

Moray & Aberdeenshire Forest District

## Deeside Woods

Land Management Plan



Plan Reference No: LMP 23

Plan Approval Date:

Plan Expiry Date:

# Deeside Woods Land Management Plan 2016 - 2025

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

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



The mark of responsible forestry



# Deeside Woods Land Management Plan 2016 - 2025

## FOREST ENTERPRISE - Application for Forest Design Plan Approvals in Scotland

### Forest Enterprise - Property

Forest District:	Moray & Aberdeenshire FD
Woodland or property name:	Deeside Woods
Nearest town, village or locality:	Ballater
OS Grid reference:	NO 371 956

### Areas for approval

	Conifer	Broadleaf
Clear felling	22.2 ha	
Selective felling		
Restocking	14.8ha	12.3ha
New planting (complete appendix 4)		

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~~\* /~~deforestation~~\*/ roads\*/ ~~quarries~~\* as detailed in my application.
3. I confirm that the initial scoping of the plan was carried out with FC staff on
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 consultation and scoping has been carried out with all relevant stakeholders over the content of the of the design plan. Consideration of all of the issues raised by stakeholders has been included in the process of plan preparation and the outcome recorded on the attached consultation record. I confirm that we have informed all stakeholders about the extent to which we have been able to address their concerns and, where it has not been possible to fully address their concerns, we have reminded them of the opportunity to make further comment during the public consultation process.
7. I undertake to obtain any permissions necessary for the implementation of the approved Plan.

Signed .....	Signed .....
Forest District Manager	Conservator
District Moray & Aberdeenshire	Conservancy Grampian
Date .....	<b>Date of Approval</b> .....
	<b>Date approval ends:</b> .....

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## FOREST ENTERPRISE - Request for Approval of Thinnings

To: Conservator

Grampian Conservancy  
Portsoy Road  
Huntly  
Aberdeenshire  
AB54 4SJ

I apply for Authority to carry out a programme of thinnings within Deeside woods in Moray & Aberdeenshire Forest District during the 10 years commencing from the date of approval.

I undertake to identify any statutory designations which apply to any of the land to be subject to thinning, and to obtain the necessary permissions from the appropriate statutory body before commencing work under any approval which is granted.

Signed.....  
Forest District Manager

Signed.....  
Conservator

District Moray & Aberdeenshire

Conservancy Grampian

Date .....

Date of Approval.....

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## Forest Design Plan Summary

This plan is a review of Forestry Commission Scotland's management of the Deeside Woods. This plan area is made up of Cambus o' May, Pannanich and Inver forest blocks.

The purpose of the plan is to set out management objectives and prescriptions for the forest for the next ten years in detail, and in more broad terms for the following twenty years, which will fulfil the requirements of the UK Forestry Standard.

The main objective for the woodlands is to manage them for the benefit of the environment and biodiversity. The plan includes details of thinning, low impact silviculture and small-scale clearfelling that will benefit a number of key species, including capercaillie, red squirrel, black grouse, juniper and a significant number of other biodiversity action plan species.

## 1.0 Introduction

Refer to Map 1: Location

### 1.1 Setting and context

The Deeside woods area is made up of three forest blocks, Cambus o' May, Pannanich and Inver, which are all located along the river Dee between Aboyne in the east and Braemar in the west. The woodlands are all within the Cairngorms national park and are accessed from the A93, north Deeside road. Together the blocks cover a total area of 742 hectares. These woodlands are all of a similar size and set within the Dee valley forming a matrix with agricultural ground, grouse moors and native pinewoods.

### 1.2 Land management objectives

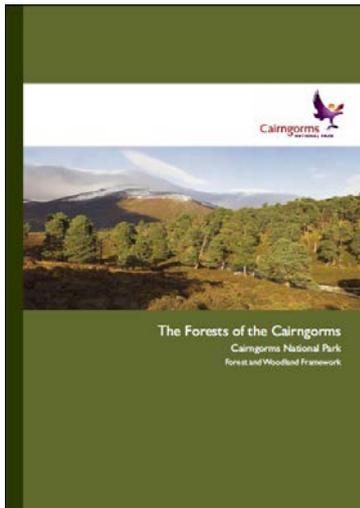
The purpose and objectives for managing these blocks of woodland have been identified following a review of:

- The physical context and existing woodland;
- The land management objectives of other statutory bodies;
- The physical capability of the woodland;
- The locational objectives identified in the Moray & Aberdeenshire Forest District Strategic Plan.

Analysis of the available information has led to the primary objective for the management of these blocks being to create woodlands with high environmental value for species, habitats and landscape.

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The Land management plan for the Deeside woods has been developed to contribute to the wider land management objectives of the Cairngorms National Park - Forest and Woodland Framework, which are:

- Promote multi-objective forest and woodland management that delivers environmental, economic and social benefits.
- Enhance the condition of existing woodland cover and expand to develop habitat networks that complement the landscape character and other land-uses.
- Encourage full range of forest ecosystems from valley floor to natural altitudinal tree-line in targeted areas and the re-development of woodland types that have declined.
- Increase the value of timber and other local forest products, strengthen supply chains and develop new markets.
- Promote the value of forests and woodlands as a major sustainable tourism asset, increasing the derived economic benefits to woodland owners and local communities.
- Promote community participation in forest and woodland planning and management.
- Contribute to national efforts to address climate change.

In addition to the overall priorities for the Cairngorms National Park as a whole, the following relate particularly to the Deeside Forest:

- Conserve and enhance the predominantly native character of the Deeside Forest;
- Restructure existing pine woodlands to create woodlands with an enhanced nature conservation and landscape value, whilst sustaining timber production;
- Encourage small-scale broadleaved woodland regeneration or planting projects on suitable sites where ground flora indicates remnant native woodland;
- Encourage the establishment of new native pinewoods with a varying broadleaved component in higher ground (pine-birch areas), especially

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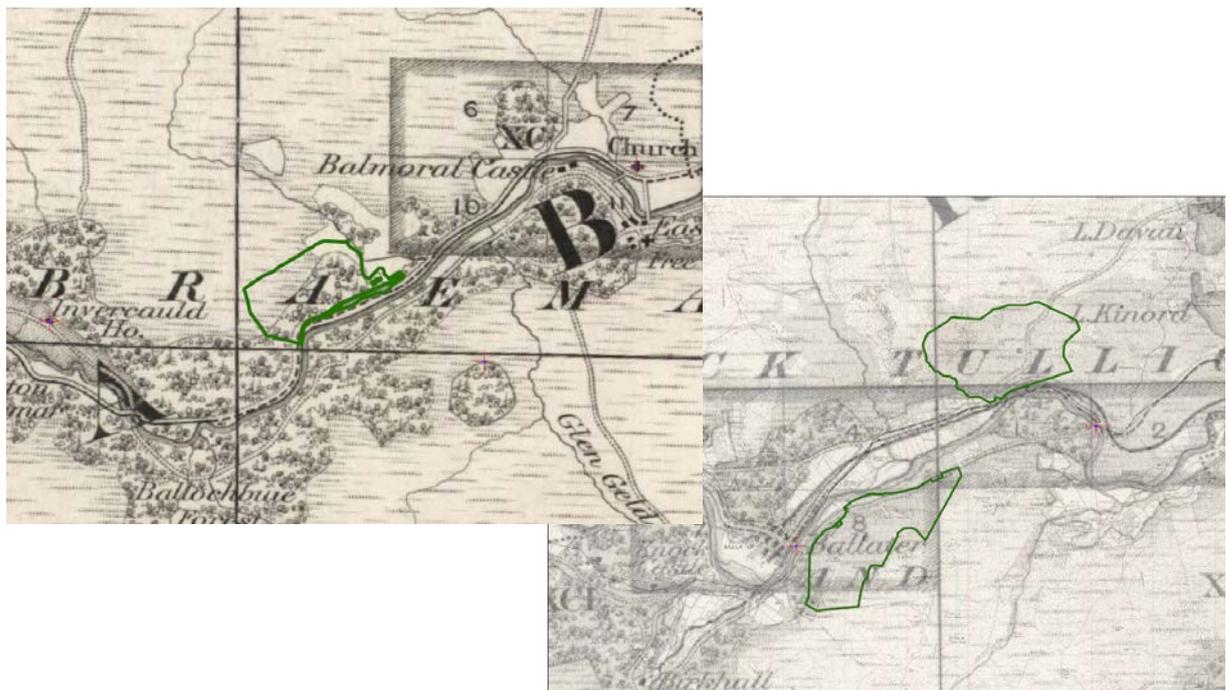
where this would facilitate forest connectivity between river catchments;

- Develop potential for forest habitat network connectivity with the Avon catchment;
- Retain approximately the same proportion of productive forests containing non-native species, with a preference for the lower ground, and with due regard to biodiversity, landscape and other land-use interests or objectives;
- Establish conditions to allow the development of sub-alpine scrub and a natural tree-line in the upper catchment in targeted areas.

## 1.3 History of the forest

The first Ordnance Survey map of Aberdeenshire and Banffshire was published between 1878 and 1883. The extracts of this map (see below) show that none of the current area of Cambus O'May or Panannich was wooded at this time. They were both open moorland. However the southern half of Inver is wooded with the upper parts of the block still under moorland.

Pannanich Woods were established predominately in the late 1940's and early 1950's around a core of woodland dating back to the 1890's.



## 2.0 Analysis of previous plans

Following the amalgamation of Moray Forest District with Aberdeenshire Forest District in 2008 the forest design plan programme was rationalised. This will allow us to take account of the wider impact of the woods on the local landscape and watersheds. To that end the three separate blocks of Cambus O' May, Pannanich and Inver have been amalgamated into one land management plan cover all the FES land holding in the river Dee valley.

Since the last plans were approved policy themes have been updated, and as a consequence previous objectives can't be directly compared with the current aspirations for the National Forest Estate. The following table highlights the main priorities set out in the previous plans. It describes how and if those aims were met and what the proposed management intent is to carry these objectives forward in this plan.



National Theme	Priority	District Strategic Plan	Forest Design Plan Objective	Cross-Reference - Current Plan 0 – No objective in current plan 1 – objective, but only nominal progress 2 – objective, and some progress 3 – objective, progress as per FDP	Proposed Measures
Climate Change	Medium	Carbon sequestration	Increase provision of deadwood habitat.	2 – Appropriate levels of deadwood retention agreed in work plans and checked at 75% visits Process lead by conservation team.	Where appropriate, ensure the retention of deadwood at levels appropriate to site conditions observed and recorded at 75% visits. Preserve existing deadwood during thinnings and retain windthrown stems where appropriate.
		Flood & Catchment management	Riparian Woodland	2 – Some work done to improve watercourses in previous plan	Manage riparian zones to maintain and enhance the existing habitat networks and extend the area where appropriate
Timber	Medium	Timber supply	Maintain a sustainable level of timber production from felling and thinning.  Control deer browsing	1 - Phase 1 felling coupes identified for Pannanich in last FDP not completed, due to a combination of lack of infrastructure and review of Capercaillie management 3 – Majority of thinning coupes identified in FDP completed, apart from Pannanich  2 – new ring fences on neighbouring estates has reduced pressure but there are still significant, damaging influxes of deer	Identify coupes and their felling dates based on production-optimization, change existing felling dates accordingly, provided other objectives are not seriously compromised. Ensure adequate infrastructure in place in Pannanich to facilitate thinning and felling operations. Undertake thinning where possible, to produce a sustainable timber supply (see Map 6).  Deer will continue to be controlled to achieve an average population of 5deer per 100ha. Control will be targeted on protecting restock areas.

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<b>Timber</b>	<b>Low</b>	Timber transport	Develop an efficient and effective timber transport network	<b>1</b> – New road was highlighted for Pannanich but this has been changed in favour of short transfer points in the east of the block	Use preferred timber haulage route to minimise potential damage to public roads. Forest road network is sufficient and well maintained in Inver and Cambus o' May with no major upgrading required. Current road in Pannanich is not adequate to service the proposed felling and thinning in the east of the block. Transfer points and loading bays have been identified for construction and are shown on map 5 Management.
<b>Business Development</b>	<b>Low</b>	Tourism	Attract more visitors and users	<b>2</b> – Car park, waymarked trails and picnicking facilities at Cambus o' May.	Main focus will remain Cambus o' May, whilst maintaining refuge north of powerline undeveloped. Informal access to Inver and Pannanich will be maintained.
<b>Community Development</b>	<b>Low</b>	Community engagement  Learning  Partnerships	Engage communities in the forest design plan process.  Engage with urban schools for outdoor education opportunities.  Maintain and increase work with partners.	<b>3</b> – Ballater and Braemar Community Councils consulted.  <b>0</b> – Cambus o' May used under permission by OWLS.  <b>0</b> – No active partnerships currently.	Maintain and enhance the relationship with both statutory and non-statutory consultees. Initial consultation carried out. Next stage of consultation will be in the final design-draft stage.  Continue to support use of Cambus o May by outdoor learning providers.  The district is open to approaches from the local community to become active in partnership working. Explore opportunities to work in partnership with RSPB, SNH and Ballater Royal Deeside Ltd.
<b>Access &amp; Health</b>	<b>Medium</b>	Recreation	Maintain and enhance existing recreational facilities.	<b>3</b> – Existing facilities at Cambus o'May Have been maintained.	This will continue to be a driver in the new plan period.



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<b>Biodiversity</b>	<b>High</b>	Species & Habitats	<p>Incorporate provisions for habitat networks</p> <p>Address the needs of priority species by utilising prescriptions from habitat action plans and species action plans.</p>	<p><b>2</b> – Conifers cleared from Culsten and Queel Burns and restocked with broadleaves.</p> <p><b>2</b> - The Deeside Woods lie within the core capercaillie area. Management of the forests to benefit capercaillie is a key objective which includes limiting large-scale clearfells and maximising LISS. The presumption is against fencing in the plan area.</p> <p><b>2</b> – The current plan does not specifically identify other species but refers to the management of the forest for BAP species.</p>	<p>Continue to manage riparian zones, natural reserves and moorland to maintain and improve the existing habitat networks and take opportunities to extend the area where appropriate.</p> <p>The Deeside Woods support populations of a number of key BAP species. The new plan will address the needs of these species through good forest management practice and site specific actions where appropriate. Forest operations will undergo a work plan process which includes environmental surveys undertaken in line with legislation and current guidance.</p>
		Invasive Species	<p>Restrict and eradicate invasive species</p>	<p><b>0</b> – No grey squirrel required in Inver.</p>	<p>Inver is part of a red squirrel stronghold. Management of the Deeside Woods will follow guidance for the management of woods for red squirrels by favouring small seeded broadleaves and conifer species preferred by red squirrels where possible.</p>

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<b>Biodiversity</b>	<b>High</b>	Designated sites	<p>Manage designated sites in accordance with agreed management plans.</p> <p>Manage PAWS in accordance with agreed plans.</p>	<p><b>3</b> – The current plan details the management of Muir of Dinnet SSSI in accordance with the agreed management plan. Site specific works carried out to improve riparian zone of SAC designated tributaries of River Dee under LIFE project.</p> <p><b>2</b> – Actions identified and addressed for Cambus o May &amp; Inver. Conifers not felled from site in Pannanich due to access difficulties.</p>	<p>This will continue to be a high priority objective for the new plan period and management regimes will reflect the agreed management plans.</p> <p>The new plan will continue work to restore the PAWS sites in the Deeside Blocks to native woodland. Sites will be monitored for regeneration of native species and enrichment planting carried out as required.</p>
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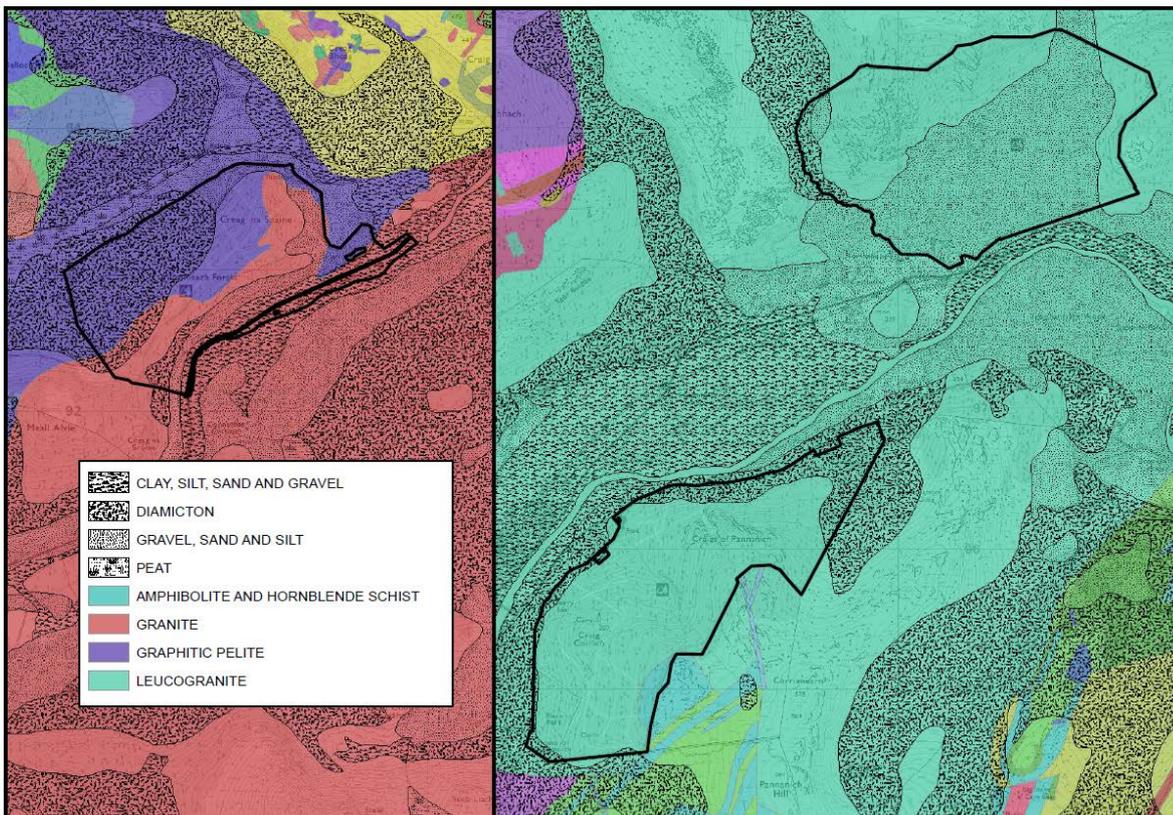
## 3.0 Background information

### 3.1 Physical site factors

Refer to Map 2: Key Features.

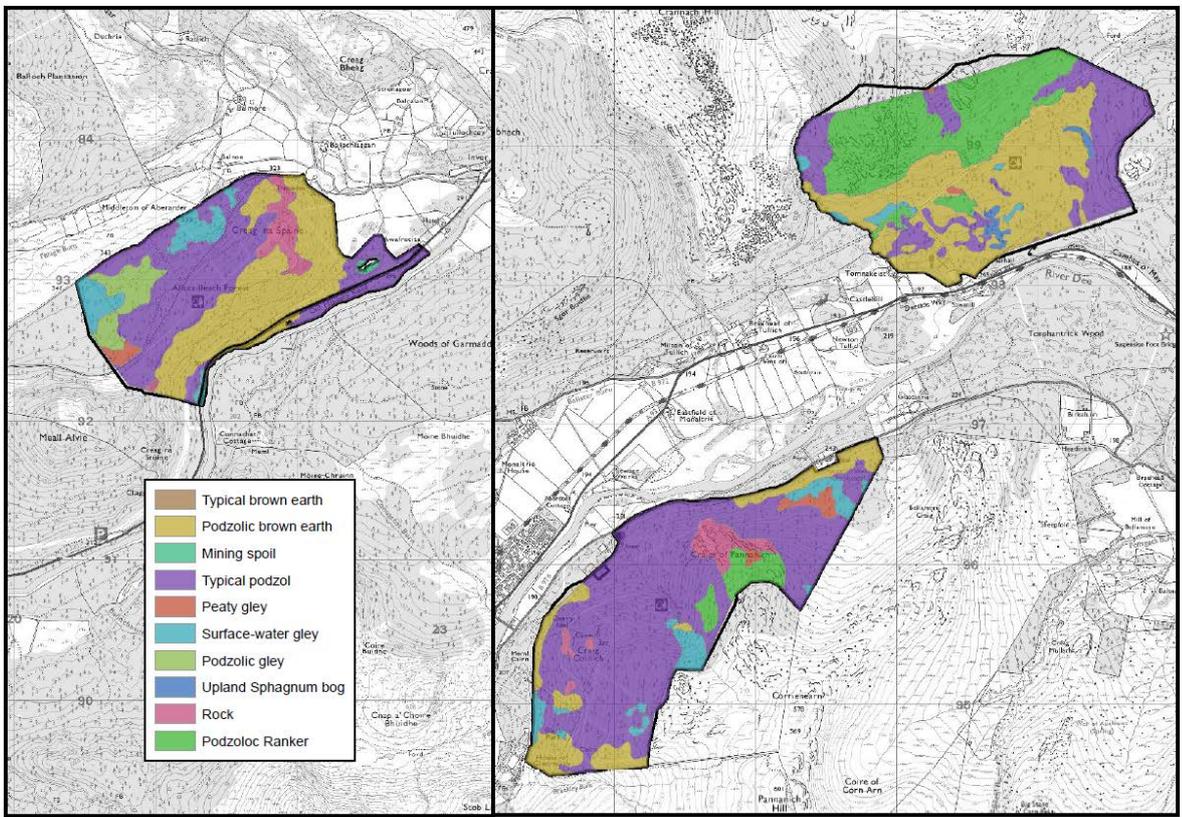
#### 3.1.1 Geology, Soils and Topography

**Geology** - According to the British Geological Survey, Geological Map of the UK the northern part of Inver is underlain with Graphitic Pelite with Granite under the southern part. Pannanich and Cambus are both underlain with Leucogranite, a light coloured granitic igneous rock with almost no dark minerals, with a very small area of Amphibolite and Hornblende Schist near the top of Pannanich. These rocks all give rise to overlying soils that have a medium level of nitrogen available.



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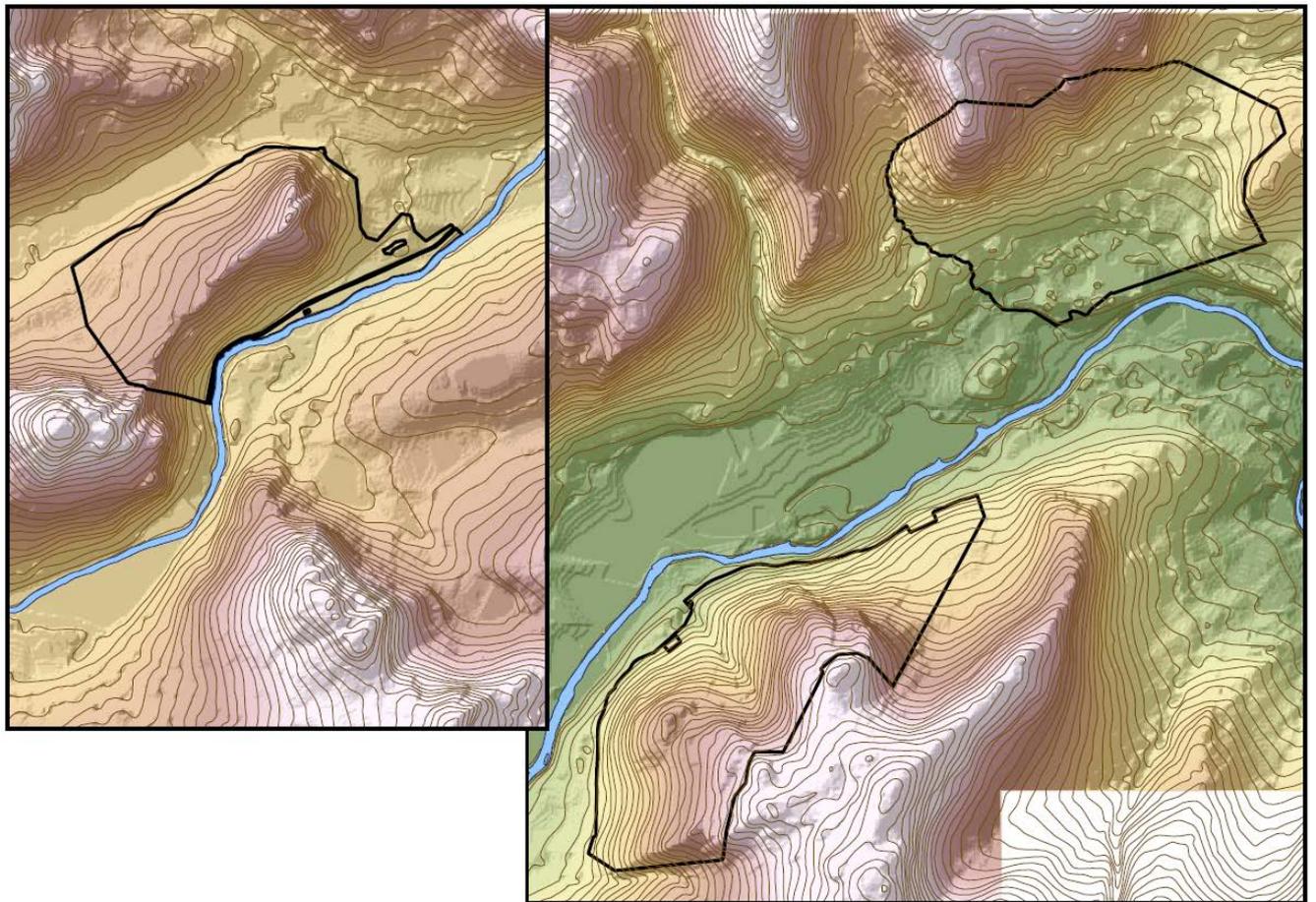
**Soils** – The vast majority of the Deeside woods have podzolic soils of some description. The lower halves of both Inver and Cambus are the better quality podzolic brown earths. While the higher ground of Inver and most of Pannanich is mostly typical Podzols. The upper half of Cambus is podzolic ranker with a soil depth of less than 30cm to the bedrock. These are all soils with a moisture regime that is slightly dry and a very poor nutrient regime. These factors both influence the species of trees that will grow successfully in these woodlands.



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**Topography** - The elevation of the plan area runs from about 180m above sea level in Cambus along the Dee valley up to approx. 500m at the top of Pannanich hill. Both Cambus and Inver have roughly a southern aspect while Pannanich is mostly north westerly. All blocks have some steep slopes that make forest management operations very difficult and expensive.

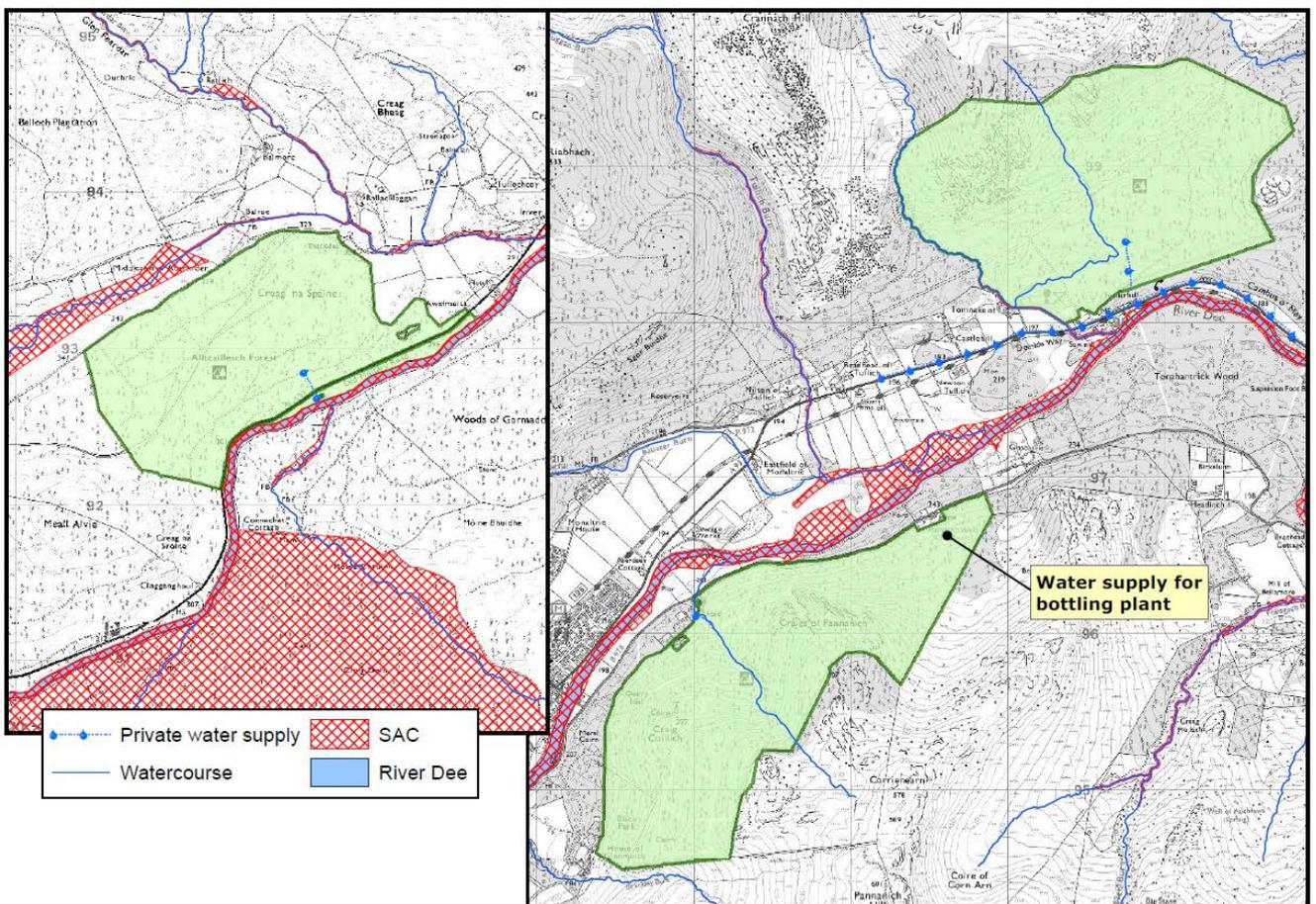


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## 3.1.2 Water

All three woodlands that make up the Deeside Woods land management plan are within the catchment of the River Dee. This is designated as a SAC for Atlantic salmon, fresh water pearl mussel and European otter. A number of tributaries of the Dee have their source within or above the woods.

Additionally there are private water supplies within each of the blocks and Pannanich is the source of water for a bottling plant. All these will be protected during any operations by following the UK forest standard guidelines for forests and water as a minimum.



According to the SEPA website there are two Potentially Vulnerable Areas to flooding. These are PVA 06/20 Aboyne which is adjacent to the eastern boundary of Cambus. The other is PVA 06/22 Ballater which contains part of Pannanich. The main reason for the flood issues in these two areas is the

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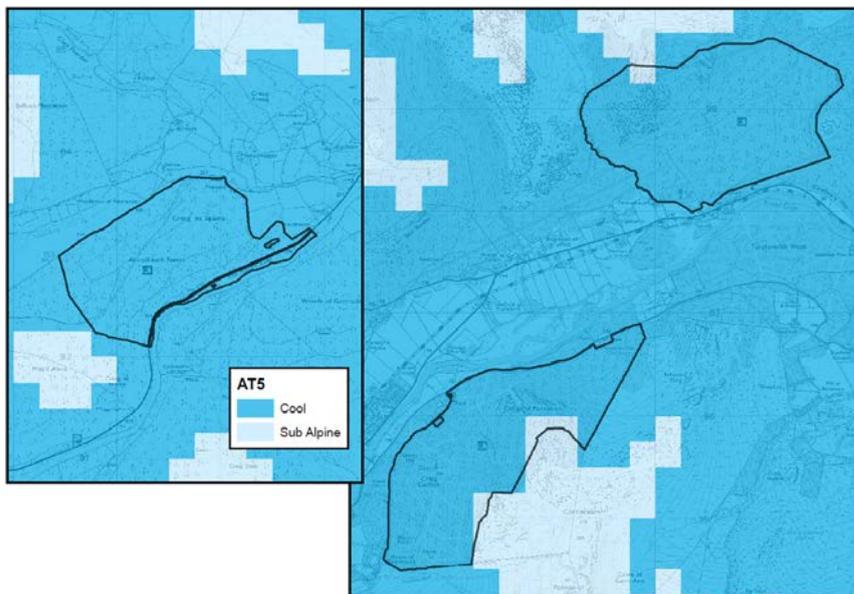
presence of the river Dee. Neither of the PVA reports highlights natural flood management studies or works as an action that needs to be undertaken to help alleviate the flooding threat. However as both Pannanich and Cambus contain watercourses that are tributaries of the river Dee all forest operations within these blocks will be undertaken in accordance with the forest and water guidelines to ensure no additional flooding risk is created. If opportunities present themselves to undertake work to help alleviate flood risks during the course of operations these will be discussed with the relevant flood management authority and undertaken if appropriate.

### 3.1.3 Climate

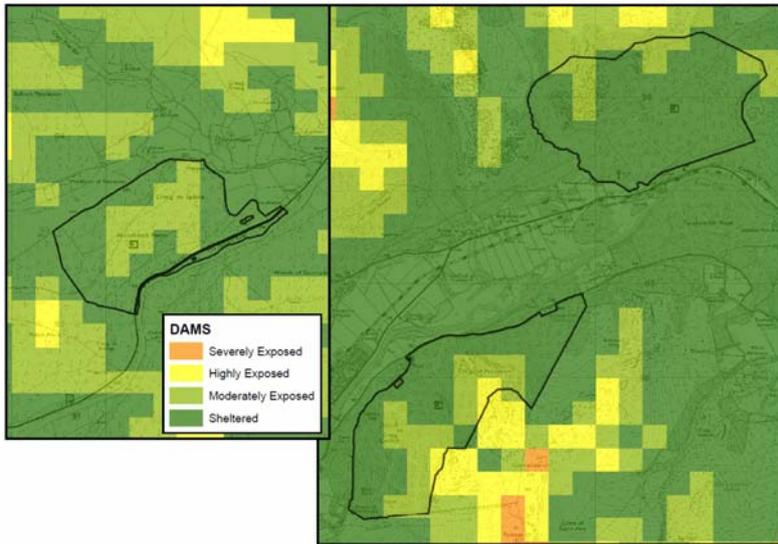
The climate data for the design plan area is obtained from the Ecological Site Classification system (ESC).

The results of interrogating this system gave the following data.

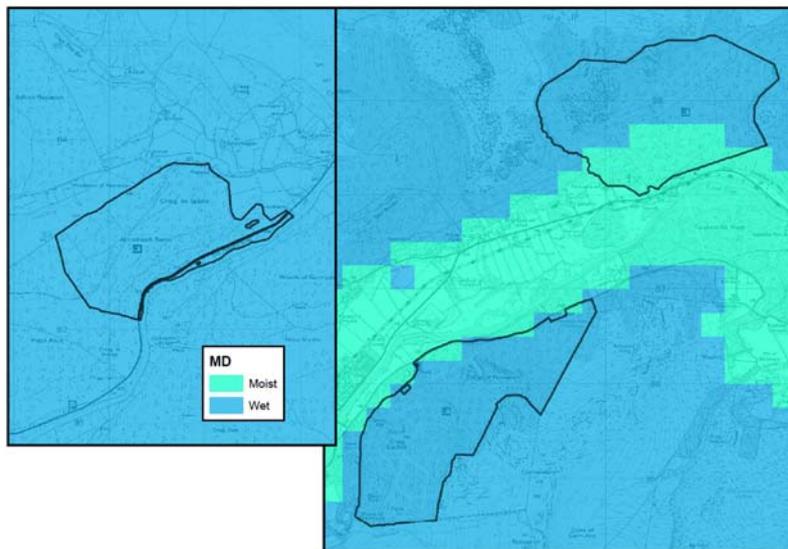
	<b>AT5</b>	<b>DAMS</b>	<b>MD</b>
Inver	790 - 976	8 - 14	31 - 70
Pannanich	726 - 1095	9 - 17	22 - 99
Cambus o' May	769 - 1093	8 - 15	31 - 99



**AT5 (Accumulated Temperature)** is the accumulated total of the day-degrees above the growth threshold temperature of 5°, which provides a convenient measure of summer warmth. The results for AT5 place nearly all these blocks in the “cool” zone.



**DAMS** is the Detailed Aspect Method of Scoring. This represents the amount of physically damaging wind that forest stands experience in the year. The range of DAMS is from 3 to 36 and windiness is the most likely limiting factor to tree growth at higher elevations in Britain. All the Deeside woods are in the sheltered to moderately exposed categories so windblow should not be a major factor in their management.



**MD** is the Moisture Deficit for the area. Moisture deficit reflects the balance between potential evaporation and rainfall and therefore emphasises the dryness of the growing season (rather than the wetness of the winter or whole year). These results place the blocks mostly in the wet zone.

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

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

## 3.2 Biodiversity and environmental designations

Cambus o May forest is part of the Muir of Dinnet SSSI, although this is solely for the geomorphological interest of the site. There are many eskers and kettleholes across the site.

The River Dee and its tributaries (Culsten Burn – Cambus o' May and Dalmochie Burn – Pannanich) are designated as a SAC for Atlantic salmon, fresh water pearl mussel and European otter.

The Deeside Woods are within the Cairngorms National Park and Cambus o' May is adjacent to the Muir of Dinnet National Nature Reserve.

Inver is within a National Scenic Area and Environmentally Sensitive Area.

Pannanich is adjacent to the Glen Tanar SPA for capercaillie and along with Inver, is immediately adjacent to the Cairngorms Massif SPA for golden eagle. All three woods are within a Core Capercaillie Area.

There are PAWS sites within all three woods.

There are several UK BAP (Biodiversity Action Plan) animal and birds species within these woodlands. These woods will be managed assuming that these species are present and are discussed below:

The Deeside Woods lie within a core **Capercaillie** area, with active leks in Pannanich and Cambus o' May. Capercaillie are recorded in Inver but the lek is on neighbouring woodland. As with most sites on Deeside, the population has been declining in recent years. The management plan will address the habitat requirements of capercaillie through variable density thinning to optimise conditions for blueberry, creating glades and opening up flushes, retaining occasional windthrow for cover and planning operations and events to avoid sensitive breeding seasons.

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**Red Squirrel** (also one of the six key species identified in the FCS Biodiversity Action Plan) are present in the woods and operational practice will be undertaken to benefit red squirrels. This will include planning forest operations to minimise damage to red squirrel dreys and populations, including survey work to locate dreys prior to felling operations and the planning of the forest structure and composition specifically to suit red squirrels. LISS will be maximised across the forest plan area, where appropriate and minimising the use of large clearfells.

**Black Grouse** lek on the open moorland and grasslands above the three Deeside Woods but utilise the woodland fringe for cover and feeding. The current open structure of this fringe should be maintained.

**Bats** – although no FCS records of bats (records in area according to North East Biological Record Centre) exist, it is assumed that there are potential bat roosts. Where possible we will survey and retain these trees before felling. Additionally, existing veteran trees and deadwood (< 20 cm dbh) will be identified, and marked for retention during the work plan process (see FES guidance for deadwood, available on request)

**Wildcats** - a general walk over survey will be undertaken as per “Forest operations and wildcats in Scotland” guidance note prior to any forest operations that could affect wildcats. As these woodlands border agricultural or moorland ground this is potentially good habitat.

**Juniper** is present within the Deeside Woods, most especially in Cambus o’ May where it is extensive along 2 wayleaves. Thinning interventions will remove shading from juniper and opportunities sought to expand the population.

**Pearl Bordered Fritillary** – management actions have already been undertaken to benefit this species and this will continue through maintaining south-facing glades, breaking up bracken and undertaking annual monitoring.

**Wood Ants** are very common across Cambus o’ May and also recorded within the other Deeside Woods. Minimise large scale clearfelling and highlight wood ant nests on operational plans.

There are a number of **UKBAP habitats** within the design plan including Upland Birchwood, Native Pinewood, Lowland Dry Acid Grassland, Upland Heath and Bog Woodland. Areas of open habitat and areas with Juniper will be maintained as open by clearing non-native conifer regeneration as required.

**Watercourses/Riparian zones** in the Deeside Woods are in the River Dee catchment which is designated SAC (Special Area of Conservation). Maintenance of water quality is therefore a priority, which will be managed through following the UKFS Forest & Water Guidelines and improvements to the riparian habitat to work towards creating more natural riparian woodland.

## 3.3 The existing forest

### 3.3.1 Age structure, species and yield class

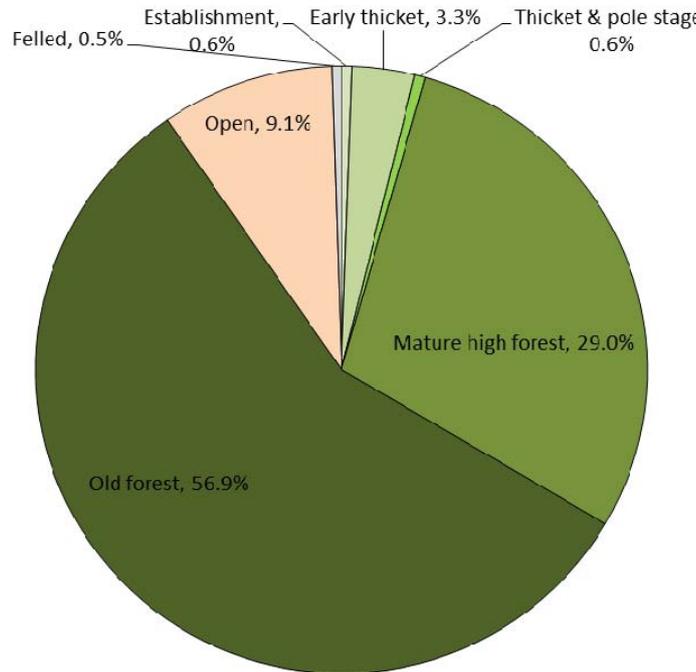
#### Age Structure

As can be seen from the following table and pie chart the spread of age classes across the plan area is not even. Mature high forest and old forest make up the vast majority of the Deeside woods with very little in the other phases. This is due to the management approach being mostly LISS with large natural reserves which leads to older mature forests with regeneration usually appearing only towards the end of the rotation. This plan will not aim to increase the structural diversity greatly as it is seen that LISS with large natural reserves is still the most appropriate management regime.

The area of open ground within the blocks is below the guideline of 10% and opportunities will be taken to increase this proportion where appropriate.

Ages of Trees (years)	Successional Stage	Area (ha)	%
0 -10	Establishment	4.1	0.6
11 – 20	Early Thicket	24.5	3.3
21 – 40	Thicket & Pole Stage	4.1	0.6
41 – 60	Mature High Forest	215.5	29.0
61+	Old Forest	421.9	56.9
	Open	67.8	9.1
	Felled	3.8	0.5

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## Species

### Scots

Pine is the largest components of the

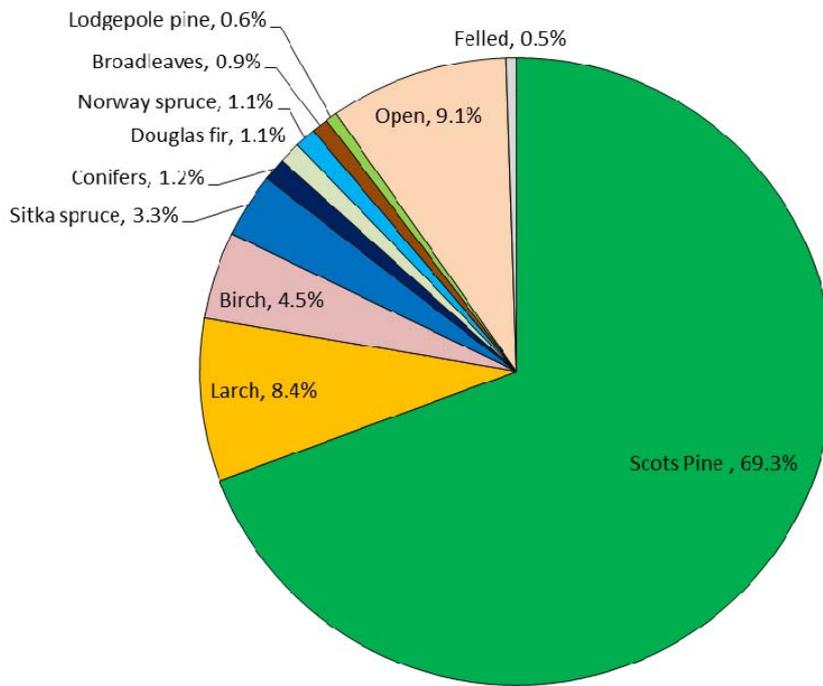
forest area. Most of the remainder is composed of larch, birch and Sitka spruce. Broadleaves are under-represented with 5.4 % however it is expected that during this plan period this will increase as broadleaves continue to naturally regenerate in areas managed under LISS.

This lack of species diversity is due in most part to the climate and soil conditions of the blocks which means the range of commercial species suited to the conditions is limited. Additionally the majority of the area is being managed under LISS or is natural reserves. This does not allow for a radical change in species composition and this will not be an objective of this plan period.

Species	Area (ha)	Percentage
Scots Pine	514.2	69.3
Larch	62.2	8.4
Birch	33.4	4.5
Sitka spruce	24.8	3.3
Conifers	8.6	1.2
Douglas fir	8.3	1.1
Norway Spruce	8.0	1.1
Broadleaves	6.4	0.9
Lodgepole pine	4.3	0.6
Open	67.8	9.1
Felled	3.8	0.5

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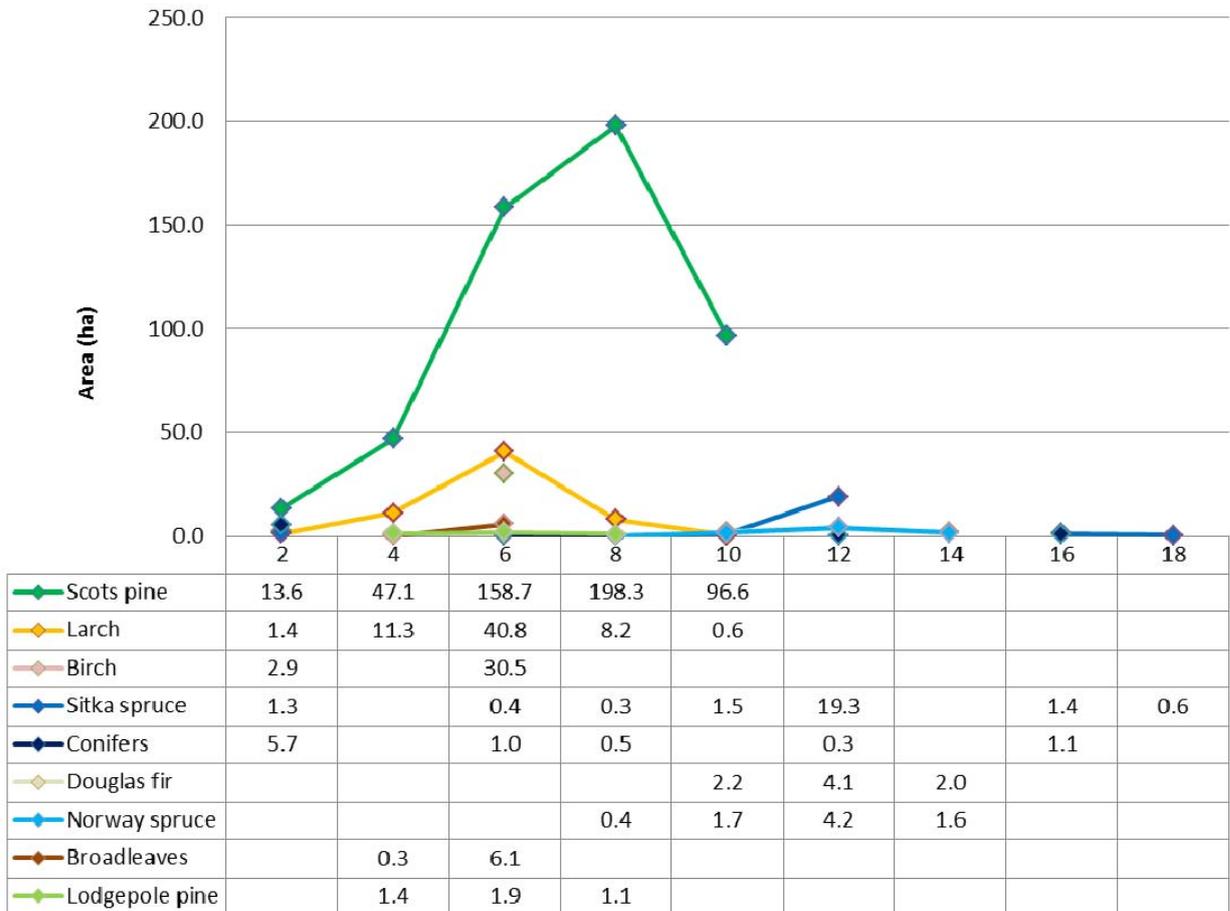


## Yield

The yield classes for all species are low due to the climate and soil types with few crops with yield classes greater than 10. The average yield class of Scots Pine, the dominant species, is about 8 which is average at best.

## Class

# Deeside Woods Land Management Plan 2016 - 2025



### 3.3.2 Access

Access both to and within much of the plan area is good. The A93 and B9077 run adjacent to the Deeside woods and are agreed transport routes\* and are directly connected to the forest blocks. In general the forest road network is adequate and well maintained. However there is currently very limited infrastructure suitable for extraction of timber in Pannanich. At the time of writing a prior notification for an additional 668m of forest road has been submitted to Aberdeenshire council with the expectation that it will be constructed in 2016/17. See map 5 Management for location.

\* <http://www.timbertransportforum.org.uk>

### 3.3.3 LISS potential

Much of the area of this design plan has potential for management under LISS (Low Impact Silvicultural Systems).



### 3.3.4 Current and potential markets

The current breakdown of the timber being harvested from this design plan area across the range of sites, species and ages is shown in the table below.

Material	End product	Percentage
Small/Short roundwood	Chip board, Orientated strand board (OSB), Paper, Fuelwood	30%
Fencing	Posts & rails	20%
Short log	Pallets & slats	30%
Log	Construction	20%

Most of this production is sold into markets in the north east of Scotland, and locally to James Jones and Cordiners. The exception to this is the short pine and spruce roundwood which usually are exported.

An increasing proportion of mainly roundwood material has gone into the local fuelwood market (approx. 10-15%), and this upward trend will likely to continue. The production of hardwood will likely to increase in the long term as well. Despite the increase, both these markets will be of a very limited scale and will have only minor impacts on the current product percentage breakdown.

## 3.4 Landscape and Land Use

### 3.4.1 Landscape character and value

Scottish Natural Heritage, in partnership with local authorities and other agencies have carried out a National Programme of Landscape Character Assessment. This programme aims to improve knowledge and understanding of the contribution that landscape makes to the natural heritage of Scotland. It considers the likely pressures and opportunities for change in the landscape, assesses the sensitivity of the landscape to change and includes guidelines indicating how landscape character may be conserved, enhanced or restructured as appropriate.

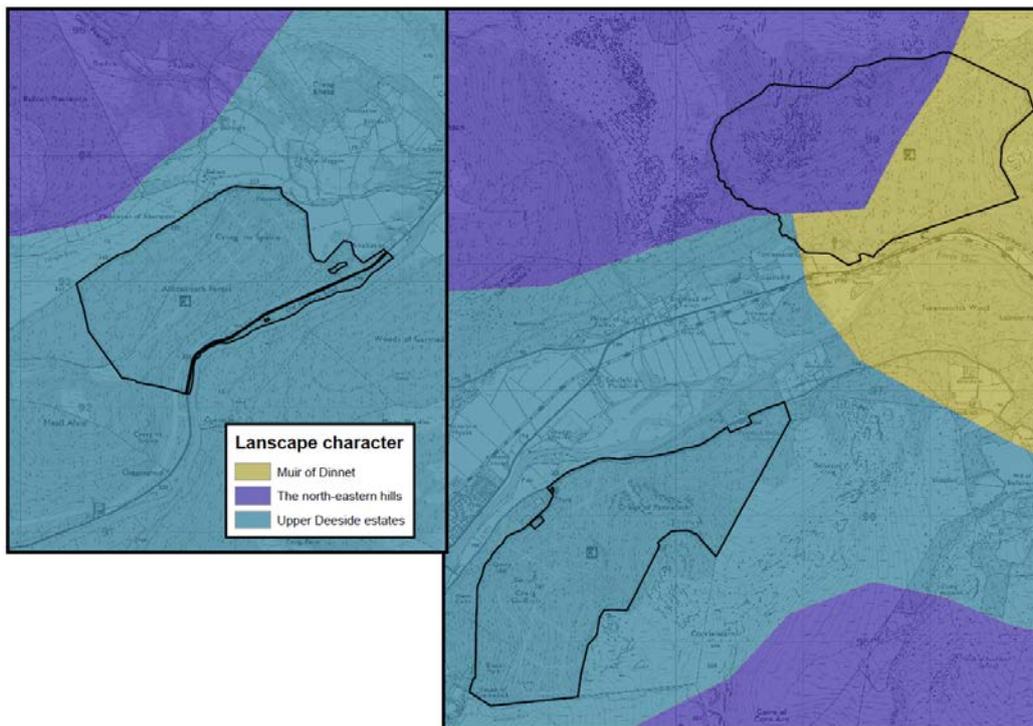
These assessments are considered during all land management plan reviews and where appropriate efforts made to follow the guidance given, where it matches with current FCS policy.

# Deeside Woods Land Management Plan 2016 - 2025

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The Deeside woods plan area is covered by Scottish Natural Heritage Landscape Character Assessment No75 Cairngorms Landscape Assessment, produced in 1996 by Scottish Natural Heritage.

Inver and Pannanich are both within the Upper Deeside estates area. While Cambus is split between the north-eastern hills and Muir of Dinnet.



The

Upper Deeside Estates area is characterised by a long, curving strath, contained by relatively low, rounded, flat topped hills receding to mountainous peaks to the north and south. The river Dee is a prominent feature of the landscape along with the extensive woodland that covers the majority of the hills giving a unity and distinctiveness to the landscape character of the area. Much of the woodland comprises scots pine, larch and spruce and is often associated with the large estates.

The north-eastern hills are characterised by their relatively low and rounded summits, gentle slopes and long, smooth interlocking spurs. Small burns lightly incise the hillsides. The upper slopes of the hills are predominantly covered by heather moorland with some stands of native pine and birch and small broadleaved woodlands in the more sheltered valleys. The lower and wetter slopes along the valley floors are covered by rough grass and moss.

Coniferous plantations are generally small-scale and many form geometric blocks which poorly integrate with the rolling character of the hills.

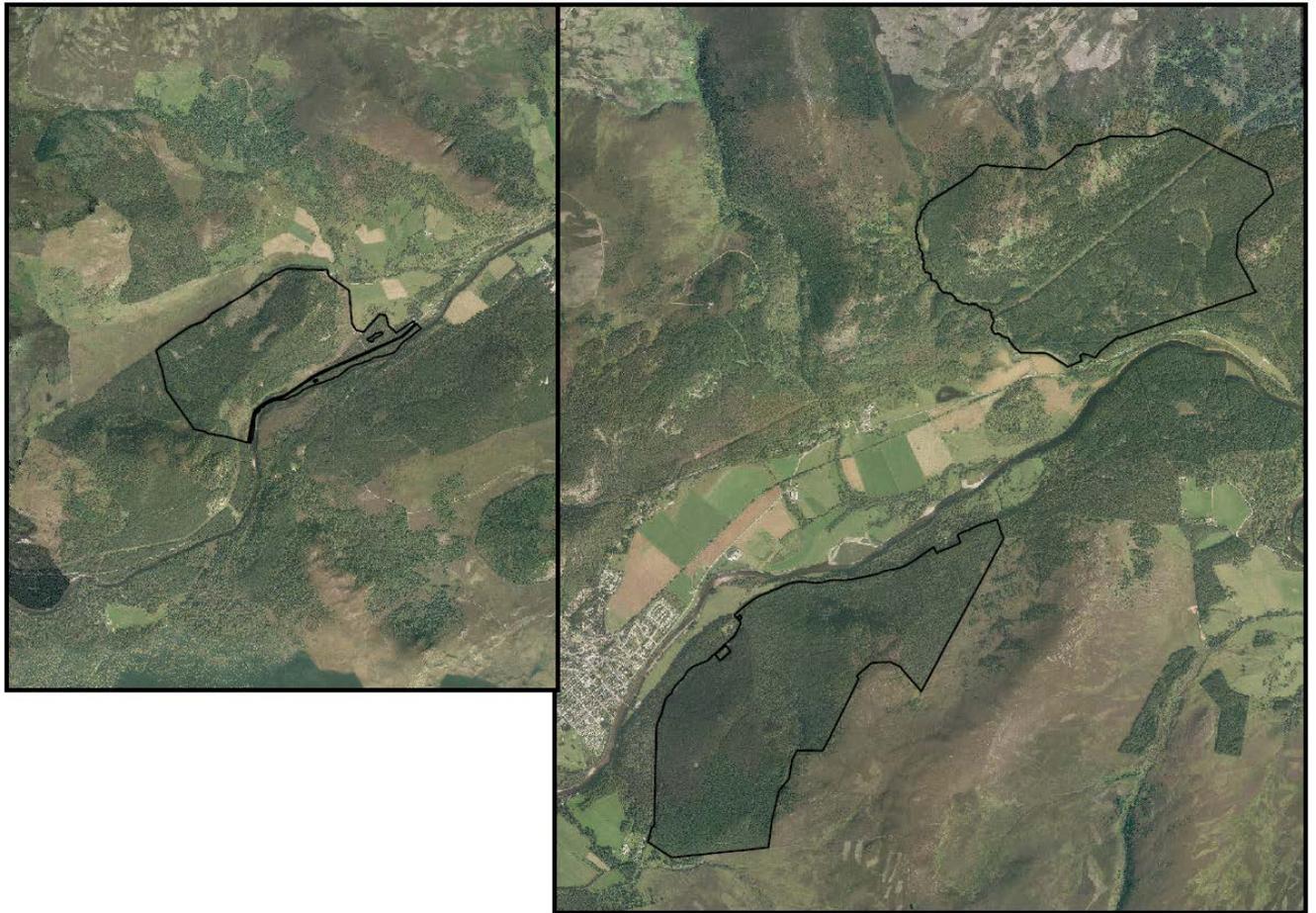
The Muir of Dinnet is primarily a wetland area comprising Lochs Kinord and Davan and the flat wetlands that surround them. A number of low irregularly shaped hills punctuate the landscape. The indented edges of Loch Kinord are enhanced by the presence of dense birch and oak woodland. This woodland covers the smaller hills and lower hill slopes throughout the area. Heather and bracken covers the tops of some of the small hills and areas of open ground within the woodlands.

### 3.4.2 Visibility

The Deeside Woods are a prominent feature in the Upper Dee Valley, cloaking the rocky crags on the steep valley sides. Pannanich is viewed directly from Ballater and from the A93. Inver is within the Lochnagar and Deeside National Scenic Area.

### 3.4.3 Neighbouring land use

Land use around the Deeside Woods is moorland managed for game interests, neighbouring, privately-owned woodland and farmland on the valley floors.

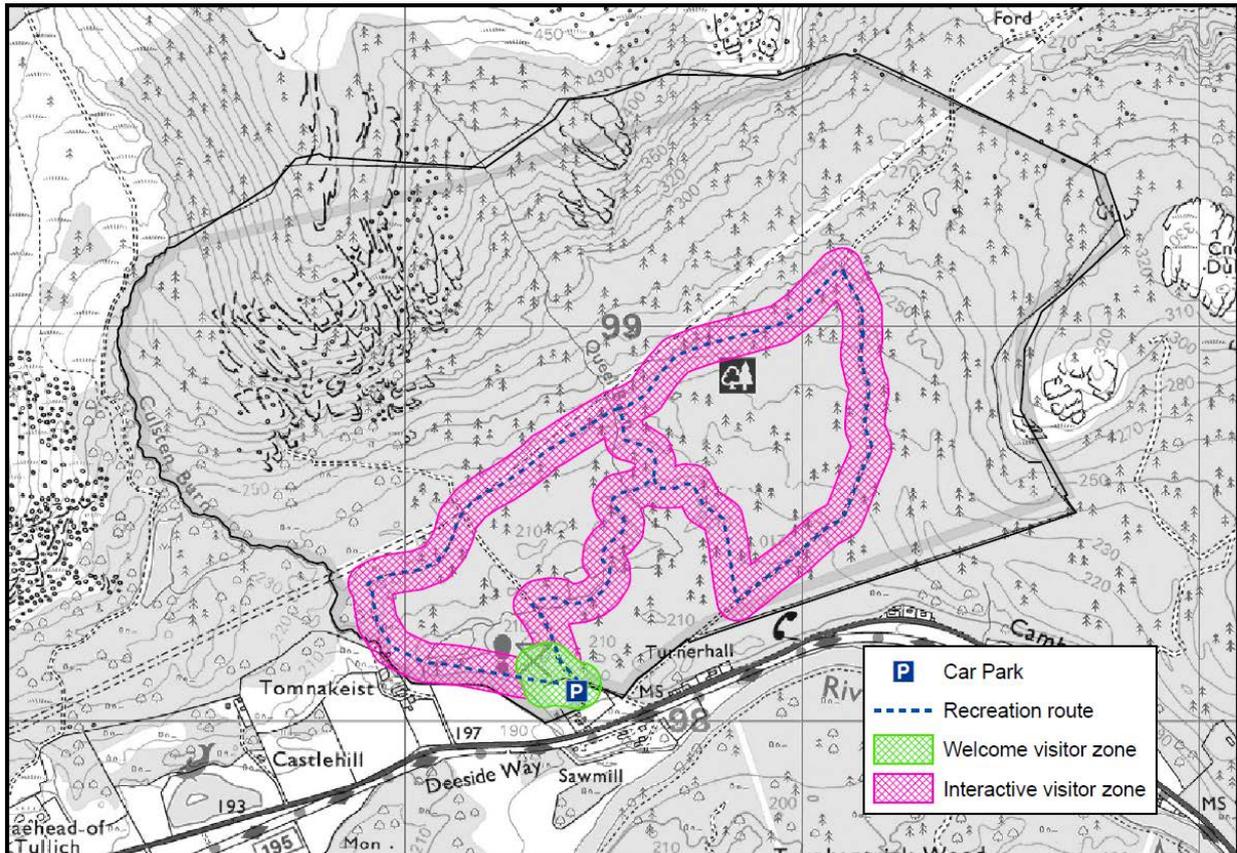


## 3.5 Social factors

### 3.5.1 Recreation

There is a network of formal trails in Cambus o' May, radiating from a car park including a boardwalk over the largest lochan and picnic benches. These are well used and link with the Deeside Way and a right of way through to the Burn o' Vat visitor centre at Muir of Dinnet. The waymarked trails are predominately used by walkers, whereas the longer routes connecting the forest to other areas attract mountain bikers and horse riders.

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The visitor experience of the forest depends on the intimacy of the landscape and the stage of their journey. Therefore the forest is split between three zones that are frequented by visitors. These are:

- Welcome zone – the “arrival” point and associated access, parking and immediate backdrop. The “high impact” zone and our shop window.
- Interactive zone – a 50m buffer either side of a designated facility or well-used informal route. What the visitors directly experience whilst using our facilities.
- Passive zone – the area of landform backdrop close to a facility where a level of management intensity higher than “normal” forestry practice will make a significant improvement to the visitor experience.

There is space for car parking at the entrance to Pannanich and Inver but nothing on a formal basis. These woods have informal trails that are predominately used by locals. There are no plans to establish any car parking facilities and we welcome the continued use of the woods in the design plan area for informal recreation.

## 3.5.2 Community

Ballater Royal Deeside Ltd is a community group based in Ballater. "It aims to utilise best practice to build capacity in the community; to undertake projects designed to sustain the local economy; to promote a sense of pride in the burgh of Ballater and surrounding area. BRD uses voluntary skills from within the communities".

It has initiated several successful promotional projects including Royal Deeside Walking Festival. It is involved with Community Woodland, assessing community needs and local history.

Cambus o' May is also used by local outdoor education businesses such as OWLS for forest schools, and FCS will continue to encourage and support such activities. The woodland plays host to a number of public events each year delivered either by FCS, by FCS in partnership with other organisations (CNPA, RSPB, Aberdeenshire Council) or by others with permission from FCS.

### 3.5.3 Heritage

There are no scheduled monuments within the plan area. However there are several non-scheduled archaeological sites. A check of both internal records and the Site and Monuments Record (SMR) has been undertaken to establish the location of these features. The details of these will be included in the work plan that is drawn up for every operation carried out within the plan area

## 3.6 Pathogens and diseases

### 3.6.1 Hylobius

Hylobius beetles can cause extensive feeding damage to young trees used to restock clearfell sites but damage is often highly variable. Previously it has not been possible to predict damage and so insecticides have been routinely used to protect the trees to try to safeguard the young crop. However on clearfells where Hylobius numbers are low this treatment may be unnecessary and conversely when numbers are very high the treatment may be unable to protect the trees. Both of these situations result in losses in valuable resources.

### 3.6.2 Dothistroma needle blight

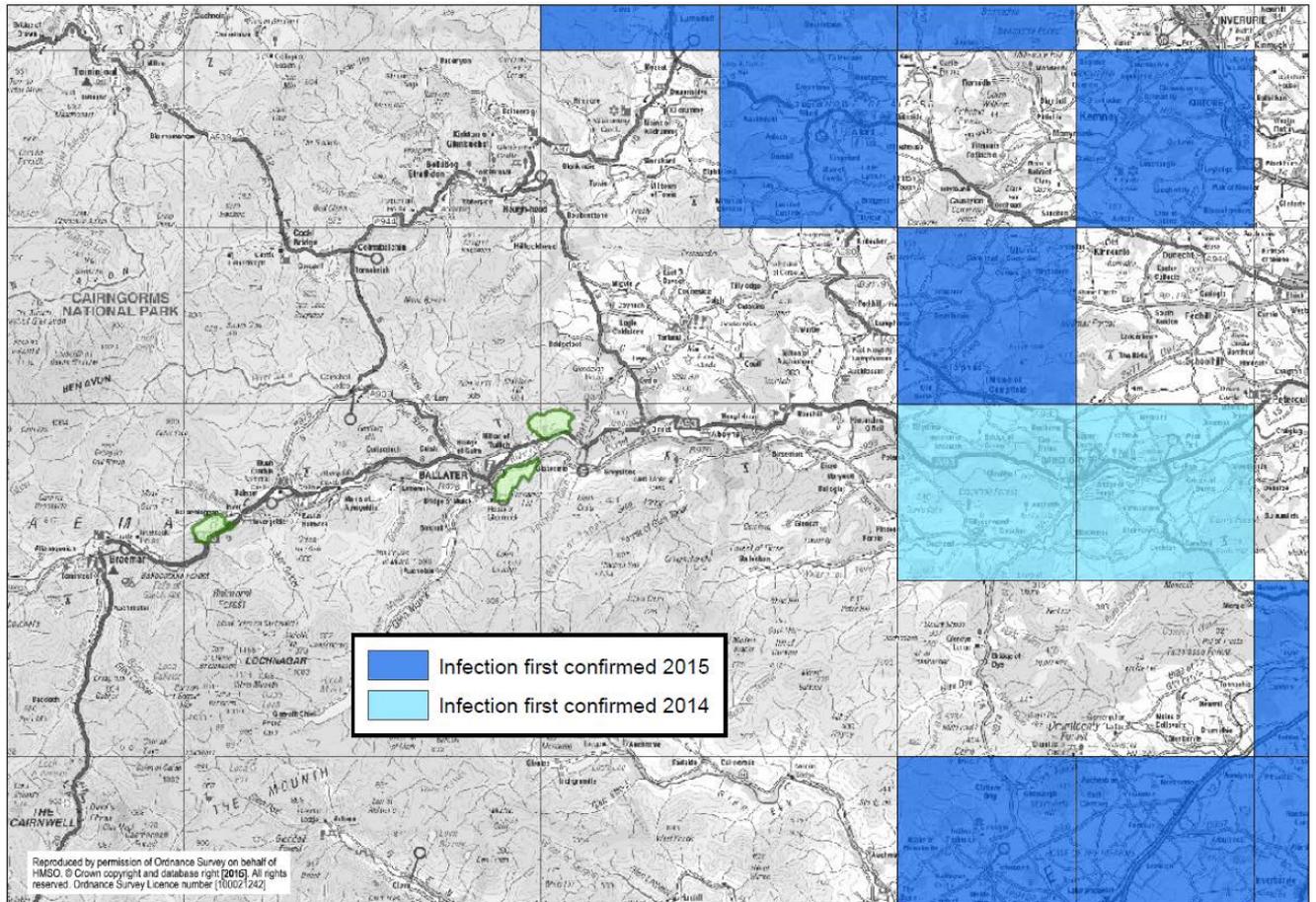
Dothistroma needle blight is a fungal pathogen affecting the woods within Moray & Aberdeenshire forest district. It is present within Deeside woods, affecting pine stands in Cambus, although at a low level currently.

Dothistroma needle blight is an economically important disease affecting a number of coniferous trees, pines in particular. The disease has a world-wide distribution but until recently was mainly of concern in the southern hemisphere. In much of the world, including Britain, it is caused by the fungus *Dothistroma septosporum*. Dothistroma needle blight causes premature needle defoliation, which results in the loss of timber yield and, in severe cases, tree mortality. Since the late 1990s the incidence of the disease has increased dramatically in Britain, particularly on Corsican pine. More recently the disease has caused significant damage and death to Lodgepole pine and Scots pine. Due to the extent and severity of the disease there is now a five-year moratorium on the planting of Corsican Pine on the national forest estate.

The reasons for the increase in the incidence of this disease are unclear but could be due to increased rainfall in spring and summer, coupled with a trend towards warmer springs, optimising conditions for spore dispersal and infection. Such conditions may become more prevalent in Britain over the next 20 years if current trends in climate change continue. On the national forest estate disease management is currently focused on silvicultural measures to reduce inoculum loads and the use of alternative, less susceptible species in future rotations.

### 3.6.3 *Hymenoscyphus fraxineus* (previously *Chalara fraxinea*)

Ash dieback is an aggressive fungal disease and is caused by *Hymenoscyphus fraxineus* (previously *Chalara fraxinea*). The disease causes leaf loss and crown dieback in affected trees, and usually leads to tree death. Ash trees suffering with the infection have been found widely across Europe since trees believed to have been infected with this newly identified pathogen were reported dying in large numbers in Poland in 1992. These have included forest trees, trees in urban areas such as parks and gardens, and also young trees in nurseries. The map below shows the confirmed infection sites based on the OS 10km grid squares and is based on information current as of 3 May 2016.



### 3.6.4 Phytophthora ramorum

*P. ramorum* is a fungus-like plant pathogen which attacks a wide range of tree and shrub species. It was first found in nursery stock in Scotland in 2002 and in an established garden in September 2007. It was first detected on Japanese larch in south west England in 2009 and in Scotland late in 2010.

Although European and hybrid larch are also susceptible to *P. ramorum*, current evidence indicates that the impact of the disease is greatest on Japanese larch which can die within one to two seasons, with consequential economic, environmental and amenity impacts. The disease on larch showed a significant expansion in 2013 with a core area of some 5-6000 ha of larch within South West Scotland showing extensive signs of infection. Further, smaller and more sporadic infections have also been identified along the western seaboard of Scotland principally in the Argyll and Cowal areas. There have been isolated outbreaks in the north east of Scotland. The total infected area within Scotland is estimated to be now in excess of 6,500 ha.

## 3.7 Statutory requirements and key external policies

This Forest Design Plan has been drafted to ensure that planning and operations functions will comply with the following legislation and policies:

### Biodiversity

- Conservation (Natural Habitats) Amendment (Scotland) Regulations 2007
- Nature Conservation (Scotland) Act 2004
- Wildlife and Natural Environment (Scotland) Act 2011
- Land Reform (Scotland) Act 2003
- The Water Environment and Water Services (Scotland) Act 2003
- Water Environment (Controlled Activities)(Scotland) Regulations 2011
- UK Woodland Assurance Standard 2008
- UK Forestry Standard 2012

### Climate Change

- The United Nations Framework Convention on Climate Change
- The Kyoto Protocol
- EC Directive 2003/87/EC
- Climate Change (Scotland) Act 2009

### Historic Environment

- Ancient Monuments and Archaeological Areas Act 1979
- Planning (Listed Buildings and Conservation Areas)(Scotland) Act 1997
- Treasure Trove Scotland
- UNESCO World Heritage Convention
- European Convention on the Protection of the Archaeological Heritage Valetta 1992

### Forests & People

- Control of Substances Hazardous to Health Regulations 2002
- Employers Liability (Compulsory Insurance) Act 1969
- Equality Act 2010
- Health and Safety at Work Act 1974
- Management of Health and Safety at Work Regulations 1999
- Occupiers' Liability (Scotland) Act 1960
- Provision and Use of Work Equipment Regulations 1998
- Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995
- The Highways Act 1980

## Soils

- Control of Pesticides Regulations 1986
- The Waste Management Licensing Regulations 1994
- European Soil Charter

## 4.0 Analysis and Concept

Refer to Map 4: Analysis and concept.

Theme	Issue	Analysis	Concept
Climate change	Adapting to climate Change	Much of the area has “good” to “moderate” potential to be managed with LISS.	Assess the current areas managed under LISS for continued suitability and extend the areas where feasible.
Timber	Timber supply	Despite the poor soil and climate conditions a quality crop of timber is growing across much of the plan area.	Optimise thinning and use of LISS to achieve a sustainable yield of timber over a longer rotation period. Upgrade tracks and access to Pannanich to facilitate harvesting operations.
Access & health	Recreation	Formal recreation provision is focused at Cambus o’ May, but informal access is widely taken across the plan area.	Maintain the provision of recreation facilities at its current level and standard.
Environmental quality	Soil, water & air quality	Some of the soils have a poor nutrient regime and their structure, combined with steep slopes makes them liable to damage and subsequent erosion.	Plan management regimes and operations to minimise inputs and maintain productivity on these soils without causing damage.
Environmental quality	Landscape	The plan area provides a positive contribution to the local landscape.	Use long-term retentions and LISS in appropriate locations to increase the landscape value of the woodlands. Where

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			clearfells are appropriate carefully plan their scale and shape to fit with the landform.
Biodiversity	Species & habitats	A number of priority species and habitats, including Capercaillie, are present across the plan area.	Plan management regimes and operations to improve the ecological value of the plan area for the identified priority species

## 5.0 Forest Design Plan Proposals

### 5.1 Management

Refer to Map 5: Management.

#### 5.1.1 Thinning

Wherever possible the district will continue to maximise the area managed through thinning. FCS policy assumes that all productive conifer crops will be thinned. The only exceptions are where:

- Thinning is likely to significantly increase the risk of windblow;
- A single thinning operation is likely to require an unacceptably large initial investment in relation to the potential benefits due to access or market considerations; and
- Thinning is unlikely to improve poorly stocked or poor quality crops.

Restrictions to thinning within the Deeside Woods are areas with fragile soils on steep, boulder slopes. These are present in both Inver and Pannanich. These areas will not be thinning to ensure unacceptable levels of ground damage leading to potential diffuse pollution is not caused.

Thinning in Cambus o' May is on seven year cycle, with Pannanich and Inver on a ten year cycle due to their slower growth rates. To achieve some of environmental objectives for the blocks the thinning intensity will be varied in places to create an uneven stand structure, retaining some areas unthinned to provide denser cover. During thinning operations the occasional windthrown stems will be retained and piles of brash (2m x 2m) created to provide cover for capercaillie.

Scots Pine and native broadleaves will be favoured during thinning while components of larch and occasional pockets of spruce will be retained. Juniper bushes within the thinning area will be opened up to allow in more light and improve their condition.

All thinning decisions will be guided by Operational guidance Booklet No 9 'Managing thinning.'

## 5.1.2 Low Impact Silvicultural Systems (LISS)

LISS is defined as a silvicultural system whereby the forest canopy is maintained at one or more levels without clearfelling. Clearfelling is defined as the cutting-down of all trees on an area of more than 2.0ha.

The attraction of LISS lies in the fact that this approach is suited to an era of multi-purpose forestry where environmental, recreational, aesthetic and other objectives are as important as timber production. In particular LISS is seen as a means of reducing the impact of clearfelling and the associated changes that this produces in forest landscapes and habitats. It also helps to create a diverse forest structure which will increase its biodiversity potential. LISS also helps reduce the potential issue of soil erosion and subsequent watercourse siltation.

The coupes selected for LISS management in the current plan have been reviewed to ensure they are still suitable and this form of management will meet the objectives for the area. While reviewing these coupes many factors are taken into consideration:

- Does LISS meet the objectives for that area of the forest?
- Is there sufficient site suitability information available (soils, wind hazard data, thinning history)?
- What level of ground vegetation competition is there with any natural regeneration?
- Are the existing species suitable for the site?
- Is any advanced natural regeneration present?

In the plan area those stands selected for LISS management are generally those that are either showing good signs of natural regeneration or have the potential to do so as restocking by natural regeneration will be the aim. For this to be successful deer numbers will need to be controlled and a figure of 5 deer per 100ha is seen as the appropriate level. If this is not achievable due to access issues and neighbours deer management policies then temporary fencing may be required.

All areas identified for restocking by natural regeneration have been recorded and programmed for inspection on a five yearly basis. At each inspection an assessment will be made to establish if the natural regeneration is or is likely to achieve the objectives for the site. If it is decided that the objectives are not being met then replanting with an appropriate species will be undertaken. If natural regeneration is occurring but not yet at the required density then the option to review the site in a further five years may be taken. If after two

such inspections, that is ten years following felling, it is felt appropriate to wait a further period for natural regeneration then a discussion and agreement will be reached with the Conservancy woodland officer.

Enrichment planting will be used to ensure the target stocking density is reached if there is insufficient natural regeneration.

In Pannanich the LISS area is split into three coupes with different objectives and prescriptions. On the lower slopes the objective is to produce a sustainable crop of quality Scots pine timber. This area has been thinned and the current crop should be stable enough to allow subsequent thinning operations to be undertaken. The aim is to create the conditions that allow natural regeneration to be used for restocking. Due to deer control issues it may be necessary to use temporary fencing to allow sufficient natural regeneration to become established.

On the higher slopes LISS will be used but here the objective will be to create woodland with greater environmental benefits. These areas are harder to access and have not been so well thinned in the past. The prescription will be to gradually increase existing gaps in the canopy, opening up existing natural regeneration and retaining veteran trees. The intention is to create a next rotation that is more diverse both in terms of species composition and stand structure. Timber production will be a by-product of this management.

In the north east of the block the area behind the water bottling plant the objective of the LISS management is to gradually convert this area to woodland with native broadleaves as the dominant component. The amount of conifers will gradually be reduced during successive thinning's. However these operations will only be undertaken if the ground conditions mean that the work can be undertaken without causing any ground damage to this very sensitive site. If the natural regeneration of native broadleaves is not as successful as expected then enrichment planting will be undertaken.

Areas selected for LISS management are highlighted on the Management map. Detailed prescriptions have been prepared for each area and can be seen in appendix 3. Each prescription will be included in the site management plan before any operation commences.

### 5.1.3 Clearfell

The main silvicultural system employed in British forestry is 'patch' clear-felling followed by planting, or occasionally natural regeneration. This is most

suited to areas in the plan which are not stable or where the ground conditions are too challenging for repeated. Timber in these areas will to be harvested before the onset of windblow by clearfell as the appropriate silvicultural system.

Although clear-felling can appear to have a negative impact on landscape and habitat it is still an important management system.

Clear-felling, to a degree, mimics natural disturbances such as fire or windblow in a forest and as such allows the forester to alter the even aged structure of the canopy over a relatively short period of time. The adoption of a 'fallow' period before restocking creates transient open habitat that is exploited by several species such as voles, deer, capercaillie and raptors.

Clearfell will not be the main silvicultural system employed in the Deeside Woods. It will be used in areas where there is windblow or on sites that are too wet and/or too steep for regular repeated thinning operations. The scale of clearfells will be in keeping with the scale and topography of the local landscape.

## 5.2 Future Habitats and Species

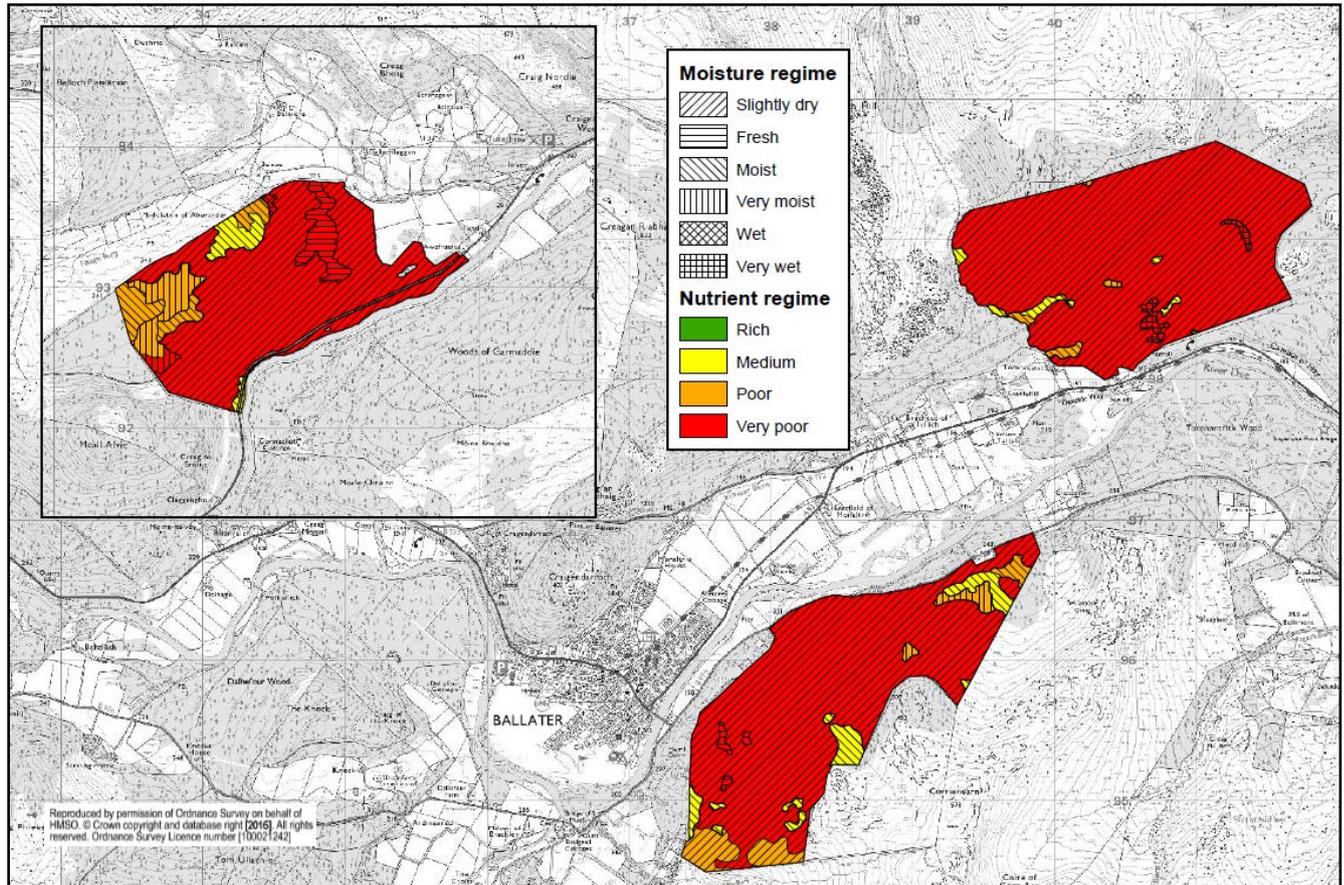
Refer to Map 7: Future habitats and species.

### 5.2.1 Restocking

The restocking of felled areas is guided by the objectives for the plan area. These include the protection of sensitive water catchments and improving the habitat for the key BAP species such as Capercaillie and Red Squirrel.

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The actual species choice for restocking has been guided by the Ecological Site Classification (ESC) results for this climatic area and soil types (see section 3.1). Due to the “very poor” soil types with low fertility the species choice in most of the area is very limited. However in areas where better soils are present efforts will be made to select as wide a range of species as possible to create diverse woodland rather than one with a more limited species mix.



One aim of restocking will be to create diverse habitat networks within the forest by linking riparian zones and existing broadleaf areas with additional broadleaf planting and open space. The aims of these networks are to:

- break up the conifer blocks;
- bring structural, species and visual diversity;
- protect watercourses from operations on the adjacent land;
- improve the biodiversity value of the forest by creating natural corridors for species migration;
- enrich the water ecosystem with falling leaf litter.

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The establishment and management of these areas will involve:

- maintaining and protecting existing broadleaf areas both beside watercourses and within the wider forest during felling operations;
- maintaining a mixture of native broadleaves and open space (up to 80% open space);
- removing conifer regeneration when it exceeds 20%;
- maintaining deadwood.

The district has the objective of increasing the proportion of broadleaves on the national forest estate. Where appropriate and the site conditions allow, broadleaves will be planted and managed to be productive. Growing broadleaves as a commercial crop requires a long term commitment. Higher establishment costs are inevitable. However the approach will be introduced into Deeside woods not only for the economic benefits but also due to the environmental advantages.

In the Deeside woods these areas are likely to be predominantly birch and will be sited and managed to allow for the recovery of fuelwood. This will not compromise the objective of increasing the woods environmental value and will not be at the expense of appropriate deadwood provision.

To be successful the general prescription will be:

- undertake the appropriate ground preparation;
- choose good quality planting material of the best available provenance;
- select the appropriate planting density;
- undertake appropriate weed control;
- undertake appropriate protection from mammals such as voles, rabbits and deer.
- provide the necessary attention in the early stages of stand development to increase the value of the final crop. Operations to be considered will include respacing, early thinning and pruning.

The presence of Capercaillie means we need to minimise the use of fencing so the protection of these trees will be by targeted deer control with the use of tree shelters where this is deemed essential to successful establishment.

## 5.2.2 Management of open land & non-commercial areas

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Areas not considered for commercial management will include permanent woodland, riparian areas and managed open habitats. These areas will require monitoring to ensure they deliver the required objectives. Non-desirable species, such as non-native conifer regeneration, will be removed if it threatens to prevent the objective of the area being met.

The main areas of permanent woodland are the **natural reserves** (NRs) on the higher ground of both Cambus O May and Pannanich. NRs are predominantly wooded areas managed in perpetuity by minimum intervention. Conservation of biodiversity is the prime objective. The function of NRs is to provide a continuity of habitat to allow sedentary species to establish and thrive. NRs provide reservoirs of permanent habitat from which more mobile species can expand into adjacent managed forests

The crags and tops of the hills all have pockets of open space within a matrix of birch and Scots pine natural regeneration however these are not individually large enough to be mapped but together they form a significant area and a natural transition to the open hill.

The other large area of permanent woodland is the **long term retention** (LTR) on the slope overlooking Ballater. The emphasis for the LTR is on the existing stand of trees. The LTR will eventually be replaced with native woodland when the current stand reaches the end of its rotation, which is likely to be when severe windblow starts to affect the stand in this instance. The LTR is being retained for environmental benefits and particularly its landscape benefit for Ballater. Ideally this area would be managed by LISS but access difficulties and crop instability are such that the stand has been designated as LTR.

Areas designated as **permanent open space** have been chosen to help diversify the woodland edges; to enhance riparian areas and complement areas of broadleaves or where there are other biodiversity benefits. They will also require regular management to maintain their integrity and value.

The area of open land within the plan area is currently slightly lower than the guideline figure of 10%. However Deeside woods are surrounded by vast expanses of open land in the form of upland heath on the upper slopes and farmland in the river valleys. So the additional benefit of creating additional open ground within the woodland boundaries would be negligible.

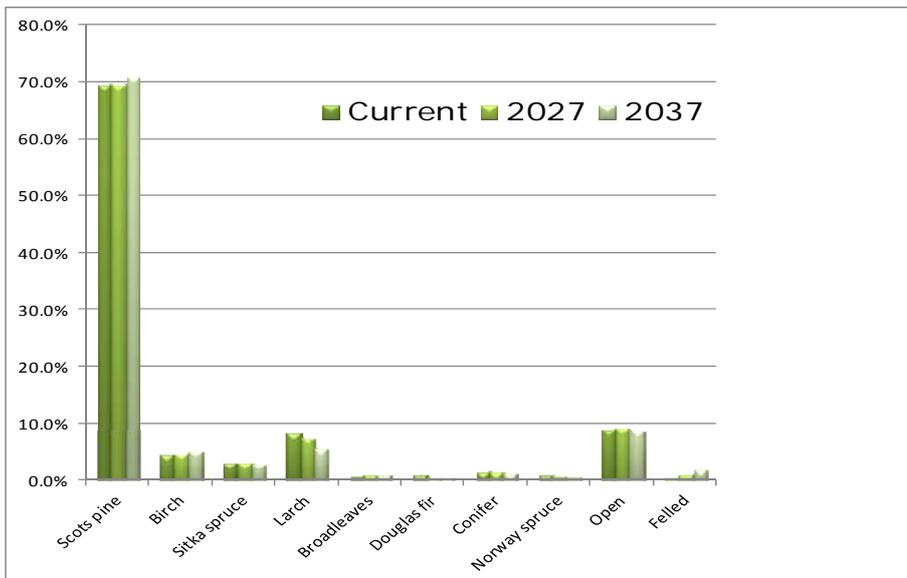
Also any open land is likely to be colonised with birch and Scots pine natural regeneration, the natural progression of open ground to native woodland

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habitat in this location. Maintaining these areas as open ground would be very resource intensive with no appreciable biodiversity gains.

## 5.3 Species tables

Species	Current species (%)	Projected species 2026 (%)	Projected species 2036 (%)
Scots Pine	69.3	67.0	72.0
Larch	8.4	4.0	1.3
Birch	4.5	6.4	7.3
Sitka spruce	3.3	2.8	2.3
Conifers	1.2	1.2	1.2
Douglas fir	1.1	0.7	0.5
Norway Spruce	1.1	0.9	0.7
Broadleaves	0.9	1.0	1.0
Lodgepole pine	0.6	0.6	0.3
Open	9.1	9.1	9.1
Felled	0.5	6.4	4.3



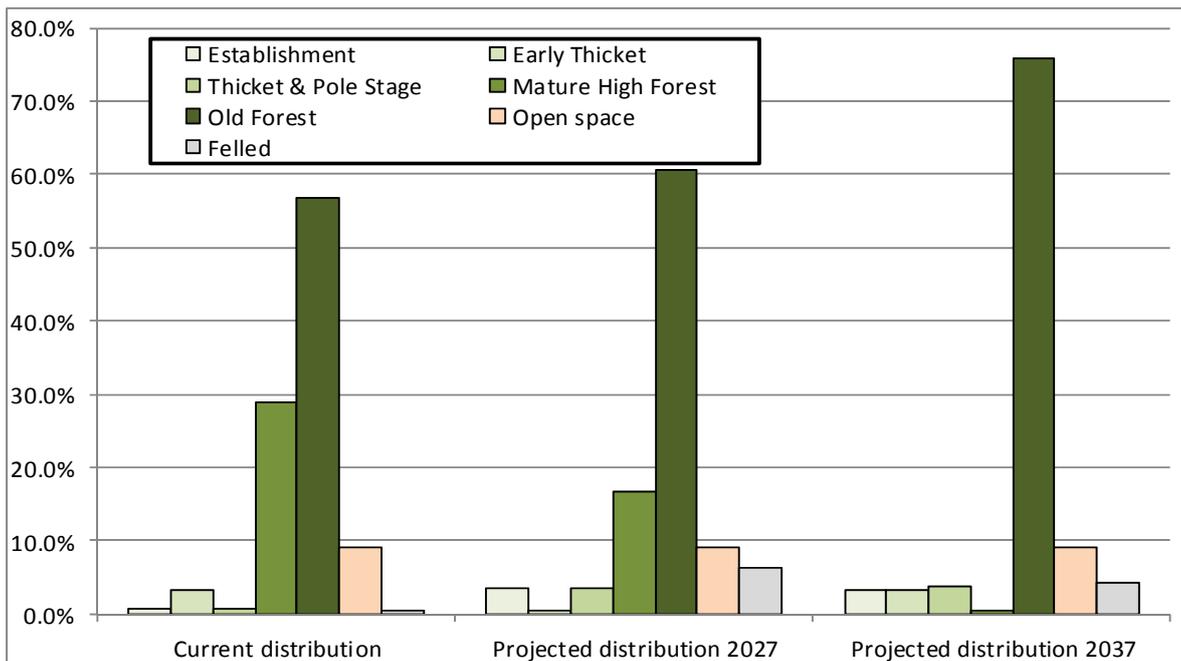
As can be seen from the figures above there is very little change in the overall proportions of species across the plan area. There is a reduction in the area of larch as areas of mature larch are felled and we are unable to replant with larch

due to the current FES moratorium on the planting of larch on the national forest estate. The reduction in larch area leads to an increase in the areas of Scots pine and birch.

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## 5.4 Age Structure

Age of Trees (years)	Succession Stage	Current Distribution 2014 (%)	Projected Distribution 2024 (%)	Projected Distribution 2034 (%)
0 -10	Establishment	0.6	3.4	3.1
11 – 20	Early Thicket	3.3	0.6	3.2
21 – 40	Thicket & Pole Stage	0.6	3.4	3.8
41 – 60	Mature High Forest	29.0	16.7	0.6
61+	Old Forest	56.9	60.5	75.9
	Open	9.1	9.1	9.1
	Felled	0.5	6.4	4.3



The age structure across the plan period and area sees an increase in the area of old forest. This is a reflection of the fact that much of the area is being managed under LISS and natural reserves. Despite the age of the crops there will be very little conversion felling during this plan period as the poor soil conditions and the climate means the trees are slow to develop and are not yet at the stage of producing a large crop of seeds that can be utilised for natural regeneration.

## 5.5 PAWS restoration

There are areas of PAWS within all three woods, although the areas in both Cambus and Pannanich are small. The native woodland types in all three woodlands would be upland birchwood and pinewoods. Restoration to these native woodland types is already underway at Inver and Cambus with exotic conifers having been felled. At Inver birch has naturally regenerated freely supplementing the planting of native species. In Cambus we are still awaiting the expected natural regeneration. This area will continue to be regularly monitored and replanting will be undertaken if required to meet the site objectives. In Pannanich the PAWS site currently has a crop of Norway spruce on it. This will be felled during successive thinning operations. Natural regeneration will again be the preferred option for restocking, with this being monitored and replanting carried out should the natural regeneration fail to be sufficient to meet the site objectives by year 10, following the felling.

## 5.4 Deer management

Wild deer on the National Forest Estate (NFE) are managed in accordance with the Scottish Government's strategy "Scotland's Wild Deer a National Approach" and under the auspices of the Code of Practice on Deer Management.

The strategy and Code of Practice takes recognition of the fact that Wild deer are an asset, an integral part of Scotland's biodiversity and provide healthy food and recreational opportunities. The challenge of managing wild deer originates in a need to balance the environmental, economic and deer welfare objectives of the Scottish nation with the objectives of private landowners for forestry, agriculture, sporting and other forms of land use.

The principal legislation governing the management of deer in Scotland and hence on the NFE is the Deer (Scotland) Act 1996.

It is therefore FCS deer policy to;

- Prevent adverse deer impacts on commercial tree crops and the wider habitat. In doing so to carry out deer culling in an exemplary and humane way.
- Work closely with relevant organisations and neighbours to make sure that there are integrated deer management plans which seek to recognise the interests of all parties.
- Take opportunities to optimise income from venison from sporting where this does not conflict with our primary objective of maintaining deer impacts at an acceptable level, in line with Quality Meat Scotland

accreditation in the form of The Scottish Quality Wild Venison (SQWV) Assurance Scheme

- Take all practicable steps to slow down the expansion of deer species into areas where they are not currently present.

All deer management will be carried out in accordance with OGB 5 - Deer management. The aim is to manage deer density safely and humanely at a level which is consistent with acceptable impacts on forests and other habitats. This is likely to be at a density level of 5 deer per 100 hectares.

Deer cull plans are prepared for each Deer Management Unit and are the responsibility of the Wildlife Ranger Manager.

## 5.5 Access

Access to and within Inver and Cambus is good. However there is currently very limited infrastructure suitable for the extraction of timber in Pannanich. At the time of writing a prior notification for an additional 668m of forest road has been submitted to Aberdeenshire council with the expectation that it will be constructed in 2016/17. See map 5 Management for location.

## 5.9 Pathogens

*Hylobius* weevil can cause extensive feeding damage to young trees used to restock clearfell sites but damage is often highly variable. Previously it has not been possible to predict damage and so insecticides have been routinely used to protect the trees to try to safeguard this valuable young crop. However, on clearfells where *Hylobius* numbers are low this treatment may be unnecessary and conversely when numbers are very high the treatment may be unable to protect the trees. Both of these situations result in losses in valuable resources.

The *Hylobius* Management Support System (MSS) is based on a simple monitoring protocol using billet traps to measure *Hylobius* numbers on individual clearfell sites. The numbers recorded are used, with other information entered into the *Hylobius* MSS software, to determine the best way to manage clearfell sites for successful, cost effective and environmentally friendly restocking. This Support System will be used along with past results and experience to determine the optimal time to restock while minimising the use of chemicals.

Due to the expected high level of *Hylobius* and the adopted policy for environmental management to “reduce the use of Insecticides where feasible” restocking is planned to take place at the end of year 4. Restocking may take

place before then if monitoring, using the Forest Research Hylobius Management Support System, shows that it is safe to do so.

**Ash dieback** is an aggressive fungal disease and is caused by *Hymenoscyphus fraxineus* (previously *Chalara fraxinea*). The disease causes leaf loss and crown dieback in affected trees, and usually leads to tree death. Despite the fact that the nearest known outbreak of ash dieback is over 10km from the Deeside woods there will be no planting of ash trees as there is currently a moratorium on the planting of ash within FC woodlands to try and help slow the spread of the disease.

**Phytophthora ramorum** is a fungus-like plant pathogen which attacks a wide range of tree and shrub species. European and hybrid larch are particularly susceptible to *P. ramorum* but current evidence indicates that the impact of the disease is greatest on Japanese larch, which can die within one to two seasons, with consequential economic, environmental and amenity impacts. Therefore there is currently a moratorium on the planting of larch within FC woodlands to try and help slow the spread of the disease.

## 5.10 Critical Success Factors

- Maintain and enhance the pinewood habitat within the blocks to continue to support the key BAP species present.
- Undertake the planned thinning and felling programme in order to increase the quality of the timber within the plan area and to meet the production targets.
- Undertake the thinning planned for the LISS areas in order to manage the light levels to allow the development of the appropriate ground vegetation and natural regeneration.
- Continue with the maintenance of the forest road network to allow forest operations to be successfully completed.
- Control of deer populations to allow natural regeneration within LISS areas.



## Appendix 1 – Consultation record

Consultee	Date of contact	Response Received	Issues Raised	Forest District Response to Issues
Cairngorms National Park Authority	27 July 2016	17 Aug 2016	Response to be provided once final proposals have been agreed.	
Scottish Environmental Protection Agency (SEPA)	27 July 2016	3 Aug 2016	Support for proposals (See appendix 2 for full response).	

## Deeside Woods LMP 2016-25

<p>Scottish Natural Heritage (SNH)</p>	<p>27 July 2016</p>		<p>“FCS is required to carry out an appropriate assessment in view of the site’s conservation objectives for these interests...In our view on the basis of the information provided, if the proposal is undertaken strictly in accordance with the Forestry Commission’s Forest and Water, UK Forestry Standard Guidelines, then the proposal will not adversely affect the integrity of the site.”</p> <p>“The LMP should therefore identify the need to carry out an evaluation of the potential impacts upon otter and if appropriate mitigation of any works.”</p> <p>(See appendix 3 for full response).</p>	<p>Appropriate assessment completed, see appendix 9.</p> <p>All work plans will include where a survey for otters is appropriate and these will be undertaken by the environment team before any operation commence.</p>
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## Deeside Woods LMP 2016-25

<p>Royal Society for the Protection of Birds (RSPB) Ian Francis</p>		<p>22 Aug 2016</p>	<p>“There is no mention of predator control, which for appropriate species is part of the set of measures that can be deployed. Proposals for its use on FCS land here should be specified, specifically aimed at enhancing Capercaillie numbers.”</p> <p>“An additional 668m of forest road is planned for the east of Pannanich. This needs to be considered very carefully in relation to its impact on Capercaillie.”</p> <p>“There is no mention of the seemingly increasing informal access, including the mountain bike trail, on the SNH/FCS boundary. Some means of reviewing and potentially controlling this informal access should be investigated, as this is a sensitive area for birds.”</p> <p>“We are pleased to see that there is a presumption against erecting any new deer fences in the Deeside Woods. However, there are some current issues with the fences and boundaries that are in place now at these sites.”</p>	<p>At present there are no plans for any predator control to be undertaken within the Deeside woods. This will be kept under review by our environment team and may be implemented if appropriate.</p> <p>The new section of forest road has received prior notification approval from Aberdeenshire Council, which included the issue of capercaillie.</p> <p>All informal access within the Deeside woods is taken under the auspices of the Scottish Outdoor Access Code. We would not want to limit access to these woods unless it was proved that those taking access are doing so irresponsibly.</p> <p>Details of the problems with the existing fence marking etc. have been passed to our environment team for addressing.</p>
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## Deeside Woods LMP 2016-25

			(See appendix 4 for full response).	
Scottish Southern Electricity (Fiona Maxwell)		25 Aug 2016	<p>“Improve/increase the wayleave around our infrastructure there is prolific regeneration of Scots pine, birch and juniper under the two 33kV overhead powerlines.”</p> <p>“Consider the management of the natural regeneration under these 33 kV overhead powerlines, with the aim to potentially remove some of the Scots pine and other non-native conifers to favour the broadleaves and juniper. This consideration reflects the positioning of the natural regeneration which is currently thriving directly underneath and between these two parallel 33kV overhead lines and will likely pose a threat to our infrastructure in the not too distant future.</p> <p>The L.V. overhead powerline is currently surrounded by overhanging branches of mature Scots pine and broadleaves, and we would welcome proposals/discussions to improve the clearance around these powerlines.”</p> <p>“We would welcome any potential opportunity to increase the narrow wayleave on each side of this 11kV to a distance of one tree length plus vicinity zone to “future proof” our infrastructure from potential tree damage.”</p>	It is the responsibility of the electricity company to maintain the wayleave for their power infrastructure. FES will not be undertaking any of this work. FES has no plans to undertake resilience felling out with the agreed wayleaves.

## Deeside Woods LMP 2016-25

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			(See appendix 5 for full response).	
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## Appendix 2 – SEPA Consultation response



Our ref: PCS148091

Your ref: DWLMP

If telephoning ask for:  
Clare Pritchett

3 August 2016

Mark Reeve  
Planning Forester  
Moray and Aberdeenshire Forest District  
Portsoy Road  
Huntly  
AB54 4SJ

By email only to: [Mark.Reeve@forestry.gsi.gov.uk](mailto:Mark.Reeve@forestry.gsi.gov.uk)

Dear Mr Reeve

### **Draft Deeside Woods Land Management Plan 2016-2025**

Thank you for your consultation email of 20 July 2016 on the Draft Deeside Woods Land Management Plan 2016-2025 dated April 2016.

Please note the advice provided below.

#### **Advice for Forestry Commission Scotland**

We note that the plan area is made up of Cambus o'May, Pannanich and Inver forest blocks which covers all the FEW land holding in the River Dee valley and totals 742 hectares.

- 1.2 We are pleased to note the text at para 3.1.2 Water - All three woodlands that make up the Deeside Woods land management plan are within the catchment of the River Dee. This is designated as a SAC for Atlantic salmon, fresh water pearl mussel and European otter. A number of tributaries of the Dee have their source within or above the woods. Additionally there are private water supplies within each of the blocks and Pannanich is the source of water for a bottling plant. All these will be protected during any operations by following the UK forest standard guidelines for forests and water as a minimum.

1.3 We note that some work has been done in accordance with the previous plan to improve watercourses and support the proposal to manage riparian zones to maintain and enhance the existing habitat networks and extend the area where appropriate.

1.4 We note that best management practices and guidelines have been followed and this will continue to be an important objective in the new plan. All operations will continue to be undertaken in accordance with UKFS Water Guidelines to meet EU water framework directive objectives.

1.5 We support the aim at para 5.2.1 that

One aim of restocking will be to create diverse habitat networks within the forest by linking riparian zones and existing broadleaf areas with additional broadleaf planting and open space. The aim of these networks is to:

- protect watercourses from operations on the adjacent land;
- improve the biodiversity value of the forest by creating natural corridors for species migration;
- enrich the water ecosystem with falling leaf litter.

The establishment and management of these areas will involve:

- maintaining and protecting existing broadleaf areas both beside watercourses and within the wider forest during felling operations;

1.6 We also support the management proposal at para 5.2.2 that:

Areas not considered for commercial management will include permanent woodland, riparian areas and managed open habitats. These areas will require monitoring to ensure they deliver the required objectives. Non-desirable species, such as non-native conifer regeneration, will be removed if it threatens to prevent the objective of the area being met.

## Good practice guidance and regulatory requirements

Details of regulatory requirements and good practice advice for the applicant can be found on the [Regulations section](#) of our website. If you are unable to find the advice you need for a specific regulatory matter, please contact a member of the regulations team in your local SEPA office.

If you have any queries relating to this letter, please contact me by telephone on 01224 266609 or e-mail at [planning.aberdeen@sepa.org.uk](mailto:planning.aberdeen@sepa.org.uk).

Yours sincerely

Clare Pritchett  
Senior Planning Officer  
Planning Service

### *Disclaimer*

*This advice is given without prejudice to any decision made on elements of the proposal regulated by us, as such a decision may take into account factors not considered at this time. We prefer all the technical information required for any SEPA consents to be submitted at the same time as the planning or similar application. However, we consider it to be at the applicant's commercial risk if any significant changes required during the regulatory stage necessitate a further planning application or similar application and/or neighbour notification or*

*advertising. We have relied on the accuracy and completeness of the information supplied to us in providing the above advice and can take no responsibility for incorrect data or interpretation, or omissions, in such information. If we have not referred to a particular issue in our response, it should not be assumed that there is no impact associated with that issue. For planning applications, if you did not specifically request advice on flood risk, then advice will not have been provided on this issue. Further information on our consultation arrangements generally can be found on our [website planning pages](#).*

## Appendix 3 – SNH Consultation response



**Scottish Natural Heritage**  
**Dualchas Nàdair na h-Alba**

All of nature for all of Scotland  
Nàdar air fad airson Alba air fad

Mr Mark Reeve  
Forestry Commission Scotland  
Grampian Conservancy  
Ordiquhill, Portsoy Road,  
HUNTLY  
AB54 4SJ

Date: 17 August 2016  
Our ref: CNS/FDP/FO/Aberdeenshire

Dear Sir,

**Deeside Woods Land Management Plan**  
**Moray and Aberdeenshire Forest District**

Thank you for your consultation dated 27 July 2016 on the proposals for the three forest blocks at Cambus o' May, Pannanich and Inver located along the River Dee between Aboyne and Braemar. We welcome the proposal to manage these blocks to "create woodlands with high environmental value for species, habitats and landscape and to work with the Cairngorms National Park Forest Framework.

Our main advice relates to protected areas and species notably:

- The River Dee Special Protection Area
- Muir of Dinnet Site of Special Scientific Interest and National Nature Reserve
- Capercaillie and
- Deer

Our full comments, which also include some brief advice on other issues, are annexed at A.

Please contact us at [Tayside\\_Grampian@snh.gov.uk](mailto:Tayside_Grampian@snh.gov.uk) if you wish to clarify any of the issues raised.

Yours faithfully

(By email)

Ewan Lawrie  
Operations Officer  
SNH Aberdeen

Scottish Natural Heritage, Inverdee House, Baxter Street, Torry, Aberdeen, AB11 9QA  
Tel: 01224 266500 Fax: 01224 895958 [www.snh.gov.uk](http://www.snh.gov.uk)

Dualchas Nàdair na h-Alba, Taigh Inbhir Dhè, Sràid Baxter, Torraidh, Obar Dheathain, AB11 9QA  
Fòn: 01224 266500 Facs: 01224 895958 [www.snh.gov.uk/gaelic](http://www.snh.gov.uk/gaelic)

## **Annex A Deeside Woods Land Management Plan (LMP) 2016-2025 SNH Comments**

### River Dee Special Conservation Area (SAC)

The River Dee is listed as an SAC for Atlantic Salmon, Freshwater Pearl Mussel and Otter. Although not actually within the SAC the proposed works have the potential to affect the SAC. The provisions of the Conservation Natural Habitats, &c.) Regulations as amended, (the "Habitats Regulations") therefore apply. Consequently, FCS is required to consider the effect of the proposal on the SAC before it can be consented (commonly known as Habitats Regulations Appraisal (HRA)). The SNH website has a summary of the legislative requirements (<http://www.snh.gov.uk/docs/A423286.pdf>).

In our view, this proposal is likely to have a significant effect on salmon and freshwater pearl mussels. This is because forest operations such as thinning, harvesting, planting and extraction (including formation of tracks) have the potential to generate silt which may be washed into the SAC and its tributaries. Both freshwater pearl mussels and salmon are susceptible to the effects of siltation; fine material can smother mussel beds and salmon redds and freshwater pearl mussels and juvenile salmon / salmon eggs may be killed by sediment deposition. In addition any pollutants from machinery used during the felling operations entering the SAC may affect the protected salmon and freshwater pearl mussel populations.

Consequently, FCS is required to carry out an appropriate assessment in view of the site's conservation objectives for these interests. To help you do this, we advise that in our view on the basis of the information provided, if the proposal is undertaken strictly in accordance with the Forestry Commission's Forest and Water, UK Forestry Standard Guidelines, then the proposal will not adversely affect the integrity of the site. In line with the guidelines, an operational plan should be prepared which will describe how each site will be set out and worked to reduce the risks of adverse effects on the water environment.

Forest operations can affect the holts and resting places of otter. SNH does not hold detailed information on the location of these sites and in any case this information would not be valid for the ten year period of the plan. In order to avoid any impact upon the protected otter population the LMP should therefore identify the need to carry out an evaluation of the potential impacts upon otter and if appropriate mitigation of any works.

### Muir of Dinnet Site of Special Scientific Interest (SSSI)

The Cambus o' May Wood lies within the western part of the SSSI. The SSSI citation refers to "Large areas of the site are covered by active regeneration of birch and Scots pine associated with remnant stands of ancient birch (e.g. on Ord Hill), and stands of long-established pine plantation in various other locations." Other features of the SSSI such as

breeding birds and insects also rely on the woodlands. The site is also notified for its glacial geomorphology.

We welcome the proposal to adopt Low Impact Silvicultural System LISS and the restoration of along the southern edge of Ancient Woodland Areas. The retention of the area to the north of the wayleave as a natural reserve to benefit Capercaillie is appropriate. We also welcome the identification of the potential impacts and benefits for insects in particular around the lochans and key areas for Pearl Bordered Fritillary. These are identified in the key features map and the plan. The management of open space is particularly important to these species and we advise that this is taken into account when planning operations in these areas and could be included in the management map. Kentish glory is also found in the SSSI and this prefers open birch woodland and lightly wooded moorland. The SSSI is notified for its glacial geomorphology. The relict landforms are considered to be in generally good although the crests of some of the esker ridges and meltwater channels are at present obscured by a thick tree cover and again open space and the selection of species could be used to address this. We note the general comment that the proposed open ground within the blocks is below the guideline 10% and highlight the importance of open ground within woodlands and ask that you consider carefully if this is appropriate.

Wet mires are a feature of the SSSI and we welcome the undertaking to consider the balance between this habitat and bog woodland in particular to manage the encroachment by non-native species such as sitka onto bog areas. In general we consider the removal of non-natives to be appropriate through selective felling and thinning and we suggest a watch is kept on the encroachment of rhododendron. Elsewhere on the SSSI there is a significant block of Aspen and we suggest that where appropriate consideration is given to wider establishment of this species.

The treeline area is appropriate for expansion of native woodland on to low value dry heath habitats. However this should be managed in such a way as to maximise benefits to black grouse and consideration should be given to retention of more unusual habitats such as National Vegetation Classification type H16

#### Muir of Dinnet National Nature Reserve (NNR)

The Muir of Dinnet NNR based around our visitor centre at Burn O' Vat. The key purpose of National Nature Reserves is to showcase some of the best wildlife in Scotland for everyone to see and appreciate. This purpose is unique and distinguishes NNRs from other protected areas. The NNR overlaps the eastern edge of the Cambus o' May block and is linked by one of the routes. We welcome the approach of retaining visitor facilities at Cambus which links with the west side of the NNR and suggest promotion of responsible access. We would anticipate continuing to work together to achieve these aims.

A copy of the current NNR management plan can be found here:  
<http://www.snh.gov.uk/docs/A1325239.pdf>

## Glen Tanar Special Protection Area (SPA)

The Southern Edge of the Panannich block abuts the boundary of Glen Tanar SPA which the plan correctly identifies as listed for Capercaillie. It is also listed for breeding Hen Harrier, Osprey and Scottish Crossbill and we advise that any proposed management, particularly to the edge should take these interests into account. There are also Golden Eagle SPAs nearby both Panannich and Cambus blocks and while relatively little can be done to benefit them on the woodlands we note them for consideration of any positive management opportunities.

In our view, it is unlikely that the proposals set out in the LMP will have a significant effect on any qualifying interests either directly or indirectly. An appropriate assessment is therefore not required in relation to Glen Tanar SPA.

More detail about the protected areas listed above can be found on our website here: <http://www.snh.gov.uk/publications-data-and-research/snhi-information-service/>

## Capercaillie

We understand that the Capercaillie Project Team have already provided comments which we annex at B for your convenience. We suggest consideration is given to producing a more detailed plan which sets out specific actions across the blocks.

## Deer

We welcome the identification of Deer as an issue in the LMP. We would encourage discussion with other stakeholders in the local Deer Management Group for input to their Deer Management Plan and if appropriate the drafting of a specific Deer Management Plan for these areas. For your convenience the link to information on managing Deer on our website is here: <http://www.snh.gov.uk/land-and-sea/managing-wildlife/managing-deer/>

## Landscape

As all of the blocks lie within the Cairngorms National Park we anticipate that they will respond on landscape issues.

## Climate Change

The LMP notes that if opportunities present themselves to undertake work to help alleviate flood risks during the course of operations these will be discussed with the relevant flood management authority. We suggest that a more proactive approach might be adopted with discussions with the catchment partnership and SEPA to identify positive opportunities.

We welcome the proposals to carry out positive management on the tributaries of the Dee in the riparian zone and would be happy to discuss in some more detail what this might entail.

## **Annex B: FCS Deeside Woods Land Management Plan Capercaillie Project Team Response**

The Deeside woods lie within a Core Capercaillie Area, with records of capercaillie in all three woods, and active leks in both Pannanich and Cambus O'May. As the Deeside capercaillie metapopulation is currently struggling in terms of numbers, these woods are becoming more important in maintaining the current population. Therefore, we are very pleased to see that capercaillie are being considered at all levels of this plan and that management work is taking place to benefit these forest specialists.

We are particularly supportive of the plans to increase the area of forest managed as LISS and Natural Reserve and that the area of clearfell will be limited, as this will help to provide continuous forest cover for capercaillie into the future. Variable density thinning, the creation of glades and wet flushes, and the retention of windblow will also be of benefit to capercaillie. However, there are a few things mentioned in the plan that we have some issues with.

### Fencing

We are pleased to see that there is a presumption against erecting any new deer fences in the Deeside Woods, however there are some ongoing issues with the fences and boundaries that are already in place at these sites.

Although the perimeter deer fence at Inver is marked with wooden droppers, this marking is now in a very poor condition with many markers falling off and some large gaps where there is now no marking at all. It is important to maintain fence marking in a good condition to prevent collisions with forest grouse and any gaps in marking makes the marking considerably less effective. If it is not possible to completely remove this deer fence, we ask that this marking is fixed or replaced where necessary and maintained throughout the life of the fence.

There are several issues with the fences at Pannanich. There is not a lot of deer fencing at this site, and what is there is marked, with the exception of the unmarked deer fence around the Pannanich Wells Hotel, which runs through the forest and we would like to see marked, if possible. However, around the southern and eastern sides of Pannanich there is a hazardous wire fence which runs along the top of the drystone dyke. This top wire has been removed in some places and replaced with an electric top wire, but in other places there are two or three strands of old metal wire which is in a very poor condition and presents a serious hazard to forest grouse. We are particularly concerned about the hazardous top wires along the wall on the

eastern side of the forest, as there are Scots pine trees on either side of the wall and it is likely that forest grouse will move between these areas. We ask that these hazardous top wires are removed from the sections where they remain.

## Forest Roads

The Land Management Plan mentions 668m of forest road that is due to be constructed at Pannanich in 2016/17, but the location of this new road is not obvious on any of the maps provided. However in some sections of the plan it is stated that there will be a new transfer point constructed instead of a road. Will the construction of this forest road be going ahead, and where will it be located? We are concerned that the construction of a new forest road at this site will encourage further recreational use of a forest that holds a lekking population of capercaillie and which already sees a fair amount of use from locals and tourists.

## Habitat

Although capercaillie in Scotland are mostly found within Scots Pine forests, it is known that they will also utilise a wider range of tree species including larch and Norway spruce. Larch trees are often used as a food source for hens in the spring, when they will feed on the Larch buds to get into good breeding condition. Capercaillie will also feed on Norway spruce, which are also good for roosting and nesting birds and which provide an area of denser cover where the birds can hide from predators. We would suggest that, where possible, some Larch and some Norway spruce are retained as cover and to increase both species and structural diversity within the forest.

## Recreation

We are supportive of the plans to maintain the use of Cambus O'May as the main visitor area within the Deeside Woods. However, there are some issues arising with the increasing use of these forests by mountain bikers that we would just like to draw your attention to. We do not yet know the full impact that mountain bikers have on capercaillie but it is safe to assume that they have the ability to disrupt lekking and nesting activities if they are using capercaillie forests within the breeding season. Research has shown that capercaillie will avoid using habitat 125m either side of regularly used paths, which decreases the amount of habitat available to them. It is likely that the creation and regular use of mountain biking trails could act in a similar way and further decrease the amount of useable habitat for capercaillie. Mountain biking appears to be increasing in popularity, and with trails in Pannanich and several of the surrounding Deeside forests, it is likely that this will become an increasing issue in the future.

## Appendix 4 – RSPB Consultation response

### **FCS Deeside Woods Land Management Plan**

Comments by RSPB Scotland, including the Capercaillie Project Team

August 2016

#### **General comments**

The three forests included within this consultation are of considerable importance for wildlife, including a number of protected bird species. We are pleased to see this recognised clearly within the plan and largely welcome the management proposals within it. Our views in relation to two of the key species present are given below, but we have a small number of comments on specific pages here; some are repeated in the capercaillie section:

Page 6 – we welcome the main objective of the plan – to manage these forest for the benefit of environment and biodiversity.

Page 12 – Community development and partnerships – we welcome the suggestion of partnership working with RSPB Scotland and others and look forward to proactively developing this further.

Page 22 – Capercaillie. Habitat management actions are outlined, but there is no mention of predator control, which for appropriate species is part of the set of measures that can be deployed. Proposals for its use on FCS land here should be specified, specifically aimed at enhancing Capercaillie numbers.

Page 25. Age structure. LISS with large natural reserves is the most appropriate management regime.

Page 28 – 3.3.2. Access – an additional 668m of forest road is planned for the east of Pannanich. This needs to be considered very carefully in relation to its impact on Capercaillie.

Page 33. 3.4.3. In this context, it would be useful to mention the presence of an RSPB Scotland nature reserve at Crannach as western neighbour to Cambus o' May, as this purpose is not captured in the description here.

Page 34 – Recreation – the formal trails in Cambus are laid out, but there is no mention of the seemingly increasing informal access, including the mountain bike trail, on the SNH/FCS boundary. Some means of reviewing and potentially controlling this informal access should be investigated, as this is a sensitive area for birds.

Page 48. We welcome the proposal to preclude fences.

Page 53. 5.4. Deer control at Pannanich would seem to be the main issue. Great care needs to be taken in relation to any possible further fencing here, given the proximity of higher numbers of deer on Glen Muick Estate, compared with the other two forest blocks. We note that this is considered to be a critical success factor in 5.10.

## **Crossbills**

These forests are used by crossbills for feeding and as breeding areas. Three species are present in Deeside, including the rare Parrot Crossbill and the endemic Scottish Crossbill (EU Birds Directive, Annex 1). However, there is no mention of crossbills within the plan. It can be quite complex retaining and encouraging the woodland features necessary for their conservation, so we urge that a review of the proposals for all three forests is undertaken involving FC specialists and drawing on the advice of crossbill experts. Deeside is a stronghold for Scottish and Parrot Crossbills and FCS can play an important role in helping to sustain them. We would be happy to provide further advice on this.

## **Capercaillie**

The Deeside woods lie within a Core Capercaillie Area, with records of capercaillie in all three woods, and active leks present. As the Deeside capercaillie metapopulation is currently struggling in terms of numbers, these woods are becoming more important in maintaining the current population. Therefore, we are very pleased to see that capercaillie are being considered at all levels of this plan and that management work is taking place to benefit these forest specialists.

We are particularly supportive of the plans to increase the area of forest managed as LISS and Natural Reserve and that the area of clearfell will be limited, as this will help to provide continuous forest cover for capercaillie into the future. Variable density thinning, the creation of glades and wet flushes, and the retention of windblow will also be of benefit to capercaillie. However, there are a few proposals in the plan that we wish to comment on.

### Fencing

We are pleased to see that there is a presumption against erecting any new deer fences in the Deeside Woods. However, there are some current issues with the fences and boundaries that are in place now at these sites.

Although the perimeter deer fence at Inver is marked with wooden droppers, this marking is now in a very poor condition with many markers falling off and some large gaps where there is now no marking at all. It is important to maintain fence marking in a good condition to prevent collisions with forest grouse and any gaps in marking makes the marking considerably less effective. If it is not possible to completely remove this deer fence, we ask that this marking is fixed or replaced where necessary and maintained throughout the life of the fence.

There are several fences matters to consider at Pannanich. There is not a lot of deer fencing at this site, and what is there is marked, with the exception of the unmarked deer fence around the Pannanich Wells Hotel, which runs through the forest and we would like to see marked, if possible. However, around the southern and eastern sides of Pannanich there is a hazardous wire fence which runs along the top of the drystone dyke. This top wire has been removed in some places and replaced with an electric top wire, but in other places there are two or three strands of old metal wire which is in a very poor condition and presents a serious hazard to forest grouse. We are particularly

concerned about the hazardous top wires along the wall on the eastern side of the forest, as there are Scots pine trees on either side of the wall and it is likely that forest grouse will move between these areas. We ask that these hazardous top wires are removed from the sections where they remain. This matter has been raised in the past, including by FCS staff.

## Forest Roads

The Land Management Plan mentions 668m of forest road that is due to be constructed at Pannanich in 2016/17, but the location of this new road is not obvious on any of the maps provided. However in some sections of the plan it is stated that there will be a new transfer point constructed instead of a road. Will the construction of this forest road be going ahead, and where will it be located? We are concerned that the construction of a new forest road at this site will encourage further recreational use of a forest that holds a lekking population of capercaillie and which already sees a fair amount of use from locals and tourists.

## Habitat

Although capercaillie in Scotland are mostly found within Scots Pine forests, it is known that they will also utilise a wider range of tree species including larch and Norway spruce. Larch trees are often used as a food source for hens in the spring, when they will feed on the Larch buds to get into good breeding condition. Capercaillie will also feed on Norway spruce, which are also good for roosting and nesting birds and which provide an area of denser cover where the birds can hide from predators. We would suggest that, where possible, some Larch and some Norway spruce are retained as cover and to increase both species and structural diversity within the forest. We realise that this may cause tensions with attempts to control tree pathogens but would hope a suitable balance can be found.

## Recreation

We are supportive of the plans to maintain the use of Cambus O'May as the main visitor area within the Deeside Woods. However, there are some issues arising with the increasing use of these forests by mountain bikers that we would just like to draw your attention to. We do not yet know the full impact that mountain bikers have on capercaillie but it is safe to assume that they have the ability to disrupt lekking and nesting activities if they are using capercaillie forests within the breeding season. Research has shown that capercaillie will avoid using habitat 125m either side of regularly used paths, which decreases the amount of habitat available to them. It is likely that the creation and regular use of mountain biking trails could act in a similar way and further decrease the amount of useable habitat for capercaillie. Mountain biking appears to be increasing in popularity, and with trails in Pannanich and several of the surrounding Deeside forests, it is likely that this will become an increasing issue in the future. We recommend that any future access proposals at Pannanich are reviewed very critically.

## Appendix 5 – SSE Consultation response



Mr. M. Reeve,  
Planning Forester,  
Moray & Aberdeenshire District,  
Portsoy Road,  
Huntly,  
Aberdeenshire,  
AB54 4SJ.

24<sup>th</sup> August 2016

Your site reference: Deeside Land Management Plan

Dear Mark,

### **Land Management Plan - Deeside SSEPD Consultation Response**

Thank you for the opportunity to respond to your Land Management Plan for Deeside.

#### **Cambus O'May Forest**

We have identified several overhead powerlines which are located through this woodland block; An 11kV overhead powerline and underground section in the southern section with, two sections of 33kV overhead powerline located through the middle and two sections of L.V. on the entrance to the car park.

According to 'Map 5 Management', you have no proposed clearfelling operations for this woodland, only low impact silvicultural system thinning operations. Should your thinning operations provide an opportunity to improve/increase the wayleave around our infrastructure, we would welcome further consultation and the opportunity to discuss such opportunities.

Whilst on site at Cambus O'May, I noted that there is prolific regeneration of Scots pine, birch and juniper under the two 33kV overhead powerlines. Whilst we appreciate the encouragement of natural regeneration is a positive objective for your Land Management Plan, we would ask for your consideration to incorporate the management of the natural regeneration under these 33 kV overhead powerlines, with the aim to potentially remove some of the Scots pine and other non-native conifers to favour the broadleaves and juniper. This consideration reflects the positioning of the natural regeneration which is currently thriving directly underneath and between these two parallel 33kV overhead lines and will likely pose a threat to our infrastructure in the not too distant future.

The L.V. overhead powerline is currently surrounded by overhanging branches of mature Scots pine and broadleaves, and we would welcome proposals/discussions to improve the clearance around these powerlines.

# Deeside Woods LMP 2016-25

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## **Pannanich Forest**

There is an 11kV overhead powerline located within this woodland block, which is currently surrounded by Sitka spruce. This woodland block also has no proposed clearfell coupes for the duration of the plan (Map 5 Management), although there are areas identified for long-term retention and to be retained as a natural reserve, both of which include the area surrounding the overhead powerline. We would welcome any potential opportunity to increase the narrow wayleave on each side of this 11kV to a distance of one tree length plus vicinity zone to “future proof” our infrastructure from potential tree damage.

## **Inver Forest**

We have identified two 11kV overhead powerlines which run parallel through this woodland block.

Whilst at Inver, I noted that there is prolific regeneration consisting of Scots pine and birch occurring throughout the wayleave under the two 11kV overhead powerlines. Similar to the Cambus O'May natural regeneration, we appreciate the encouragement of natural regeneration in this area is a positive objective for your Land Management Plan, but again we would ask for your consideration to incorporate the management of the natural regeneration under these 11kV overhead powerlines, with the aim to potentially remove all regeneration directly under the powerline but essentially the Scots pine. This consideration again reflects the positioning of the natural regeneration which is currently directly underneath and between these two 11kV overhead lines and will likely pose a threat to our infrastructure in the not too distant future.

We welcome consultation on all forestry operations/proposals within the vicinity of our overhead powerline network, as per FISA 804 and HSE GS6, and thank you for including us in your consultation process.

Should you wish to discuss any matters further, please do not hesitate to get in touch.

Yours sincerely

Fiona Maxwell,  
Harvesting Liaison Manager



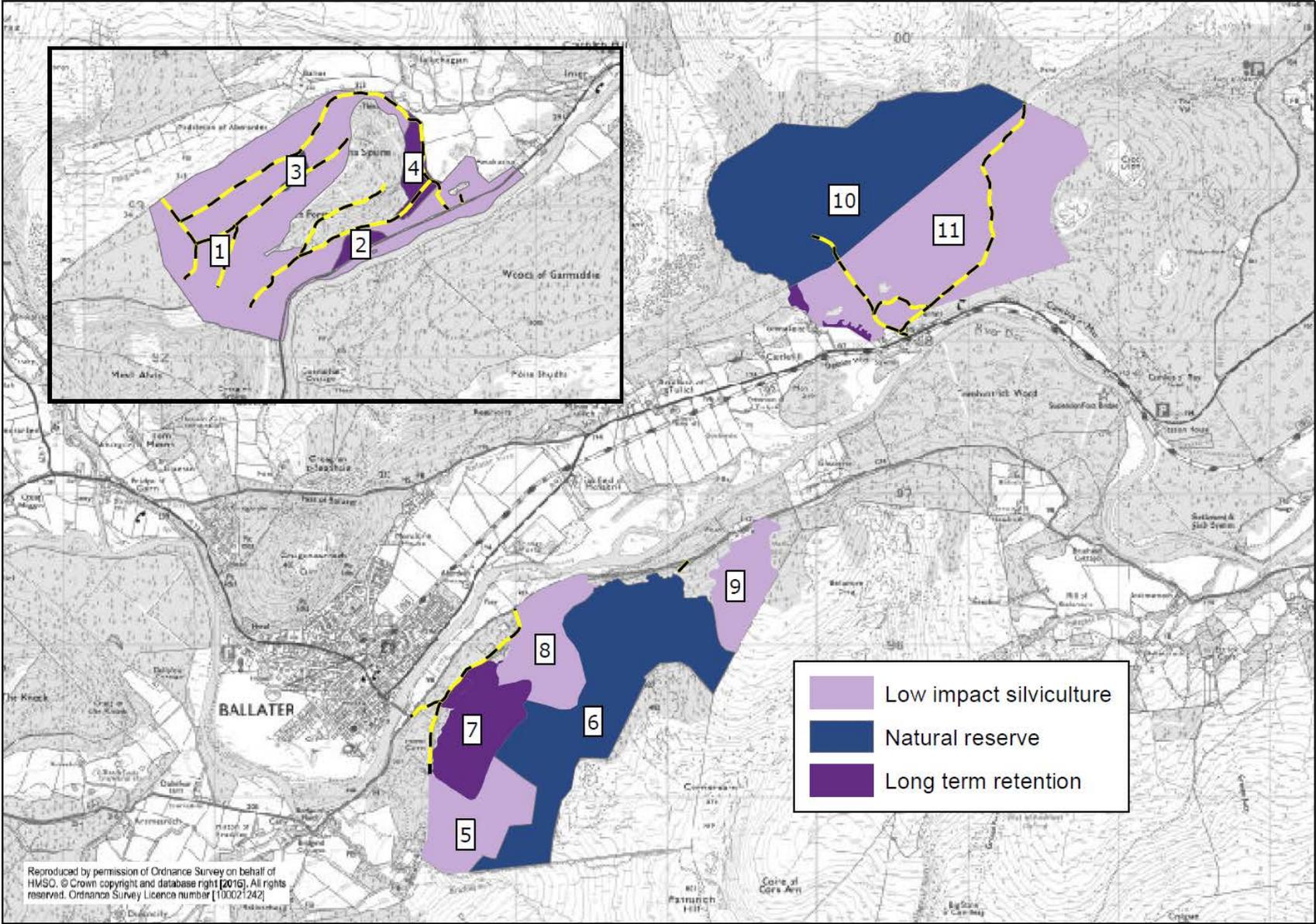
## Appendix 6 – Tolerance table

	Adjustment to Felling period	Adjustment to felling coupe boundaries	Timing of restocking	Change to species	Changes to roadlines	Designed open space	Windblow Clearance
FC Approval not normally required	Fell date can be moved within 5 year period and between phase 1 and phase 2 felling periods where separation or other constraints are met	Up to 10 % of coupe area	Normally up to 2 planting seasons after felling. Where hylobius levels are high up to four planting seasons after felling subject to the wider forest and habitat structure not being significantly compromised.	Change within species group e.g. conifers, broadleaves.		Increase by up to 5% of coupe area	
Approval by exchange of letters and map		Up to 15 % of coupe area	Between 2 and 5 planting seasons after felling subject to the wider forest and habitat structure not being significantly compromised.		Additional felling of trees not agreed in plan Departures of more than 60m in either direction from centre line of road.	Increase by up to 10%.  Any reduction in open ground within coupe area.	Up to 5 ha
Approval by formal plan amendment may be required	Advanced felling (phase 3 or beyond) into current or 2 <sup>nd</sup> 5 year period	More than 15% of coupe area	More than 5 planting seasons after felling subject to the wider forest and habitat structure not being significantly compromised.	Change from specified native species. Change between species group.	As above depending on sensitivity.	More than 10% of coupe area. Colonisation of open areas agreed as critical.	More than 5 ha

### Appendix 7 – LISS prescriptions

- The size and number of groups in the group selection is indicative only. The actual size will depend on the conditions found in each coupe.
- The shape of the groups in the group selection coupes do not have to be circular. Oval shaped with the long axis orientated to receive the most light is preferred.
- The location of the felling areas in the group selection coupes will be located to reflect the conditions in each coupe. Felling areas will be located to:
  - expand existing groups,
  - start new groups taking advantage of existing natural regeneration,
  - start new groups in areas where there is currently no natural regeneration.
- The preferred restocking method is by natural regeneration. However if restocking by natural regeneration is not successful within 10years of felling then the option of replanting will be discussed with FCS.

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LISS no. (See map above)		Management objective/Reason for selection	Long-term structure* and desirable species	Age Trans. period and return time (years)	Regeneration and ground flora	Observations (e.g. likely barriers to achieving objective)	Next treatment required**	Proposed monitoring	Other useful information
1	Group selection 146.9ha	Create a diverse forest structure for biodiversity and produce quality timber.	Complex 70% SP & 30% MB	Mostly 80 years 120 10	Some birch and pine regeneration. In the other parts regeneration is sparse due to current light levels.	Deer browsing & weed competition.	Crown thin and fell groups.	Crop validation prior to next thinning.	No groups currently felled in this coupe.
2	Long term retention 3.5ha	Retain existing tree crop beyond economic maturity then restock with natural regeneration.	Complex 80% MB 20% SP	16 years 300 10	Young plantation	Incorrect thinning to create future stable seed trees.	Selective thinning when stand reaches thinning age.	Crop validation prior to next thinning.	
3	Natural reserve 1.9ha	Retain current crop to maintain stable conditions for biodiversity potential.	Simple 94% SS 6% SP	80 years None None	Little regeneration due to low light levels.	Deer browsing & weed competition.	Non-intervention	Monitor biodiversity potential.	
4	Long term retention 9.3ha	Create diverse canopy structure at forest edge by retaining MB beyond optimum economic age.	Simple 90%BI/ MB 10% SP	16 years 300 10	Young BI/MB natural regeneration.	Incorrect thinning to create future stable seed trees.	Selective thinning when stand reaches thinning age.	Crop validation prior to next thinning.	

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5	Group selection 45.8ha	Create a diverse forest structure for biodiversity and produce quality timber.	Complex 80% SP 20% MB	65 years 135 10	Little regeneration due to light levels.	Deer browsing & weed competition.	Crown thin and fell 0.2 ha groups.	Crop validation prior to next thinning.	No groups currently felled in this coupe.
6	Natural reserve 125.9ha	Retain current crop and its biodiversity potential on steep rocky ground.	Simple 70% SP 10% MC 10% MB 10% Open	65 years None None	Little regeneration due to low light levels.	Deer browsing & weed competition.	Non-intervention	Monitor biodiversity potential.	
7	Long term retention 6.8ha	Create diverse canopy structure at forest edge by retaining MB beyond optimum economic age.	Complex 50% SP 50% MB	SP 65 years, MB 5 years 300 10	Little regeneration due to low light levels.	Deer browsing & weed competition.	Selective thinning including young MB when stand reaches thinning age.	Crop validation prior to next thinning.	
8	Group selection 32.8ha	Create a diverse forest structure for biodiversity and produce quality timber.	Complex 80% SP 20% MB	65 years 135 10	Little regeneration due to light levels.	Deer browsing & weed competition.	Crown thin and fell 0.2 ha groups.	Crop validation prior to next thinning.	No groups currently felled in this coupe.
9	Group selection 23.2ha	Create a diverse forest structure for biodiversity and produce quality timber.	Complex 80% SP 20% MB	65 years 135 10	Little regeneration due to light levels.	Deer browsing & weed competition.	Crown thin and fell 0.2 ha groups.	Crop validation prior to next thinning.	No groups currently felled in this coupe.
10	Natural reserve 141.7ha	Retain current crop and its biodiversity potential on steep rocky ground.	Complex 70% SP 10% MB 20% Open	50 - 65 years None None	Little regeneration due to low light levels.	Deer browsing & weed competition.	Non-intervention	Monitor biodiversity potential.	

## Deeside Woods LMP 2016-25

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11	Group selection 137.9ha	Create a diverse forest structure for biodiversity, recreation and produce quality timber.	Complex 70% SP 30% MB	45 -55 years 150 10	Little regeneration due to light levels.	Deer browsing & weed competition.	Crown thin and fell 0.2 ha groups.	Crop validation prior to next thinning.	No groups currently felled in this coupe.
12	Long term retention 1.5ha	Create diverse canopy structure at forest edge by retaining SP & MB beyond optimum economic age.	Complex 30% SP 30% MB 40% Open	45 years 265 10	Little regeneration due to low light levels.	Deer browsing & weed competition.	Selective thinning including young MB.	Crop validation prior to next thinning.	
13	Long term retention 1.1ha	Create diverse canopy structure at forest edge by retaining MB beyond optimum economic age.	Complex 50% MB 50% Open	10 years 290 10	Young stand.	Incorrect thinning to create stable seed trees.	Selective thinning when stand reaches thinning age	Crop validation prior to next thinning.	

## Appendix 8 – LISS management

LISS is an approach to forest management in which the forest canopy is maintained at one or more levels without clearfelling.

The word 'approach' is important because:

- we are not following a system;
- there are no standard prescriptions; and
- flexibility is important – to take advantage of opportunities as they arise.

Any preconceived ideas about systems of managing forests can act as a 'straight jacket' to thinking about CCF.

Stands that have been regularly thinned are more likely to be successful with CCF. Crown thinning will be undertaken when transforming stands to CCF rather than low or intermediate types, as used in plantations. The basis of crown thinning is to remove competition from around selected trees (Frame trees); even if the trees to be removed are as big. Using crown thinning usually increases the average tree size, so there is potential for more income.

There are two main types of structure:

- Simple – in which there will be one or two canopy layers of trees
- Complex – where there are three or more canopy layers of trees

### 1. Transformation of a young (<40 yrs) stand to a simple structure

The objective is to achieve reasonably even regeneration of the desired species and then remove the canopy in a number of thinnings.

- Early crown thinning will be heavier (10-20%) than management table intensity and aim to develop 100 equally distributed 'frame' trees per hectare.
- 'Frame' trees are well-formed dominant trees with good crowns at reasonably even spacing.
- When the trees begin to cone (see table 1 below) stands will be thinned to the basal areas shown in table 2 to develop good conditions for regeneration to establish.
- If/when natural regeneration occurs it will be more variable than on a planted site, giving more variability in age, density and species.
- Canopy removal will aim to maintain a leader-to-lateral ratio of >1 in the regeneration (see figure 1), generally this will be achieved using the basal areas in table 2.
- The final removal of the overstorey may not involve all the trees depending on management objectives and windthrow considerations (green tree retention).

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- If natural regeneration is only partially successful in terms of number and species mix planting will be undertaken. Planting will be concentrated so the location of trees is known and they can be maintained. This will be by using a minimum of 16 trees in distinct group with the trees planted at 1.5 m x 1.5 m to form robust groups.
- If natural regeneration has been completely unsuccessful and CCF is still seen as appropriate planting will be undertaken to form the new canopy layer.
- Before planting the stand will be thinned to the basal areas for 'seedling growth' in the table 2.
- The felling and extraction of the canopy trees will be considered when deciding where to plant.
- Planting will be at 2500 trees per hectare in a well-defined pattern so they can be found for subsequent maintenance. 'Blanks' will be left when the planting position is close (<1 m) to canopy trees. This should ensure restocking compliance with OGB 4, as the area under the canopy is not part of the net area.
- Attention will be paid to site preparation, vegetation management, plant quality and reducing the impact of mammals to make sure of successful establishment. In general opportunities for site cultivation will be constrained by the overstorey.
- If the established crop is between the ages of 20 and 40 years, a transformation period of up to 50 years is expected.

Table 1. Species seed production details.

Species	Age of first good seed crop	Age of max seed production	Interval between good seed crops (yrs)
Sitka spruce	25-35	40+	3-5
Scots pine	15-20	60+	2-3
Douglas fir	30-35	50+	4-6
European larch*	25-30	40+	3-5
Japanese larch*	15-20	40+	3-5
Hybrid larch*	15-20	40+	3-5
Western hemlock	25-30	40+	2-3
Corsican pine	25-30	60+	3-5
Lodgepole pine	15-20	30+	2-3
Norway spruce	30-40	50+	**
Noble fir	30-40	40+	2-4
Grand fir	35-45	40+	3-5

Table 2. Basal area guidance for natural regeneration

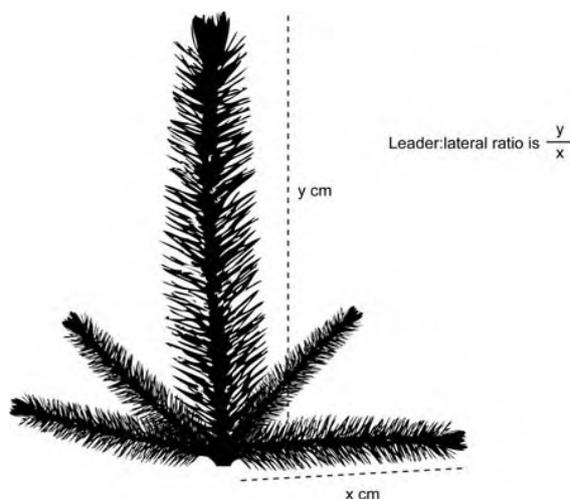
Species/ group	Shade tolerance of seedlings	BA (m <sup>2</sup> ha <sup>-1</sup> )	
		Establishment*	Seedling growth**
Larches	Intolerant	20-25***	15-20
Pines	Intolerant	25-30***	20-25
Sitka spruce	Intermediate	30-35	25-30
Douglas fir	Intermediate	35-40	30-35
Norway spruce	Tolerant	40-45	35-40
Western hemlock	Tolerant	40-45	35-40

\* On moderate to fertile sites where vegetation regrowth will be faster and more severe the BA for establishment will be increased.

\*\* Seedlings and saplings are growing well under a canopy when the ratio of the length of the leader to the length of laterals in the upper whorl is  $\geq 1$ , as shown in figure 1.

\*\*\* Stands of larch and pine at these basal areas will usually have well-developed ground vegetation layer and control or cultivation will be needed to start regeneration.

Figure 1. Leader-to-lateral ratio.



## 2. Transformation of a young (<40yrs) stand to a complex structure

The objective is to create a wider dbh range than under a simple system by:

- retaining small trees; and
- encouraging fast growth of selected frame trees
- The pattern of regeneration will be different to a simple structure, and will be arranged in groups that only cover up to 20% of the area at any one time.
- Up to 50 'Frame' trees will be selected per hectare and these will be crown thinned so as to keep as many small trees as possible.
- 'Frame' trees are stable, well-formed dominant trees. They may need to be present on the site for a long time; spacing should be 'clumpy' and not regular. Stable trees will have a larger diameter for a given height.
- The stand will be thinned to a residual basal area of about 18-25 m<sup>2</sup> per ha for larches and pines, and 25-35 m<sup>2</sup> per ha for spruces and Douglas fir. The choice within this range will depend upon the site and the balance between the overstorey and any regeneration. If there is little or no regeneration a higher value will be chosen to provide suitable conditions for seedlings to establish. If there is enough regeneration, which needs to be released, then a lower value will be favoured. The aim at each thinning is to remove enough trees to achieve the chosen residual basal area.
- If there is too much regeneration thinning will be concentrated on releasing the best regeneration and attempting to hold it back in other areas.
- Planting in complex structures will be considered to increase chances of success.
- Trees will be planted in canopy gaps of 0.1 ha minimum size.
- Trees will be planted in half the area of the gap in the centre.
- Close spacing (1.5 m x 1.5 m) will be used to make the groups robust. For example, when planting a canopy gap of 0.1 ha 200 trees will be planted at 1.5 m spacing on half the area in the middle of the gap. Close spacing will ensure rapid canopy closure and planting only half the area ensures minimal competition from the canopy trees, allowing opportunities for natural regeneration and increasing operational access.

## 3. Transformation in older (>40yrs) stands

Transformation of stands older than 40 years may be possible, especially on wind-firm sites, but the opportunity to steer the development of the young stand in thinning has been lost.

The main implications of this are:

- for simple systems there will be reduced opportunities for developing the crowns of 'Frame' trees and the window for natural regeneration is reduced. Therefore more 'frame' trees will be retained and a longer regeneration period used.
- in complex systems the main risks are that 'Frame' trees will become too large to be marketable, and the stand will still be quite uniform when windthrow starts. The aim is to establish groups of regenerating seedlings under an irregular overstorey while older trees are progressively felled.

## Appendix 9 – Appropriate assessment

### Appropriate assessment of forestry proposals which are likely to have a significant effect on a European site under the Conservation of Natural Habitats, &c.) Regulations 1994. Regulation 48.

**1. Name of European site affected by the application and current designation status, including name of component SSSI (if relevant).**

River Dee SAC (including tributaries)

**2. Features of European qualifying interest, whether priority or non-priority; and conservation objectives for qualifying interests.**

**1. SAC**

**Conservation objectives**

To avoid deterioration of the habitats of the qualifying species:

1. *Margaritifera margaritifera* (Freshwater pearl mussel)
2. *Salmo salar* (Atlantic salmon)
3. *Lutra lutra* (Otter)

or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for the qualifying features.

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species (including range of genetic types for *Salmo salar* only) as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species
- Distribution and viability of the species' host species (for *Margaritifera margaritifera*)
- Structure<sup>1</sup>, function<sup>2</sup> and supporting processes<sup>3</sup> of habitats supporting the species' host species (for *Margaritifera margaritifera*)

1 structure, eg variety of flow types, river morphology

2 function, eg macrophyte growth, macro-invertebrate community

3 supporting processes, eg water table, water quality



- Where practical felling debris will be removed from the riparian zone at the time of felling. Where it is necessary to leave debris in-situ, breakdown would be expected to occur rapidly due to the wet ground conditions in the riparian zone. (See also 'Conditions Required' below).

#### 4.5 Any other comments

#### 4.6 What would be the outcome on the site if the proposal is not approved?

Impact on European Site would be neutral.

Heavy shading by conifers of minor watercourses outwith designation would continue with loss of riparian habitat.

### 5. **Conclusions.**

*Will the proposal adversely affect the integrity of the European site?*

**No. With reference to the assessment in 4.4 and the conditions stated in (6), the proposals should not affect the integrity of the site.**

### 6. **Conditions required (if any).**

- All operations to comply with the Forest and Water Guidelines and Forests and Soils Guidelines as a minimum.
- Motor manual felling to be undertaken within riparian zones
- No fuel or chemical storage or application within 15m of any watercourse
- Direct FES supervision of all sites and liaison with Dee and District Salmon Fisheries Board ahead of operations
- All operations will be timed to minimise the possibility of siltation (i.e. summer working), accumulation of felling debris and to avoid breeding seasons of key species.
- Otter surveys will be carried out prior to any operation to identify location of holts and there status to avoid disturbance from operations.