



# Swinnie

## Land Management Plan

### 2023-2033

### South Region-V1.0

**Plan Reference No:**

**Plan Approval Date: 20/12/2024**

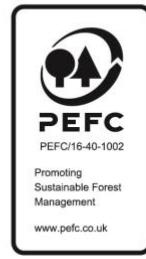
**Plan Expiry Date: 10/12/2034**

We manage Scotland's national forests and land to the United Kingdom Woodland Assurance Standard – the standard endorsed in the UK by the international Forest Stewardship Council® and the Programme for the Endorsement of Forest Certification. We are independently audited.

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



The mark of  
responsible forestry



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# 1.0 Objectives and Summary

## 1.1 Plan overview and objectives

Plan name	Swinnie Land Management Plan
Forest blocks included	Swinnie
Size of plan area (ha)	170.7 ha
Location	See Location map ( <a href="#">Map 1</a> )

Long Term Vision
<p>The management objectives of this plan will provide Swinnie Plantation with the steps in achieving a dynamic and resilient forested structure providing small scale economic return but also providing an ideal and interesting location for informal recreational access.</p> <p>Diversification of tree species incorporate both single species sub-compartment components and intimate mixtures to adapt to and mitigate the impacts of climate change.</p> <p>Swinnie offers viable habitat connectivity to the natural environment both within the site and as a refuge from neighbouring land. Future management of the site will also reduce operational forestry impacts with the use of Low Impact Management Approaches along with Long Term Retentions and Minimum Intervention areas.</p>
Management Objectives
<ol style="list-style-type: none"><li>1. Produce a management plan that ensures future management coupes provide a dynamic and resilient habitat adaptable to climate change and beneficial for informal social access and environmental habitat.</li><li>2. Utilise Low Impact Silvicultural Systems where appropriate and build in adaptive resilience to new species design.</li><li>3. Utilise high yielding soft conifers to sequester carbon and contribute to mitigating climate change whilst also utilising natural regeneration and planting of broadleaf species for both economic return and environmental resilience.</li></ol>
Critical Success Factors
<ul style="list-style-type: none"><li>• Timely thinning incorporating systematic removal of Larch species.</li><li>• Effective protection of broadleaf and alternative species must be in place within planting designs and also in areas where natural regeneration is being utilised.</li><li>• Utilising operational machinery proactively where possible and tackle larch/unwanted non-native removal within adjacent coupes.</li></ul>

## 1.2 Summary of planned operations

Table 1

Summary of Operations over the Plan Period	
Clear felling (gross)	5.6 ha
Thinning (potential area)	101.4 ha
Restocking (gross)	24.2 ha
Afforestation	0 ha
Deforestation	0 ha
Forest roads	0 m
Forestry quarries	0 ha

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

## 2.0 Analysis and Concept

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

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

**Objective: Produce a management plan that ensures future management coupes provide a dynamic and resilient habitat adaptable to climate change and beneficial for informal social access and environmental habitat.**

- **Opportunity:**
  - Recent Statutory Plant Health Notice sanitation felling works gives opportunity to begin the furthering of species diversification earlier than previously planned within the Swinnie block.
  - With Swinnie residing within the Priority Action Zone for Larch removal this also gives opportunity to look at alternative species to replace larch with.

- Swinnie has been seen produce natural regeneration in both conifer and broadleaf species which could be used for both productivity and conservation/amenity purposes
- **Constraint:**
  - Both alternative conifer and broadleaves are invariably palatable to deer and therefore mortality rates can be high at the establishment stage.
  - Much of the older age classes are within the larch components therefore removing the larch will negatively impact age class structure.
- **Concept:**
  - Utilise and manage natural regeneration where the species regenerating are in line with plan objectives, flexibility may be needed to adjust plans if natural regeneration is over/under what is expected.
  - Incorporate robust wildlife management infrastructure to afford effective protection.
  - Retain areas of stable mature thinned crops where larch is not a component to retain age class distribution as best as possible.
- **Objective: Utilise Low Impact Silvicultural Systems where appropriate and build in adaptive resilience to new species design.**
- **Opportunity:**
  - Where larch is within mixture as a minor component there is opportunity to thin these out within a 'pseudo single tree selection' type system.
  - Where larch forms a larger component but the remaining crop is young enough to withstand a higher than usual thinning regime this will create openings for natural regeneration to colonize.
- **Constraint:**
  - Natural regeneration may be regenerating in areas difficult to manage for wildlife browsing pressures.
  - There is a chance some of the remaining overstorey will blow.
- **Concept:**
  - Incorporate robust wildlife management infrastructure to afford effective protection within areas being thinned.
  - Thinning will be anticipated to be carried out as early as practicably possible.
- **Objective: Utilise high yielding soft conifers to sequester carbon and contribute to mitigating climate change whilst also utilising natural regeneration and planting of broadleaf species for both economic return and environmental resilience.**
- **Opportunity:**
  - A range of species are viable for growing within Swinnie and as such Swinnie has one of highest diversity scores within the Region.

- Swinnie has been seen to produce natural regeneration in both conifer and broadleaf species which could be used for both productivity and subsequently carbon sequestration.
- **Constraint:**
  - Natural regeneration may be regenerating in areas difficult to manage for wildlife browsing pressures.
  - Natural regeneration of undesired species can and has occurred in areas of open habitat
- **Concept**
  - Group restock species sensitive to deer browsing into areas where deer control can be easily tackled with existing facilities and add infrastructure where required.
  - Be proactive with operations and take advantage of contracts occurring nearby coupes which require minor removal of target species.

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

## 3.0 Management Proposals - regulatory requirements

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

### 3.1 Designations

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

Table 2

Designations and significant features		
Feature type	Present	Note
Site of Special Scientific Interest (SSSI)	No	
National Nature Reserve (NNR)	No	
Special Protection Area (SPA)	No	
Special Area of Conservation (SAC)	No	Swinnie Burn to the East and Fodderlee Sike to the West of the site both flow into Special Area of Conservation designated rivers; Jed Water and Rule Water respectively.
World Heritage Site (WHS)	No	
Scheduled Monument (SM)	No	
National Scenic Area (NSA)	No	
National Park (NP)	No	
Deep peat soil (>50 cm thickness)	No	
Tree Preservation Order (TPO)	No	
Biosphere reserve	No	
Local Landscape Area	Yes	Teviot Valleys SLA 5
Designed landscape	Yes	Langlee Park Designed Landscape #171
Ancient woodland	No	LEPO bordering Gillies Shank
Acid sensitive catchment	No	
Drinking Water Protected Area (Surface)	No	

The Key Features map (**Map 2**) shows the location of all designated areas and significant features.

## 3.2 Clear felling

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

Table 3

Clearfell Summary by Phase and Coupe Number		Fell Year	Gross Area (ha)
Phase	Coupe Number		
2	62022	29/30	5.66
			<b>Total</b> 5.66

Table 4

Clearfell by Species					
		Net Area (ha) by Main Species >20%			
Coupe Number	Fell Year	JL	SP	SS	Coupe Total
62022	2029/30	4.2	0.2	0.2	4.8
<b>Plan Area Total</b>					<b>4.8</b>

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

Table 5

Scale of Proposed Felling Areas											
Total Woodland Area			170.7 ha								
Felling	Phase 1	%	Phase 2	%	Phase 3	%	Phase 4	%	Long Term Retention	%	
Net Area (ha)	0	0	4.8	2.8	0	0	0	0	4.03	2.3	

### 3.3 Thinning

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

This covers an area of 101.4 ha

Thinning will normally be carried out at, or below, the level of marginal thinning intensity (i.e. removing no more than 70% of the maximum MAI, or YC, per year). Higher intensities (no more

than 140 % of maximum MAI, or YC, per year) may be applied where thinning has been delayed, larger tree sizes are being sought or as part of a LISS prescription. In all cases work plans will define the detailed thinning prescription before work is carried out and operations will be monitored by checking pre and post thinning basal areas for the key crop components.

## 3.4 Other tree felling in exceptional circumstances

FLS will normally seek to map and identify all planned tree felling in advance through the LMP process.

However, there are some circumstances requiring small scale tree felling where this may not be possible and where it may be impractical to apply for a separate felling permission due to the risks or impacts of delaying the felling.

Felling permission is therefore sought for the LMP approval period to cover the following circumstances:

Individual trees, rows of trees or small groups of trees that are impacting on important infrastructure (as defined below\*), either because they are now encroaching on or have been destabilised or made unsafe by wind, physical damage, or impeded drainage.

*\*Infrastructure includes forest roads, footpaths, access (vehicle, cycle, horse walking) routes, buildings, utilities and services, and drains.*

The maximum volume of felling in exceptional circumstances over the plan area covered by this approval is 75 cubic metres per calendar year.

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

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

## 3.5 Restocking

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

**Table 6**

Restocking			Proposed Restock Year	Species	Method *	Minimum stocking Density (s/ha)	Note
Phase †	Coupe Number	Gross Area (ha)					
1	62018	18.58	25/26	SP PBI PBI MB	R/NR R/NR	2500 2500	SP PBI 50:50 PBI MB 70:30
3	62022	5.66	33/34	NS PBI PBI	R R	2500 2500	NS  PBI 60:40 Pure crop
<b>Total</b>							<b>24.24</b>

† recently felled awaiting restock (F) / Phase 1 (1) / Phase 2 (2)

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

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

## 3.6 Species diversity and age structure

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

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

Table 7

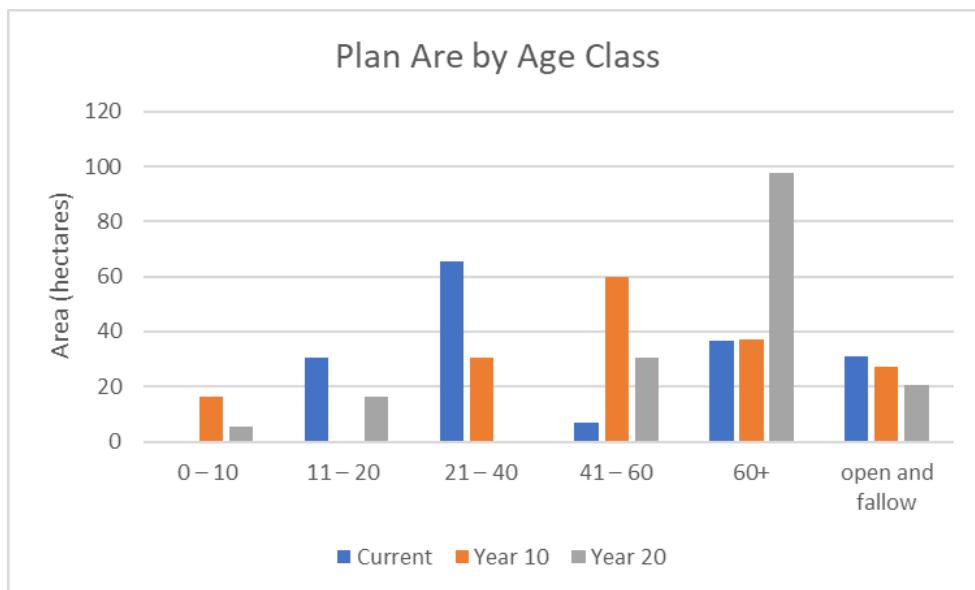
Plan area by species						
Species	Current Area (ha)	%	Year 10 Area (ha)	%	Year 20 Area (ha)	%
Sitka spruce	37.2	21.8%	32.5	19.0%	32.7	19.2%
Other conifers	63.4	37.1%	55.9	32.7%	53.6	31.4%
Native broadleaves	39.3	23.0%	55	32.2%	63.8	37.4%
Fallow	12.4	7.3%	7.5	4.4%	0	0.0%
Open ground	18.4	10.8%	19.8	11.6%	20.6	12.1%
<b>Total</b>	<b>170.7</b>	<b>100</b>	<b>170.7</b>	<b>100</b>	<b>170.7</b>	<b>100</b>



Figure 1, Plan Area by Species

Table 8

Plan area by Age						
Age Class (years)	Current Area (ha)	%	Year 10 Area (ha)	%	Year 20 Area (ha)	%
0 – 10	0	0.0%	16.1	9.4%	5.7	3.3%
11 – 20	30.5	17.9%	0	0.0%	16.1	9.4%
21 – 40	65.7	38.5%	30.5	17.9%	0.0	0.0%
41 – 60	7	4.1%	59.5	34.9%	30.5	17.9%
60+	36.7	21.5%	37.2	21.8%	97.8	57.3%
Open and Fallow	30.8	18.0%	27.3	16.0%	20.6	12.1%
<b>Total</b>	<b>170.7</b>	<b>100</b>	<b>170.7</b>	<b>100</b>	<b>170.7</b>	<b>100</b>



## 3.7 Road Operations and Quarries

There are no planned new roads, road realignments, road upgrades, or new quarrying within the plan period. Timber haulage routes are shown on the Road Operations and Timber Haulage map ([Map 7](#)).

## 3.8 Environmental Impact Assessment (EIA)

No operations within the plan period meet the requirements for an EIA determination.

## 3.9 Tolerance table

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

# 4.0 Management Proposals – guidance and context

## 4.1 Silviculture-

### 4.1.1 Clear felling

Coupes for clearfelling during the plan period (refer to **Map 4**):

52022

Minimal clearfelling is proposed within the Swinnie block, however coupe **52022** is proposed for felling in phase 2 given it is comprised of circa. 75% pure larch.

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

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

### 4.1.2 Thinning

Refer to **Map 5** for proposed thinning areas throughout and beyond the plan period. For detailed prescriptions see section 3.3 above.

The coupes for thinning within the plan period are all favoured for their larch content (with the exception of **62007** being solely a silvicultural intervention) and larch removal through thinning will be the favoured target tree.

62006/09/21

These areas are proposed to be thinned much earlier than usual to pre-emptively remove the larch and allow natural regeneration of broadleaf to recolonise the gaps.

62008/19

These areas are proposed to be thinned alongside the clear fell operations within coupe **52022**.

62010

As above, this area is proposed to be thinned alongside clear fell operations within coupe **52022**. Assessment of the site nearer the time will determine the scale and type of thinning.

### 4.1.3 Low Impact Management Approaches (LIMA)

Refer to **Map 4**.

62005

This coupe will receive its first thin with the expectation that further thinning interventions will be maintained lending the opportunity to then transform the coupe into a Continuous Cover System in the future.

62003

Thinning focusing on larch will further open up canopy light levels, 5 year review should assess natural regeneration levels coming through beneath the canopy post thinning.

62019

Thinning focusing on larch will further open up canopy light levels, 5 year review should assess natural regeneration levels coming through beneath the canopy post thinning.

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

Refer to **Map 4**.

With the gradual loss of larch consideration on retaining mature windfirm non-larch crops is paramount in maintaining a diverse age class structure.

From the previous plan we are retaining the young crop within **62002** to the north west and a new Long term Retention of pure thinned Scots pine within **62023**. The Swinnie Burn associated coupes shall remain as Minimum Intervention with the expectation that a new minimum intervention coupe be created between **62007/62003** to incorporate the Upland Heath area in time. The Natural reserve within **62016** provides further diverse age class and habitat.

### 4.1.5 Tree species choice / Restocking

Refer to **Map 6**.

Species for restocking throughout the lifetime of this plan period will be primarily Scots pine and Norway spruce. Both these species are highlighted as either suitable or very suitable for Swinnie as per the Ecological Site Classification Decision Support Tool.

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

The Restocking Strategy for Scotland's National Forest Estate explains that we will minimise chemical usage in restocking (insecticides and herbicides) by considering options at the site scale, and using tactics such as delayed planting to achieve this.

#### 4.1.6 Natural regeneration

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

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

There are some productive sites where natural regeneration is occurring. These will be monitored and recorded in the FLS sub-compartment database. Where this is the desired species, we will endeavour to use it to establish the required stocking density. If stocking density is too low it will be beaten up by year 5. If the natural regeneration is too dense it may be necessary to clear and restock. Where the natural regeneration is not the desired species it will be considered against the plan objectives and tolerance table and either accepted (with a plan amendment if necessary) or removed.

#### 4.1.7 Protection

##### Deer

There is a significant challenge to establishing broadleaves and soft conifers due to the impacts of deer. One of the critical success factors of the plan is to ensure young trees are protected from browsing damage.

Swinnie forms a part of the wider Wauchope Deer Management Unit (DMU) with Roe deer being the frequently recorded species.

The key objectives within the Deer Management Plan are:

- To enable re-stocking to take place without the need for deer fencing and to achieve the appropriate stocking density at year five in accordance with OGB 4.
- To maintain a sustainable deer population.

To achieve this, the agreed target laid out in the South Region Strategy document is to maintain deer populations at sustainable levels and maintain impact levels in accordance with FLS policy of less than 10% on all commercial tree species.

Targets have been set in line with population models, should deer impact monitoring suggest rises in impact levels the cull target may be revised to reduce population levels below these estimates.

Culling is on-going with culls set based on population modelling cull data evidence. The DMU Population model suggests we will have a 2023 spring population of 8 deer/km<sup>2</sup>. Since there have been no restock coupes in this block over the last 5 years, there is no browsing impact data available for this block.

The Swinnie forest block cull is currently set to be circa. 5 roe per annum for the next 3 – 5 years.

### **Tree Pests and Diseases**

*Phytophthora ramorum* has been identified in Swinnie and a recently issued Statutory Plant Health Notice is currently in the process of being felled. Swinnie is in the more vulnerable Priority Action Zone. Throughout Scotland we are aiming to pre-emptively remove at least 20% of larch within this zone by April 2027, as per the FLS larch strategy. Within the lifetime of this plan we are aiming to remove approximately 70% of larch from Swinnie through pre-emptive and selective thinnings alongside small clear fell operations.

Monitoring of the *Elatobium abietinum* on the young Norway spruce within coupe 62004 will be carried out through reviews of the LMP.

### **Fire**

FLS continues to work closely with the Scottish Fire and Rescue Service (SFRS) to prevent and tackle wildfires that threaten Scotland's National Forests and Land. FLS support SFRS in their lead role for fire prevention and suppression through creating annual fire plans, maintaining a duty rota, and providing additional logistical support. FLS's primary objective is always to protect people's health, safety and wellbeing.

## **4.1.8 Road operations, Timber haulage and other infrastructure**

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

A well-established track (170 m) alongside **62005** and **62023** may be required to be upgraded to a forest road to facilitate upcoming thinning operations. If required this will be in place before thinning operations commence.

## 4.2 Biodiversity

### 4.2.1 Designated sites

Swinnie Burn to the East and Fodderlee Sike to the West both flow into Special Area of Conservation designated rivers; Jed Water and Rule Water respectively. The Swinnie Burn is proposed to be managed under minimum intervention retaining the mixed woodland with monitoring of target non-natives.

The Fodderlee Sike area (and catchment) is proposed to have thinning and clearfell interventions at a small scale however all forest and water guidelines will be met during operations.

### 4.2.2 Native woodland

Given the early map records of The Swinnie Burn area is showing woodland present (map surveyed 1858, published 1863) it is likely to be Long established of Plantation Origin (LEPO) however, it is not recorded as such. Much of this area is difficult to access given the narrow strip to the north and the steep gully to the Burn throughout therefore will be managed under minimum intervention. Non-natives such as western hemlock will be monitored.

Within **62013** the non-native conifer element will be removed to maintain the open/woodland component.

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

As per section 4.2.2.

### 4.2.4 Protected and priority habitats and species

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

#### Red squirrel

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

Volunteers have recently been trained through Saving Scotland's Red Squirrels and have BASC certification to trap and despatch grey squirrel on FLS premises including Swinnie.

#### Schedule 1 Raptor

Previous years have seen Schedule 1 raptors within Swinnie however, no current active nests are known of. As per the work plan process coupe checks are carried out prior to operations commencing and mitigation will be put in place including timings and buffers.

#### Upland Heath Priority Habitat

62001/04

Naturally regenerating native and non-native trees present, these will be monitored at the time of thinning operations of coupe 62004 – at minimum non-natives will be removed (out with plan period).

62003/07

Non native conifer will be removed alongside final crop felling of 03 and 07 (out with plan period) with the intention that this area then becomes managed as minimum intervention.

62013

The non-native conifer element will be removed to maintain the open/woodland component within this plan period.

## 4.2.5 Open ground

Currently open ground contributes to 10.8% of the plan area, over the next twenty years this is expected to increase to 12.1%. This is primarily focussed alongside riparian areas integrated with pockets of native broadleaves and on Priority habitats. Where managed open is allocated there is an expectation that resources will be allocated to maintaining it as open. A combination of techniques will be used to maintain the open condition, including vegetation management and scrub removal.

The plan area also incorporates areas of successional open, where natural regeneration will be tolerated. This is located within ridges, upper margins and along riparian zones of side tributaries, where deer control will be very challenging. Monitoring of these areas will allow us to identify any significant changes, and Scottish Forestry will be notified if these require amendments to the plan.

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

## 4.2.6 Dead wood

Opportunities for retaining or creating deadwood will be identified during the planning of all felling and thinning works, favouring areas with the highest deadwood ecological potential. Valuable deadwood and deadwood areas will be marked on contract maps. Areas of natural reserve will offer some of the best opportunities for the development of standing and fallen

deadwood. Where it is safe to do so, standing mature dead trees will be retained as these offer excellent potential for a range of species.

### 4.2.7 Invasive species

Rhododendron control has been carried out previously within the Swinnie block most notably around and within coupe **62003**. This will be continued to be monitored.

Hemlock within coupe **62012** will be monitored.

## 4.3 Historic Environment

Refer to **Map 2**.

Our key priorities for archaeology and the historic environment are to undertake conservation management, condition monitoring and archaeological recording at significant historic assets; and to seek opportunities to work in partnership to help to deliver Our Place in Time: the historic environment strategy for Scotland (2014) and Scotland's Archaeology Strategy (2015). Significant archaeological sites will be protected and managed following the UK Forestry Standard (2017) and the FCS policy document Scotland's Woodlands and the Historic Environment (2008). Harvesting coupes, access roads and fence lines will be surveyed prior to any work being undertaken in order to ensure that upstanding historic environment features can be marked and avoided. At establishment and restocking, work prescriptions remove relevant historic environment features from ground disturbing operations and replanting. Where appropriate, significant historic assets are recorded by archaeological measured survey, see active conservation management and may be presented to the public with interpretation panels and access paths. Opportunities to enhance the setting of important sites and landscapes will be considered on a case-by-case basis (such as the views to and from a significant designated site).

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

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

### 4.3.1 Designated sites

None present

### 4.3.2 Other features

A road feature recorded within the Canmore database is present to the south east although not identifiable on the ground. The line roughly follows existing tracks and rides within Swinnie which will be kept as such.

A woodbank feature of local interest is present within Swinnie in the shape of a puzzle piece. Following a [Press Release](#) to gather information it was discovered further features in the wider Roxburghshire area are present in similar shapes and that these were used as stells affording livestock protection from the elements.

The feature at Swinnie will be retained with the encroaching spruce removed in future plans and a restock design to complement the existing circa. 180 year old broadleaf planting.

## 4.4 Landscape

### 4.4.1 Designated areas

Swinnie is located within the Teviot Valley Special Landscape area 5 and the Nature.Scot Landscape Character Type 102: Upland Fringe with Prominent Hills. See landscape designation text in [Appendix I](#).

The main viewpoints where change within the block over the next plan period can be seen are from the B6357 heading north (NT6107 1459) and from Rubers Law (NT5804 1557). The recent SPHN related fellings can be viewed from both these viewpoints and the clearfell of coupe **62022** proposed in phase 2 can also be seen from both these viewpoints albeit to a lesser extent.

The restocking designs have been considered with both these viewpoints in mind and will start the gradual transformation of the forest landscape to work more holistically alongside the lines of force and maintain the levels of visual diversity of tree species.

### 4.4.2 Other landscape considerations

The northern Swinnie Burn area of the block touches on the Langlee Park designed landscape. Fringes of the Swinnie block can be seen from the Ferniehirst Road (NT6559 1841), the areas of Swinnie that can be seen are the minimum intervention areas running from the Gilliestounie Farm area south through the Swinnie Burn and the northern end of **62003**. Through the lifetime of this plan only the fringe of larch may be removed from **62003**.

## 4.5 People

### 4.5.1 Neighbours and local community

A public drop in event was hosted at the Bedrule Village Hall on the 3rd March 2023 along with an online survey which was opened for comments from the beginning of February. Several neighbours have taken an active interest in the development of the plan and their aspirations have been incorporated where they do not conflict with the objectives of the plan and are consistent with FLS's approach to land management.

### 4.5.2 Public access

Visitors are welcome to explore FLS land, and will only be asked to avoid routes while certain work is going on that will create serious or less obvious hazards for a period (e.g. tree felling). Scotland's outdoors provides great opportunities for open-air recreation and education, with great benefits for people's enjoyment, and their health and well-being. The Land Reform (Scotland) Act 2003 ensures everyone has statutory access rights to most of Scotland's outdoors, if these rights are exercised responsibly, with respect for people's privacy, safety and livelihoods, and for Scotland's environment. Equally, land managers have to manage their land and water responsibly in relation to access rights and FLS will only restrict public access where it is absolutely necessary, and will keep disruption to a minimum.

### 4.5.3 Support for the rural economy

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

## 4.6 Soils

### 4.6.1 Protection and Fertility

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

### 4.6.2 Cultivation

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

### 4.6.3 Deep peats

No deep peats are recorded within Swinnie.

## 4.7 Water

### 4.7.1 Drinking water

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

### 4.7.2 Watercourse condition

See **Appendix I** for water quality detail. All forestry operations will meet the requirements of the UKFS Guidelines on Forests and Water.

### 4.7.3 Flooding

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

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# Appendix I: Description of Woodlands

Description of woodlands
Topography and Landscape
<p>The topography and landscape surrounding the Swinnie Forest block is typical of the landscape character in which it resides. Small to medium smooth rolling hills with the occasional larger somewhat craggy topographic feature, in this instance Rubers Law to the West, dominating the landscape. The predominant landscape use is that of permanent pasture on largely improved grazing, with occasional arable fields, this is dissected by broadleaf and coniferous shelter belts along with drystone dyking creating a geometric patchwork of land.</p> <p>The scale of the site itself in contrast to its surroundings would be considered medium scale with the surrounding pasture; medium to large scale. From outside the forest block the openness is maintained but from within an enclosed intimate experience is captured. The visual diversity is relatively low and is largely made up of the farmed fields however, this is interspersed by river courses, hedgerows, shelter belts, and larger forest blocks with tree species being a mix of broadleaf and conifer.</p>
<p>The area is within the landscape designation; <a href="#">Teviot Valley SLA 5</a></p> <p>The key forces for change and management recommendations relevant to the Swinnie LMP are the recognition of changes to crops (although in a farming context still relevant to forestry) which would primarily be due to tree health issues. The promotion of sustainable land management balancing biodiversity, recreation and tourism and promotion of forest restructuring.</p>
<p>The area is also within the Nature.Scot <a href="#">Landscape Character Type 102: Upland Fringe with Prominent Hills</a></p> <p>There are five different areas associated with this LCT the relevant points for Swinnie are as follow:</p> <p>‘Rubers Law is a dominant, sharply conical, heather moorland covered hill, with a contrasting expansive, gently rolling plateau of coarse grassland and rush pasture, in large units divided by fences. There are few trees which are confined mainly to small scattered conifer forests and shelterbelts, and which are conspicuous in the large scale, open landscape. Settlement is very low density, confined to farm buildings and dwellings on sheltered lower slopes.’</p>

## Description of woodlands

The Swinnie Burn plantation/Gillies Shank northeastern arm of the area from NT 63145 15831 (on the Swinnie Burn itself) northeastwards has been recorded in the Scottish Borders Council Survey of Designed Landscapes as part of the Langlee Park designed landscape (number 171). Further details of this can be found at [Survey of designed landscapes](#)

**Map 2** shows the Landscape designations relevant to Swinnie

## Geology and Soils

The baseline [geology](#) throughout Swinnie is that of glacial till deposits, primarily boulder clay described by the British Geological Society as; blanketing deposit generally of tough, well consolidated clay or sandy clay with numerous rounded pebbles or boulders. Bedrock is described at or close to the surface within the northern area close by the Swinnie Moor, this is from the Stratheden Group – Sandstone and Argillaceous rocks.

Soils within Swinnie have been surveyed as being primarily typical peaty surface water gley (83%) this soil type also comprises 20% podzolic peaty surface water gley both soil moisture regimes (SMR) consist of being wet with the soil nutrient regime (SNR) being Poor for the main type and very poor 3 for the secondary.

A ground water gley type is present (12%) to the east with an SMR of very moist and SNR of rich.

Lastly, a typical brown earth is present (5%) towards the south east of the site with SMR at fresh and SNR at medium.

Soils types within the forest block are shown on **Map 9**

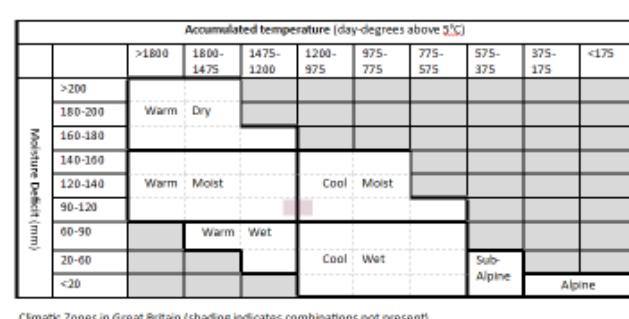
## Climate

Accumulated temperature (day-degrees above 5°C)  
Min: 1120, Max: 1261, Mean: 1190

Moisture Deficit (mm)  
Min: 94, Max: 119, Mean: 106.5

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

## Description of woodlands



## Hydrology

**Map 2** shows all watercourses, open water, and recorded water supplies within close proximity to Swinnie.

The forest sits in the Solway Tweed river basin district.

### Water quality

Bodies of surface waters (as identified by SEPA) that the streams and burns within the plan area feed in to:

**Name:** Rule Water      **Overall Condition:** Moderate

**Name:** Jed Water      **Overall Condition:** Moderate

Impacted condition / Responsible pressures (Responsible activity):

Access for fish migration / barrier to fish migration (public water supply)

### Flooding

No water bodies within Swinnie have flooding potential however, the associated burns and streams within Swinnie feed into rivers that do. The [SEPA flood map](#) shows both the Rule and Jed Waters have a high likelihood of river flooding with 10% chance of flooding each year.

### Water supplies

There are no public water supplies present within Swinnie as confirmed by Scottish Water. Also, no private water supplies are present within the FLS Swinnie land management plan area. Five known Private Water Supplies however have been identified nearby the forest. Following a PWS catchment analysis only one of these has been identified (NT 6297 1603) as being within the Swinnie catchment.

Description of woodlands
Windthrow
<p>The detailed aspect method of scoring (DAMS) windiness is split almost 50/50 through the site with values between 15 and 14, meaning the majority of the forest is thinnable without an increased chance of windblow.</p> <p>That said previous crops, have suffered windblow in the central area and there are some minor windblow pockets within the northern area of 62003, some of this is historical (before previous plan) and some likely from the Storm Arwen event in November 2021.</p> <p><b>Map 10</b> illustrates the DAMS measurements for the Plan area.</p>
<p>Adjacent land use</p> <p>Adjacent land use to Swinnie is primarily that of pasture grazing made up of rectilinear fields and farms containing both improved and rough grazing. The James Hutton Institute (JHI) Land Capability Scale for Agriculture (250k map) give the neighbouring land class 4.1 - <i>Land capable of producing a narrow range of crops, primarily grassland with short arable breaks of forage crops and cereal</i>, 5.1 - <i>Land capable of use as improved grassland. Few problems with pasture establishment and maintenance and potential high yields</i> and 5.2 - <i>Land capable of use as improved grassland. Few problems with pasture establishment but may be difficult to maintain</i>.</p> <p>Alongside the pasture, associated shelter belts are present of which some are managed under a management plan and have felling scheduled according to the Scottish Forestry Map viewer.</p>
<p>Public access</p> <p>Swinnie is frequented by walkers, dogwalkers, horse riders and wildlife enthusiasts. There is a trail network throughout the forest which connects the southern and northern forest roads creating a popular looped trail. These trails are not promoted or maintained by FLS however, are within the following Scottish Borders Council (SBC) categories:</p> <p>Promoted Path: the U shaped loop coming from the north-west of the block and egressing to the north-east. This also forms a part of the Jed Forest Trails Justice Trail and links on to the Right of Way past the Swinnie Cottages and also onto two customary paths to the east and north-east.</p>

<h3>Description of woodlands</h3>
<p>Customary path: A trail to the south of the Swinnie Block is shown on the SBC path plan map however this has evidently not been used for some time on the ground with the forest road likely being used as the preferred option.</p>
<p><b>Map 2</b> shows the location of trails.</p>
<h3>Historic environment</h3>
<p>No scheduled monuments, category A listed buildings or inventory gardens and designed landscapes are present within the Swinnie block.</p> <p>There is a road feature recorded as being of local importance highlighted on FLS records and Canmore (ID56948) however, this is not evident on the ground, through historical maps or Lidar records.</p>
<p>A curiously shaped woodbank feature was found during initial scoping surveys for this LMP located at NT 624 147, the feature is likely to be a 'stell'; a shelterwood system affording livestock shelter from all four cardinal points. The feature forms a 1 m high woodbank with mature beech trees along its perimeter and forms the shape of a puzzle piece, the feature is present on first edition OS maps and Lidar records and is likely to be approximately 180 years old. Other very similar features within the surrounding landscape are also present and so a press release was issued to ascertain if the stell was significant in any way representing or commemorating an event or person given its intricate design. This gathered much interest from the local community but unfortunately has yet to have any significant reason for the shape other then the practical benefits to sheltering livestock.</p>
<p>Historic environment records for the forest are shown in <b>Appendix V</b> and on <b>Map 2</b>.</p>
<h3>Biodiversity</h3>
<p><b>Designated Sites</b>  Swinnie Burn to the East and Fodderlee Sike to the West of the site both flow into Special Area of Conservation designated rivers; Jed Water and Rule Water respectively.</p> <p><b>Priority Habitats</b>  There are some minor elements of Upland Heath scattered throughout the site which are likely to be dry heath (H10 or H12). These are relatively small but can be locally valuable and also provide pollinator habitat.</p>

## Description of woodlands

### Priority Species

Red squirrels have been sighted within Swinnie although no formal data is on record.

Schedule 1 raptors have been present within Swinnie in the past no currently active nests are recorded formally.

### Ancient Woodland / PAWS

Although not currently included within the Ancient Woodland Inventory the Swinnie Burnhead Plantation and Swinnie Burn Plantation strip that runs along the eastern boundary of the site is not included in the Roy maps however, is subsequently wooded according to the 1858 surveyed first edition OS map which would make the site Long Established of Plantation Origin (LEPO).

### Natural Reserves

An area of 1.4 ha within coupe 62016 has been retained as Natural Reserve as per the previous plan following windblow noted within the last plan revision. This area has provided an area of mixed conifer both windblown and regenerating in a block that currently has little retentions.

### Deadwood potential

Areas of high deadwood ecological potential are located primarily around the riparian areas alongside the Natural Reserve within 62016 s mentioned above. Medium potential can be found throughout the northern coupes and along the eastern Swinnie Burn and Burnhead Plantation areas. Low potential is focused within the centre of the site.

### Open ground

Open ground is distributed throughout the forest block however the bulk of the open ground is located to the east along the Swinnie Burn and among the broadleaf area to the west.

## Invasive species

A minor element of western hemlock (*Tsuga heterophylla*) is located within the northern area of the Swinnie Burn Plantation – 62012.

*Rhododendron ponticum* has been recorded in 62003 but has since been treated.

## Woodland composition

The current species composition of the forest is illustrated on **Map 8**.

<b>Description of woodlands</b>
See the table above within section 3.6; Species diversity and age structure for detailed species breakdown. There is a relatively high diversity of tree species present with a Shannon Index score of 2. However, 15.5% is larch which we would be aiming to remove throughout the lifetime of the plan.
<b>YC</b>
Average Yield Class distribution per species is as follows: Douglas fir 14; European larch 8; hybrid larch 11; Japanese larch 9; lodgepole pine 12; mixed conifer 16; Norway spruce 14; Scots pine 12; Sitka spruce 17. Generally it can be seen the site is quite productive.
<b>Rotation</b>
The standing mature crop at Swinnie is primarily in its first rotation having been planted throughout the 1950-60's with the younger areas being in the second rotation
<b>Management types</b>
Currently just over half (50.6%) the forest is managed as clear fell, Low Impact Management follows (32.2%) with the rest being Minimum Intervention (15.2%). Natural Reserves and Long Term Retentions currently make up less than 2%.
<b>Plant health</b>
Swinnie is within the Priority Action Zone for dealing with <i>Phytophthora ramorum</i> infections. Within the south east of the site a Statutory Plant Health Notice (SPHN) – STH22_0231 has recently been served (31.08.22).
Swinnie has had confirmed reports of <i>Elatobium abietinum</i> on young Norway Spruce noted and reported during the initial scoping surveys of the site for this LMP.
<b>Infrastructure</b>
Two forest roads in good condition service the site; both coming in from the B6357 to the west of the site.

## Appendix II: Consultation record

Consultee	Date contacted	Date of response	Issues raised	FLS response
Scottish Water	06.02.23	06.02.23	No supplies present within site – No further issues	-
Historic Environment Scotland	06.02.23	07.02.23	No issues	-
Scottish Borders Council – Infrastructure Manager	06.02.23	14.02.23	No issues	-
SEPA	06.02.23	14.02.23	General guidance given in reference to forest management in particular improving riparian areas and following Forestry and Water guidelines throughout all operations.  Best efforts should be made to ascertain Private water supply location and mitigate accordingly.	
Nature.Scot	06.02.23	16.02.23	No comment as below the SF and Nature.Scot concordat on operational delivery.	-
Scottish Borders Council – Archaeology officer	06.02.23	27.02.23	Consideration of designed landscape area around Swinnie Burn Plantation/Gillies Shank North-eastern area.  Continued access throughout existing tracks	Followed up on landscape comments awaiting response from SBC landscape team.  Tracks will be retained.

Consultee	Date contacted	Date of response	Issues raised	FLS response
			The Swinnie puzzle piece should be retained within future species or age class design and operations not doing any further damage – utilise existing breaks in the future.	This feature will be preserved within the future species design and is now a heritage constraint feature on our GIS database.
Scottish Borders Council – Countryside Access Ranger	06.02.23	15.03.23	<p>Continued access along existing SBC promoted paths</p> <p>Site visit requested to assess current infrastructure incl. boardwalks, gates/barriers and picnic tables.</p> <p>Request to review/improve car parking facilities</p> <p>Request for review on a horse route along Western boundary</p>	<p>FLS will retain the existing trail offering and will remove any fallen trees that may block access.</p> <p>Site visit to be followed up once current operations have ceased. FLS will continue to work alongside SBC to allow them access to maintain their trails.</p> <p>Barriers were previously moved to their existing position as anti-social behaviour was being observed with the barrier further in the wood.</p> <p>Can be discussed at site visit however no plans for this currently.</p>
Public drop in event	03.02.23 Posters on site/letter drop and PR release of event	03.03.23	<p>Event ran from 17:00 – 20:00 at the Bedrule Village Hall with 10 locals attending. With the following being the issues raised.</p> <p>Grey squirrel management raised</p>	FLS work in partnership with Saving Scotland's Red Squirrels. A monitor and trapping volunteer event has recently taken place with good numbers participating, these volunteers are now trained and hold the BASC certification in capture and despatch of grey squirrels. These volunteers are permitted to trap on FLS land with Swinnie being one of the blocks being managed in this way.

Consultee	Date contacted	Date of response	Issues raised	FLS response
			<p>Information on larch disease</p> <p>Outline of potential future operations – and maintained access</p> <p>Request for more ponds</p> <p>Request for a looped mountain bike trail</p> <p>No new Private Water Supplies were highlighted.</p>	<p>P.ramorum discussed along with potential future impacts</p> <p>Current SPHN works discussed and proposals for future thinning operations along with the phased removal of larch throughout the block.</p> <p>Followed up with Environment team and no further pond features are planned at this stage.</p> <p>The justice MTB/walking trail is still promoted by SBC and is accessible. The south eastern area is currently closed due to operations but will re open once safe to do so.</p> <p>FLS requested PWS information from all those who attended the event.</p>
MOP	23.03.23	23.03.23	Confirmed location of PWS outside of Swinnie and outwith Swinnie Catchment	Added to Key features map
MOP	03.02.23	22.03.23	<p>Noted presence of red squirrel within Swinnie</p> <p>Noted presence of a lichen of interest. Blue &amp; ribbon-like</p> <p>Confirmed presence pf PWS outwith Swinnie and outwith Swinnie catchment</p>	<p>Noted in text</p> <p>Possibly that of <i>Ramalina spp (farinacea/fraxinea?)</i> – Indicator of good air quality</p> <p>Noted in key features map</p>
Comments received from Online Google Survey form	03.02.23	various	Comments received from members of the public describing themselves as walkers, dog walkers and nature enthusiasts.	

Consultee	Date contacted	Date of response	Issues raised	FLS response
hosted on FLS website			<p>Concern over lack of consideration in terms of public access and no mention of enhancing existing access.</p> <p>Post operational sites should be left tidy (paths still accessible)</p>	<p>The plan has considered public access and consultation with SBC access officer has taken place. A follow up site visit is scheduled with SBC to discuss existing access infrastructure.</p> <p>Residual debris from any harvesting operations will be cleared from walking trails.</p>

## Appendix III: Tolerance table

	Maps Required (Y/N)	Adjustment to felling period *	Adjustment to felling coupe boundaries **	Timing of Restocking	Changes to Restocking species	Changes to road lines	Designed open ground ***	Windblow Clearance ****
<b>FC Approval normally not required</b>	N	<ul style="list-style-type: none"> <li>Fell date can be moved within 5 year period where separation or other constraints are met.</li> </ul>	<ul style="list-style-type: none"> <li>Up to 10% of coupe area.</li> </ul>	<ul style="list-style-type: none"> <li>Up to 3 planting seasons after felling.</li> </ul>	<ul style="list-style-type: none"> <li>Change within species group e.g. evergreen conifers or broadleaves.</li> </ul>		<ul style="list-style-type: none"> <li>Increase by up to 5% of coupe area</li> </ul>	
<b>Approval by exchange of letters and map</b>	Y	<ul style="list-style-type: none"> <li>Advance felling of Phase 2 coupe into Phase 1</li> </ul>	<ul style="list-style-type: none"> <li>Up to 15% of coupe area</li> </ul>	<ul style="list-style-type: none"> <li>Between 3 and 5 planting seasons after felling, subject to the wider forest and habitat structure not being significantly compromised.</li> </ul>		<ul style="list-style-type: none"> <li>Additional felling of trees not agreed in plan.</li> <li>Departures of &gt; 60m in either direction from centre line of road</li> </ul>	<ul style="list-style-type: none"> <li>Increase by up to 10% of coupe area</li> <li>Any reduction in open space of coupe area by planting.</li> </ul>	<ul style="list-style-type: none"> <li>Up to 5ha</li> </ul>
<b>Approval by formal plan amendment may be required</b>	Y	<ul style="list-style-type: none"> <li>Felling delayed into second or later 5 year period.</li> <li>Advance felling (phase 3 or beyond) into current or 2nd 5 year period.</li> </ul>	<ul style="list-style-type: none"> <li>More than 15% of coupe area.</li> </ul>	<ul style="list-style-type: none"> <li>More than 5 planting seasons after felling, subject to the wider forest and habitat structure not being significantly compromised.</li> </ul>	<ul style="list-style-type: none"> <li>Change from specified native species.</li> <li>Change Between species group.</li> </ul>	<ul style="list-style-type: none"> <li>As above, depending on sensitivity.</li> </ul>	<ul style="list-style-type: none"> <li>In excess of 10% of coupe area.</li> <li>Colonisation of open space agreed as critical.</li> </ul>	<ul style="list-style-type: none"> <li>More than 5ha.</li> </ul>

### NOTES:

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

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

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

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

**Table of Working Tolerances Specific to Larch**

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

## Appendix IV: Historic Environment records

Refer to Map 2

Historic Environment Records					
Designation	Name	Feature Description	Grid Reference	Importance	Area (ha)
Undesignated	Swinnie Plantation Road	Archaeological feature - Line of road	NT 621146	Local	0.31 ha
Undesignated	Swinnie Puzzle piece	Non-heritage feature – Woodbank with mature beech along perimeter likely 180 years old in shape of a puzzle piece – likely a ‘Stell’; a shelterwood for livestock previously. Other similar features present in local area.	NT 624 147	Local	1.65 ha