Dumfries and Borders Forest District

Nether Horsburgh

Land Management Plan

Approval date: ***

Plan Reference No: ****

Plan Approval Date: *****

Plan Expiry Date: ******

FOREST ENTERPRISE - Application for Forest Design Plan Approvals in Scotland

Forest Enterprise - Property

Forest District:	Dumfries & Borders Forest District
Woodland or property name:	Nether Horsburgh
Nearest town, village or locality:	Cardrona
OS Grid reference:	NT29984024
Local Authority district/unitary	Borders

Areas for approval

	Conifer	Broadleaf
Clear felling	18.0*	0
Selective felling	0	0
Restocking	16.0*	0
New planting (complete appendix 4)	See below	

* deforestation of 2 small areas for landscaping reasons

1. I apply for **Forest Design Plan** approval*/~~amendment approval~~* for the property described above and in the enclosed Forest Design Plan.
2. * I apply for an opinion under the terms of the **Environmental Impact Assessment (Forestry) (Scotland) Regulations 1999 for afforestation/road building*/ deforestation** as detailed in my application.
3. I confirm that the initial scoping of the plan was carried out with FC staff in 2011
4. I confirm that the proposals contained in this plan comply with the UK Forestry Standard.
5. I confirm that the scoping, carried out and documented in the Consultation Record attached, incorporated those stakeholders which the FC agreed must be included.
6. I confirm that agreement has been reached with all of the stakeholders over the content of the design plan and that there are no outstanding issues to be addressed. Copies of consultee endorsements of the plan are attached.
7. I undertake to obtain any permissions necessary for the implementation of the approved Plan.

Signed …… Signed……

Forest District Manager Conservator

District Dumfries & Borders Conservancy South Scotland

Date …… **Date of Approval** ……

Date approval ends: ……

CSM 6 Appendix 4

FOREST ENTERPRISE - Application for Approval of Woodland Creation

1. Forest Enterprise – Property

Forest District:	Dumfries & Borders Forest District
Woodland or property name:	Nether Horsburgh
Nearest town, village or locality:	Cardrona
OS Grid reference:	NT29984024
Local Authority district/unitary	Borders

2. Proposed areas to nearest tenth of a hectare

New Planting	245.7
Existing plantation	18.0 planned for CF & RS 43.7 to be retained 3.1 research plot 25.7 to enrich
Natural Colonisation	0
Open Ground	135.4 Open 24.6 Open comp of MB 27.9 Parkland Agric
Total	524.1

3. Special areas and protected land

Designation	Area Name or Number	Comments
N/A		

4. Proposal details of woodland creation

See section 5.5 for full details

Area Name	GrossArea Ha	P Year	Spp	Area ha	Open ha	Comments
		2016	Beech	5.7		
		2016	Sitka Spruce	30.3		
		2016	DF60% GF/RC40%	22.7		
		2016	DF/SS 50/50	36.2		
		2016	Noble Fir	6.4		
		2016	Norway Spruce	2.8		
		2016	Scots Pine	16.5		
		2016	Scots Pine / Birch	4.2		
		2016	Scots Pine / Noble Fir	4.4		
		2016	PB	55.2		
		2016	MB 50% Open 50%	24.6	24.6	
		2016	Native PB	29.5		
		2016	Sycamore	1.0		
		2023	SS	22.2		Kirnlaw future coupe
		2016	Enrich	25.7		
			Research	3.1		
		2016	Parkland	27.9		
			Deforestation	2.0		Woodland removal for landscape
			Retain	43.7		
			Open	135.4		
			Total	**499.5**	**24.6**	

Existing plantation

I apply for authority to create a woodland as above and as shown on the attached map.

I undertake to obtain the necessary permissions from the appropriate statutory body before commencing work under any approval which is granted.

Signed ……Signed……
Forest District Manager Conservator

District ……Conservancy……

Date ……**Approval Date**……

Date approval ends……..

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3. Location Map
4. EIA determination area
5. Management Type
6. Species map
7. Fencing map
8. Ground Preparation map
9. Road profiles and 3D perspectives
10. Viewshed analysis and 3D design Visualisations
11. Agreed Routes for Timber Transport
12. The approved planning permission for new forest road
13. Heritage features and Lidar prints
14. Current sub compartment database
15. Ancient woodland inventory
16. Current Climate data
17. Solid Geology Map
18. SNH Designations
19. Land Capability Agriculture
20. Core paths network

Appendix Folder

21. River Tweed River Basin Management Plan
22. Bird Survey
23. Deer Management Report
24. Native woodland potential survey
25. Open Habitat Survey
26. Archaeology survey report x 2
27. 1:10000 Soil survey
28. Public Consultation records
29. Statutory Consultation records
30. Recreation survey
31. Nutwood SSSI
32. Private water supply report
33. Agricultural capacity report
34. The proposed new road and potential landscape impact

Summary of Proposals

This design plan sets out the proposals for woodland creation at Nether Horsburgh and enrichment and enhancement of Castle hill.

It should be noted that only part of the area will be subject to a Environmental Impact Assessment determination for afforestration as the existing Castle hill area is already forested – see EIA determination map for exact boundaries.

To optimise design opportunities of the new woodland, some of the existing shelter belts will be felled early in the plan period prior to tree establishment. Early felling before the wider woodland planting will also make timber extraction easier.

A new forest road will be built to service the area and act as an operational access for Glentress forest. This will separate the operational access from the recreation area at Glentress Peel and reduce H&S risk.

The existing and partially failed woodland at Castlehill will be enriched and enhanced and linked with Glentress and Nether Horsburgh. A long term coupe shape at Kirn Law is planned to straddle Castlehill, Nether Horsburgh and existing Glentress. This will involve temporary grazing and delayed new planting in one area whilst we wait for restructuring to start on Kirn Law. We plan felling and restock/new planting in 8-9 years.

A wide variety of diverse tree species to be planted to deliver timber, environmental, business development and social objectives. The design and species diversity also aims to be resilient to the potential impacts of climate change e.g. extreme weather events and pests and diseases.

Large areas are identified to be managed under a Continuous Cover Forestry system to help deliver the management objectives

Landscape character and visual landscape has been carefully considered given the site's prominence and sensitivity in the Tweed valley

Open access from Glentress Peel and other safe entrances will be managed through the SOAC.

The Forest Design Plan is aimed at complementing the wider master planning process undergoing development for Glentress in the Tweed Valley.

Opportunities will be taken to enhance the environment including management of priority open habitats, species and soils and water

1.0 Introduction:

1.1 Setting and context

Nether Horsburgh is 524 ha of land acquired by the Forestry Commission in 2010 and 2011 located 3 Km East of Peebles situated between Glentress forest and the River Tweed. The area consists of 128.5ha of existing variable density plantation known as Castlehill and 395.6ha of farmland and shelterbelt woodland situated around Nether Horsburgh House.

The land (now known as Nether Horsburgh) was purchased to support a number of FCS objectives:

- The site presents the opportunity to create a “model” exemplar forest for the 21st century with a wide range of species.
- Establishment of a commercial broadleaf and conifer crop with the resultant increase in the percentage of broadleaf woodland.
- Addition and expansion to Glentress Forest
- Potential for tourism business opportunity.
- Potential for an alternative timber haul route to take traffic away from what is becoming a very busy recreation access at Glentress Peel
- An opportunity to engage with communities
- Linkage, expansion and improvement of habitats for biodiversity.

The land offers good potential for tree growth due to its favourable fertile mineral soils and climate conditions with the exception of the higher open ground to the East which is less suitable and better suited to support FCS conservation and environmental objectives.

The site has high landscape sensitivity and careful design is required to enhance the overall landscape including “correcting” the current conifer shelter belts. Given that this is a high profile site, the FCS fully qualified landscape architect will have significant input.

The location of the site being close to the communities of Peebles, Cardrona and Innerleithen make it a valuable asset for the community and opportunities, desires and wishes will be carefully considered in balance with other objectives for inclusion into the project.

Neighbours include a sporting grouse estate to the East, river (fishing), community and mixed farmland to the South and FC Scotland to the North and West.

The conservation interest of the site includes valuable priority heathland open habitats, SSSI woodland site and a number of unscheduled and

scheduled heritage sites including the fabulous Castle Hill site with panoramic views across the Tweed. There is a small area of native woodland located near Dirtpot Burn, and significant native woodland potential between here and the Ancient Woodland at Nutwood. The land is a water catchment of the River Tweed which is a SSSI and Special Area of Conservation (SAC) and has high profile fishing lets.

The site creates a backdrop to the recently improved and extended Glentress Peel complex, Forestry Commission Scotland's premier visitor location in Scotland. This new landholding creates opportunity for appropriate access and recreation expansion with obvious benefits to local businesses and economy.

Separating recreation users and timber traffic through long term route planning has proved very successful in other locations across South Scotland and this site offers a terrific opportunity to reroute the increasing Glentress timber traffic and improve the visitor experience at Glentress Peel as well as making it safer. This is particularly important as visitor numbers are set to increase.

1.2 History of the site

There is much evidence on the site of land management including settlements, sheepfolds and indeed Nether Horsburgh Castle.

The Castlehill section was predominantly agriculture up until 10 or so years ago when the area was afforested with a number of different species including Douglas Fir, Scots Pine and birches. Prior to that the land was used for agriculture.

The Nether Horsburgh end of the site has been mainly in agriculture for the past few centuries. Much of the land has been improved and areas of the soil are compacted (machines, horses and stock) with the relatively intensive use of the land for farming. In the past 30 to 40 years some of the areas with less agricultural potential have been planted with conifers and broadleaves.

1.3 Planning Context

The management of the Forestry Commission Scotland's NFE is guided by Scottish Forestry Strategy (SFS) 2006, which sets out seven key themes:

- **Climate change**
- **Timber**
- **Business development**

- **Community development**
- **Access & Health**
- **Environmental quality**
- **Biodiversity**

Relevant issues under the SFS and Dumfries and Borders Forest District Strategic Plan Key Themes are identified in Appendix 1.

2.0 Analysis of previous plan

For Nether Horsburgh there was a woodland plan for the small areas of afforestation including riparian zone planting and creation of shelter belts. This plan has largely been successful and many of the trees are currently growing well and have good potential.

The Castlehill section was subject to a full design and grant application and approval 10 or so years ago. The right species were planted as per plan but unfortunately some trees did not survive the threat of stock animals or deer and indeed many trees have been heavily browsed. The woodland establishment programme failed to meet the plan targets.

There is a Forest Design Plan for Glentress forest to the North (prepared in 2008). At the next Forest Design Plan review opportunities will be taken to combine all into one design plan unit.

3.0 Background information

3.1 Physical site factors

3.1.1 Neighbouring landuses

To the North is Glentress forest with key aims of timber production and social outputs including recreation

To the East and over the ridge is a large area of upland heathland leading down into Leithen Burn. Further to the East is Moorfoot Hills SSSI. SE is the well known hill Lee Pen.

To the South is Cardrona village and further across the valley is Cardrona Forest. There is a key A class road (A72) running along the South boundary of the Nether Horsburgh site. Also on the South Boundary is the River Tweed, with it's well know attraction of fishing and tourism. There is a golf course and the MacDonald Hotel in the valley basin.

To the West is a mixture of small woodlands nestled in mixed agriculture and improved grassland agriculture. There are a number of rural properties and also the Glentress Peel Forestry Commission Scotland attraction. Further to the West is the town of Peebles.

3.1.2 Statutory and legal requirements and key external policies

There are three Scheduled Ancient monuments on the site including:

- Nether Horsburgh Castle which is a "little oblong tower house".
- Nether Horsburgh enclosure which is the remains of a settlement.
- Horsburgh Castle Farm located on Castle Hill

There are other interesting heritage features that will be described in more detail later in section 3.

The areas have been checked for SNH designations including SSSI's, NSA's SPA's, SAC's etc these can be seen on the attached map. The key features are Nutwood SSSI which is on the site, and also River Tweed SSSI and SAC which boundaries onto the site.

There are no formal SEPA designations on the site but clearly water quality and protection will be critical given the proximity of River Tweed.

The site sits within the newly designated Tweed Valley Special Landscape area – designated by Scottish Borders Council.

3.1.3 Geology Soils and landform

The solid geology is Gala Group - Wacke. Sedimentary Bedrock formed approximately 428 to 443 million years ago in the Silurian Period. Local environment previously dominated by deep seas. The Superficial Geology description is: Till - Diamicton. Superficial Deposits formed up to 2 million years ago in the Quaternary Period. Local environment previously dominated by ice age conditions. These rocks were formed in cold periods with Ice Age glaciers scouring the landscape and depositing moraines of till with outwash sand and gravel deposits from seasonal and post glacial meltwaters.

A 1:10,000 soil survey has been carried out on the site and the full map can be seen later in the FDP. The soils are generally very favourable for tree growth being relatively high in nutrients with average to dry soil moisture regime.

The bulk of the area (mainly the river plains as well as lower and middle slopes) is characterised by brown earths and, to a lesser degree, by surface water gleys. The soils have been subject to agricultural cultivation (mostly pasture) in the past which is likely to have boosted soil fertility temporarily. On higher ground the brown earths turn ericaceous (i.e. poor) and shallow, and are largely replaced by ironpan soils, rankers and peaty gleys (where topography facilitates high water tables). With the exception of the flood plains most soils tend to be shallow and/or affected by induration. Soil texture is generally loamy, indicating a good balance between soil aeration and water holding capacity.

Basically, fertility may look slightly better than it inherently is, and induration and rankers may limit rooting depths for some tree species.

This geology and soils provides a ready source of nutrients and nitrogen and creates a good base for tree growth.

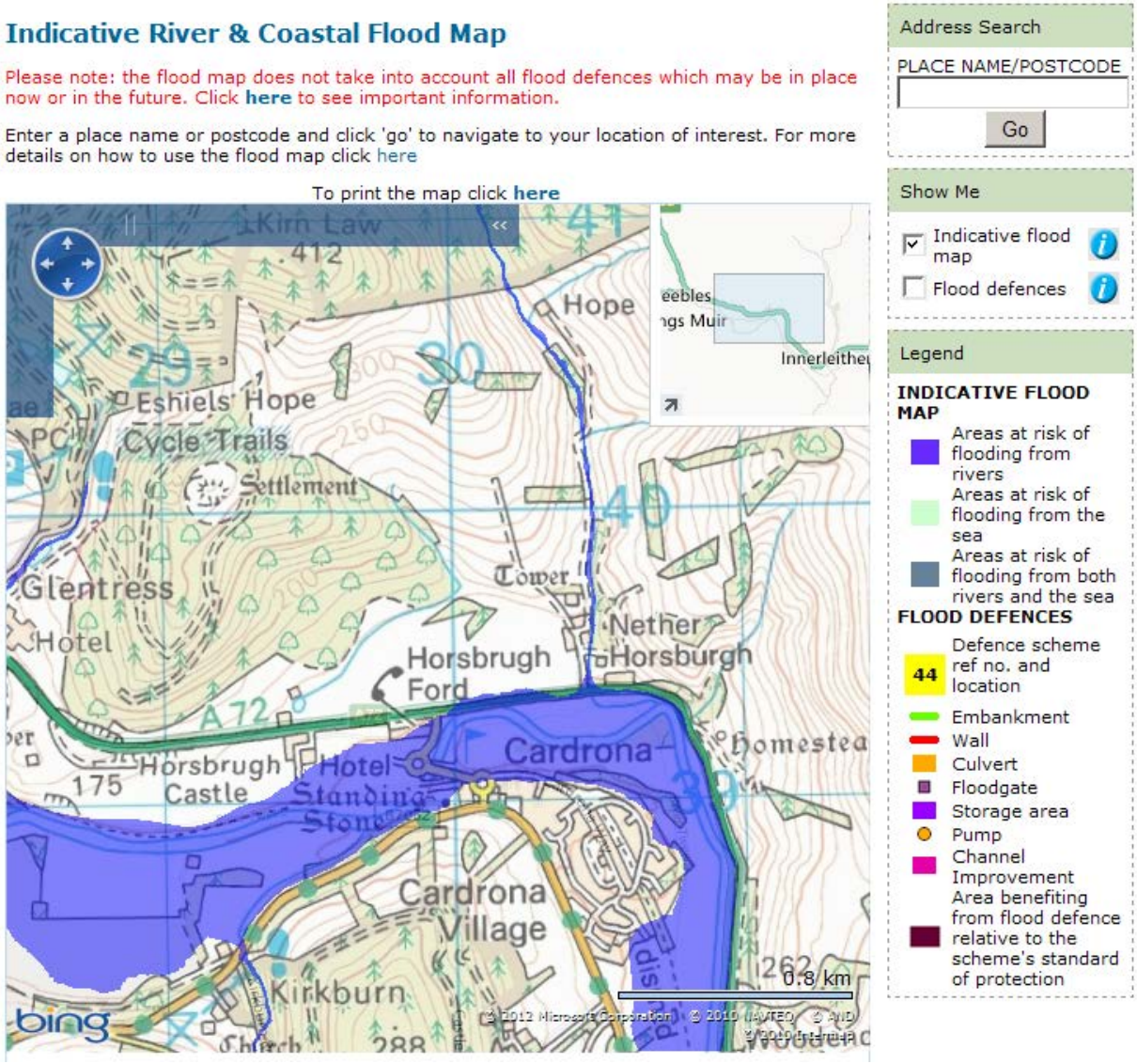
As can be seen on the OS map contours the landform is diverse with elevation between 150 and 500m. The base of the site is the River Tweed.

3.1.4 Water

All water from the site is part of the River Tweed water catchment. Catchments are covered by SEPA's River Basement Management Plans. The RBMP process allows SEPA to plan improvements to water for particular parameters over time.

The Tweed River below Peebles is classified as having an overall status of bad in 2008 with overall ecological status of bad and overall chemical status of pass. The pressures on this water body include point source pollution which has planned increased treatment by Scottish Water. Also, water abstraction is a pressure which leads to a change in the natural flow conditions. Forestry is not indicated as a particular problem in water quality.

Peak flow – clearly any change of landuse may have an impact on the peak flow. There is negligible or no risk in terms of potentially increasing flood risk in the Tweed due to the relatively small area of afforestation of Nether Horsburgh in comparison with the overall tweed catchment area. However, there is potential to increase peak flow within Hope burn and Dirtpot burn due to potential faster runoff due to forest drainage. This will be considered during design with the addition of appropriate buffers. Hope Burn especially is sensitive as it has residential properties situated at a low level. Dirtpot burn has no properties that could be affected but consideration must be given in the plan to potential landslip risk of the bank near Dirtpot corner. Consultation will ensure the optimum plan will be written to reduce risk of landslip and flooding.



Map taken from SEPA website

Private water supplies have been identified as part of the plan and these will be protected during operations of the site. There is a private water supply for Hope cottage and also a single large private water supply feeding 6 properties around Nether Horsburgh House. Operations for afforestation will include track building, establishment & tending and harvesting of timber and the design of the woodland that may impact the private water supplies will be considered and mitigation will be built into the design. The FC hydrologist will investigate and provide proposals to mitigate environmental impact.

When new planting operations are carried out the Forest and Water Guidelines (5th Edition) will be strictly adhered to.

3.1.5 Climate

Current climate

Large areas of the lower site are warm moist and sheltered and are ideal for growing trees. Obviously climate deteriorates with altitude, higher on the site the conditions become cool, wet and highly exposed. See current climate map for further information.

Future climate predictions

Using 2050 (high emissions scenario) data from Forest Research GB, there is a predicted increase in accumulated temperature above 5 degrees. This change will generally have a positive effect on tree growth. Perhaps more importantly, there is a significant change in predicted moisture deficit and this will drop suitability of Sitka Spruce from highly suitable to suitable. The exact change in climate is difficult to predict but this drop in Sitka Spruce suitability would suggest limiting the extent of Sitka planting especially where the soils are drier.

3.1.6 Landscape value and character, visibility, recreational use, heritage, protection forestry.

Landscape value, character, visibility

Site analysis has been undertaken by Head FCS landscape architect.

Nether Horsburgh sits within the wider landscape and visual context of the Tweed Valley Forest Park, and is located in zone 1 with Glentress, Cademuir and Cardrona forests (ref. Nether Horsburgh TVFP visual concept August 2012.pdf).

Two Landscape Character types define the upper and lower slopes of the site. These are *Moorfoot Hills: Dissected plateau moorland* and *Upland Valley with woodland* (ref.SNH The Borders Landscape Assessment).
The relatively complex arrangement of rounded hills, ridges and steep sided valleys on the site form a visually significant and intimate backdrop to Cardrona village, and a sequence of views from A72. Panoramic views are also significant from south of the Tweed.

The landform of the site follows a curve in the river valley, forming a visible and pivotal feature in the landscape. Around the curve, main ridges run north-south and north east-south west, allowing slopes full or partial exposure south. Slopes rise relatively steeply from the Tweed valley floor

from around 200m to 500m. Consequently, proposed roads and planting is likely to have an impact on the landscape.

Recreational use

Currently there are no formal recreation facilities on the site. Castle hill has some informal access tracks but this is used fairly infrequently by walkers, cyclists and horseriders. Access in the Nether Horsburgh section is more difficult at the moment as it is being used for agriculture with many gates and farm stock limitations. However there is evidence of a small number of users particularly up Hope burn and across the plateau towards Lee Pen.

There is a recorded right of way (SNH data) leading above Nutwood but his is impassable by foot and has not been used for many years. The status of this right of way is unknown.

Community

There is much interest by the community in the development of the forest plan for this site. Local people are keen to ensure that the land is well managed and designed correctly. The early consultation meeting (December 2011) highlighted the following issues as important; they are listed in priority order:

- General access
- Business development
- Tourism development
- Woodland cover/structure/landscape/diversity
- Biodiversity / Archaeology
- Vegetable and Wood fuel allotments
- Cycling

Consultation has been done throughout the development of this plan with a view to understand the community aspirations. These aspirations have been built into the plan where they could be aligned with the wider management objectives.

Heritage

Following the purchase the site an archaeological walkover survey was commissioned in order to enhance the existing historic environment record. A detailed archaeological assessment was undertaken in 2011, enhancing the existing GIS information with both additional data (editing existing data and adding new site records) and known site extent polygons (for sites categorised as of national and regional importance). The archaeological survey will inform this Forest Design Plan and the future

conservation and management of significant and designated historic environment assets contained within.

There are approximately 40 features across the site including Nether Horsburgh Castle, old smithy, settlements, burnt mounds sheepfolds roman road, hollow/quarry. Nether Horsburgh Castle, Nether Horsburgh enclosure and Horsburgh Castle Farm are protected as Scheduled Ancient Monuments (SAM). The other features are unscheduled but they have been recorded by FCS and will be protected from damage during establishment of the woodland. In addition they will be excluded from planting so that visitors can gain access and view the sites.

A full report including photographs, tables and maps has been created by the surveyor including categorising the features into their importance and significance e.g. Nether Horsburgh Castle is of regional importance and high significance.

The feature map and report will be used to select the appropriate planting boundaries in this woodland plan. Typically the features will be unplanted to a distance of 10 or 20 m

Later in 2013 SBC Archaeologist highlighted 2 further sites of interest including a potential enclosure and potential rigg and furrow. FCS commissioned a follow up report and site survey. Although it is still not clear what these two sites are specific proposals are built into section 5 to safeguard them during operations (road building and afforestation). The potential enclosure requires a “strip, map and record” before building the road and the potential rigg and furrow should be hand planted only (no machines)

3.1.7 Biodiversity (woodland, open ground)

Open Habitats

A full open habitat survey was undertaken in 2011 to explore the value and potential of the current open habitats on the site. The full report is available in appendix but the key highlights are listed below.

The open habitats found on the Nether Horsburgh estate are typical of the central-eastern Southern Uplands. The upland heathland areas, are generally in good condition with a high cover of dwarf shrubs. These heathlands are part of one of the most extensive expanses of dry upland heathland in southern Scotland including the neighbouring estates to the north east linking into the Moorfoot Hills SSSI.

The heathlands at Nether Horsburgh correspond to the UKBAP habitat "Upland Heathland" and the EU Habitats Directive Habitat "European Dry Heaths". These policies oblige the UK government and its agencies to take account of the conservation status of the habitat including targets to maintain its overall area.

Full details of the open habitat survey can be found in the appendix. The woodland design will take the priority open habitats into account and the vast majority will be retained as open space.

Native woodland

A full native woodland survey was undertaken in 2011 to highlight the current and future potential of native woodland on the site. The full report can be found in the appendix, along with a native woodland inventory map, a summary of the findings is given below.

There is very little woodland recorded on the NWI map except the ancient woodland site at Nutwood SSSI. The recommendation for this site and the area adjacent is to manage and expand the native woodland site in consultation with SNH. The SNH report for Nutwood itself states that it is an Upland mixed ash woodland and in 2001 it was classified as "unfavourable declining" condition, this is probably due to lack of input / activity /management. Regeneration was being held in check by grazing. A SNH/FCS site meeting was held in May 2014 and SSSI management plan is being agreed to improve the condition to "favourable recovering"

There is an area of woodland, just above where Dirtpot burn crosses the public road, the report states that this appears to be an ancient woodland site but was perhaps not picked up at the time. Restoration would be appropriate.

Riparian zones. Although there are few woodlands currently in the riparian zones the report explains the potential for "great scope" in developing woodlands.

The dry scree slope facing Cardrona village has potential for juniper and hawthorn shrub species and this would also act as a link to the Black grouse conservation area above.

The report identifies the area on the South East of the site as potential for larger scale productive broadleaf planting.

Moving onto the Castle hill area, there is a large area of mature Scots Pine and European Larch which are proposed to be retained and managed as minimum intervention.

Below this are is some young Ash which is wide spaced and some form of enrichment is advised.

In the bowl just to the NE of the mature Scots pine is a large are of gappy birch and ash. It is suggested that enrichment or consideration of woodland pasture is an option.

Birds

A summer bird survey was carried out in June 2011 at both Castlehill and Nether Horsburgh together with a winter walk over visit to the site carried out in October 2011. A visit was repeated in 2012. The survey was carried out by Tony Lightley (Conservation Manager Dumfries & Borders FD).

The purpose of the survey was to establish if any Schedule 1 birds and also any birds of conservation concern as listed in the EC Birds Directive were breeding within the boundary area of the FCS landholding.

Consideration will be given in the FDP regarding the most vulnerable species present and this ensures that there will be no detrimental affect on the breeding status and numbers of the most common species, whilst enhancing specific areas for upland breeding birds relevant to the FDP such as Black Grouse, Curlew and Sky Lark.

Blackgrouse, although not recorded during any of the site visits, they are present on the adjacent sporting estate in good numbers (population between 35 – 40+) have been estimated by the local game keeping staff.

Full details of the survey and proposed mitigation for birds can be found in the appendix.

3.1.8 The existing forest: (Age structure, species and yield class, access and LISS potential)

The western part of the site (formally known as Castlehill) is predominantly P2002 woodland with areas of open space, mature Scots pine/European Larch woodland. The 2002 woodland is Douglas Fir, Birch, Scots pine, European larch. Much of the 2002 woodland has actually failed and will require enrichment and replanting as part of this forest design plan proposal. The failure was due to grazing and browsing by deer and stock and this will need to be addressed in this next period.

The woodland in the larger East section of the site is a mixture of riparian woodlands and shelterbelts. The riparian woodlands include some native woodland species including ash and oak some of which have been planted with Sitka spruce and conifer species in the 1970's and 1990's. These riparian woodlands will be priority for restoration through the removal of exotic conifers. Other areas are planted shelterbelts including 70's, 80's and 90's conifers including mainly Sitka Spruce, Scots Pine and Larch. These trees are growing well with yield classes measured in 2012 as mid 20's. To help optimise the final design of the woodland a key part of the plan will be to make decisions on felling these existing areas. Some can be kept for age class diversity and structure as well as shelter for the new trees to be planted. Others can be felled before the new planting to make access / extraction easier.

Access by wheeled vehicle is currently fairly limited with a number of farm tracks suitable by landrover/tractor. These include up alongside Hope burn and also in the Castle hill area. There are a number of field gates throughout the area that have/are being used for cattle/stock management. These are small fords and foot bridges. Unfortunately some of this existing infrastructure is inadequate for forestry establishment and future timber harvesting and a new forest road is proposed as part of this project.

There is significant potential for Low Impact Continuous Cover (LISS) and Continuous Cover Forestry (CCF). The climate and soils are suitable for growing appropriate shade bearing species including firs. Importantly the species will also help deliver the wider management objectives. During design of the woodland, future CCF potential will be considered and species will be planted with a view to transformation to CCF in 30 - 40 years time. In practice we would expect large areas of the lower valley and mid slope to be managed under CCF systems in the future. Wind is a limiting factor for CCF further up the slope.

4.0 Analysis and Concept

4.1 Analysis

The Analysis and Concept map shows the factors that were identified early in the planning process that would influence the development of design and long term vision of this forest.
Main factors were identified as:
-Community aspirations
-Landscape
-Soils, altitude, wind hazard as factors limiting species choice
-The neighbouring National Forest Estate.
-Opportunities for preserving priority open habitats and heritage
-Opportunity to design in an improved timber transport solution.

4.2 Concepts of the plan

The design concept has been graphically presented in the site analysis and design concept map. The thought process in developing the concept is set out below.

Factor	Opportunity	Constraint (limitation or restriction)	Concept Development
In terms of tree growth the majority of the site includes favourable climate and soils	Good tree growth potential. Excellent opportunity to diversify species. Expansion of native woodlands.	Wind, Accumulated temperature and moisture deficit. Depending on species chosen there is potential to lose / gain timber income	Select appropriate high yielding diverse tree species. Select appropriate native woodland species to suit soils and climate in biodiversity areas. Select appropriate productive broadleaved species to provide hardwood timber resource for the future.
Induration and shallow soils may limit rootable soil depth.	Promote silvicultural best practice (mixed stands, thinning) in order to enhance individual tree stability.	Tree species capable of dealing with those conditions (robust root system) required.	Prefer: OK, SY, AH, SF, SP, DF, EL/HL/JL, NOM, NF

Climate change may affect tree growth in the future.	Increase opportunity for species like Douglas Fir	Potential moisture deficit constraints for Sitka Spruce	Establish a trial plot with Forest Research GB to explore species adaption to climate change. Limit planting of SS.
The location is sensitive in terms of water. It includes the designated River Tweed and floodplain as well as its water catchment area.	Create buffer zones for protection.	Take care with planning of ground preparation to avoid pollution and longer term erosion.	Establish adequate buffer zones from the Tweed and tributaries. Plant appropriate species to protect water quality and avoid acidity. Consider River Basement Management Plan. Avoid exacerbating peak flow through good woodland design.
Current forestry access to Glentress is very busy including timber traffic and recreation users	Separate accesses and make safer for recreation and forestry by building new forest road	Landscape. Cost.	Create a new forest road through Nether Horsburgh to remove Glentress timber traffic from Peel entrance.
Nether Horsburgh is a very prominent site with high landscape sensitivity. Some existing landscape issues require fixing.	Exemplar species. Create natural landscape fixing some of current issues e.g. straight edge shelterbelts.	Although natural landscape desired, some non native trees will be planted for timber production management objectives – but included in the plan will be large area of native broadleaves.	Design the woodland using photo montages and 3D modelling to ensure optimum species, shapes, colours and texture to create the perfect natural landscape. Integrate the existing woodland and shelterbelts into the new woodland. Create a shop window for Glentress Forest through exemplar forest design.

There is potential for future recreational developments or initiatives to help the local economy	Create space and potential for future developments		Future proof the design of the woodland to ensure potential developments can be integrated at a later date. Access via Glentress Peel.
Much interest by the local community in the forest design	Listen to the needs of the local community and try to design in their needs where appropriate to the management objectives of the plan	Potential conflicts between community regarding landuse and opportunities	Listen and understand the issues. Integrate ideas where appropriate. Consult throughout the design period. Build in requests where appropriate or consider at an alternative part of the National Forest Estate.
Potential increased public access	Increase in rural economy. Good for health and well being.	Less natural. Less wildlife.	Design woodland to allow informal public access. Work with groups and access officers to identify appropriate opportunities for core path networks/other routes.
Much interesting archaeology throughout the site including scheduled ancient monuments	Create visitor opportunities and enjoyment. Retain for heritage into future.	Reduction of timber production.	With local archaeologists and Historic Scotland identify and protect the heritage through use of buffers in forest design. Increased access opportunity supporting SOAC

Stability issues of the land around Dirt Pot corner and safety issues on the public road.	Use trees and shrubs planned carefully to help stabilise and to reduce risk	None	Work with Scottish Borders Council to stabilise and protect against future landslips.
Interesting sites designated for their biodiversity including Nut wood SSSI and River Tweed SAC	Expand these natural areas through use of native woods and open space.	None	Work with Scottish Natural Heritage to draw up appropriate management plans that will help these areas get to an improving or recovering condition. Expand native woodland above A72 with native shrub planting.
Priority open habitats exist on the East edge of the site with associated interesting priority species – Black Grouse	Maintain or improve important habitat. Reduce grazing pressure. Design new edge habitat for black grouse.	Less timber production opportunity	Avoid tree planting on much of this area. Improve priority open habitat condition through active land management. Also to help black grouse species, the design will create appropriate woodland edge habitats and consider and design existing and potential future fences to avoid bird strike.
Potential for native woodland expansion	Increase broadleaved coverage. Improve landscape. Diversifying potential timber resource for the future. Improved internal landscape for access. Improved opportunity for wildlife.	Slower growing than conifers.	Focus native woodland expansion in the East of the site where there is greater potential for biodiversity and more challenging timber access situations. Protect riparian zones throughout the site by establishing robust native woodland.

Best quality land by A72	Some form of development to support business/rural development. Grazing and agriculture. Premium climate and soils for tree growth.	Impact on visual landscape and landscape character of the Tweed Valley. Different land uses will always want the good ground. Effective public consultation will deliver the best solution.	Through effective consultation design this area to achieve the optimum benefits for people, the local economy and the environment

5.0 Forest Design Plan Proposals

5.1 Management (fell proposals)

There are a number of different management coupe types planned:

- Clearfell – some of which will be immediate felling in the plan period (existing shelterbelts), others will be further in the future.
- Natural reserves where biodiversity is a priority and there will be no or little intervention of management
- Minimal intervention where there is minimal amount of work to increase biodiversity potential e.g. where exotic conifers can be removed from native woodlands
- Areas identified where the soil, climate and species will suit management under CCF e.g. Productive broadleaved areas
- Open land for agriculture/conservation

5.1.1 Felling schedule

In the first 10 years of the plan there are a number of small felling coupes:

1. Some of these are shelter belts which are approx 30 years of age and have adequate quantities of merchantable material for economic harvesting.
2. By clearing a few carefully chosen shelterbelts this frees up land to create a better woodland design across the whole site – the existing shelterbelts limit the landscape and biodiversity potential
3. Clearfelling and removing these shelterbelts before planting is operationally better – avoids damaging new planting saplings if done now rather than say in 5-10 years.
4. There are a few coupes being proposed for early felling for various reasons

Coupe reference	Reason for felling early
78388	This is 2002 SS/EL. Removal of this is a key part of designing the large future coupe on Kirnlaw. Felling in 2023 will recover some merchantable products.
78138	Age 20 when felled. By freeing up this area as open ground this will allow the new planting and the restocking of this small area to follow landform and be planned at an appropriate scale.

5.1.2 Timber volumes

The p1978 and p1987 coupes have a standing volume of 200-300m3obs per ha, it is viable to fell these in the first 10 years of the plan.
The felling areas are shown red or orange on the management map. They are also listed below:

5.1.3 Timber volumes from thinning

Given the soil conditions and climate we would expect much of the area to be thinned from around year 20 to year 60 (approx clearfell age). The thinning would be undertaken on a 5 year cycle removing approximately 60-80 m3 per cycle – depending on growth rates.

Areas potentially managed as future CCF areas will be thinned using crown thinning techniques to help stabilise the trees and create larger crowns for seed production.

Future clearfell areas will be thinned using the conventional thinning type of intermediate thinning.

Productive broadleaves will be pruned and thinned with a view to create marketable high quality hardwood timber.

5.1.4 Future rotations

This is the first rotation on most of the site. Species are being chosen to build potential for future CCF across large areas of the site. CCF is a favoured option for this area as there are suitable soils; climate and it would also help deliver wider social and environmental management objectives.

See potential CCF areas marked on the Forest Design Plan (FDP) management map – marked in pink.

5.2 Future habitats and species

Summary of habitats and species plan

To deliver the management objectives we have selected the right species and land use for the different parts of the sites.

The first step in the design was to select the areas for open space and alternative land use. Then native broadleaf expansion areas on riparian zones were next to be selected. The land remaining was then designed for productive tree establishment.

Species diversity will have an important role in delivering the wider management objectives in Nether Horsburgh. The key is to select species that are deemed “very suitable” for the site conditions (climate and soil) but also those species with capacity for delivering the management objectives

Spatial Ecological Site Classification has been used to match the right species to the right location. Future climate has been considered and in particular the predicted dryer climate in combination with the dry soils of the Tweed valley. Species will be selected on the ESC basis of “very suitable” or likely to be “very suitable” given climate change predictions. The key was finding the range in which each potential species can perform as “highly suitable” - >75% of yield growth potential. The upper limit of this range would in turn form the upper planting line for that species e.g. DF upper limit for very suitable is 1200 day degrees. For different species different soil and climatic factors would be the limiting factor.

On very favourable sites, usually the lower, sheltered sites with mineral soils, there was a wide range of opportunities in term of species choice – where this was the case Management Objectives were used as the guide to reach the final decision on species e.g. DF very suitable for timber and social management objectives (Recreation).

Landscape and design is clearly very important. Design is driven by landform and shapes should avoid vertical and horizontal lines. Unfortunately this is a direct conflict with the ESC outputs which often suggests a limitation of planting horizontally along a contour. The design is a balance between landscape and species suitability and this has been worked through in an iterative way in order to design the best possible woodland.

Structural diversity is also used to deliver the management objectives, this will include permanent native woodland, continuous cover forestry, open space and clearfell systems.

5.2.1 Species and landuse

The table below sets out the criteria used to select species and landuse on Nether Horsburgh.

Species / Landuse	Soil criteria	Climate criteria	Management objectives and operational influences on species selection at Nether Horsburgh
Non productive native woodlands including birch willow rowan aspen alder and wild cherry	Various but mainly in the riparian zones	Various – clearly timber yield is not an issue with this category.	• To fulfill social, environmental and biodiversity management objectives **native broadleaves** will be planted along watercourses and along some edges of the forest. These will usually be planted in groups of 1600/ha with areas of open space in between. The net planting will be 50% broadleaves surrounded by 50% open space. • Individual WCH could also be incorporated in the matrix on the most sheltered sites.
Productive native woodlands	Depending on species e.g. brown earths for oak.	Warm, moist and sheltered. Cool, moist and sheltered. Cool, wet and sheltered.	• On the East of the site there will be a significant area of productive native broadleaves. The aim here is to expand native broadleave woodland between Nutwood and Dirtpot burn. The woodland will deliver timber production management objectives as well as environmental. • Lower elevations of the site will grow productive oak, alder at close spacing (6000+ per ha). On the dry knolls plant oak nests at 100 per ha (25 per nest) These nests should be surrounded by alder in the wetter areas and aspen on the moist and slightly dry sites. • Timber production will reduce with elevation as soils and climate become more challenging. The intermediate zone will be mainly SBI with less oak and introduction rowan. Spacing will be 4000+

			per ha. Timber production is still an objective. OK should still be planted in dense groups (OK nests), BI and ASP can go in at 2000+/ha. • Above this zone, broadleaves will be established for environmental reasons including 1000+ per ha hawthorn, eared willow, holly, rowan and a minor amount of eared willow. • On the slope to the West of Hope cottage Native broadleaves will be established given the proximity to the river Tweed tributary, the steep ground and permanent screening for Hope cottage.
High quality productive broadleaves	Fresh and slightly dry soils. Brown earths or fertile earths	Sheltered spots on the site including shelter from existing larger trees	• **High quality Productive broadleaves (native and non native)** – These sites are being selected based on soils and climate suitability but also in terms of access for establishment and future felling and extraction. Successful productive broadleaves is intensive in terms of management and operations and ease of access is very important. Permanent access track layout has been considered. Protection from wildlife will also be an important factor, this may include fencing. Existing shelterbelts will be used to protect productive broadleaves. • Aim for 10m branch free bowl • 100 oak nests per ha (25 trees per nest @ 50cm spacing). • As a nurse around the oak create a single row of lime, sycamore or hornbeam around each nest. • In the matrix between the nests plant broadleaves at 4000/ha including Sycamore, Norway maple, Alder, SOK.
Productive broadleaves (Beefing up broadleaves in Castlehill)	Good soils and fairly sheltered in the bowl of castlehill		• This area failed during its initial establishment over the past 10 to 15 years and requires substantial beat up and maintenance. • The ground preparation will be via excavator mounder and “hinge mounding” – existing trees and saplings that can be seen will be retained and the ground preparation will provide new planting positions in between existing trees.

			• In the “bowl area” beat up ash areas with birch which will grow fast and catch up with the ash. In more open areas plant clumps of sycamore at 3000 per ha on the upper hill and plant “high quality productive broadleaves” on the lower slopes; spec as above. • In the Ash area near to Glentress Peel enrich with Birch as Ash planting on NFE is not permitted. Also Birch will grow fast and catch up with older ash. • Planting of Hazel and hawthorn on the edges to act as a transition
Pure Beech	Good soils but can tolerate some wind		• On the edges of the private water supply for Nether Horsburgh • Planting at 3000 per ha.
Pure Sycamore	Good quality soils but can tolerate wetter sites too	More sheltered spots	• Strengthen the riparian zone planting above hope cottage with sycamore broadleaf planting, evidence of good growing P1977 sycamore just above hope cottage. • 3000 stems per ha at planting
SP/OAK	Dry free draining soils	Warmer climate	• To strengthen the existing mature SP and SOK by Nether Horsburgh house. • This is a very dry site and the oak nests should be planted on the slightly more moist areas – 50cm spacing 25 per nest – 100 nests per ha. SP in between at 3000/ha. • This area is dry soils and suits both species very well
Douglas Fir 60% Western Red Cedar 20% Grand Fir 20%	Soils will be moist (for WRC), fresh or slightly dry with medium or rich fertility for DF. GF selected on slightly damper soils in the	The sites will be warm, moist and sheltered (max DAMS 11). Accumulated temperature is often the upper limiting factor and with climate	• With an aim of establishing permanent conifer woodland for CCF management these species have been chosen on the lower slopes and valley bottoms • Douglas Fir (DF) is a highly desirable species for structural timber (including beams) and also social management objectives, as a result this species is being proposed in significant quantities. • The “very suitable” sites for DF are often very similar to productive broadleaves, DF will be chosen for the remaining sites after choosing PB sites.

	moist category, ideal in the valley bottom. Soil nutrient is less important.	change bringing about increased accumulated temperature these species are ideal. GF and WRC like the damper conditions and therefore should be planted in wetter areas and in the valley bottom with DF on the lower mid slope zones.	• Typically on the site DF will be planted on the lower slopes on brown earth soils where there is good shelter from wind. • Great tree species to deliver good economic returns as well as social and environmental benefits. • GF timber is light and usually non structural timber and it's extent should therefor be limited. • GF is a light demander and will be an effective CCF species in the future. • Visually the tree is "Grand" and so will be situated near tracks and access points. • GF species is good for delivering large tree "feel" or "look" • WRC has high durability qualities and is very suitable for wood cladding. • DF and GF offer potential for SY/BE encroaching as an understorey later on, thus allowing the development of even more diverse stands and softer boundaries between crops.
Norway Spruce	NS Ideally in lush, rich heavy sites perhaps even where the soil is waterlogged. Soil nutrients are ideally medium to rich.	a warm moist and sheltered climate Norway spruce is less tolerant of wind.	• Good timber species producing structural quality timber but must be recognised that slightly slower growing but useful species where looking for an alternative to Sitka Spruce. • Useful to support red squirrel populations with high nutrition content in the cones. • As with DF/GF, potential to enrich with BE at a later stage, leading to improved stability and higher productivity.
Scots Pine	SP can tolerate	It can tolerate	• Although lower yielding species than SS, this is chosen as species

(SP)	poorer soil nutrients and drier soils and will still be a "highly suitable" species in terms of ESC.	wind (DAMS 12 and 13)	diversity is a key way of delivering the management objectives in the Tweed Valley. • It will be a particularly useful species to plant in areas of the site that have low soil nutrient status because of heather/soil type. • These heather sites are typically steeper and more difficult for harvesting and the lower yielding species would be better suited to these areas – e.g. on the edges of Habs Cleuch. • Very useful species to assist deliver biodiversity and environmental objectives. • Useful dark green colour to help lock into landscape adjacent to existing Glentress • A SP/Birch mix in Habs Cleuch to help create a permanent woodland primarily for biodiversity including habitat for black grouse. Mainly SP lower down moving towards majority Birch at higher locations. • A transition area of NF/SP on the upper mid slope where scattered NF (5%) will act as diversity species and character trees in amongst the SP. In the long term individual NF will help create diverse permanent woodland and potential CCF. It can be anticipated that NF will develop prolific natural regeneration underneath SP overstorey. This will help to control ground vegetation under a relatively sparse SP canopy at later stages and will therefore facilitate CCF management. Basically, 2 NF rotations will equal 1 rotation of SP. • If concerns remain regarding DNB, the SP will be replaced by 100% birch with potential for a productive timber crop in the future.
Noble Fir (NF)	Can tolerate poor through to rich nutrients. Prefers moist or fresh soil moisture regime.	Cool or warm wet climate. Can tolerate high degrees of wind exposure.	• We are proposing a small area of NF, again for species diversity to deliver management objectives. The area chosen will avoid S and SE aspects where there is potential cracking. NF can tolerate a wet and cool climate which is windy. Areas of heather should be avoided due to soil nutrient limitations. • Situate this species at higher altitude where the climate will remain wet enough even with climate change.

			• Very prominent cones and foliage associated with Christmas trees. Foliage will be marketable when the trees grow older. • Useful large dimensional timber for non structural loadings e.g. planters beside house/sleepers
Sitka Spruce /Douglas Fir	Sitka Spruce is tolerant of a wide range of soils from very moist to fresh and poor to very rich nutrients.	DF prefers a warmer and more sheltered climate.	• Sitka Spruce remains as a desirable species for timber and economic objectives, this species will be planted where there are limiting factors for other species e.g.wind, soil nutrients • In this area of SS/DF the idea is to have the DF lower and in the more sheltered places and the SS higher up the hill. To deliver landscape objectives this will be a phased mix ranging from pure DF lower down to pure SS higher up the hill. • Future climate has also been considered for particular species, particularly for SS as it likes wetter climates and the prediction is that SE Scotland will become drier by 2050-2080. Coupled with the dry soils of the Tweed Valley, SS may drop from being “very suitable” to only “suitable”. We are mindful that SS is a key timber producing species in challenging climates and soils and therefore we will take the risk and continue to plant some areas in the Tweed valley. But there are areas like Nether Horsburgh where we will also plant large areas of alternative conifers which are “very suitable” currently or likely to become “very suitable” as climate changes.
Open Space	Various	Various	• Priority open habitats. Large areas of upland heathland habitat managed towards improving biodiversity value. Although recently been heavily grazed this area will now benefit from a period of rest and will be monitored. It is hoped that the period of rest will allow some of the shrub and dwarf layers to develop. Above the deer fence in the upland heath land area it is proposed to plant small clumps of trees/shrubs for Black Grouse Habitat (not >25 trees per clump, < 5% of the area will be planted) • Maintaining heritage features. Appropriate open space will be left

			around these heritage features, firstly for their protection from forest operations and secondly to allow access and visibility for visitor enjoyment. • Enhancing visual landscape and landscape character. This is an important element of the entire design at Nether Horsburgh. Open space within the forest adds diversity and interest whilst open space on the edges/hill tops helps in linking with neighbouring land/estates. • Open space will be an important component of the riparian broadleaved areas, it will allow light to enter the water as well as provide light for animals and vegetation including natural regeneration of trees. • There may be some potential grazing opportunities, these are the temporary grazing at Kirn Law and also the permanent agric in the flat fields in the valley bottom. • Open space will be created for specific wildlife species (in some cased protected and sensitive) • Large scale farming opportunities are excluded from this plan as the woodland creation provides higher environmental, social and wider economic advantage (including tourism and business development opportunity)

5.3 Restructuring

The existing mature woodland on the site creates a perfect opportunity to take advantage of the mixed ages build on this ready made age diversity.

The first presumption was to retain all existing tree cover provided it did not limit the future vision of the woodland. The aim was to minimise the removal of existing woodland.

Some existing shelterbelts will be removed where there are landscaping issues and/or there is a desire to change species e.g. Sitka Spruce to Douglas Fir or Native Broadleaves.

Clearly with a single planting year of 2015 there are few immediate opportunities to restructure. However, as time passed and this P2015 crop reaches maturity early coupes will be felled to assist in restructuring. This will be considered as a whole as part of Glentress FDP and neighbours private forestry with the aim of creating a mixed age class forest with obvious benefits.

The plan includes relatively large coupe around the top of Kirn Law hill. We plan to delay planting part of the new acquisition until the woodland at Kirn Law is felled in approx 8-9 years time and the new coupe (shown on the maps) will straddle existing Glentress and the new acquisition. Although relatively large the coupe is seen only from distance and not all of the coupe can be seen at any one time from different viewpoints.

There are significant opportunities to develop CCF and this will bring about advantages of permanent woodland cover across large areas of the lower site in the longer term.

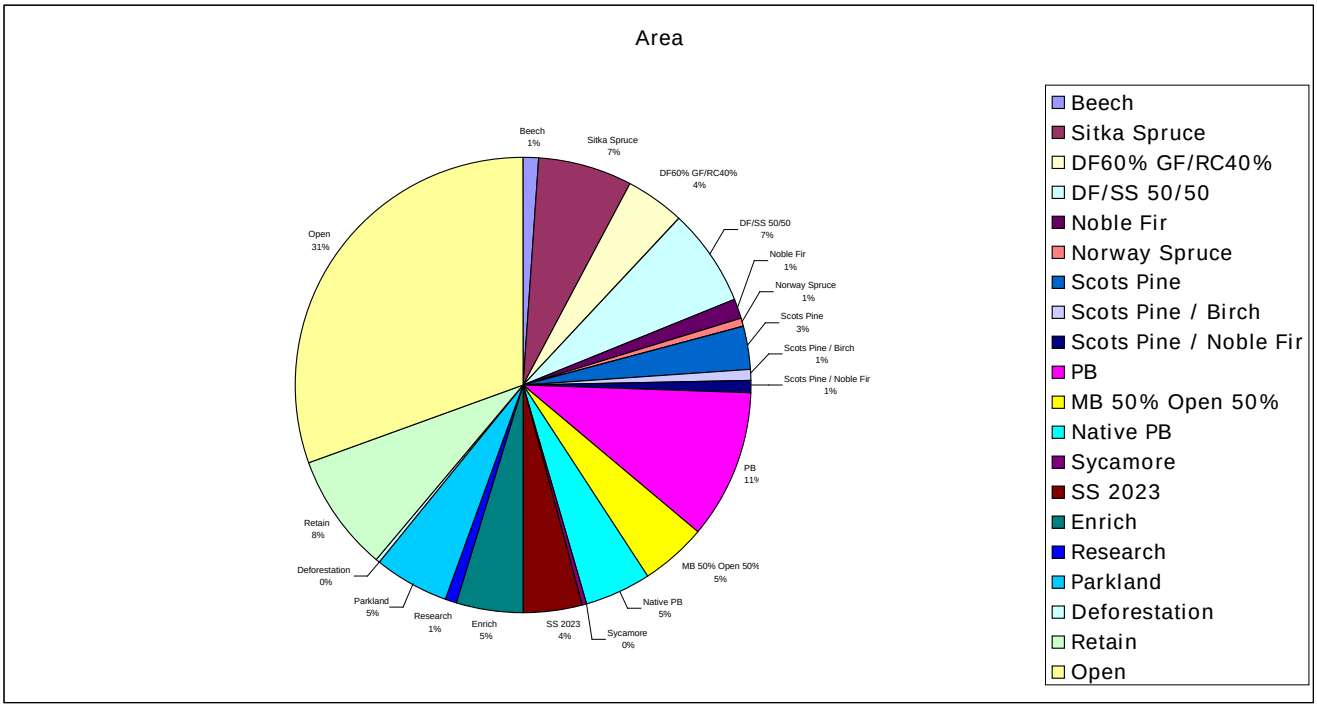
The management map shows the approach to restructuring including:

- Immediate clearfell and restock of carefully selected areas to make best design for new planting
- Retention of shelterbelts for a time and embedding them into the new planting area.
- Connecting and interlock to existing Glentress by including the Kirn Law coupe.
- Enrichment of areas which have a low stocking at Castlehill

5.4 Species tables

The table and pie chart below show landuse and tree species that will result through the implementation of this plan including the felling of shelterbelts and new woodland creation.

Species	**Area**
Beech	5.7
Sitka Spruce	30.3
DF60% GF/RC40%	22.7
DF/SS 50/50	36.2
Noble Fir	6.4
Norway Spruce	2.8
Scots Pine	16.5
Scots Pine / Birch	4.2
Scots Pine / Noble Fir	4.4
PB	55.2
MB 50% Open 50%	24.6
Native PB	29.5
Sycamore	1
SS 2023	22.2
Enrich	25.7
Research	3.1
Parkland	27.9
Deforestation	2
Retain	43.7
Open	160
	524.1



UKWAS requires the following proportions of species in new planting as:

<65% Primary species
>20% Secondary species
>5% native broadleaves
>10% open space

As can be seen above the percentages easily comply with UKWAS.

5.5 Management of open land

See section 5.2.1 for details

5.6 Access

Access

Public will be welcome to visit the forest on foot, on pedal bike and on horses. The design of the woodland will take advantage of existing tracks and desire lines and leave open where appropriate e.g. the access routes and roads to Castle hill. At this stage the there are no plans for formal routes but these may develop later as interest grows and potential of the site is reached. It is appreciated that Glentress Peel is nearby and visitors may seek access opportunities they will be expected to respect the Scottish Outdoor Access Code. The new operational access at Nether

Horsburgh will be for operations only and access by recreational vehicles must be prevented as part of the planning permission conditions. It would however be appropriate to create an informal public access pedestrian gate in the area opposite Cardrona junction and this will be implemented over time as the project progresses.

Access for Forestry and Agricultural

1. Legal vehicle access by Nether Horsburgh House ceased in August 2014.
2. A new forest road is proposed just to the West of the existing Nether Horsburgh entrance. This road will serve as the main forest/timber haul route for Glentress and Nether Horsburgh. When this new road opens the timber wagons will cease access via Glentress Peel. The aim here is to separate recreational users and timber wagons and thereby reduce the associated health and safety risk.
3. The design and location of the new road has been considered in detail and is situated lower on the hill to reduce landscape impact but not so low as to cause significant environmental impact e.g. water, archaeology.
4. The new forest road proposed will also act as a service road for establishing and maintaining the site. The forest road will be built to the standard required for 44 tonnes articulated wagons.
5. Only the road shown on the “Proposed Scenario” Map are planned in the next 10 years. Additional roads for harvesting may be required in 10+ years. E.g. extension to the proposed road SE of Dirtpot burn; road on South Side of Kirn law through towards Bught hill. These are operationally feasible and are better built once the trees grow and provide mitigation.
6. The point at which the new road connects to the A72 has been subject to a separate Scottish Borders Council planning department application. This was approved in August 2014. Separately the forest plan is being submitted to Forestry Commission for Environmental Impact Assessment determination and Forest Design Plan approval
7. The forest road and the forest are being designed together with an aim of the forest/woodland design acting as a longer term screen of the road construction.
8. For further information and full justification of the new operational access see the application to SBC.
9. A condition of the approval by Scottish Borders Council is that this access is for forestry access only – not recreation.

10. Different options were considered for the route of the road through the new woodland area and through into Glentress forest. The options and pros and cons can be seen in the appendix.

5.7 PAWS restoration

There are no formal (Plantations on ancient woodland sites) PAWS within the area but there is an area of potential biodiversity value just above where Dirtpot burn crosses the public road that will betreated like ancient woodland. It will be a priority for removing the exotic conifers early in the plan period.

Other riparian areas which have been planted with conifers will be gradually transformed to native woodland over the plan period. This will be done through removal and extraction of conifers or felling to waste and indeed enrichment planting of broadleaves.

5.8 Deer Management

Deer have been a challenge in the Castlehill area and experience on the site has shown us that careful consideration, planning and implementation of deer control will be necessary. A full deer management plan can be found in the appendix.

There is a wide range of species being proposed including high investment in productive broadleaves and therefor the proposal is to create a ring fence around the entire Nether Horsburgh area to secure the asset.

The design of the ring fence has been carefully considered in terms of landscape design, black grouse management and public access.

- Landscape design – From a landscape point of view it would be ideal to build the fence right on the upper tree line but given the design includes trees pushed up the gullies and pulled off the ridges it is almost an impossible operation to build a fence on the tree line. The fence is kept below the skyline to avoid visual impact but high enough to make it buildable along the contour. Where possible the fence will avoid straight lines and creation of vegetation patterns.
- Black grouse - It is recognised that there is adverse potential impact on black grouse, where deer fencing is chosen close to black grouse populations and recent leking sites and this decision is taken as a last resort in order to achieve establishment. Without the fence there is a high risk of loss of investment of expensive broadleaved and other

conifer trees e.g. oak, douglas fir. Given the large size of the site there is no reasonable alternative to the fence. The fence is designed to be away from the upper tree line so that BG can see the deer fence and markers out in the open. The map shows the maximum extent of deer fencing permitted in this Forest Design Plan. Risk of black grouse strike will be minimised through;

-Careful sighting of fences,

-Minimising the amount of fencing that runs downhill or across contours as birds often fly along contours.

-We have tried to locate deer fences in hollows where there is less risk.

-Include visual markers so they can be seen and avoided by flying black grouse.

-The fences will include visual markers where there is higher risk (on fence adjacent to the 1km buffers from leks) – as seen on the map. It is noted however that there have been no sitings of black grouse in this area and this additional mitigation of markers therefor is belt and braces. The annual FES transect for black grouse survey is attached. Marking techniques will be to the Forestry Commission standard specification using either chestnut or sawn wooden pales @ 30cm centres, 0.9 -1.2m bamboo diagonal @ 30cm centres or UV orange netting.

-When trees are established and there is less threat from deer the deer fences will be removed.

-Fences will be monitored for evidence of black grouse strikes and follow-up action taken in relation to additional marking or fence removal.

- Access – People, bikes, horses and vehicles will access through the fences and appropriate pedestrian gates, horse gates, traffic gates and cattle grids which will be built as part of the project – See fencing map for full details. The gate locations are carefully chosen to provide safe access for residents and visitors alike. The aim is to provide crossing points at sensible locations.

5.9 Other design and operational considerations

1)The design for **Private water supplies.** FCS have known about the private water supplies since before purchase and part of the planning stage has been to understand and design mitigation to at least maintain current situation or improve where possible. Site survey has been undertaken by FC Hydrologist to better understand the situation and mitigation planting and land management has been proposed accordingly. At Nether Horsburgh the

majority of the catchment area has been changed to broadleaves to protect the quality and quantity of the water. As shown on the planting map the heart of the catchment is designed for 50% broadleaves and 50% open ground, the trees to be planted here will be slow growing including shrubs. Species will include hawthorn, oak, rowan, willow. No machinery (also no ground preparation) will be permitted in this central zone. On the edges of the catchment area Beech will be planted as a productive tree crop and to provide autumn colour. Ground preparation will be minimised by excluding use of ploughs and excavators and the formation of new drains will NOT be permitted. At Hope cottage only broadleaves will be planted in the riparian zone and therefore quantity should not be reduced over the current situation. Only light excavator hinge mounding will be permitted in the riparian zone. There will be no drainage in the riparian zone. During establishment and maintenance operations in these specific areas FCS (or their representatives) will aim to reduce disruption and liaise with householders. Farm stock will be excluded from the catchment areas and surrounding area to improve water quality. The owners of the 6 properties are considering mains water supply and if it is agreed and installed before planting, and it is agreed that the private water supply is no longer required the catchment will be planted with Douglas Fir lower down the hill changing towards Sitka Spruce higher up the hill. This change in species would provide and improved landscape “scale” and also provide additional timber and carbon sequestration.

2) **Specific design for birds**. Planting is excluded from the vast majority of the upland heathland which is designated as potential black grouse habitat that is only 1.0 to 1.3km from established lek sites on adjacent land. This is also valuable potential breeding areas for other upland bird species. To help improve the habitat above the proposed deer fence some ground scrapes /small ponds and suitable tree/shrub planting will be undertaken by FES. The deer fence is designed and aligned to reduce the likelihood of bird strikes. The deer fences will be appropriately marked and monitored for evidence of bird strikes and additional work done as required.

3)**Enrichment planting of Castle Hill.** This is a very late beat up of a failed area and the approach will be to use excavator hinge mounding to create new planting positions in amongst the remaining young trees. The aim is to create productive broadleaves “in the bowl” and in the area nearer to Glentress Peel.

4) The **landscape design** includes:

- Removal of some of the visually intrusive shelter belts so that they do not reappear within the forest
- Plan one large scaled coupe across Kirn Law to interlock existing Glentress and the new planting
- Connect to existing Glentress woodland at Black Knowe and plan to remove the top corner of existing Glentress forest at the next felling intervention to allow shape to follow landform from the new site through into a saddle point on the horizon in the existing Glentress Forest.
- Landform is the prominent shape in this landscape and woodland is pushed up the valleys and comes off the spurs.
- Increasing species diversity at lower levels and on the valley floor to suit the smaller scale landscape
- Increased scale at higher elevations to suit larger landscape scale.
- Create a well scaled and smooth shaped upper margin respecting the rule of “two thirds”
- Use single tree planting and policy woodland associated with the valley floor to reflect the tradition of estate planting in the Tweed Valley
- In the South East connection with the existing woodland at “High Wood” using the green colour of Scots pine at a point that will reduce the current straight edge effect of High wood whilst also respecting and following landform where possible.
- Appreciate the site sits within the “Tweed Valley Special Landscape Area” 2012 (Scottish Borders Council) and follow the management recommendations contained within.

5) The **SSSI at Nutwood** requires work to improve its condition and this work is specified in a SSSI management plan - enrichment planting including moving ash regeneration internally within the site, creation of more light to enhance regeneration. This intervention will start in 2015 followed by monitoring. To strengthen the biodiversity value of Nutwood, FCS propose to create new native woodland to the North – this will be and expansion of the hazel and mixed native woodland. Further North and East from the SSSI and to the East of the SAM homestead a large flank of new native woodland will be created with the aim of further strengthening the biodiversity of the area. This large flank of **new native woodland** will include potential hardwood timber production on the lower slopes graduating to non productive native broadleaved woodland and shrubs higher up the slope. The approved Forest Design Plan and the agreed SSSI

management plan for Nutwood will be developed simultaneously and work will complement the overall biodiversity of the area.

6) **The new operational access to the forest.** The proposed road is located on the lower slopes to reduce landscape impact but not too low to have a negative impact on the archaeology and risk of pollution to water courses in the event of a pollution spill from the forest road. For design of the entrance to the operational access (See SBC application details). For bater angles and design of the road see civil engineers cross section drawings and 3D visualisations. Where the forest road can be seen from the public road the topside and bottom side bater will include topsoil covering and reinstatement to reduce visual impact.

7) **Parkland planting of the lower fields.** A few carefully located individual trees will be planted on the lower fields to create parkland type environment. Neighbours and consultees gave input to this design. Species will include Oak and Scots Pine. Each tree will be protected by wooden post and rail fencing and the spacing between the trees will be wide – approx 70m. This plan will leave the entire fields free for grazing and the land will be let by FCS as a grazing opportunity. The trees will not be positions so as to interrupt the flow of parking and use of the field for the Peebles Annual Show.

8) Over the years Hope Burn (below the A72) has been drained and rechanneled to speed run off and reduce flooding on farmland. Tweed Forum is interested in **restoration of natural watercourse of Hope burn**. This would bring benefits in slowing the flow of water whilst also creating wildlife habitats and improving the visual amenity. Although these works is not intended to be covered by this forest plan the proposal is to extend the park land planting across this area and this will not limit any future remeandering or restoration project. Parkland trees should be kept at least 50m away from the Tweed River so that fishing opportunities are not disadvantaged.

9) There is potential archaeology interest at NT 29827 39899 where there is a potential enclosure and **an archaeology “strip map and record” MUST be undertaken** before building this part of the road.

10) To help the interlock design of the new planting area with existing Glentress forest, planting will be delayed for part of the site for 8-9 years and consideration will be given to **temporary grazing** in this area between the South side of Kirn Law and Bught Hill. In 8-9 years this area will be

planted along with the existing forest area on top of Kirn Law. Access to this potential temporary field will be via field tracks either from the SE or from the West. Water supply for the field will be via pump from a spring line lower in the new planting area. FCS would let this grazing opportunity and it may be leased along with the grazing on the lower flat land.

11) **Design for informal public access.** The woodland design has been shaped taking public access into account and large open spaces have been left for views and access (foot, cycle and horse). Particularly in Castlehill area there are many old routes and these will not be planted and public can make their way across the area, most of which will be free from farm animals and fence obstacles. Visitor parking is available at Glentress Peel and access onto Castlehill and Glentress will be easy and encouraged. Numerous gates are being installed in the deer fence so that people are free to move between this new planting area and the wider area. Obviously Glentress Peel links up well with the existing Core Path Network.

12) The plan needs to mitigate against further **landslip at Dirtpot** corner on the A72. Firstly, **heavy plant and machinery will NOT be permitted on the existing track**, instead they will use the new proposed forest road to the North. Secondly planting of large trees is avoided and vegetation will be limited to shrubs and open space.

13) **New Deer Fences.** Where these are being located on the march boundary the fence should be located 1-2m inside the existing boundary fence. This will leave the existing march fence in tact with the existing agreements with the neighbours. Where the deer fence is not on a march boundary the fence can be positioned exactly on the line specified. E.g. on old dyke etc. Bird markers required on the East boundary. Badger gates required where tracks and routes are known. **New Stock fences** are to be built to include grazing animals as per plan. **Removal of existing Stock Fences -** Where farm land is being changed to forestry there will not be a need for existing stock fences and these will be removed before ground preparation and planting commences. **Existing field enclosures (dykes)** should be left in tact within the new woodland as this is part of the Archaeology and history of the land.

14) It is very likely that the **operational works** will be carried out by a single main contractor whom will have the task of planting, maintaining and establishing the new woodland to reach year 5. After that time FCS will manage the woodland operations.

5.10 Ground preparation and Drainage

The ground preparation must be adequate to give the young tree a good silvicultural advantage but equally we must fulfil our environmental commitments and avoid unnecessary soil disturbance.

1. Continuous Mounder, scarifier or planting machine on better land
2. Direct plant – or direct plant with pre plant spot spray where ground disturbance is not required.
3. Hand planting only on lower slopes of Leeburn head due to the potential rig and furrow identified by LIDAR imagery. Area around NT311394
4. Excavator Ground Preparation – To ensure successful establishment, this method of ground preparation will be permitted in the following situations on upto c20% of the site:

   - Riparian zones – "within defined buffer areas limit cultivation to hinge mounding" – extract from F&WG 5th edition page 33. It's important to recognise the water sensitivity here and "no ground preparation will take place within 2m of any surface water or wetland…" – extract from F&WG 5th edition page 34. There will be no trench mounding in these areas. No drainage will be carried out in these riparian zones. Nearer existing broadleaves, some of the hinge mounds may also act as a seed bed for natural regeneration.

   - Some wetter areas will require drainage and ditch dollop ground preparation will be appropriate with ditches to F&W guideline spec.

   - Rocky areas are a feature across the site and the flexibility of an excavator bucket will be required to make the planting positions amongst the stones. Hinge mounding would be appropriate here to minimise ground disturbance.

   - Smaller rough areas will be inaccessible by scarifier etc and an excavator will be permitted.

   - Walking excavator is an option on the steepest sites.

5. Ripping will be carried out on the site where there is excessive compaction.

Drainage will be carried out to the standard identified in the Forest and Water Guidelines. Specifically:

- Align drains so that the gradient does not exceed 2 degrees, 3.5%

- Align drains up-valley to maintain an even gradient
- Do not divert natural water courses into drains
- Do not drain within natural watercourses
- Keep drains well short of natural watercourses (min 5m to 20m)

Special Notes to Contractors

1. **NO PLOUGHING OR ROTARY PLOUGH MOUNDER WILL BE PERMITTED ON THE SITE.** On this site ploughing will move more soil than required and will also have the potential to increase the risk of pollution. And it would promote weeds.
2. There are two private water supplies. One supply for Nether Horsburgh House (and 5 other houses) and the second supply for Hope cottage. They must be protected throughout

5.10 Critical success factors

Main critical success factors for plan development are:

- Community support
- Protection from threat of deer and farm stock
- Resources for implementation
- Commitment and expertise in establishment of productive broadleaves

Appendix: Issues where mitigation has been built into design

Brief Description of the receptor / factor	Description of Potential effect.	Description of Residual effect following mitigation
The proposed new operational access and timber haul route (Landscape)	Potential scar on the landscape created by cutting of the new forest road across the current agricultural / field landscape.	Using scenarios (see appendix) explore the best possible line. Exclude upper hill option due to the scale and degree of change from the current situation. Exclude valley bottom option due to proximity of water (potential pollution) and archaeology (potential damage). Retain some existing shelterbelts to hide the road. Proposed location of the road is to be situated on the lower slopes. See 3D visualisations for results.
The change in land use will change the landscape. There is a relatively complex arrangement of rounded hills, ridges and steep sided valleys on the site form a visually significant and intimate backdrop to Cardrona village, and a sequence of views from A72. Panoramic views are also significant from south of the Tweed.	Poor woodland design would have a negative effect on the landscape by exacerbating the poor landscape design including shape scale and diversity. Mono-culture planting of spruce would also have a negative effect on this fantastic landscape in the Tweed Valley Forest Park.	Recognition of landscape character. Designing shapes taking account of landform that predominates. Increasing scale with increasing distance from viewpoints. Higher diversity at lower levels e.g. CCF and parkland trees. Ensure interlock with forest edges including existing Glentress Forest and Glen Ormiston Estate.

Brief Description of the receptor / factor	Description of Potential effect.	Description of Residual effect following mitigation
There are two **private water supplies** located in the proposed afforestation area and there is concern that the change in landuse will have a negative impact on the quality and quantity of the supply. The current landuse of the area is sheep grazing and this sets the base line for water quality. Only occasionally during dry periods does demand outweigh supply. Sheep compact the soil and can make it more impermeable to water.	By removing the farm stock and creating woodland this has a positive impact on the water quality and also potentially increase quantity of water soaking into the ground through better soil conditions. However, if the land were to be planted with commercial conifer trees there is potential for reduced quantity of water due to higher levels of evaporation from conifer tree - during dry times the supply may suffer more frequent shortfalls.	To mitigate the potential impact and minimise the risk of the new planting affecting the reliability of the supply and to maximise potential water quality benefits it is proposed to plant c. 70% of the catchment area with broadleaved trees – there is much less **evaporation** of rainwater from broadleaved trees compared to conifer trees. In the area of the catchment where there is greatest risk to **pollution** the broadleaved planting will be low density and scattered and once established this will become a natural place where no timber will be extracted. Overall it is proposed that the design will have a positive effect on the private water supplies. See appendix water supply report.
Natural water courses are abundant throughout the site, from small water courses through to the larger River Tweed (Designated SAC SSSI). There are few buffers currently and farm stock are free to	There is a positive effect on the quality and regulation of flow through woodland creation provided it is designed as per F&WG – native woodland buffers.	New native woodlands will be created with buffer zones on water courses see map – These will be permanent features being established for environmental and biodiversity reasons – there will be no future harvesting and

access and pollute the water.	If operations were to be implemented to poor standards there is potential for water pollution. There is potential to increase peak flow and therefore increase flood risk in Hope burn.	machines in these areas. In the long term they will become categorised as Natural Reserves. The operations will be managed as per F&WG. Key issues during ground preparation operations includes: type, timing, distance from water course. The trees will improve the ability of the soil to absorb water, forest drainage will not run directly into water courses and will be separated by a wide buffer zone of flatter ground. These are improvements over the current situation and will provide adequate mitigation.
Archaeology. There are three SAMS on the site including Nether Horsburgh Castle, Horsburgh Castle Farm and Nether Horsburgh Enclosure. Also recoded on the survey were approx 30 other sites of local and regional importance including sheepfolds, structures, rig and furrow, old quarry, possible enclosures etc.	There is potential to have a significant negative effect on the archaeology if the features were to be disregarded. Ground preparation and tree planting could cause irrepairable damage to the features. The features could be lost forever in the dense forest. This would be significant environmental impact and must be avoided.	The whole site a walkover survey conducted in 2012. The SAMS will be covered by an agreed management plan with Historic Scotland. Planting buffers of at least 20m will protect the SAMS. Archaeology environmental Guidelines will be followed. Planting buffers of at least 10 -20m on all features with the exception of old quarries where there is no buffer planned. Where possible access will be maintained to the features by leaving areas unplanted. As protection of archaeology is a key

		objective of the project the overall effect will be positive rather than negative.
Late in the design stage and during final consultation two potential additional **features** were identified. 1) A possible prehistoric settlement at NT 29827 39899 2) Potential rigg and furrow above Nether Horsburgh Enclosure. Relict medieval (potentially prehistoric) cultivation remains. These extend between the Dirtpot Burn in the north and west and the High Wood in the south and east.	1 The planned forest road crosses this potential feature and any history of the feature would be lost if this was disregarded during the planning and operation. 2 If disregarded during the planning and operational phase there is potential for ground preparation and drainage to cause significant negative impact to these features.	1 Once identified as a potential site we commissioned a **survey** by a Archaeology consultant and liaised with SBC Archaeologist to identify the best course of action. We agreed that the best course of action was to include a **strip map and record** on this feature before the road construction. This solution allows us to understand more about the site whilst partially retaining the feature. 2 As above, survey was done and SBC liaison took place. No further evidence was found during the survey and was not possible to see linear features on the ground. The mitigation is **scattered hand planting** rather than dense planting and there will be **no ground preparation** permitted across this area. Structures on this site should be left **free of trees** (20m buffer)
Landslip potential. There is a history of landslip and unstable	Inappropriate development or ground disturbance on the site has the potential	Mitigation for landslip has been a key driver in the design of the proposed

ground above the A72 at dirtpot corner. SBC have installed ground stability netting and undertaken various survey work and planning work.	to make the land less stable and this may have the effect of land slipping onto the road and blocking the road or causing an accident.	new woodland from the start and FCS has worked alongside SBC since we acquired the site in 2011 to plan remedial and stability work. For the actual woodland creation project the plan is to plant shrub species e.g. HAZ, HAW, JUN immediately above dirtpot corner. This will help bind and consolidate the soils but the key is to limit to short height species so they can not blow over and destabilise the soil. The planting map shows realignment of the access track leading to the East of the site; the proposed new track is some 200m from the A72 compared to the old track that was only 30m above the A72. Forest and track drainage above dirtpot corner will aim to divert water away from the risk area.
Nutwood SSSI Upland mixed ash woodland situated just above the A72. The latest SNH site monitoring reported the current condition assessment as Unfavourable Declining.	There is a positive effect on the SSSI due to the woodland creation nearby and the improvement works planned to the SSSI. The site can benefit from protection and also potential native woodland expansion on the edges of the SSSI	The positive effect on the woodland described opposite will improve the condition from 'unfavourable recovering' to ideally 'favourable' condition as soon as possible.
UKBAP Priority **Open habitat** – Upland Heathland. This habitat occupies significant areas on the East of the site with almost continuous cover on the higher	The potential effect of planting woodland across this extensive area (c. 100ha) of upland heathland would be a loss of UKBAP and EU habitat and in some ways would be a failure to meet obligations	The design proposal will keep the vast majority of the habitat open. Upland conservation planting above the fence will be created to help black grouse both in terms of habitat and feeding

ground between Lee Burn Head to Mill Rig to Black Knowe and along to Habs Cleuch. The area is a potential habitat for FCS priority species **Black Grouse**	and objectives of conserving these habitats. There would be potential loss of habitat for Black Grouse. There would loss of landscape value, both viewing onto the heathland and views looking from the hill tops would be hidden by trees. Overall this would be a significant negative effect.	opportunities. Overall, it is suggested that the residual effect may be positive rather than negative.
Birds of conservation concern include: • Meadow Pipit • Sky Lark • Curnew • Cuckoo • Lapwing • Fieldfare There are nearby populations of Black Grouse (FCS priority species)	Potential negative impact on many important species if open habitat was lost to afforestation	The proposed Black Grouse habitat improvements will have a positive impact on the Black Grouse and other upland breeding birds. The broadleaf planting will have a positive impact on most species seen on the survey. For Black Grouse the heathland habitat is maintained and improved, BG conservation planting for food and shelter, fencing alignment changes to avoid conflict with BG, fence markers to reduce risk of bird strike.
To protect the investment of woodland establishment the proposal includes a **deer fence** around the area plus deer control. Given the species diversity including 60+ha of broadleaves and many softer conifers it is considered very appropriate include this deer fence. Without a deer fence there would be	If poorly designed, the fence could cause a significant negative impact. Black Grouse survival would be effected by bird strikes on the deer fence. The fence could create visual impact on the skyline. The fence could create a negative visual impact near the A72. The fence could restrict public access.	To reduce bird strike risk the fence will be sited in gullies/lower areas where possible. To help Black Grouse to see the fence we will use fence markers and situate the deer fence above the tree line where it can be seen. Fence markers will be installed along the East edge. The fence will not be located on the

a high risk of failure due to Roe deer ingress from Glentress and surrounding properties.		skyline but lower on the hill. Nearer to the A72 the fence will be located behind buildings and behind existing and future woodlands: these design features will help reduce visual impact. The fence will have numerous gates for horse, bikes and foot access. Through planning above mitigation for the issues raised opposite it is proposed that the fence will create only minor negative impact.
Public access in the Tweed Valley is an important issue and the change in landuse creates an opportunity to improve public access over the current baseline of enclosed agricultural land with stock fence. Sheep and cattle currently limit the access opportunities – especially for dog walkers. Recent Core path improvements to the South of the area will increase the general public access demand. For those who do access the land, fantastic views can be had along the tweed valley and beyond.	Currently, very few people use the land for public access. Exclusion of the farm animals and removal of internal fences for change to forestry should have a positive effect on public access. However if planting designs and deer fences were to be implemented without consideration for public access this would be a missed opportunity. Although walkers, cyclists and horse riders are welcome to use the land under the SOAC, they would find it difficult to roam amongst dense forest and indeed they would find the deer fence an obstacle and would find it difficult to get access and egress. Large scale and dense tree planting could hide views.	The woodland design aims to enhance public access over the current baseline via the following: 1 Removal of sheep and cattle. 2 Encouraging public access from Glentress Peel and existing Glentress Forest and also from the East from Lee Pen and Black Know areas. 3 Provision of pedestrian and horse gates in the Deer fence at specific locations where there are potential and safe links to neighbouring land. 4 Design of the new forest to keep clear potential walking routes e.g. burnsides, informal routes to Archaeology, informal routes to views. 5) Design the woodland to retain prominent views from locations e.g.

		Bught Hill, Castle Hill, Black Knowe.
Change of landuse from Agriculture to Forestry will have impact on the economy and business development	The woodland proposal will have a significant positive impact on tourism and recreation and forestry economies. The project adds 50% area capacity to existing Glentress area and this will be additional to the tourism development benefits already had by the local economy. The economy will also benefit from additional forestry landuse e.g. as laid out in the CONFOR Eskdalemuir report of February 2014 The loss of the farming land can be seen a relatively insignificant as the area around Innerleithen, Peebles and Cardrona has become increasingly urbanised over the past 4 decades and there is little reliance on farming. See Agric capacity report for more info.	To mitigate against any negative agricultural impact the following has been included in the design: • The best fields on the site in terms of productiveness are the flat fields by the A72 and it is proposed to keep these in agriculture • Potential Temporary grazing at Kirnlaw for c.10 years will help with providing a transition between forestry and agriculture
Potential impact on Solar (PV) performance at Hope cottage. The off-grid cottage has a relatively small Solar set up including a system whereby the solar panels charge batteries that can be used to generate electricity for the house. The cottage sits deep in a North-South aligned valley and the panels are West facing taking advantage of the afternoon and early evening sun.	The planting of trees to the North of Bught Hill (which will be seen on the horizon from Hope Cottage) will indeed have a small negative impact on the available direct sunlight hitting the panels and therefore generation of electricity. To assess the degree of impact we need to recognise that the performance is already significantly reduced due to the alignment and the shade cast by Bught Hill and any further shading by trees will	To mitigate against impact the following issues have been built into the plan. • Avoid **all** planting in the small field immediately to the South West of the property and retain this as open space so as not to impact on the light for the solar panels and also avoid potential impact on amenity light on the property. • Assuming Option 1 road line

The late evening sun will already be blocked by the hill side. The system is already significantly limited by the alignment and a much better performance would be gained through south facing (perhaps ground mounted panels)	have an impact further. It is also appreciated that at the point at which the sun sets over Bught Hill, this is also the point at which the panels are in direct alignment with the sun making the tree planting a potential negative impact. It is fact that this poorly performing system will be impacted further and the extent of impact will be related to the amount of reduced sunlight cast on the panels. Albeit when the sun sets it disappears more quickly. From simple observation on site Alan Gale has estimated that the loss of sky view is c. 5%.	restrict the planting to the point at which the new road enters Glentress forest and thereby reducing the effect of blocking sky view from the house. It is appreciated that the large future coupe linking through from Kirnlaw will be planted in c. 10 years and once established this will start to have an impact but by this time (20 years?) the solar panels may be reaching the end of their life and or new technologies will be developed.

Appendix III Forest Design Plan Consultation Record

Consultee/event	Date contacted	Date response received	Issue raised	Forest District Response
Public consultation drop in meeting, Cardrona village hall	Advert in Peebleshire news and Southern reporter	15/12/11	Public consultation drop in 15 Dec 2011 between 1400hrs and 1900hrs to share site analysis to date understand the community desires that may be built into the plan. Key issues raised by attendees was requirement for a natural place including landscape and general public access. Other issues raised included request for wood allotments and vegetable allotments	Taking issues most issues through to design stage. Wood allotments being considered for other areas with existing tree cover within the Tweed forests. Vegetable allotments not appropriate for the setting and access at Nether Horsburgh.
Stakeholder meeting Glentress Peel and Nether Horsburgh 26th January 2012	23/12/11	26/1/12	Significant discussion throughout the day on how economic development can benefit the wider community. The importance of Glentress as a visitor attraction and potential for NH to support wider forest. The design should future proof the forest. Opportunity for diverse woodland should be taken. Much guidance given on environmental issues including water, landscape, heritage, open habitats all of which should be protected.	Taking these issues through to design stage
Separate consultation meeting at Scottish Borders Council Offices 28th March 2012	22/3/12	8/5/12	As few SBC staff were not able to attend the original scoping meeting FCS agreed to hold separate meeting. Main issue was the need for diversity in the woodland design to support and deliver business development and tourism management objectives. Future proofing the woodland to accommodate development opportunities in the future.	Noted and taking through to the forest design
James Hammond Deer Commission		No Comment		
Andrew Panter SNH. Karen Rentoul attended stakeholder meeting	2012	Ongoing	At stakeholder meeting Karen provided most up to date report and advice on Nutwood SSSI.	
SNH Karen Rentoul	2013		Concern of potential sediment running off the hill ground and inundating the buffer strips, parkland area and reaching the designated area.	The hill ground planting and all of the site will be planned and managed as per Forest and Water Guidelines which stipulates a standard for ground preparation type, drainage, timing of operations and general good practice to ensure that run off is slow and avoids siltation.
			The proposed new forest road crosses a tributary of the Tweed and this will require close scrutiny and consultation with SEPA	Consultation will be consulted by FCS roads engineers during the design and planning stage of the forest road.

			The 50% NBL mixture above Nutwood should complement the SSSI	The species being planned for the area will complement the SSSI and species will include birch and hazel. Unfortunately Ash can not be planted due to ash dieback restrictions but ash natural regeneration will be encouraged and accepted.
			Due to the size of the area a competent deer management plan will need to be created. see www.bestpracticeguides.org.uk/planning/dmps	FCS deer management officers are fully involved in the planning process and a Deer Mana Plan will be created.
			Site meeting to develop the SSSI management plan in 2014.	FCS and SNH have agreed on the principles for the Management Plan and this is being written in 2014.
Nick Yonge, The River Tweed Commission		No comment		
SBC Road department		Ongoing	FCS request for a new connection to A72 for forestry traffic from Glentress Forest. Ongoing liaison with FCS and SCB between 2012 and 2014 and SBC's preferred access was existing NH house access but unfortunately FCS have no legal right to use this road and have been unable to secure permission. SBC next preferred option was immediately West of this entrance and a Planning Permission Application was made in May 2014. Full planning permission was granted in August 2014 for a connection point immediately to the West of existing Nether Horsburgh Entrance.	
Andrew Millar Built and natural heritage manager SBC		Ongoing	Supportive of proposals and reiterated the importance of future proofing.	Noted
Erica Niven Access Officer SBC		Ongoing	Assistance and advice given on existing and potential access routes	
Jim Knight Landscape Architect SBC		23/3/12 30/1/14	Explained the unique opportunity for diverse woodland offering many diverse benefits including timber. Wide species mix recommended. Wants a better link to existing Glentress. Would like to see better connection and interlock with high wood.	Noted With JK and FCS Landscape architect these have been revisited and improved. There are two options here for the design: -Design the new woodland high to connect to the top corner of high wood but this would not follow landform. -Design to landform and leave high wood sitting isolated up the slope. Agreement reached with JK to link half way up the wood with MB and Scots Pine (green colour)
Andy Tharme Biodiversity Officer SBC			Biodiversity support offered	Noted
Chris Boles Regional Archaeologist		19/12/13	Chris raised concern with two features that were not noticed on the original full survey and asked FCS to investigate	FCS commissioned a further survey to better understand the features and have agreed mitigation of both features with regional archaeologist
Mike Fraser RSPB		No comment		
Alan Church SEPA		Ongoing	Supports proposals. Reinforced the need for careful consideration of water quality and operational workings including adequate buffers. Provided information on diffuse pollution	Noted

Sandra Archer and Deirdrie Cameron Historic Scotland		Ongoing	Offer of support and advise on archaeology	Noted and adequate buffer zones built into the area of the SAMS
Karen Ramoo Red Squirrels		No comment		
Ian Laidlaw Forestry Commission		Ongoing	Supportive of the proposal during early consultation stage and the design stage.	Noted
Mrs Mathieson Peebles and district Community Council		Ongoing	Supportive of approach and community consultation	
Mrs Couchman Innerleithen and district CC		Ongoing	Assisted in setting up the approach for the community consultation	
Calum Rankine Scottish Borders Forest Trust		No comment		
Chris Land Southern Uplands Partnership		No comment		
Luke Cummins Tweed Forum		2014	Would like FCS to reinstate the natural water route just above where hope burn meets the Tweed.	Correspondence with Hugh Chalmers and Luke Cummins and FCS keen to build this into the forest plan. This may be part of the Forest Design Plan or will be implemented at a later date depending on funding and resource availability.
Paula McDonald Visit Scotland		Ongoing	Supportive of the potential for tourism development	
Joe Wilton Tweed Green		Ongoing	With representatives from Tweedgreen requested support for wood allotments initiative	Other options for woodlots on FCS land were discussed with Tweedgreen
Barry Prater Butterfly Conservation SE Scotland		13 Jan 3 Feb	Expand native woodland from Nutwood to Dirtpot Plenty open space in a mosaic for butterflies. Prefer broadleaves.	Noted and thank you for the information

Public meetings 11/12/13 Cardrona and 18/12/13 Glentress Peel

50 posters posted to immediate neighbours

Written to all agric neighbours

Asked stakeholders for comment on the preferred scenario

One to one visits to some immediate neighbours

Erect banner on A72 to advertise public meeting on 11/12/13

This document aims to keep a weighted record of the issues raised from face to face meetings, from letter & e-mail responses, from completed questionnaires and from drop-in conversations.

The issues raised	Count
The new road	
Dislike of the new access at the A72 junction - a number of strong negative views expressed.	IIIIIIiii
Like the new forest road running the length of the area	IIIIIIi
Informal access on the new forest road - appreared to be strongly supported.	IIIIIIIIIi
Will there be informal car parking at the start of the new road?	IIIi
Concern of noise from the new forest road. Strong view from immediate neighbours	IIIIIi
Would like restricted timing on the timber haul route	IIIIi
Road should be by the burn on the existing track	I

Public Consultation drop in meeting 9/11/12 Sent proposal to stakeholders (including RPID)			Access	
			Additional recreational facilities requested including family walking and picknicking biking	IIIIIIIIIiiii
			Want direct access across from the Cardrona junction for recreation. Need to make this a safe crossing. Many thought putting the road in here would allow this.	IIIIIIii
			Design informal access / walking routes and circuits and include specific access gates	IIIIi
			Want access to High wood and the "speck"	iii
			Want 3 specific horse gates intalled in the deer fence backing onto Glenorminston. Many people will use. Including walkers	II
			Walks need to be designed to allow people to walk in sunshine	I
			We should be investing in the mountain biking trails on this site to keep up with Wales who are trying to capture our market. This is a wasted opportunity.	II
			Want additional walking loops from Glentress Peel out onto Castlehill	II
			Make a learner skills area for learner bikes at Casetlehill	I
			Want walk loop around castlehill and ponds area - separate from bikes	I
			Private water supply	
			The Nether Horsburgh water supply is important both in terms of quality and quantity. There is concern amongst the water users and they all like the fact that FCS will be considerate and plan the design of the forest taking the water supply into account. A detailed plan of the management of the private water supply is required.	IIIIIII
			Woodland	
			Disliked parkland trees on the lower fields. This was expressed at first meeting when the visualisation suggested too many trees.	III
			Liked Parkland trees on lower fields	IIIIIIIii
			Liked the mixture of native and conifer trees	IIIiii
			Liked the design of the woodland including broadleaves	IIIIIIIIii
			The species diversity and general design- The words fabulous and fantastic were used by 2 people.	III
			Avoid Xmas trees and leave this area as minimal intervention - see what happens	I
			Need to give more priority to timber and financial return	II
			Suggestion of doing Agro forestry scheme (likely to be SRDP option and need a demo site)	I
			Be more adventourous with tree species - Norway Maple, Red Alder, European Silver	III

				Fir specifically mentioned.	
				Noble fir timber is worse than Grand fir	I
				Spacing 50% OS in mix wth broadleaves is too much - think this was more about the spacing of broadleaves than the amount of broadleaves ie grouped broadleaves and closer spacing	II
				DF / SS grading from 100% DF lower down to 100% SS higher up OK	II
				How are we proposing to manage the CCF in the future - may influence how we do the mixtures.	I
				OS is better than Xmas trees on Kirn law.	
				Peebles Show	I
				Want the flat field area designed to allow the Peebles Show to use the Nether Horsburgh flat fields. Don't make the parkland trees too close. Central arena area of sufficient size needs to be kept clear of trees	IIIIII
				Landscape and Views	
				Keep views out of the woodland	IIII
				Topsoil should be stripped off the flat fields and the opportunity taken to create a wildflower meadow	I
				Disliked the idea of wildflower meadow	I
				The landscape design	III
				General	
				Public wanted woodland lots for firewood to buy or lease	I
				Area to run forest school, fairly remote suitable for fire.	I
				Need to negotiate with the SBC roads department to solve the problem of landslip and road disruption. This issue is not addressed in this plan and this is outrageous. Some thought FCS should lead the council into agreeing a plan for Dirtpot corner	III
				Prefer sheep to trees - not strongly expressed.	II
				Should keep the flat fields in agriculture as some of the best arable fields in the area – at least be able to take silage off them	III
				Reinstate the burn across the riverside field (currently a drain)	II
				DO NOT want allotments	II
				We need to link up with Abbotsford who might be making a film about Sir Walter Scott who planted trees at Bowhill – FC should take the opportunity to promote modern woodland creation as part of this project	I
				Deer Control - sceptical about a 3 sided fence	I

			Squirrel control - Should be controling greys to protect reds	II
			Squirrel Control - Need to control greys to protect the productive broadleaves - need to agree when this can start.	I
			Operations - Should be planting over >1year - also concern of a scheme of this size will pull contractors from else where.	III
			Operations - Have to allow time to source the right seed sourse - are the oak sown now for Nether Hors?	III
			Operations - Should be encouraging local labour and local contractors.	II
			Woodlots	i
			No opportunities for public involvement.	
			Run off concern at cottages	
			Parking concerns of layby at Nether Hors Cottages. The would like to secure additional parking on their side of the road.	
			New LIDAR imagery brought to the meeting showed further arch potential which may impact on the planting or at least the ground prep and also the road line. SBC arch to provide written comments before Christmas on the importance of the sites and recommendations for how to manage them	I
Rubens Singlton	2013		Good that large areas of open are retained on the open ground for black grouse and moorland plants and fauna. It would be good where landscape constraints permit to provide wider than normal rides for butterflies, bees, hoverflies and lizards. A document was provided giving guidance on managing woodlands for butterflies and moths. The parkland area could be managed as a flower rich meadow (including hay making) giving huge pubic access and wildlife benefits.	Noted and open space and rides will be provided to maximise the benefits from the site. There is a large area of open space planned on the moorland. Coronation meadows site for FCS is at Yair Haugh These low fields will be maintained in agriculture with a few scattered trees.
Barry Prater Butterfly Conservation East Scotland.	2013		Nutwood SSSI is and important feature and opportunities should be taken to help safeguard and improve it. There are grazing pressures and also invasion of exotics. Prefer broadleaves	For the bulk of the area we should create a mosaic of planted areas with plenty of connected open space which will hold butterflies and moths. FC response - see proposed planting design with plenty open space and links along riparian networks. large areas of broadleaves are being planned
Royal Scottish Forestry Society - Lothian and Borders Region	2013		Overall we were very impressed at the proposed design which is imaginative and bold, containing a large proportion of productive planting with native elements	Noted

			where appropriate. We are concerned with the idea of a 3 sided deer fence based on the fact that the deer will not cross the river. Would like to see grey squirrel control at Nether Horsburgh from the outset. We believe that the continuous cover area would benefit for Abies Alba. Would like an area to be short rotation basis. Would like to see Norway Maple as a potential timber species of high landscape value. We question the Xmas tree proposal at Kirn Law due to high elevation We suggest seed source is considered at early stage. We understand that footpaths cycleway etc will not be installed at the outset. Given the recent investment in the Peel and its proximity to the new woodland this is a missed opportunity. We would like to see local labour used on the site.	Noted and most likely that the fence plan will include a carefully positioned 4 sided fence to exclude deer and be considerate of landscape and also appropriately sited and marked for black grouse. Grey squirrels will not be controlled specifically for this site unless unacceptable damage levels are found on broadleaf or commercial crops. Both Red and Grey squirrels area already resident in the Tweed Valley and have been there for decades with no negative interaction between the species. FCS resources for grey squirrel control are focussed North of the Scottish border to create a buffer zone to endeavour to stop the spread of Grey's Northwards and in particular to prevent the spread of the pox virus to the Red population. Grey squirrel officers are in place to carry out both monitoring and control. European Silver Fir is species we would like to see in the CCF areas but it is our understanding that it is best established under the cover of other trees and therefore will be included at later date It is not current FCS D&B Forest District policy to plant for short rotation crops but we will keep this policy under review. Will include this species in the mix of productive broadleaves to the West of Hope burn We are reconsidering this proposal and provided we can secure water for grazing we think that temp open space would be a better option until the felling and restocking of the existing Kirn Law hill is carried out to give visual integration Noted and FCS are developing a system to best deliver this. Some seed collected locally in 2013 Unfortunately there are no funds available at this stage in the project for new facilities. The sourcing of 'local labour' will be the prerogative of the contract company that wins the establishment contract. We are bound by civil service rules on procuring projects such

				as this and can not include a clause that favours local labour
Liaison with SBC relating to the connection to the A72 Planning permission	2014	2014	The council gave advice on the requirements of a planning permission application	The application was submitted in the standard requested.
Pre submission advice was given by Forestry Commission Scotland	2014	2014	FCS wanted to see evidence of how the route of the proposed timber haul route was considered and the single proposal chosen Also advice given on the format of the EIA determination.	The submission includes 5 options that were considered and the chosen recommended option. EIA determination and Forest Design plan being submitted together.
Much neighbour liaison (including 10+ visits) to neighbours properties on the lead up to the submission. These meetings were to better understand any concerns and issues and to amend the plan to provide mitigation.	2014	2014	Some were concerned that the private water supply would be effected by the woodland plan. Some of the neighbours are exploring the possibility of a public water supply and this route may involve crossing FCS land. Much discussion regarding the specific line of planting near to neighbours property. Some discussion regarding fencing and gates for access. Some concern from neighbour regarding the route of the new proposed road through the flat fields and on the slopes above hope cottage.	A hydrologist undertook a site survey and report and this was shared with neighbours. Mitigation planting was included in the plan including a future Natural Reserve area around the catchment area. FCS will submit the woodland proposal on the basis of using the private supply but FCS will help/support the neighbours achieve their aspirations of public supply if this is what they want. In almost all cases the design has been changed to accommodate the neighbour wishes Fences and gates amended to accommodate wishes of the neighbours. Route amended to make it further way from the neighbouring properties.

Appendix IV Tolerance table

	Adjustment to felling coupe boundaries	Timing of restocking	Change to species	Windthrow response
FC Approval not normally required	0.5 ha or 5% of coupe – whichever is less.	Variation of less than 2 planting seasons from standard restock year, 4 years post-felling.	Up to 5% species exchange	Up to 1.0 ha.
Approval by exchange of letters and map	0.5 ha to 2.0 ha or 10% of coupe – whichever is less.		>5% species change	1.0 ha to 5.0 ha – if mainly Windblown trees. Between 5.0 ha to 10.0 ha in areas of low sensitivity.
Approval by formal plan amendment	Greater than 2.0 ha or 10% of coupe.	Variation of greater than 2 planting seasons from standard restock year, 4 years post-felling.	Change from broadleaf to Conifer Reduction in native broadleaves by >5% Reduction of >10% of productive net area	Greater than 5.0 ha in areas of medium to high sensitivity.