Rossie Priory Long Term Forest Plan

2017 - 2027

FCS - FOREST PLAN

Name Rossie Priory LTFP

Approval Date 19 MAR 2018

End Date 19/ Mar/ 2028

Redacted

Signature

Please refer to the Long Term Forest Plans (LTFP) Applicant's Guidance for more information on what should be included in this template. As a guide, your LTFP should be 15-20 pages long.

Please insert further tables and charts as required. Append maps, ensuring that they are clearly labelled.

A. Description of Woodlands

A.1 Property Details			
Property Name:	Rossie Priory Estate		
Business Reference Number:	128305	Main Location Code:	696/0010
Grid Reference: (e.g. NH 234 567)	NO 279 312	Nearest town or locality:	Longforgan
Local Authority:		Perth and Kinross	
LTFP Plan area (hectares):		244.44	

Owner's Details			
Title:	Redacted Redacted	Forename:	Redacted
Surname:	Redacted		
Organisation:	Rosie Home Farms	Position:	Owner
Primary Contact Number:	Redacted	Alternative Contact Number:	-
Email:	-		
Address:	Farm Office, Castehill Farm, Inchture, Perthshire		
Postcode:	PH14 9SH	Country:	Scotland

Agent's Details			
Title:	Redacted Redacted Redacted	Forename:	Redacted
Surname:	Redacted		
Organisation:	SAC Consulting	Position:	Senior Forestry Consultant
Primary Contact Number:	Redacted	Alternative Contact Number:	Redacted
Email:	RedactedRedacted		
Address:	Caledonian Marts, Millhall, Stirling		
Postcode:	FK7 7LS	Country:	Scotland

A.2 Location and Background

Provide details on the wider context of the LTFP area. Append a 1:25,000 or 1:50,000 map with contours and the grid reference of the main forest entrance. The map should show the estate boundary based on the Business Reference Number (BRN) and the woodland boundary, if different.

Rossie Priory is located nearly 6km west of Dundee, north of the A90. The grid reference of the main block of woodland is NO 279 312.

The woods at Rossie Priory total 244.44ha. The area can be broken down thus:

- 146.95ha broadleaves
- 44.32ha conifers
- 53.17ha mixed conifers/broadleaves

A.3 Existing Schemes & Permissions

Provide details on any existing forestry permissions, grants, EIA approvals, previous plans, or cases in progress.

Type (e.g. Felling Licence)	Ref. No.	Details
NA		

A.4 Stakeholder Engagement

Include a summary of the main points from Scoping and where they are addressed in the plan. Append pre- and post- scoping maps, and the full Scoping Report.

Scoping – Main Points	LTFP Reference (section/page):
Osprey nest in field south of compartment 9	NA
Rossie Priory designed landscape	A.5 A.6.11 B.1 C.1

	C.2.3 C.2.4 C.2.5
Moncur Castle scheduled monument – should be shown on concept map	A.5 A.6.8 A.6.11 B.1 C.2.10
Nine scheduled monuments within or near forest plan area	A.5 A.6.8 A.6.11 B.1 C.2.10
Policy trees and woodlands	A.5 B.1 C.1 C.2.3
Presence of unscheduled archaeology	A.5 A.6.8 B.1 C.2.10
Sensitivity to felling and thinning operations of Knapp Burn, and ponds and tributaries which flow to it	A.5 A.6.4 B.1 C.1 C.2.3
Flood risk down-stream from forest operations	A.5 A.6.4 B.1 C.1 C.2.3
Remove inappropriate or poorly designed structures in watercourses	NA
Morphological and ecological improvement to water courses	NA

Invasive non-native species	C.2.13
Diffuse pollution	A.5 B.1 C.1 C.2.3
Felling within acidified water body catchments and catchments sensitive to nutrient enrichment	A.5 B.1 C.1 C.2.3
New supporting infrastructure	NA
Carbon balance and impacts on peat	NA
Wetlands	NA
Use of waste wood on site	NA

A.5 Long Term Vision and Management Objectives

Tell us how you intend to manage the forest in the long term and your goals for its development.

Vision

Describe your long term vision for the LTFP area.
The woodlands on Rossie Priory will be managed largely through continuous cover methods, by virtue of their broadleaved or predominantly broadleaved composition. The majority of the woods will continue to be productive.

Management Objectives

Give your objectives of management and also how you will manage the forest area sustainably. Your objectives should be specific and you should also be able to measure their outcomes.

No.	Objectives (including environmental, economic and social considerations)	Indicator of objective being met
1	Generate sustainable income from the sale of timber and firewood	Income generated from timber sales on a regular basis over ten year period
2	Restructure conifer woods to achieve a wider age-class distribution	Restructuring of mature conifer plantations
3	Enhance the landscape value of the woods	Restructuring of mature conifer plantations
4	Reduce the quantity of self-seeded	Reduced quantity of sycamore as

No.	Objectives (including environmental, economic and social considerations)	Indicator of objective being met
	sycamore	understorey
5	Manage the woods in sympathy with the designed landscape	Key landscape elements intact and improved after ten year period

A.6 General Site Description

Provide details under each of the headings below. Append maps if appropriate for each subsection.

A.6.1 Topography

Rossie Priory rises from 14m above sea level at its south side, up to 175m at the north side of the estate. However, central in the estate is Rossie Hill, reaching 173m at its highest point, and dropping by up to 75m on its west, north and east flanks.

The estate also has two wooded dens: Baledgarno Den on the south-west side of the estate which is steep-sided and runs north-west to south-east; and Knapp Den / Rossie Den which runs through the estate, to the north and north-east of Rossie Hill, which is generally shallow but with some crag-lined sections.

Slopes within the woodland are gentle to moderate, there are no severe slopes.

A.6.2 Geology and Soils

The parent material at Rossie Priory is drifts derived from basalts and basic igneous rocks. Soils are brown earths throughout the estate.

A.6.3 Climate

Records for Mylnefield, Invergowrie, indicate the following climate statistics:

- max temp ave. = 12.4°C
- min temp ave. = 5.3°C
- rainfall = 722mm
- monthly mean wind speed ave. = 6.7 knots

A.6.4 Hydrology

There are numerous ponds located around the estate. There are two main watercourses: the Baledgarno Burn on the south side of the estate, and the Knapp Burn which flows through Rossie Den. The latter has smaller

tributaries joining it from the north-west parts of the estate.

A.6.5 Windthrow

Windthrow has occurred amongst the older conifer stands, in compartments 9, 25, 27, 34, 35 and 42. Partial clearance has been undertaken in the more accessible cmpts.

A.6.6 Adjacent Land Use

The adjacent land is used for arable or beef farming.

A.6.7 Access

Access to the estate is good, with the B953 being an agreed timber haulage route, as shown on the Concept Map. Access throughout the estate is also good, being well served by a network of roads and tracks.

A.6.8 Historic environment

There are a high number of historical features within the woods at Rossie Priory. Scheduled Ancient Monuments (SAM) and listed buildings are marked on the Concept Map and the Proposals Map and comprise the following:

- Moncur, remains of timber buildings
- Moncur enclosures and barrow
- Rossie Priory Stone
- Castlehill unenclosed settlement
- Castlehill barrow
- Moncur Castle

There are also likely to be numerous unscheduled features throughout the woods.

There are a number of SAMs adjacent to woodland which are shown on the proposals map and listed below:

- New Mains, souterrain
- Falcon Stone, cup-marked stone and barrow
- Falcon Stone, barrows
- Falcon Stone, barrow
- Dron Hill, fort.

There are two category A Listed Buildings on the estate:

- Market Cross
- Rossie Church.

In addition there are a number of category B and C Listed Buildings on the estate near or next to woodland:

- Rossie Priory
- North Lodge
- Rossie Estate sawmill
- Former road bridge over Knapp burn
- Seasoning shed
- Sawmill stable
- New Mill of Knapp, including storage shed
- New Mill of Knapp, the Mill House
- New Mill of Knapp, Former road bridge over Knapp burn
- Knapp Lodge
- Old Rossie Lodge, including gate piers and boundary wall
- Drimmie Lodge, including gate piers, gates and adjoining walls.

A.6.9 Biodiversity

Biodiversity has been reduced over the years in the woods due to increasing shade resulting from a lack of management. In particular the abundance of sycamore has cast heavy shade over much of the woodland, to the detriment of the field layer of vegetation.

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A.6.10 Invasive Species

No invasive species were noted during site visits.

A.6.11 Designations

The northern part of the estate, from the Knapp road northwards, lies in a Conservation Area.

From the Knapp road southwards the land is recorded in the Inventory of Gardens and Designed Landscapes.

There are numerous Scheduled Ancient Monuments and Listed Buildings, as indicated in Section A.6.8.

Much of the woodland is recorded on the Ancient Woodland Inventory as Long Established (of plantation origin). The woodland within Baledgarno Den is recorded as Ancient, of semi-natural origin.

A.7 Woodland Description

Provide a brief description of woodland types and any relevant past management.

Also complete the Tables below, with reference to Appendix 2 of the Long Term Forest Plan – Applicant's Guidance.

The area can be broken down thus:

- 146.95ha broadleaves
- 44.32ha conifers
- 53.17ha mixed conifers/broadleaves

The broadleaves largely originate from plantations, having been recorded on the Ancient Woodland Register as Long-Established of Plantation Origin. The conifers were mostly planted around the 1960s although there are some small woods and stands which were planted in the last 20 to 30 years.

The woods have been managed in the distant past, evidenced by many crops having been well thinned, the presence of several stands of outstanding quality mature broadleaves and an old sawmill. A good network of tracks and estate roads serve the woods.

However, throughout the woods sycamore has established itself in abundance as a result of lack of management which, given the size of the sycamore, appears to have ceased around 25 years ago. Much of the sycamore is of poor quality and is shading out the natural ground vegetation. Windblow amongst the older conifer stands is also occurring from lack of management.

Active pheasant pens and duck ponds are located throughout the woods for the estate's shoot.

Table 1 - Area by species

This shows the current and future species composition within the entire Long Term Forest Plan area.

Area by species						
Species	**Current***		**Year 10***		**Year 20***	
(Add relevant species groups, or OG/OL)	**Area (ha)**	**%**	**Area (ha)**	**%**	**Area (ha)**	**%**
Ash/beech/sycamore	5.28	2.2	5.28	2.2%	5.28	2.2%
Beech	0	0	0.3	0.1%	0.3	0.1%
Douglas fir	11.38	4.7	8.18	3.3%	8.18	3.3%
Douglas fir / Sitka spruce	2.39	1.0	0.33	0.1%	0.33	0.1%
Douglas fir / broadleaves	3.45	1.4	0.88	0.4%	0.33	0.1%
Larch	10.54	4.3	7.97	3.3%	4.34	1.8%
Larch / broadleaves	3.00	1.2	0.55	0.2%	0.55	0.2%
Mixed broadleaves	79.98	32.3	81.34	33.3%	82.59	33.8%
Native broadleaves	14.81	6	14.81	6%	14.81	6%
Broadleaves / Douglas fir	1.90	0.8	0	0.0%	0	0.0%
Broadleaves / larch	0.22	0.9	0.22	0.1%	0.22	0.1%
Mixed broadleaves / conifers	34.35	13.9	37.23	15.2%	37.23	15.2%
Mixed conifers	0.27	0.1	0.27	0.1%	0.27	0.1%
Norway spruce	8.28	3.4	10.22	4.2%	12.97	5.3%
Norway spruce /	2.56	1.0	2.07	0.8%	0.82	0.3%

broadleaves						
Open ground	1.79	0.7	7.28	3.0%	7.28	3.0%
Oak	0.75	0.3	3.22	1.3%	4.17	1.7%
Poplar	0.37	0.2	0.37	0.2%	0.37	0.2%
Scots pine	6.21	2.5	7.66	3.1%	7.60	3.1%
Scots pine / Sitka spruce / broadleaves	3.55	1.5	3.55	1.5%	3.15	1.3%
Sitka spruce	2.50	1.0	3.2	1.3%	1.80	0.7%
Sitka spruce / larch / broadleaves	3.15	1.3	1.8	0.7%	4.14	1.7%
Sycamore	25.03	10.0	25.03	10.2%	25.03	10.2%
Sycamore, ash, beech	19.51	8.0	19.51	8.0%	19.51	8.0%
Western hemlock / larch	0.42	0.2	0.42	0.2%	0.42	0.2%
Water	2.70	1.1	2.7	1.1%	2.7	1.1%
Total	**244.39**	**100**	**244.39**	**100**	**244.39**	**100**

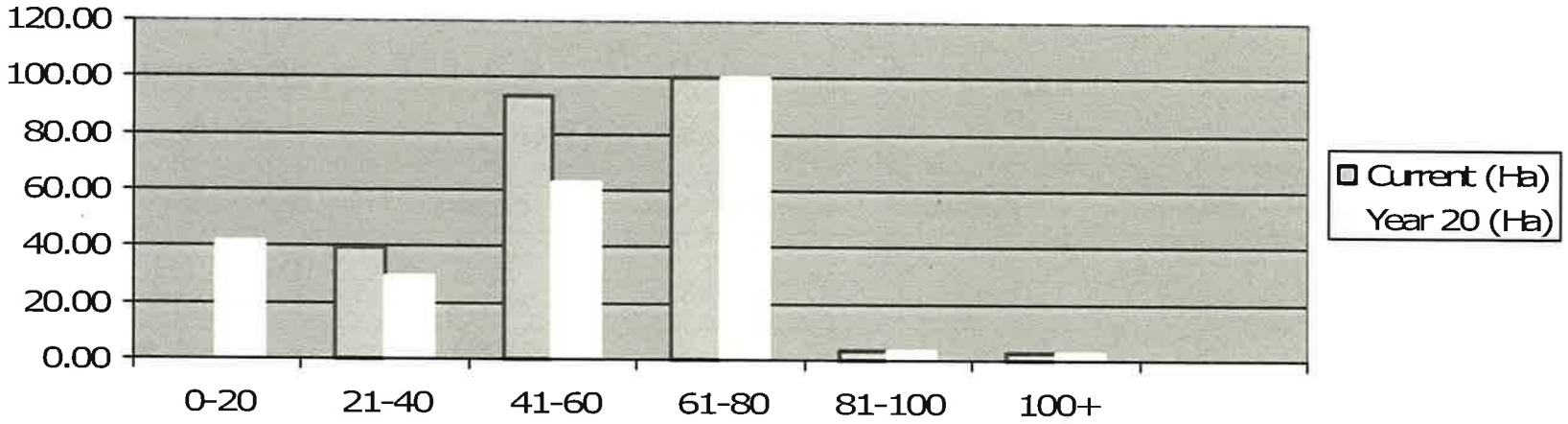
* Of whole Forest Plan area (including open ground (OG)). Any mixtures such as Mixed Conifer (MC) should be broken down and included as an individual species component where a species occupies more than 10%.

Table 2 – Area by age

This shows the woodland area broken down by age class and will show how well the woodland is distributed across the age classes. This information can be provided as a chart below. Double click on the chart below and paste your area figures into the spreadsheet that appears.

Age class (years)	Current Area (ha)	Year 20 Area (ha)
0-20	0	43.64
21-40	39.84	29.35

41-60	93.57	62.64
61-80	100.09	100.09
81-100	3.52	3.52
100+	2.88	2.88
Total	239.9	239.9



A.8 Plant Health
Provide details on any known plant health issues within the LTFP area and their effect on the forest plan.
Chalara fraxinea is present within some of the ash, particularly in cmpt 19.

B. Analysis of Information

B.1 Constraints and Opportunities

Identify constraints and opportunities. Append maps as appropriate and provide map reference.

Factor	Constraint	Opportunity
Rossie Priory designed landscape	Protected landscape	• Use of Low Impact Silvicultural Systems where appropriate • Use of appropriate species and design for restocking
11 scheduled monuments within or near forest plan area, 14 listed buildings	Protected archaeology	• Opening up of features by clearing trees from within buffer zone
Policy trees and woodlands	Old trees/woods of high landscape value	• Use of Low Impact Silvicultural Systems where appropriate • Identify and maintain features tree and woods which contribute character to landscape
Presence of unscheduled archaeology	Sensitive features requiring protection	• Opening up of features by clearing trees from within buffer zone
Sensitivity to felling and thinning operations of Knapp Burn, and ponds and tributaries which flow to it	Minimise use of conventional management techniques and harvesting machinery	• Use of Low Impact Silvicultural Systems and machinery where appropriate
Flood risk	Risk of high levels of water	• Use of continuous cover

down-stream from forest operations	run-off	and low-impact silvicultural systems where appropriate
Diffuse pollution	Watercourses and waterbodies	• Use of Low Impact Silvicultural Systems and machinery
Felling within acidified water body catchments and catchments sensitive to nutrient enrichment	Sensitive water bodies and catchments	• Use of continuous cover and low-impact silvicultural systems

Outline how you intend to incorporate the constraints and opportunities into the management objectives.

The management objectives were proposed with the constraints and opportunities in mind.

C. Management Proposals

C.1 Silvicultural Practice

Outline silvicultural practice and management prescriptions. Include any past management practice that is relevant and the strategies to address the issues identified during the analysis phase.

Use of LISS will be made as much as possible, however there are some conifer stands where windthrow has and is occurring, which will require a more conventional clear-fell and restock approach.

C.2 Prescriptions

Please provide maps as set out in Appendix 2 of the Forest Plan Applicant's Guidance and complete the associated Tables. Provide any further details required along with the map references.

C.2.1 Felling

Most of the conifers at Rossie Priory are of approximately the same age (around 50 years old). With the on-set of windthrow in several of the compartments there is little scope for delaying felling to assist in restructuring. In addition, the felling coupes are generally small-scale and widely distributed across the estate; to make harvesting financially viable for the estate the felling proposals have been grouped into only two felling phases, with the first being the busiest phase due to the windthrow issue.

C.2.2 Thinning

No conifer crops will be thinned as they are all past their window of opportunity.

Most of the broadleaved stands will however be thinned, with most of the thinning work taking place within the first two phases. The estate has some very fine examples of high quality broadleaved (predominantly sycamore and beech) stands, and the aim will be to manage the woods to produce extremely high quality hardwood timber.

Halo thinning will be undertaken around the large Sequoias in cmpt 30.

C.2.3 LISS

The vast majority of the estate's woods will be managed using LISS. The broadleaved elements of the woods will never be clear-felled, but managed on a continuous cover basis, utilising group felling (up to 0.25ha) and heavy thinning (appropriate to the species), to promote natural regeneration. The use of LISS will also be in keeping with the designed landscape and conservation area designations, as well as minimising soil damage and thereby any impact on watercourses. Natural regeneration will be protected by a combination of temporary fencing and deer control.

C.2.4 Long Term Retentions (LTR) / Natural Reserves

There is no formal long term retention as all the broadleaved woods will be managed under continuous cover and therefore be a permanent feature in the landscape. Only cmpt 36 will be retained as a natural reserve due to its inaccessibly steep slopes.

C.2.5 Restocking Proposals / Natural Regeneration

Where there is reasonable scale and access to felled coupes, restocking will be with productive conifers. Sitka spruce will be the only conifer to be planted due to its relative unpalatability to roe deer (other species would require deer fencing, but the small size and distribution of the coupes would make fencing prohibitively expensive). Restocking will be at a minimum density of 2500/ha.

Where coupes are particularly small, but accessible, productive broadleaves will be planted, at a density of 2500/ha for birch and sycamore, and 3100/ha for oak and beech.

Where coupes are small and access is poor, non-productive mixed broadleaves will be planted, at a density of 1100/ha.

Restocking will generally be carried out within five years after felling, with conifers restocking being delayed by at least three years after felling to avoid use of pesticides.

The exception applies to coupes 18 and 19, which is located on the top of Rossie Hill. Here, early-mature Douglas fir has been badly windblown and is a result of the shallow soils. Rather than risking future windthrow of a crop again, these coupes will become non-productive and be restocked with mixed conifers and broadleaves, the former becoming a landscape feature in the future, as can be

seen with other prominent conifers on the estate. Sycamore natural regeneration will be expected and this must be managed/controlled to avoid it dominating the woods any further. Under-planting will be undertaken in cmpt 8 where the existing broadleaved stand has a particularly open structure.

Table 3 – Felling

This shows the scale of felling within the felling phases in the context of the whole Forest Plan. This includes any areas of 'LISS – Fell' (i.e. removal of final overstorey).

SCALE OF PROPOSED FELLING AREAS (including LISS final fell areas)												
Total Forest Plan Area:	244.39	hectares										
Felling	Phase 1	%	Phase 2	%	Phase 3	%	Phase 4	%	Long Term Retention	%	Area out-with 20yr plan period	%
Area (Ha)	32.74	13	0	0	8.68	4	0	0	0	0	202.97	83

Table 4 – Thinning

This shows the area of thinning over the first 10 years of the Forest Plan.

Species	Thinning (ha)
Beech	0.19
Beech/sycamore	3.75
Douglas fir	2.00
Larch	3.94
Larch/broadleaves	0.55
Mixed broadleaves	26.76
Mixed broadleaves/conifers	11.20

Mixed broadleaves/Scots pine	2.58
Mixed conifers	0.27
Mixed conifers/sycamore	2.32
Norway spruce	0.20
Scots pine	1.62
Scots pine/Sitka spruce	0.89
Sitka spruce	0.07
Sycamore	19.17
Sycamore/ash	1.21
Sycamore/beech	3.74
Sycamore/beech/ash	11.67
Western hemlock/larch	0.42
Total	**92.55**

Table 5 – Restocking

This table provides information on the restocking proposals for the first 10 years of your Forest Plan. Restocking should be listed on a coupe by coupe basis.

Felling Phase	Map Identifier(s)	Species to be planted	Area (ha) to be planted
1	1	SP	2.79
1	2	NS	4.06

1	Compt No 3	NS	1.98
1	on Map 4	NS	2.04
1	7	MB	1.03
1	8	OK	0.62
1	10	OK	0.82
1	11	OK	1.03
1	12	SS	1.73
1	13	MB	0.19
1	15	OG	1.54
1	16	OG	0.36
1	17	OG DF	3.58 2.22
1	18	NS/MB	3.75
1	19	MB/MC	0.28
1	21	BE	0.30
1	22	DF	3.96
1	23	MB	0.18
1	24	MB	0.28
		Total Restocking Area	32.72

C.2.6 Protection
Productive and non-productive broadleaves will be fitted with 1.2m tubes to protect them against browsing by roe deer.

C.2.7 Fence erection / removal
There will no new deer fences. There are no deer fences requiring removal.

C.2.8 Road Operations
None

C.2.9 Public Access
There are no public footpaths through the woods, but open access will be maintained, apart from during forestry operations.

C.2.10 Historic Environment
Numerous historical features have been identified at plan concept and during scoping. Where these are located (along with unscheduled or previously unknown features) within the woods, they will be clearly marked on the ground to prevent damage to them, with a minimum buffer width of 20m. The opportunity will be taken however during operations to remove trees (carefully) from on, or immediately next to, these historical features so they can be appreciated by future generations. Any activity required on the Scheduled Monuments will require Scheduled Monument Consent. Efforts will be made to maintain the buffer areas and SAMs free of natural regeneration or dense bracken.

C.2.11 Biodiversity
Biodiversity will be considerably improved within the woods, primarily letting more light into the woods via thinning, coppicing, clearing sycamore and clear-felling.

C.2.12 Tree Health
Chalara fraxinea is present in ash in cmpt 19.

C.2.13 Invasive species
No invasive non-native species have been observed. Should they be observed they will be identified on a map and appended to this plan, and appropriate treatment (to control and remove) scheduled as a priority action.

C.2.14 New Planting
There are currently no proposals for new planting on the estate.

C.2.15 Other:	Coppicing
Several subcmpts have relatively young stands of sycamore which lend themselves to coppicing. In order to maintain diverse woodland habitat, those areas will be coppiced, whilst producing firewood In cmpt 26 there is also a stand of sycamore which appears to have been historically coppiced. This will be singled to let good quality stems grow on for high quality timber.	

C.2.16 Other:	Respacing/clearance
Where young natural regeneration (non-sycamore) is prolific, respacing will be undertaken (cmpts 24 and 26). Where the natural regeneration is dominated by sycamore it will be completely cleared. Due to an absence of management over the past decades, sycamore has spread throughout the woods without control and to the detriment of the woods; its removal at an early stage will therefore be beneficial to management.	

C.3 Environmental Impact Assessment and Permitted Development Notifications

Please indicate the total area (hectares) for each project type and provide details as requested by sensitive or non-sensitive area.

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

Provide further details on your project if required.

C.4 Tolerance Table

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

Note

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

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

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

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

D. Production Forecast

Append your production forecast.

Appendices

Provide a list of appendices:

Item number	Title
1	Location map
2	Concept map
3	Archaeology map
4	Species map
5	Proposals map
6	Restocking map
7	Production forecast