tadorna tadorna	Shelduck	Amber	Endangered
Actitis hypoleucos	Common sandpiper	Amber	Vulnerable
Arenaria interpres	Ruddy turnstone	Amber	Vulnerable
Falco tinnunculus	Common Kestrel	Amber	Vulnerable
Gavia arctica	Black-throated diver	Amber	Vulnerable
Mergus serrator	Red-breasted merganser	Amber	Vulnerable
Chroicocephalus ridicubunds	Black-headed gull	Amber	Vulnerable (non-breeding); Least Concern (breeding)
Accipiter nicus	Sparrowhawk	Amber	Near threatened
Somateria mollissima	Common eider	Amber	Near threatened
Gallinago gallinago	Common snipe	Amber	Least Concern (breeding); Near Threatened (non-breeding)
Alca torda	Razorbill	Amber	Least Concern
Anser anser	Greylag goose	Amber	Least Concern
Anthus pratensis	Meadow pipit	Amber	Least Concern
Gavia immer	Great Northern Diver (Common Loon)	Amber	Least Concern
Haematopus ostralegus	Oystercatcher	Amber	Least Concern
Oenanthe oenanthe	Northern wheatear	Amber	Least Concern
Prunella modularis	Dunnock	Amber	Least Concern
Pyrrhula pyrrhula	Bullfinch	Amber	Least Concern
Thalasseus sandvicensis	Sandwich tern	Amber	Least Concern
Troglodytes troglodytes	Wren	Amber	Least Concern
Turdus philomelos	Song thrush	Amber	Least Concern
Uria aalge	Guillemot	Amber	Least Concern
Columba palumbus	Common wood pigeon	Amber	Least Concern

Larus canus	Common gull	Amber	Least Concern
Morus bassanus	Gannet	Amber	Least Concern
Phylloscopus trochilus	Willow warbler	Amber	Least Concern
Larus fuscus	Lesser black-backed gull	Amber	(data deficient)
Tringa totanis	Redshank	n/a	Near threatened (non-breeding); Vulnerable (breeding)

Appendix V: Private Water Supplies (CONFIDENTIAL)

This Appendix can be found on a separate document and should not be shared publicly