



Forestry and  
Land Scotland  
Coilltearachd agus  
Fearann Alba

# Central Region

## Blairhouse Woodland Land Management Plan

Approval date: \*\*\*

Plan Reference No: \*\*\*\*

Plan Approval Date: \*\*\*\*\*

Plan Expiry Date: \*\*\*\*\*





## Land Management Plan Details

LMP Name:	Blairhouse Woodland		
Grid Reference:	NT 0301 9051	Nearest town or locality:	Oakley
Local Authority:	Fife Council Bankhead Central Glenrothes		
Land Management Plan area (hectares):	89.5		

## Owner's Details

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## Approval - to be completed by Scottish Forestry staff:

LMP Reference Number:			
Plan Period: (ten years) (day/month/year)	From:	To:	
Operations Manager Signature:		Approval Date: (dd/mm/yyyy)	



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## 1.0 Summary of Proposals

This Land Management Plan sets out proposals to create a productive and resilient mixed woodland on a previous opencast coal mine site. Site suitable species are selected for mixed conifer in appropriate locations, to ensure productive sustainability of the site. Existing native woodland habitats will be retained and expanded upon with new productive broadleaf and wet woodland planting. Open water habitat and trackside open space will be retained and enhanced to improve biodiversity provision on the site. Public access to the site will be improved for the benefit of local communities. These proposals will complement the diversity and aesthetics of the surrounding landscape.

Implementation of this plan will transform a previous industrial site into a multiuse forest, which will improve recreational opportunities to the local community, provide a range of habitat for priority species and contribute to long-term sustainable timber supply.

This plan delivers against Scottish Government woodland expansion targets in a priority Woodlands In and Around Towns (WIAT) zone. Blairhouse is within the Central Scotland Green Network (CSGN) and delivers against several of the project principles and themes, principally associated with regeneration of former industrial land to provide a high quality environment for the benefit of people and wildlife.

This plan covers forestry operations which will commence once Forestry and Land Scotland (FLS) acquire the site. Land forming and soil restoration operations are delivered by Scottish Mines Restoration Trust (SMRT) prior to FLS site acquisition, and are thus covered by a separate planning process.

The Current Land Use and Future Habitat and Long-Term Management maps illustrate the long-term vision for the site's transformation.



## 2.0 FCS Regulatory Requirements

Approval is sought for the creation of 51.6 ha of new woodland.



## 2.1 Summary of planned operations

Planned Operations	2020-2030
Felling	0 ha
Thinning	0 ha
Restock	0.65 ha
Woodland Creation (afforestation)	51.6 ha
Habitat Restoration (deforestation)	0 ha
Road Construction	0 ha
Quarry expansion	0 ha



## 2.2 Proposed felling in years 2020-2030

There is no felling proposed within the 10 year period of this plan.

## 2.3 Proposed thinning in years 2020-2030

There is no thinning proposed within the 10 year period of this plan.

## 2.4 Proposed restocking in years 2020-2030

Restocking of 0.65 ha of ground cleared for installation of drainage, as part of the land forming operations, is included in this Land Management Plan. Species prescription for this restock area will be a wet woodland mix, as described in section 7.2 and illustrated in the Planting Design map.

## 2.5 Access and roading 2020-2030

There are no new roads or access tracks being proposed within the 10 year period of this plan.

## 2.6 Departure from UKFS Guidelines

The UKFS standards will be met through the delivery of this plan.

## 2.7 Standards and guidance on which this LMP is based

This Land Management Plan has been produced in accordance with a range of government and industry standards and guidance as well as recent research outputs. A full list of these standards and guidance can be found here: <https://forestryandland.gov.scot/what-we-do/planning/links>





## 2.8 Tolerance table

	Map Required (Y/N)	Adjustment to felling period	Adjustment to felling coupe boundaries	Timing of restocking	Change to species	Wind throw response	Adjustment to road lines	Designed open ground
SF Approval not normally required (record and notify SF)	N	Fell date can be moved within 5 year period where separation or other constraints are met	<10% of coupe size.	Up to 5 planting seasons after felling (allowing fallow periods for hylobius).	Change within species group E.g. Scots pine to birch,  Non-native conifers e.g. Sitka spruce to Douglas fir,  Non-native to native species (allowing for changes to facilitate Ancient Woodland policy).			Location of temporary open ground e.g. deer glades if still within overall open ground design  Increase by 0.5 ha or 5% of area - whichever is less
Approval by exchange of letters and map	Y		10-15% of coupe size.	5 years +	Change of coupe objective that is likely to be consistent with current policy (e.g. from productive to open, open to native species).	Up to 5 Ha	Departures of greater than 60 m from the centre of the road line	Increase of 0.5 ha to 2 ha or 10% - whichever is less  Any reduction in open ground
Approval by formal plan amendment	Y	Felling delayed into second or later 5 year period  Advance felling into current or 2 <sup>nd</sup> 5 year period	>15% of coupe size.		Major change of objective likely to be contrary to policy, E.g. native to non-native species, open to non-native,	More than 5 Ha	As above, depending on sensitivity	More than 2 ha or 10%  Any reduction in open ground in sensitive areas  Colonisation of open Areas agreed as critical



## 3.0 EIA Screening Determination for forestry projects

Proposed Work							
Please put a cross in the box to indicate the type of work you are proposing to carry out. Give the area in hectares and where appropriate the percentage of conifers and broadleaves							
Proposed Work	Select (x)	Area (ha)	Conifer	Broad-leaves	Proposed work	Select (x)	Area in hectares
Afforestation	X	51.6	46%	54%	Forest roads		
Deforestation					Forest quarry		
Location of work		Restored opencast mine area.					

### 3.1 Proposed deforestation

There is no deforestation proposed within the 10 year period of this plan.

### 3.2 Proposed forest road works

No new forest road is proposed within the 10 year period of this plan.

### 3.3 Proposed forest quarries

There are no proposals to develop forest quarries within the 10 year period of this plan.

### 3.4 Proposed afforestation

51.6 ha of afforestation is proposed in this plan. 49.8 ha of which will be on restored and reinstated opencast mine ground and 1.8 ha on previous agricultural land.

New planting proposals including species prescriptions and design are detailed in section 7.2 and the supporting Planting Design map.



## 4.0 Introduction

### 4.1 Site History

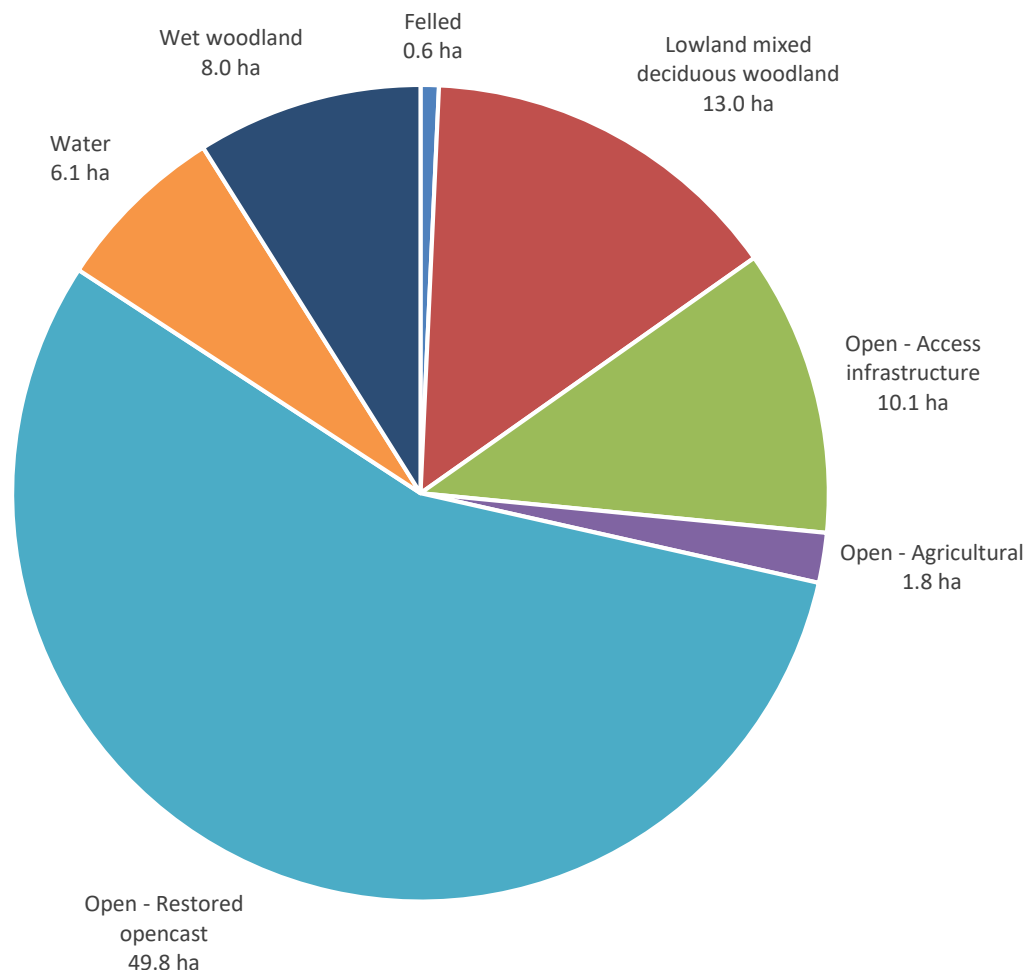
Prior to mining on Blairhouse site, the land was dominated by woodland (Black Wood), with some mixed agricultural land on the peripheries. Oakley Colliery (deep coal mine) opened in the mid nineteenth century in the north of the Blairhouse site. Woodland cover on the site gradually waned through the twentieth century as the mining development and agricultural area expanded. This progression is illustrated in the historic Ordnance Survey maps in Appendix II.

Most recently, Scottish Coal Co Ltd. worked the site as an opencast mine until 2013. The site was subsequently abandoned and became derelict. At this point the site was a typical derelict opencast landform, with a bing (large mound of overburden spoil) and a water filled void adjacent. The compacted overburden material throughout the site became scoured by water runoff in the absence of drainage. The bing was a dominant feature in the landscape due to its size and steepness.

The site was acquired by Scottish Mines Restoration Trust (SMRT) in 2014. SMRT have been working in partnership with Forestry and Land Scotland to restore the site to greenspace and productive woodland, as described below.



## 4.2 The existing land holding



*Figure 1: Blairhouse existing land breakdown 2020*

Blairhouse site is 89.5 ha in total. The accompanying Current Land Use map illustrates the land holding as of the start of this Land Management Plan period.

### 4.2.1 Restoration of opencast coal site

SMRT are responsible for ground works and soil restoration on opencast coal elements of the site. FLS have acted as a key consultee and partner during this operational phase to monitor works and ensure that restoration is adequate for the establishment and sustainable growth of woodland. Works undertaken by SMRT have included redefinition of the bing, voids and soil bunds in order to create a more natural appearance. Works to replace top soils, alleviate compaction and install drainage have been delivered simultaneously. Forest roads and access paths are also being installed and formalised during this land forming phase.



FLS will purchase the site from SMRT once land forming and soil restoration operations described above are complete to agreed specifications. The planning period covered by this Land Management Plan commences once FLS have ownership of the site.

#### 4.2.2 Existing woodland and agricultural ground

Existing remnants of Black Wood in the south west of the site currently consist of birch dominant high forest, birch coppice wood and small patches of open space. Slopes adjacent to Blair Burn and historic drainage routes are dominated by willow.

Existing woodland on the site is largely categorised as Long - Established (of plantation origin) in the Ancient Woodland Inventory. There is evidence that some of this woodland has been subject to grazing historically.

There is also a small area (1.8 ha) of abandoned agricultural ground around the ruins of Black House. This is currently open space.

### 4.3 Setting and context

Blairhouse is situated in mid-Fife. The site falls within the Scottish Natural Heritage (SNH) 'Lowland Hills and Valleys' Landscape Character Type. This is a medium scale landscape of variable land cover of woodland, farmland and settlement. This rolling landscape has a strong pattern of geometric fields and woodland. In the vicinity of Blairhouse, woodlands are a constant feature ranging in size, scale and type from shelterbelts, small woodland units to larger scale plantations. There are several other derelict former mine sites locally.

The local landscape encompasses several former mining villages such as Oakley, Blairhall, Saline and Comrie. The village of Oakley (population circa 2,250) is 1 km to the south of the Blairhouse. 1.5 km to the north is the village of Saline (population circa 1,200). Other neighbours include Cowstrandburn hamlet, Kinneddar Park, farms, smallholdings and scattered housing.

There are several Forestry and Land Scotland (FLS) woodlands in the wider landscape. To the east of Blairhouse is Carnock woodland, which is comprised largely of mature Scots pine, birch and larch. Additionally Muirside, 2 km to the west of Blairhouse, is a new mixed woodland creation site planted in 2014 comprising of conifers such as Sitka spruce and larch as well as native broadleaf areas.

These points are illustrated in the accompanying Location and Context map.

### 4.4 LMP Presentation

Given the relatively small scale of the site there is no intention for zoning.



## 5.0 Plan Objectives

The Land Management Plan Brief (Appendix III) illustrates objectives derived from the Forestry and Land Scotland Corporate Plan 2019-2022 and how these relate to Blairhouse and the Management Objectives listed in section 5.3. The following Issues and Key Challenges have been considered during formulation of the Management Objectives.

### 5.1 Issues

The key features and management considerations for Blairhouse are illustrated in the Current Land Use and Location and Context maps. They are summarised in the following list:

- Woodland In and Around Towns (WIAT) designation for proximity to Oakley village, and location within the Central Scotland Green Network (CSGN).
- Existing priority habitat on-site, including wet woodland and lowland mixed broadleaf woodland.
- Populations of UK Biodiversity Action Plan Priority Species on site and in the local landscape including red squirrel, great crested newt, pine martin and otter (further detail in Appendix II).
- Landscape impacts of former industrial, brown field sites in the local landscape.
- Forestry and Land Scotland's contribution to Scottish Government woodland expansion targets (further detail in Appendix III).

### 5.2 Key challenges

Key challenges associated with this site and the Plan Objectives as detailed in the Plan Brief, revolve around the legacy of opencast mining. These include:

- Appropriate species selection with tolerance to recovering soils, including compromised soil functionality and localised variability, as described in **Error! Reference source not found.**
- Elements of steep and varied topography, leading to a diversity of climatic micro-sites intimately spread across the site. This will pose operational challenges in achieving economies of scale in some areas.
- Timely establishment of vegetation on restored soils to minimise risks associated with erosion and compaction.

An addition challenge relating to new planting and revegetating Blairhouse is protection from high levels of browsing. This is likely to be particularly apparent considering the mixed and plentiful habitat available for deer populations locally.



## 5.3 Management objectives

The management objectives for Blairhouse are:

Establish a new productive and resilient mixed woodland for long-term sustainable timber supply. Species selection and silvicultural systems applied appropriately to soil conditions, habitat types and operational variables across the site.

Manage and protect new woodland during establishment with appropriate planting operations and herbivore management.

Protect and enhance the biodiversity value of the site through the provision of diverse and well-connected habitats including open space, water features and various native woodland types.

Improve habitat connectivity and food availability for local populations of priority species where appropriate.

Establish and maintain a well-connected and diverse network of recreation routes, designed for use by local communities.

Continue to work with local communities to enable opportunities for learning and engagement on the site.

## 6.0 Analysis and Concept

### 6.1 Analysis

*Table 1: How the analysis of the opportunities and constraints of an objective lead to the plan concept*

Objective	Opportunities	Constraints	Concept
<b>Establish a new productive and resilient mixed woodland for long-term sustainable timber supply. Species selection and silvicultural systems applied appropriately to soil conditions, habitat types and operational variables across the site.</b>	<p>Land-forming and soils restoration operations on the site have largely provided an adequate substrate for new woodland creation, through mechanical decomposition and distribution of stored soils.</p> <p>New woodland creation on previous industrial sites will contribute to Scottish Government woodland expansion targets without sacrificing productive agricultural area.</p>	<p>Some minor areas of the restored landform remain relatively steep, waterlogged and/or operationally fragmented.</p> <p>Restored soils generally suffer from impeded functionality and altered nutrient availability, due to destruction of natural soil structure. The range of site suitable tree species and the initial productivity potential of the soil is subsequently altered.</p>	<p>A mosaic of productive broadleaf, of predominantly pioneer species, and native wet woodland will reflect the fragmented and diverse nature of soils and land form in the northern section of the site.</p> <p>Mixed conifer with pioneer broadleaf species will be established in more substantial blocks of ground in the east of the site, where more frequent thinning interventions can be facilitated.</p>
<b>Manage and protect new woodland during establishment with appropriate planting operations and herbivore management.</b>	<p>Bringing Blairhouse into a formal deer management programme will reduce browsing pressure on both the new woodland and the established woodland areas within and adjacent to the site, improving conditions for vegetative colonisation and natural regeneration of trees.</p>	<p>Landscape scale buy-in is required to achieve effective deer control.</p> <p>Increased recreational access to the site can disturb and constrain deer management operations.</p>	<p>Blairhouse will be subject to formal and strategic deer management programme, including the installation of linear open space and access infrastructure to facilitate operations.</p> <p>Vulnerable tree species will be protected through a combination of individual tree guards, fencing and deer management throughout establishment, as guided by population surveys and Herbivore Impact Assessment.</p>





Objective	Opportunities	Constraints	Concept
<b>Protect and enhance the biodiversity value of the site through the provision of diverse and well-connected habitats including open space, water features and various native woodland types.</b>	Various woodland habitats including wet woodland, mixed broadleaf woodland, hedgerows and riparian scrub areas abut directly to the site, and connect to larger forest blocks in the wider landscape.	Habitat provision must be balanced with productivity and access objectives across the site to ensure financial and social sustainability.	<p>Various habitat types will be protected, expanded, complimented and connected through a well-designed planting of new, mixed woodland.</p> <p>Natural successional processes will be allowed to progress undisturbed in the existing wet woodland elements of the via a minimum intervention regime, whilst other existing broadleaf areas will gradually be enriched with a wider variety of native species.</p>
<b>Improve habitat connectivity and food availability for local populations of priority species where appropriate.</b>	<p>Red squirrel, pine martin, otter and great crested newt have been detected on site and/or in the neighbouring landscape.</p> <p>Restored elements of the site include a network of disused settling ponds, a significant water body in the former mining void and various topographic niches.</p>	<p>Habitat and food source provision is currently limited by the lack of vegetation and woodland cover across restored areas.</p> <p>Tree species selection and long term habitat network design must be balanced with the site's recreation and timber production objectives.</p>	<p>Habitat and food availability will be improved across the site with planting of both small and large seeding broadleaf, shrub and conifer species.</p> <p>Woodland and hedgerow habitats across the wider landscape will benefit from improved connectivity across the site.</p> <p>Regeneration of vegetation and long term accumulation of deadwood will improve habitat opportunities for invertebrates and terrestrial woodland species, such as Great Crested Newt.</p> <p>Improved soil stability through revegetation of the restored land, will improve water quality in water bodies and burns within and downstream of the site.</p>



Objective	Opportunities	Constraints	Concept
<b>Establish and maintain a well-connected and diverse network of recreation routes, designed for use by local communities.</b>	<p>SMRT have consulted local community groups, designed and delivered ground works for a diverse and well-connected network of reaction routes throughout Blairhouse, during the land forming operations.</p> <p>Blairhouse is within a Oakley village's WIAT zone and within the CSGN.</p> <p>To date the site has been officially closed to the public, having been an 'active' mine site. Purchase of the site by FLS means that full public access will be permitted.</p> <p>The site is situated directly between Oakley and Saline villages, with core paths connecting it to the wider landscape. Non-mortised transportation links could be improved via routes through the site.</p>	<p>Location and density of the access network is limited by financial implications associated with installation and maintenance. Implications on future mechanical forest operations must also be considered.</p> <p>On-site public parking will not be provided due to lack of FLS resources and threat of attracting anti-social behaviour.</p>	<p>Planting buffers, maintained open space and planting of occasional open-grown and fruiting trees/shrubs adjacent to paths, will maximise the amenity value of the site.</p> <p>Long-term views of the surrounding landscape from strategic points within the site will be maintained via considered orientation of open space and strategic planting of shorter, shrub species.</p>
<b>Continue to work with local communities to enable opportunities for learning and engagement on the site.</b>	<p>A community liaison group has been established and consulted throughout the land forming phase of the site restoration, by SMRT.</p> <p>FLS have a Community Ranger working in the area, with established relations with local schools and community groups.</p>	<p>Provision of community engagement opportunities is limited by FLS resource availability.</p>	<p>Opportunities and permissions for community lead projects and site use for learning by local schools and community groups will be enabled.</p>



## 6.2 Concept

The attached Planting Design, Access and Future Habitat and Long-term Management maps spatially illustrate the strategies and prescriptions designed to deliver the plan objectives, with the site's opportunities and constraints considered as detailed above.



## 7.0 Long Term Land Management Plan Proposals

The long term vision for the site is illustrated in the accompanying Future Habitat and Long-Term Management map. Further details are provided in this section.

### 7.1 Management

This section highlights management activities scheduled for the current 10 year planning period to work towards long term objectives.

#### 7.1.1 Clear Felling

There are no proposed clear felling operations within this plan period.

#### 7.1.2 Thinning

There are no proposed thinning operations within this plan period.

#### 7.1.3 Restructuring

There are no proposed restructuring operations within this plan period.

#### 7.1.4 Low Impact Silvicultural Systems (LISS)

There are no proposed operations associated with LISS within the plan period, beyond the establishment of new woodland with long-term aspirations of LISS management, as detailed below.

#### 7.1.5 Minimum Intervention

Planting of new wet woodland will be delivered as part of this plan. Wet woodland will generally be managed under a minimum intervention prescription (detailed in section 7.3.4). Once established natural processes and succession will be allowed to develop in new wet woodland areas under a Minimum Intervention prescription.

#### 7.1.6 Planting

Restored opencast coal mining areas on the site will be subject to planting within this planning period. Species prescriptions and planting designs are detailed in section 7.2.

#### 7.1.7 Open Ground

Open space on Blairhouse will largely be in the form of unplanted areas around paths, tracks and watercourses. Vegetation cutting will be prescribed to maintain access routes where required.



## 7.2 New Woodland Creation

The accompanying Planting Design map illustrates the special distribution of the planting mix prescriptions below.

Selection of the below species and mixtures have been made with consideration of local climate data (via the Ecological Site Classification Decision Support Tool), resilience to current and future pest and diseases (further detail in Appendix II), biodiversity contribution and the continued recovery processes of disturbed soils on site. The latter is a particularly strong driver and accounts for the proliferation of pioneer species on restored areas, such as common alder, birch and pine. These pioneer species will serve a critical role in tolerance and improvement of the depleted soil nutrients and structure. This will benefit accompanying species in the current species mix prescriptions and future rotations of a potentially wider range of species.

*Table 2: Planting prescriptions*

Planting Prescription	Indicative Species	Target Density (Stems/ha)	Design	Area (ha)
Productive mixed conifer	Mix 1: Macedonian pine, birch	2500	Intimate mix at 2.0 x 2.0 m tree spacing	8.0
Productive mixed conifer	Mix 2: Norway spruce, Douglas fir, birch, common alder	2500	Intimate mix at 2.0 x 2.0 m tree spacing	5.8
Productive mixed conifer	Mix 3: Norway spruce, common alder, birch	2500	Intimate mix at 2.0 x 2.0 m tree spacing	4.5
Productive mixed broadleaf	Mix 1: Common alder, birch, aspen. Occasional oak, rowan and native shrubs	2500	Blocky mix at 2.0 x 2.0 m tree spacing	12.2
Productive mixed broadleaf	Mix 2: Oak groups with mixed broadleaf matrix (wild cherry, common alder, hazel)	2500	Oak at 1.0 x 1.0 m in groups of 25 - 36 trees. 12 m between group centres. Mixed broadleaf matrix at 2.5 x 2.5 m	1.8
Wet woodland	Common alder, willow	800	2.5 x 2.5 m. 50% open	6.8
Native shrubs	Hawthorn, hazel, blackthorn, dog rose, elder	1600	2.5 x 2.5 m	1.1
Planting buffers	Open ground	N/A	Open ground – natural regeneration acceptable in some areas	11.4

The species mixtures as described above may be subject to further enrichment during beat-up phases, with species that fulfil the objectives and prescriptions of each area and are suitable to changing site conditions, such as increasing local shelter from establishing surrounding crop. For example, beat up species for Productive mixed conifer Mix 1 may include Scots pine or Douglas fir, as well as species from the original mix. Beat up species for Productive mixed conifer Mix 2 may include western red cedar as well as species from the original mix. It is important to design such an element of species flexibility into new planting on restored soils as localised variations in texture and nutrient availability (as described further in Appendix II) may

become more apparent as the site settles. Such flexibility falls within the parameters detailed in the LMP Tolerance Table (section 2.8)

### 7.2.1 Crop Protection

As with all FLS deer management programmes, deer management in Blairhouse will be guided by a Region specific Deer Management Strategy, which is underpinned by a national code of practice and industry best practice guides.

An operational strategy for protection of new planting at Blairhouse will be informed by on-site deer population monitoring and Herbivore Impact Assessment. Additional considerations such as tree species palatability, local topography and other operational constraints will be taken into account. In practice a combination of tactics will be implemented, including deer management, tree tubes and fencing across the site.

A deer fence around the perimeter of the former bing is illustrated in the Planting Design map as an example of the scale and alignment at which fencing is considered applicable. However this may be subject to change once population surveys are complete.

In order to aid safe, efficient and humane deer management operations, linear open space radiating away from strategic locations with sufficient backdrops have been incorporated into the planting design.

## 7.3 Long term silvicultural prescriptions and systems

### 7.3.1 Productive conifer

The majority of the new woodland creation, on the previous opencast coal areas will be planted with productive conifers. The primary objective for these areas is to produce softwood timber. With relatively favourable soil, climate and exposure conditions, a long-term ambition to produce quality sawlogs should be achievable.

In Blairhouse the productive conifer prescription has been applied to areas with favourable soil textures and topography that will aid drainage and adequate rooting depth to support thinning interventions and a long term ambition of achieving natural regeneration of subsequent rotations.

To best ensure resilience against changing factors such as climate, pest and disease and the relatively unpredictable initial nature of restored soils, productive conifer areas will be mixed species with a components of broadleaf.



### 7.3.2 Productive broadleaf

In selected new planting areas a prescription of productive broadleaf woodland is applied. First are intended to largely produce firewood quality products. A long-term aspirations of log production should be achievable in subsequent rotations, once restored soils have sufficiently recovered.

Established areas of productive broadleaf are dominated by birch. Under subsequent Land Management Plans, these areas will be subject to thinning and allowed to reach full economic maturity before harvesting and supplementary planting of alternative site suitable broadleaf species.

### 7.3.3 Low Impact Silvicultural Systems (LISS)

Existing productive broadleaf woodland are currently birch dominant. Restructuring through group selection will allow opportunities for enrichment with other site suitable productive broadleaf species, such as oak and alder. These interventions will fall beyond the current plan period.

Mixed species prescriptions in new planting areas lay the foundations for long term productive LISS management, as each species reaches their optimal economic potential at different times. In Blairhouse LISS would provide benefits of soil stability and continuity of woodland conditions, particularly pertinent to the site's long term soil restoration. To account for changing contextual issues over subsequent decades of implementation, long term silvicultural prescriptions as described below are aspirational and thus may be subject to change in following Land Management Plans.

In new mixed productive conifer stands, long term management under LISS is likely to take the form of an Irregular Shelterwood or Uniform Shelterwood. This will allow the current crop time and space to reach maximum economic potential before felling and provide a regulated woodland environment for establishment of regeneration, whether it be natural or under-planted.

In new mixed productive broadleaf stands, long term management under LISS is likely to take the form of Group Selection or Uniform Shelterwood. This will be influenced by the performance of the current crop and objective for subsequent rotations.

### 7.3.4 Minimum intervention and Natural Nature Reserves

There are several riparian areas throughout the site that are either currently or have potential to function well as native wet woodland habitat. As well as ecological benefits, these areas also act as operational buffers to protect watercourse and drainage channels from disturbance.



Established wet woodland is dominated by willow across the Blairhouse. Minimum Intervention in these areas may consist of minor and focused operations on arising issues only, such as tree safety operations or invasive species removal for example.

New wet woodland will be established with a mosaic of open space and suitable native broadleaf species, in riparian zones on the coalfield restoration area. A Minimum Intervention prescription in these areas will consist of some planting and weeding operations, during establishment phases.

## 7.4 Biodiversity & Environment

### 7.4.1 Riparian Management

Existing woodland on riparian zones is functioning well as willow dominant wet woodland (UK Biodiversity Action Plan Priority Habitat). This is key habitat for an array of associated species. Wet woodland will be extended into the new planting areas. Riparian zones within the new planting areas will be subject to 50% planting of suitable native broadleaf tree species and 50% open space. This will allow light and space for the natural development of rich ground flora and shrub layers, with associated soils stability, water regulation and biodiversity benefits. Riparian areas throughout the site will be managed under a minimum intervention regime, as described in section 7.3.4.

### 7.4.2 Water

Blairhouse encompasses several water features. Blair Burn demarks the western boundary of the Blairhouse site. Cowstrand Burn crosses the site and has been redirected during landscape restoration of the opencast mine features. The main mining void in the north of the site will be retained as a permanent water feature and will discharge to the west towards Blair Burn. Additionally, there are several minor holding ponds associated with the previous mining infrastructure. These contribute to the habitat diversity across the site.

The Blairhouse site is within the Forth Estuary Local Planning District in the Scottish Environment Protection Agency's (SEPA) Flood Risk Management Strategy. The site is not within a Potentially Vulnerable Area, as designated within this Strategy. Soil restoration and establishment of woodland across the abandoned mining elements of the site will improve the site's water regulation capabilities, including interception, slowing and filtration of surface water flows through increased layers of vegetation and stabilised soils.

Forestry and Land Scotland will comply with current industry best practice guidance and UKFS stipulations in order to protect water quality during forest operations.





### 7.4.3 Deadwood

Deadwood is an important habitat within a healthy forest ecosystem. The UKWAS long-term target for deadwood provision is for an average of 20 m<sup>3</sup>/ha, including both standing and fallen deadwood. With the age and condition of woodland across Blairhouse considered, it is expected that actual concentrations will vary widely across the site.

Provision of deadwood will be maintained through natural processes such as windblown, individual tree failure or natural limb damage/dieback within the existing woodland area on the site. A Minimum Intervention prescription for riparian areas (as described in section 7.3.4) will allow space and time for these processes to function. Additionally, veteran and ancient trees on site, mainly concentrated around historic boundaries and passages will be retained and protected.

Deadwood within Blairhouse will be concentrated in areas where it will provide the highest ecological benefit, such as;

- Riparian and wet woodland areas
- Long-establish (of plantation origin) semi-natural woodland

In the longer-term, naturally occurring deadwood may also be supplemented via operational interventions.

### 7.4.4 Important species

Ecological surveys and monitoring has been carried out on behalf of Scottish Mines Restoration Trust prior to FLS ownership. The presence of great crested newt and otter has been noted on site. Appendix II includes a list of priority species and habitats present on site or in the landscape adjacent to Blairhouse.

New woodland creation and habitat enhancement works on the previous opencast coal site at Blairhouse, as detailed in this plan, will diversify and extend various habitats across the site. On a landscape scale, proposed new planting will contribute to greater habitat connectivity specifically between woodland and riparian habitats.

Operations proposed within this plan are focused on new woodland creation on the currently open, recently land formed areas. Habitats associated with the existing woodland areas in Blairhouse will therefore remain undisturbed during this plan period.

### 7.4.5 Invasive species

No invasive species have been detected during initial site surveys. If invasive species are discovered, mitigation activities will be undertaken in accordance with industry best practice.



### 7.4.6 Deer Management

Implementation of a formalised deer management programme, as described in 7.2.1, will have positive effects on lower herbaceous and shrub layers within the block. Management of deer browsing pressure will improve the development of diverse ground flora and improve opportunities for natural regeneration of shrub and tree species. This in turn will improve structural and species diversity of both the new planted and existing woodland areas.

## 7.5 Heritage

There will be a memorial (see Appendix II for draft design) installed on site dedicated to miners who lost their lives during a fire in Kinneddar Colliery on 31<sup>st</sup> May 1895. Planting design adjacent to the memorial will provide an appropriate setting with views and open space for resting. The location is illustrated in the Planting Design and Access maps.

There are no scheduled monuments on the Blairhouse site.

There are several heritage features within the existing woodland area on the site associated with historic mining infrastructure, agricultural use and historic boundaries and byways. Operational buffer zones will be applied to these features during forest operations, in accordance to industry best practice guidance.

## 7.6 Operational Access

Operational access to the site is via a gravel road which connects to A907, 500 m to the south. This section of gravel road is owned by a third party, with whom FLS have established an access agreement in perpetuity.

Within the site a forest road and ride network will be installed as part of the land forming operations, prior to the commencement of this Land Management Plan.

## 7.7 Public Access, Core Paths and Viewpoints

Recreational access to the site has been closed for the duration of the mine being active and derelict. A core path has been redirected around the northern extent of the site for this period.

Public access through the site will be re-opened and supported with a formalised path network. These routes will encompass new viewpoints and historic features within the site, as illustrated in the Access and Recreation map. They will also provide linkages to existing core paths in the wider landscape. Appropriate gate and fence crossings will be installed to



specifications adequate for intended use. Improvement of public access across the site will be a significant delivery against WIAT and CSGN objectives, as detailed in Appendix II.

Recreational routes have been consulted upon and installed as part of the land forming operations, prior to the commencement of this Land Management Plan. The long-term management of recreation routes will be supported with the implementation of buffers during planting and establishment operations. See Planting Design map for illustration.

Opportunities within the site for medium to longer views have been identified and where practicable incorporated into the planting and recreation plans. Viewpoint design and management prescriptions have been created in consultation with FLS Landscape Architects. An example of such work is illustrated in Appendix II.

## 7.8 Landscape

The planting at Blairhouse aims to create woodland groups and open space that reflect the medium scale of the SNH 'Lowland Hills and Valleys' landscape type. The woodland design reflects existing field boundaries and seeks to complement the existing patchwork of fields and woodland across the local area.



## 8.0 Critical Success Factors

Critical success factors are –

- Successful establishment of the new woodland areas to the target stocking densities listed in section 7.2.
- Herbivore impact on new planted stock, ground vegetation and existing woodland areas managed to an acceptable level, as determined via the Herbivore Impact Assessment.
- Improved habitat networks and foraging opportunities for priority species via establishment of new woodland and open space habitats as designed. Species compositions and stocking densities measured against prescriptions detailed in section 7.2.
- Proposed network of recreation routes managed and maintained in a condition suitable for intended use.

Community engagement and responsible use of the site