Moray and Aberdeenshire Forest District

Elchies

Forest Design Plan

Approval date:

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Summary of Proposals

The broad aim of this plan is to realign the present management of Elchies to coalesce with the Scottish Forestry Strategy (SFS) 2006, incorporating the core themes of climate change; timber production and business development; community development; access and health; biodiversity and environmental quality.

- Climate Change:

Wood fuel has the advantage of being carbon neutral. Therefore, within the life of this plan we will see a drive to bring broadleaves back into management. Primarily this will be through coppicing existing natural regeneration to supply the bio-fuel markets. Thereafter, efforts will be made to identify potential sites for commercial broadleaves some of which will be managed using short rotation forestry approaches. There will also be an opportunity to utilise first thinnings, natural regeneration of Lodgepole pine (LP), Western hemlock and potentially rhododendron.

The removal of poorer growing conifers with the replacement of more appropriate species will in-turn sequester and utilise greater proportions of carbon over the life of the plan.

The deep peat habitats are increasingly being identified and designated as minimum intervention areas and therefore will be left undisturbed to prevent the release of carbon to the atmosphere. There will be no establishment on deep peat areas that have previously been uncultivated.

The identification of local combined heat and power plant (CHP) projects to significantly reduce potential haulage distances.

- Timber :

The continued removal of Lodgepole pine will remain the main priority. The high incidence of red band needle blight (RBNB) will expedite this process. Consideration should then be given to the planting of improved planting stock of recognised phenotypical qualities where there is the potential for tangible increases in increment. More emphasis and resources will be targeted at identifying the right species choice for the specific site types.

- Business Development:

  The increased expansion of the fuelwood markets will provide an opportunity for new business creation and development. Particularly, small scale two-person operations with low–cost machinery including firewood conversion systems, fuelwood chippers and mobile sawmills. Niche marketing will be actively pursued including non- timber opportunities such as moss and foliage collection. The contract cycles would be synchronised with the clearfell phases to ensure a sustainable approach.

- Community Development:

  Engaging with the community regarding issues and opportunities related to the forest is high on our priority list. We will endeavour to continue the dialogue we have historically communicated through the community council. The supply of fuelwood for heating community infrastructure is an example of potential development.

- Access and Health

  Elchies has a network of paths that are part of the Moray Council Speyside Access Forum. They are extensively used by the local community. However, the volume of usage is low. Therefore it is appropriate that we target resources on maintaining the existing network in partnership with Speyside footpath network (SFN).

- Biodiversity

  Efforts to increase the biodiversity will be focused on the continued establishment of one significant area of natural reserve and three habitat networks/reserves. The natural reserve will be centred on the riparian network. Increased planting of broadleaves will add to the biodiversity as will the establishment of an open space habitat network based on priority habitats, wayleaves and archaeological features. There will also be the development of an open mosaic habitat reserve and a forest/ moorland interface, transitional habitat network.

  The improvement of the overall water quality throughout the watercourse network in Elchies is a fundamental and underlying principle of this plan.

  Maintaining the remnant population of capercaillie and improving habitat for black grouse is a key objective in the west of the forest.

1.0 Introduction

The purpose of this plan is to review the Forestry Commission Scotland's (FCS) management of Elchies Forest in accordance with the Moray & Aberdeenshire Forest Districts (MAFD) strategic plan. The aim is to set out management objectives and prescriptions for the forest for the next ten years and thereafter a general overview of intent for the following twenty years. The plan is based on the requirements and guiding principles of the UK Woodland assurance scheme.

1.1 Setting and Context

Elchies forest block is located at GR NJ234444 just north of the small village of Archiestown, within Speyside. The nearest centre of population (see location plan) is Elgin at 16.3 miles from Elchies. It is close to the A95 trunk road, which leads to the south and incorporates part of the renowned Malt Whisky trail.

The forest block extends to 1520 hectares comprising of high moorland forest in the north that descends to a pastural landscape in the south. The elevation ranges from 150 –300m. To the east and north of the Elchies plateaux are predominantly thicket stage plantings belonging to Rothes Estates.

1.2 History of Forest

The Elchies forest block was acquired in its entirety in mid 1950^{s}. Thereafter it was established over the following decade. The poorer wetter ground was planted predominantly with South Coastal Lodgepole pine. A significant proportion of this has been felled prematurely over the last decade and this process of diversification will be continued through the revised plan. This felling has facilitated the redesign of the forest. The main thrust of the previous plan (see next section) was the improvement of water quality in the Ballintomb Burn and its tributaries the enhancement of habitat for capercaillie and black grouse and the restructuring of the forest with appropriate species to improve habitat and timber quality. These fundamental principles remain the same.

2.0 Analysis of previous plan

2.1 Analysis from previous plan

The following table highlights the main priorities set out in the previous plan. It also describes how and if those aims were met and what the proposed management intent is to carry these objectives forward in this plan.

Key to Progress against objective
1 – Nominal progress against objective
2 – Some progress
3 – Progress as per the FDP

Factor	Priority	Objective	Measurement indicator	Progress to date	Proposed action in new plan
Social & Recreation	Medium	Maintain network of informal trails through consultation	Confirmation from Moray Council and Speyside access forum that the path network is well used.	2. Part of the existing informal network has been waymarked by Speyside footpath network.	Maintain present provision. Discussions with Moray council over the development of the Mannoch Road footpath. Any proposal would have to consider potential pressure on the caper area.
Commercial	High	The production of economically viable marketable products using a sustainable approach.	Sales recording package (SRP) indicates that income exceeds production costs.	1. Areas felled as per the previous forest design plan (FDP). Balance has been achieved between the supply of sawlogs and removal of poorer SLP.	Continued and accelerated removal of South coastal Lodgepole pine (SLP) prioritising RBNB infected material, windblow and snap. Restocking will see the use of more appropriate species. Identify long term retentions (LTR) and thinning areas in an effort to improve log breakout.
			Within areas designated for future timber production the aim is to maintain or increase yield class at a final stocking for conifer species 2800 trees/ha at year 5.	2. The planting of both improved Sitka spruce (SS) and Scots pine (SP) stock has had positive results. However there is a small percentage of the area that has not reached 2800 stems/ha. Natural regeneration	Identify sites that will benefit from vegetatively propagated (VP) Sitka and continue to use improved stock elsewhere. Alternative species will have to be identified as a nurse for SS as LP is no longer a viable option. Areas to be identified for the planting of productive

Progress against objective
1 – Nominal progress against objective
2 – Some progress
3 – Progress as per the FDP

Factor	Priority	Objective	Measurement indicator	Progress to date	Proposed action in new plan
				has helped fill the gap and beating up is often unnecessary.	broadleaves. Fencing will be necessary. Broadleaves to be planted according to best practice for species and that will supply high quality marketable material. Future Scots pine (SP) restocking will be at a stocking density of 5000 stems/ha as per OGB 4 (revised).
			Thinning of the existing broadleaf resource.	3. Preliminary markets include firewood and coppicing.	Broadleaved areas will be developed and fenced if necessary to encourage natural regeneration. Enrichment planting only to be considered if all the ecological site classification (ESC) criteria are met. Niche market potential to be fully resourced and researched.
Archaeology	Low	Maintain sites and prevent encroachment of surrounding trees (see Historic Environment Planning Guidance).	No damage to sites during operations. Identification, recording and protection of previously unknown sites.	1. The integrity of unscheduled ancient monument (UAM) sites within felling coupes has been maintained.	Sites to be opened up and kept clear within the new plan and incorporated into the open space habitat network. If resources allow we will engage the FC Archaeologist to confirm and update our current database.

Progress against objective

1 – Nominal progress against objective
– Some progress
3 – Progress as per the FP

Factor	Priority	Objective	Measurement indicator	Progress to date	Proposed action in new plan
Landscape	Medium	To enhance the relationship between the forest and the landscape within which it sits.	To use a combination of feathering, open space and species selection to improve the landscape character.	3. Felling in the previous plan has served to reduce some of the hard edges as well as the introduction of more organic shapes within the restocking.	The prioritisation of the removal of Lodgepole pine starting where possible with material infected with RBNB. Harnessing this opportunity to restructure the forest both visually and dynamically (see point 5.5 Species distribution comparisons & Map 8 Age class structure visualisations).
Biodiversity	High	Protect & enhance existing habitat whilst increasing level of potential habitat. Key species capercaillie.	Structural diversity and restructuring is ongoing. Increased areas of bog cotton and blueberry.	2. There has been a reduction in numbers of surveyed capercaillie. This could be as a result of a number issues. The introduction of formal footpaths in the east. Too rapid a transformation of the age class structure. Natural regeneration and windblow filling up ride network. A potential increase in egg predation from corvids, Pine martens and foxes and the least understood extreme weather events.	Retain open grown trees where possible. Maintain and increase areas of bog cotton and blaeberry. Keep where appropriate the ride and rack network clear of natural regeneration and impediments to flight. Manage predation issues where resources allow. Create small-localised areas of open water where they will be most effective.

Progress against objective

1 – Nominal progress against objective
2 – Some progress
3 – Progress as per the FDP

Factor	Priority	Objective	Measurement indicator	Progress to date	Proposed action in new plan
Hydrology (water quality)	High	Recognised as important catchment for the River Spey (see appendix iii appropriate assessment).	Improvement of water quality. Spey Fisheries Trust carried out a survey of the Ballintomb in the early life of the previous plan. Similarly critical load analysis carried out towards the end of the plan.	1. As a result of the consultation with the fisheries board the entire Ballintomb and its tributaries where classified as a natural reserve. The majority of the burn has now been cleared of conifer and the brash removed from the alluvial plains.	To plant sizeable fenced areas of native broadleaves that mimic the SSSI at the mouth of the burn. To have the water quality assessed and monitor for key species at 5-year intervals. Reviewing at the next plan. The Spey fisheries trust has agreed carry out sampling in the Ballintomb to provide a bench mark for future testing. Encourage and protect natural regeneration where it occurs.
Wildlife Management	Med	Reduce roe deer pressure. To prevent red deer from getting a foot-hold in Elchies.	Cull targets based on deer numbers and damage assessments have been consistent.	2. Deer numbers have been maintained at a relatively constant level. However, they are still slightly higher than the perceived acceptable levels. The recent clearfells especially along the burn will help facilitate the deer control in the immediate future.	Primary control to be administered by the Moray & Aberdeenshire Wildlife team augmented by a contractor if necessary. Levels of damage have risen in recent times and the incursions by red deer are becoming more frequent. The greater use of marked fences to be explored especially for the protection of broadleaves.

3.0 Background Description

3.1 Physical site factors

3.1.1 Geology Soils and landform

Elchies forms part of the Moray uplands consisting of rounded hill slopes and plateaux. A mixture of moorland and forestry surrounds the forest block with semi-improved pastures to the south.

The Solid morphology to the south of the forest in and around Archiestown is predominantly igneous. The remainder of the Elchies block is made up of quartos and schist's - moine metamorphics.

There are significant areas of peat and deep peat (Trichophorum, Calluna bog) that support important habitat characteristics for capercaillie. The majority of the remainder is made up of typical ironpans and podzols (see Map 2 Key features map).

3.1.2 Water

The River Spey site of scientific interest (SSSI) is world renowned for its salmon fishing, its inexorable link with the whisky industry and its significant relationship with tourism. These factors provide a valuable contribution to the fragile rural economy.

The Ballintomb burn special area of conservation (SAC) is an important tributary that has become impoverished, partly as a result of previous objectives. The major thrust of the new FDP and its predecessor is to improve the water quality and its ability to sustain key species (see appropriate assessment).

3.1.3 Climate

The uplands between the River Findhorn and Spey are markedly cooler and wetter than the climatic conditions on the Moray coast and therefore more aligned with upland silviculture.

The snow days experienced does have a bearing on forest operations and timber haulage. It has always been prudent to avoid the coldest months of January and February.

The winter of 2009/10 saw a significant volume of snow snap that in turn has resulted in a rise in secondary pathogens.

Climatic Element	Average annual Values 1971 - 2000
Rainfall	900 – 1200mm
Temperature	7 – 8 ^{o}C
Sunshine Duration	1100-1200 hrs
Ground Frost	140 - 160days
Snow Lying	20 – 40 days

3.2 Biodiversity and environmental designations

The River Spey SAC – includes the River Spey and several tributaries including the Ballintomb Burn. As a result an 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 has been compiled (see appendix iii – Appropriate assessment).

The area to the south of the forest and leading up to the slopes of Ben Rinnes has been designated as an area of great landscape value as identified on Map 2 Key features map.

There are two areas of distinct natural reserve built into the heart of the plan area. They comprise of the riparian habitat network and on the northern and western margins of the forest the forest/ moorland interface (see appendix vi & vii with supporting Map 7 Future habitats – natural & habitat reserves).

The following table identifies species/ communities which are present within the Elchies FDP area. The relevant designation associated with each is indicated.

Species/ Habitat	Designation	Body
Capercaillie	Core caper area, UKBAP	RSPB, UK Government
Black Grouse	UKBAP	UK Government
Scottish Wildcat	UKBAP, EPS	UK Government, EU
Scottish Crossbill	UKBAP	UK Government
Crested Tit	Schedule 1 & 4 WACA	UK Government
Red squirrel	UKBAP	UK Government
Goshawk	Schedule 1 WACA	UK Government
Brown Hare	UKBAP	UK Government
Acid dry grassland	UK/NE priority	UK Government
Dry heath	UK/NE priority	UK Government
Open mosaic habitat	UKBAP	UK Government
Unclassified raised bog	UKBAP	UK Government

3.3 The existing forest

3.3.1 Age structure, species and yield class

Age structure and species are covered in future management 5.5 & 5.6 (see appendix x 2010 Yield Class (YC) Comparisons.).

The species distribution is almost exclusively conifers with only 1% being broadleaves. The most common tree species is still Lodgepole pine at 33% originally planted as nurse species with SS. However, there has been a reduction of 11% since 1999. Scots pine is next at 24% a reduction of 2% followed by Sitka spruce at 19% with a reduction of 3%. Other conifer mainly the larches has seen a rise from 3-7%. The most significant change after the continued removal of Lodgepole pine is marked increase in open space up from 5 – 16%.

The current yield class (YC) range for the principle conifer species follow a typical normal distribution. With 60% of Sitka spruce at between YC 12 & 14 and 78% of Scots pine between YC 8 & 10. The larches record 63% of stands between YC 6 & 8 and Norway spruce is sitting at 76% between YC 8 & 10. The current status of broadleaves is essentially unknown. However, within the next 5 years there will be a systematic survey of all broadleaves putting them on an equal footing with conifers.

3.3.2 Access (see Map 1 Location Map).

The principle access to the forest is via Archiestown village square (grid reference - NJ229 442) by the war memorial. The main agreed haulage route uses the B9102 that leaves the A95 at the Craigellachie junction. Light vehicle access is provided by the U144E from Dallas the U139E from Carron and the B9102 from Ballindalloch in the south

3.3.3 Low impact silvicultural system (LISS) potential (see Map 2 Key features map & Map 3 Concepts and analysis map).

There is less scope to develop low impact silvicultural systems or approaches in the upland environment. However, more effort will be directed at the micro management of sites at the establishment stage to utilise pockets of potentially better soils for productive broadleaves or conifers where appropriate. More resources will be targeted at identifying areas that will benefit from thinning at an early stage. It is envisaged that these will be predominantly in the south of the forest.

3.4 Landscape and land use

3.4.1 Landscape character and value

The landscape character is that of upland moorland and forestry. This extends down to the south to the broad-farmed valley with fragmented woodland. To the north the rolling hills with a patchwork of coniferous woodlands and open ericaceous moorland. Pikey Hill 355m, Green Hill 338m and Bracken Noits 355m are examples. The diverse characteristics of the natural woodland/forest with its diverse spatial and vegetation structure can only serve to enhance the landscape if the present variety and balance is maintained.

3.4.2 Visibility (see Map 11 Viewpoints Map).

Although an important component in the landscape it is not particularly significant in terms the visual aesthetic from many of the key external viewpoints. From the A95 (major communication and tourist route) and towns of Rothes Aberlour, and Craigellachie, Elchies only appears in peripheral and distant views.

3.4.3 Neighbouring landuse

The north-eastern fenceline is a mixture of thicket, early thicket and open moorland managed by Rothes Estates. The western march is owned by Knockando estate and this is predominantly open moorland that extends uphill to Carn na Cailliche at 400m. It is actively managed as a grouse moor and as a result has been denuded of trees. The southern edge is predominantly agricultural smallholdings and domestic residences ranging from 1 – 35ha.

3.5 Social factors

3.5.1 Recreation

Recreation in Elchies is relatively low-key nevertheless, it is important in the context of the village and surrounding environs. The majority of usage centres on and around the footpath network that starts at the Elchies main entrance. The walks range from 1.5km to 7.5km.

The majority of visits are by local residents exercising their dogs although there is an upward trend in visitors from outside the area. Mountain bikers do use the forest and there is evidence of them throughout Elchies. However, numbers are low and the impact manageable. Usage for horses has remained relatively constant. In the main it is locally stabled horses that are exercised in the forest. There is seasonal use of the forest by cross-country skiers but this is becoming increasingly more infrequent.

The increasingly popular long distance footpath the Speyside way follows the valley along and around the River Spey. There is potential within the life of this plan that the Ancient Mannoch Road and public right of way runs along the western edge of the forest will be incorporated into Speyside footpath network. The forest is very visible from Ben Rinnes, which is a popular local hill and listed in the Corbett guide by the Scottish Mountaineering Council.

3.5.2 Community

Archiestown is a small community with a population of circa 180 people. There is a slight seasonal rise in the population during the holiday and fishing seasons. Archiestown has seen a modest increase in the last decade with an upsurge in house building. This is set to continue although there has been a slowdown as a result of the latest recession. The forest is a significant backdrop to this community.

3.5.3 Heritage (see Map 2 Key Features Map & Map 3 Concepts and Analysis Map).

The archaeological legacy is almost exclusively related to an agricultural or land based heritage.

The ruins and artefacts are generally low grade and of limited interpretation value. Nevertheless we will endeavour to maintain the integrity of these features by continuing to establish them as part of the open habitat network

Feature USAM	**Location**
Green Bog Well	NJ 198440
Un-roofed buildings and enclosure	NJ189445
Coreshelloch	NJ209458
Cach Na Vattie (enclosure)	NJ208462
Burn of Roehoish	NJ217462
Burn of Loishkean	NJ215459
Enclosure	NJ197445
Enclosure	NJ194445
Ballintomb Building	NJ217450
Stone & bronze age discovery	NJ199450
Boundary Stones	NE edge
Lady Croft	NJ242449

For further information refer to the Historic Environment Planning Guidance.

3.6 Statutory requirements and key external policies

3.6.1 Burn of Ballintomb NJ209430 (see appendix iv & v appropriate assessment & SSSI description).

Although not on our ground it is significantly part of the Ballintomb burn network and very much the conditions we are trying to promote on the public managed side of the fence. The potential habitat connectivity will help encourage key species to re-colonise the area and meet the aspirations of the natural reserve prescription (appendix vi).

The key objective will be to establish a riparian natural reserve of alder with varying amounts of birch, ash, aspen and Wych elm. There should be scope to add a small number of oaks on the upper drier slopes of the burn without compromise to the red squirrel management guidance. It would be desirable if seed could be collected from the SSSI to re-establish the broadleaves along the FCS section of the burn.

3.6.2 Special Area of Conservation (SAC)

Elchies Forest falls within the River Spey catchment and within the forest there are tributaries of the River Spey. These tributaries are the **Burn Roy** and the **Burn of Ballintomb**, into which most of the watercourses within Elchies forest eventually join. These burns provide potential habitat for Atlantic salmon and otters. Freshwater pearl mussels and sea lamprey have only been recorded within the main stem of the River Spey. Any activity affecting watercourses has the potential to impact on these 4 species and needs to be considered carefully. The burn is currently in unfavourable condition because of the afforestation which has affected fish continuity. The assessment criteria are the improvement of the riparian vegetation. Felling non- native conifers along the burn has already taken and as a result the watercourse in the initial stages of recovery.

4.0 Analysis and Concept

4.1 Analysis of constraints and opportunities

Within this section the key influences on the forest are analysed and from this broad concepts the forest's future management are established. The table listed on the following pages highlights the factors that are deemed to have an influence on the long-term management of the forest block.

The general environmental site classification (ESC) and detailed aspect method (DAMs) analysis that will guide our species choice is as follows:

Accumulated temperature over 5.6^{o}C ranges between 876 -1237.

Moisture deficit range is 61-80mm. This in conjunction with the accumulated temperature gives us a cool moist climate.

The DAMS scoring ranges between 13-19.

The soil parent material is predominantly peat with elements of acid schists and quartzite in addition there are localised areas of morainic and fluvioglacial sands and gravels.

Soils are predominantly peaty with areas of podzol freely and imperfectly drained.

The soil nutrient regime is very poor to poor.

Moisture regime ranges from very wet to wet with localised areas of fresh.

Considering the above analysis the following key species are available to us. This has helped inform our decision process in the tables below.

Sitka spruce, Japanese larch, Downey birch and common alder with Scots pine on the drier areas. On the slightly improved soils Norway spruce, European larch, Silver birch and Aspen can be considered.

None of the above assessment precludes the establishment of additional species based on the local knowledge and experience of the establishment forester. The rationale for these decisions will be discussed as part of the workplan process.

Factor	Opportunity	Constraint	Concept Development
Social/recreation	- Potential to engage with recreation bodies and adjoining land interests to educate in the habitat requirements of both capercaillie and black grouse. - Proposed refurbishment of the Mannoch Road has potential to be a long distance path for cyclists, horse riders and walkers. This could relieve the environmental pressure on more sensitive areas. - Potential to improve the open mosaic habitat including the open water in the quarry area making it suitable for forest classroom and pond dipping.	- Remote average size block that historically has had relatively low recreation utilisation. - Localised recreation predominantly made up of two circular routes- on occasions disrupted by harvesting operations restricting access. - Primarily frequented by local people predominantly dog walkers. This has possibly been detrimental to the suitability of the habitat previously used by the remnant populations of capercaillie and black grouse. - Limited visitor parking facilities are insufficient to meet potential demand for those who live outside the local environs.	- Present facilities will be maintained and enhanced (where funds allow) to cater for all user groups. - There will be no further expansion of recreation facilities in order to protect and improve the habitat for the remaining capercaillie and black grouse. Exception is the potential use of the Mannoch road as part of a long distance footpath. Any proposal will have to be managed sensitively and creatively with input from the RSPB. - Liaise with the Moray equestrian access group (MEAG) to develop ways to maintain and enhance the equestrian experience in the east of the forest. Possible dedicated routes. - Enter into dialogue / partnership with local stakeholders, Moray Council, MEAG, Speyside Access Forum to develop strategies on relationships and coexistence of recreation types. Reduce conflicts between biodiversity issues and recreation users.

Factor	Opportunity	Constraint	Concept Development
Commercial	- The rolling nature of the landscape allows scope to restructure/ redesign the forest by removing large areas of diseased, windblown an inappropriate species. - Restructuring generates opportunities to increase areas of appropriately located open space and a mix of native species. - Opportunity to replant species, which are less susceptible to disease and more suited to heather and heathland, sites. - The potential growth of the biomass/ fuelwood market may create opportunities for broadleaved coppicing especially birch also consider short rotation forestry. First thinning should be a more attractive proposition where conditions allow.	- Significant areas of RBNB require felling and removing. This has the potential to impinge on the felling of species favoured by the sawmills. - Restocking species choice limited by RBNB. Moratorium on the use of LP, SP in previously infected area and Corsican pine (CP). - Significant areas of windblow affecting in particular SP and LP planted on inappropriate site types. - High proportion of wind snap in a number of coupes -removal of salvageable marketable timber may result in the remainder of stands becoming unstable. - Large clearfells not conducive to restocking through natural regeneration, increasing costs of restocking.	- Although challenging on sites with RBNB, windblow and snow snap the ultimate aim is to produce a mosaic of age and species structures where possible. - Increase proportion of SP on heather sites where there has been no RBNB - Increase areas of SS on appropriate soil types- gleys and drier peat areas. (This is compatible with capercaillie objectives). - Delay felling where necessary to avoid adjacency with coupes felled due to RBNB. - Provide effective protection for broadleaved planting. The default position is tube only where the scale of the project makes it uneconomic to fence. Fences must be marked and capercaillie ‘friendly’. - Resource and promote the utilisation of broadleaf (primarily birch) regeneration for carbon neutral fuelwood and biomass markets. Identify potential standards where appropriate for seed trees and potential sawlog.

Factor	Opportunity	Constraint	Concept Development
Hydrology	- The continued improvement of water quality is important for biodiversity and the reestablishment of key species. It also adds value to the visitor experience. - Provide opportunities for creation of riparian woodland, habitat networks, natural reserve and open space. - The wayleaves for water supplies provide opportunity to create elements of open space and broadleaved/native woodland. These measures will help reduce disturbance from future operations. - To remove conifer species from the riparian zones and adjoining catchment. This will reduce the amount of scavenged airborne pollutants that are potentially detrimental to improved water quality.	- The entire forest block is within the River Spey catchment. One significant burn (SAC) and associated tributaries feed into the Spey. - Part of the forest block is within a critical exceedence square for the River Spey, so water sampling maybe required. - There are several small burns and ponds within the forest block, which will require the appropriate prescriptions and protection to be applied during operations - Several private water supplies, including the Cardhu distillery, are sourced from the forest. Scottish Water has redundant supplies and tanks within the forest block.	- Utilise watercourses to create riparian woodlands and other important habitat networks. Form linkages between these and other networks both within the forest block and beyond. This will augment the already increasing age class diversity, species composition and biodiversity. - Plant appropriate proportions and species of native broadleaves to expedite the recovery of the watercourse network. - Monitoring of key species will be carried out to determine the quality and value of potential water quality improvement. Target to be good quality status by 2021 as defined by the Scottish environment protection agency (SEPA).

Factor	Opportunity	Constraint	Concept Development
Archaeology	- These archaeological sites will provide opportunities to create permanent open space where appropriate.	- Several features within the forest block reflect the agricultural heritage of the area. These will require the standard protection afforded to all unscheduled ancient monuments during and between forestry operations.	- Maximise the benefits of the enforced open space associated with archaeological features by managing it to promote appropriate biodiversity and linking it with natural reserves and habitat networks. - Depending on the sensitivity of the feature the open space can be utilised to fulfil other management objectives such as deer control.
Factor	Opportunity	Constraint	Concept Development

Factor	Opportunity	Constraint	Concept Development
Landscape	- Opportunities to break up the forest edge especially in the north and west through clearfell and partial restock, natural regeneration and the management of localised areas of open space. - Incorporate diversity through the introduction of targeted broadleaf planting with the aim of disrupting the conifer edge and creating appropriate habitat links. Elements of the conifer edge- a sudden edge to agricultural margin will be retained to compliment the overall aesthetic value. - Immediate planting following clearfell will reduce the potential deleterious impact on the landscape. However, hylobius issues will have to be considered. - The quarry habitat adds diversity to the internal intimate landscape. - Larch will be left as default. This will add a valuable landscape component.	- The northern and eastern edges of the forest block are relatively geometric. Issue is low priority as area can only be viewed from limited vantage points. - At a landscape scale the forest looks like an uninterrupted blanket of conifer. - Unavoidable large-scale coupes and resultant felling of RBNB, windblow and snow snap will create large expanses of open ground. - The stark contrast between the forest boundary and the agricultural land-uses can be overwhelming and unattractive to some. Geometric shapes to be avoided. - Enforced fallow periods for hylobius control will extend the period felled areas remain open and unplanted.	- Proposed habitat improvements for capercaillie and black grouse along the forest moorland interface will also benefit landscape by 'naturalising' these transitional areas as they regenerate at different densities. - Break up the expanse of conifer by creating natural reserves and habitat networks along gullies and riparian zones and favouring native broadleaved species where appropriate. - Enhance the internal intimate landscape by staggering the restocking of large areas. - Identify suitable areas of open ground and creative design of the ride network. - Retain architectural trees but restrict the amounts of standing deadwood in areas of high visibility / recreation use. - Retain large trees in and around the entrance to the Forest at Archiestown. - The default will be to thin all coupes at least once. Evaluation thereafter will be carried out on potential of coupes to sustain additional thinning. Rationale should be delivered as to why we should not thin. Perpetual thinning where applicable will reduce the impact on the landscape.

Factor	Opportunity	Constraint	Concept Development
Biodiversity	- Scope to improve the levels biodiversity through habitat enhancement and new habitat creation. There is an opportunity to increase the forest moorland interface on the northern and western flanks. - Opportunities to link natural reserves and habitat networks incorporating watercourses (Ballintomb Burn and tributaries along with the Roy Burn), water features open space and appropriate archaeological sites. - The quarry has created an open mosaic habitat. There is potential to improve this habitat using the broad habitat action plan (UK BAP). - The larch that will be left will be incorporated in long term retentions (LTR's), LISS's and natural reserves. This will provide age and species diversity as well as a valuable habitat element for capercaillie.	- The presence of Capercaillie and Black grouse within the forest mean that the FDP must focus strongly maintaining and enhancing their habitat. - Goshawk, Sparrow hawk, Red Squirrels and Badgers with their associated exclusion zones may affect operations during their respective breeding seasons. - Diversity limited primarily to conifer species. The amount of broadleaves is proportionately low. - The use of fences to establish broadleaves may have a detrimental affect on fragile capercaillie populations. Therefore, marked caper fences to be used when establishing broadleaves	- Through a system of transient dynamic habitat reserves we will endeavour to produce a forest moorland interface of naturally regenerating trees of uneven age. Liaise with Rothes and Knockando Estates. - Create extensive network of riparian woodland within a natural reserve utilising the Ballintomb and Roy Burns. - Aim to improve water quality for key species to potentially return. Such as otter, salmon, fresh water pearl mussel and water voles. This will be primarily through removal of shade bearing conifers and replacing with a proportion of broadleaves that will offer dappled shade. - Increase species diversity by creatively using broadleaf species to attain multi-benefit objectives. - Conservation team to carry out periodic surveys of key species to establish efficacy of both operation and prescriptions. - Interim default will be to retain all larch wherever possible for species diversity and maintenance of capercaillie populations.

Wildlife management	- Larger ride networks can initially be utilised for deer control. In turn these areas will naturally regenerate similar to a strip shelterwood approach. This provides good habitat for capercaillie and black grouse. - Potential to create deer lawns where there may already be requirements for open space, (i.e. archaeology site). - Scope to create multi-use tracks that improve quad access but also cater for walkers, mountain bikers, cross country skiers and equestrian users. - Creative control of the roadside regeneration will provide better potential for deer control while at the same time offering protection for capercaillie whilst at roadside.	- There are few areas conducive to efficient deer control. - Generally access is limited with quad access being particularly poor. - The larger felling areas will inevitably lead to longer shooting distances. - No effective deer lawns exist. - Roadside natural regeneration is increasingly becoming a problem for sight lines. - Prolific windblow and snap in forest rides impinges on access as well as the ability to control the deer. - A small number of red deer are now sharing the forest with the roe deer adding extra dimensions to damage levels and control.	- In conjunction with Wildlife, Recreation and Conservation Rangers identify potential future deer control areas and those requiring quad access. Where appropriate and as resources allow link with other uses such as recreation archaeology. - Employ creative management for the protection of broadleaves. This will be primarily protection from browsing. The appropriate use of marked fencing will have to consider the preservation of fragile capercaillie populations. - Multi- benefit tracks can only be created where the soil substrate is suitable. Therefore much of Elchies will be ruled out. Avoid any access operational or otherwise that conflicts with caper of black grouse management.

4.2 Concepts of the plan

The broad concepts are illustrated on the Concepts and Analysis map (Map 3)

These concepts are governed by the principle of producing a sustainable renewable resource that is economically viable. The plan must be robust but maintain the flexibility to adapt to ever evolving objectives and unforeseen economic fluctuations. It must also demonstrate the highest environmental credentials.

4.2.1 Timber production

Although Elchies has produced relatively consistent volumes over the last decade the quality has in general been poor primarily because of inappropriate species selection based on the best knowledge at the time. Not only was there a propensity to plant Lodgepole pine but the provenance's of Scots pine have not been the most conducive for the site types. This should be rectified in the following rotations. There will be a greater proportion of improved seed orchard Sitka spruce with VP used on the potential YC 16 and above sites. A70 Scots pine will be used when available and on suitable sites. The perceived climate change conditions with longer drier summers will in turn make a considerable area of Elchies more suitable for spruce. Mixtures on the impoverished or wetter sites will be made-up of SP, JL and BI. This range of mixtures has partly been brought about by the enforced moratorium (February 2009) on Lodgepole pine and the use of Scots pine in areas previously infected with RBNB. Where feasible, local provenance material should be used when selecting suitable broadleaves.

Appropriate silvicultural approaches will be practised where possible to achieve the highest quality timber for the site types. Optimum plant spacing and deer fencing will be considered in order to successfully establish localised areas with multi-objective broadleaves*.

Conifers principally Sitka spruce and Scots pine will be established on most of Elchies, which is made up of predominantly poorer quality sites, often with reduced rooting depth. Appropriate nurse species to be used if site conditions demand. Where site classification lends itself to species diversification a wider range of species should be established, providing further protection against climate change.

**Multi-objective broadleaves equate to areas of trees that will be planted at spacing's prescribed for producing good quality timber. However, it is fully intended that these areas will satisfy environmental, biodiversity and amenity objectives.*

Coppice

The use of coppice (see appendices xi) will be utilised initially in areas where the natural regeneration of birch is already established and on sites where constraints would not allow the establishment of taller crops. This includes close proximity to footpaths: boundaries where landscape considerations are an issue or where there maybe light issues with neighbours: areas of high windthrow risk. Areas of wet ground where ground damage is a potential problem the low impact of coppice management may be considered. Coppice will be managed on a rotation length dictated by the species selected and the aim will be to produce both timber products and fuel-wood on relatively short rotation lengths. It is also the intention that the birch will act as a nurse for the natural regeneration of SP in areas where that is appropriate. After review it maybe applicable to consider coppicing alder, aspen and ash within the natural reserves to help meet shared objectives.

Short Rotation Forestry

Areas still to be identified for short rotation forestry if applicable. There primary function would be to provide wood fuels for the renewable energy, biomass markets. Potential to establish demonstration sites in partnership with Forest Research. The Forest District will endeavour to establish a number of sites in the early life of the plan. This will be co-ordinated by planning with involvement from Forest Management (FM) and niche marketing officer.

4.2.2 Biodiversity

The biodiversity objectives and issues for Elchies have a significant effect on the operational aspects.

Capercaillie

The management of capercaillie habitat is a primary objective and is closely linked to the restructuring process. However, the inherent difficulties of increasing age diversity in an even age crop on an upland site are very apparent in Elchies.

The view taken has been to reduce the overall size of clearfells and manage windblow as appropriate. All this may not be the optimum in terms of landscape, harvesting and economies of scale and maximising mean annual increment (MMAI) potential. However, it does minimise dramatic change and maintains the mosaic of habitat types suitable for Capercaillie.

Black grouse

The grouse populations have seen a decline comparable if not more marked than the capercaillie. A key objective is to create a forest/ moorland interface. This will be achieved by not restocking within 100m of the boundary fence on the east and west of the forest except in a number of localised areas. This area will not be unproductive but will be allowed to fill in with natural regeneration at different rates and densities.

Salmon

The reestablishment of salmon spawning in the Ballintomb burn goes hand in hand with improving water quality. The reintroduction of indigenous and appropriate broadleaved species initially in the riparian zones will help reduce acidity and the scavenging of potentially harmful pollutants whilst helping to regulate temperature through the creation of dappled shade.

Otters & Watervoles

The return of the otter and watervole to Elchies is inexorably linked to the quality of the burn and the surrounding riparian area. It will ultimately be a marker of success as and when they return to the enhanced habitat. Short-term efforts will be directed at creating woodhouse piles (outwith the flood zone) to provide shelter and protection.

Important Species.

There are several other important species and these include:

- Red squirrel
- Wood ants
- Badger
- Crossbills
- Goshawk
- Sparrowhawk
- Kestrel
- Pine marten

Prime consideration will be given to the continued protection and improvement of key species and their habitats. This will be achieved through the work plan process and be monitored by the conservation team.

Broadleaved Species (See Forest District Broadleave Plan – Draft).

There will be a significant reintroduction of broadleaves initially into the riparian areas. There are several sites in the south of the forest where the aspiration is to re-propagate the area by the natural regeneration of birch which will be enriched with aspen as appropriate. On one sizeable site to the north at the higher elevation where there is limited seed source a fenced area of birch, aspen, and rowan, with small-localised areas of oak will also be planted. This will be at multi-objective spacing.

Open Mosaic Habitat -Quarry. (See appendix viii - Habitat Reserve Prescription).

The aim for this site after quarrying activities have finished is to maintain as an open water habitat. This will be in conjunction with the protection of the surrounding open faces and ledges for bryophytes lichens and associated flora and fauna. There will be a transition period and reinstatement plan generated prior to the 5-year review.

4.2.3 Hydrology (Water Quality)

Hydrology and biodiversity are inexorably linked. As part of our commitment to the River Spey (SSSI), Ballintomb Burn (SAC) and water and wildlife tourism we have generated a natural reserve prescription to inform the management and operational activities in the riparian areas. This consists of:

- The ongoing removal of non-native conifer from alluvial plains and gully sides.
- Clearing the subsequent brash from the flood plain.
- Restocking and fencing with sizeable areas of appropriate native broadleaved species. This will help maintain a temperature that is conducive to fish egg development.
- Monitoring water quality at 5 yearly intervals through water sampling and key species survey. It is envisaged that this will be carried out in partnership with the Spey Fisheries Trust sharing knowledge and expertise.

4.2.4 Landscape

The intent is to creatively work within the parameters of capercaillie/ black grouse habitat types, whilst working with the removal of SLP, RBNB infected material, and windblow. There is also an obligation to optimise maximum mean annual increment where appropriate and satisfying the objective of creating age diversity (see point 5.5 age diversity).

Tackling the issues above lends itself to the production of a diverse forest.
The riparian and forest/ moorland interface natural reserves are vehicles to bring about some of this fundamental change. By prioritising the removal of RBNB we will also notice a major change. The challenge is timing the remainder of what is a relatively even aged crop to maintain that structural diversity that does not compromise adjacency issues.

4.2.5 Archaeology

Again the preservation of the land heritage archaeology is closely linked with the provision of habitat network and open space. Where appropriate all archaeology will be cleared of trees and brash up to a minimum of 25m. This will be maintained as open space. Where possible this should be tied into adjacent felling or maintenance operations. There will be guidance drawn up to support this concept.

Incorporate in open space habitat network

4.2.6 Social recreation

The aim here is to maintain the current level of provision and improve the visitor experience where sustainable and appropriate. This primarily centres on the existing footpath network. We will engage with Moray council when approached over the proposed footpath along the ancient Mannoch road and public right of way. Any proposal to link our path with our existing network will have to be approached in such away that it does not impinge on conservation or operational interests.

4.2.7 Wildlife management

Deer numbers will continue to be managed through a prescribed cull. If fencing is considered its effect on capercaillie will have to be factored in. Tree tubes will only be used in circumstances where small localised windfirm areas of amenity trees need to be established.

5.0 Forest Design Plan Proposal

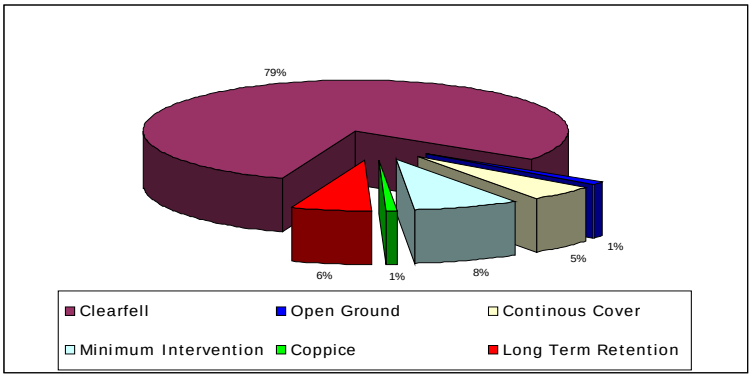
5.1 Management (See Map 4 - Management Map).

The management and implementation of this plan will be coordinated by the programme manager who will programme operations at the appropriate time prescribed by the plan. This will be communicated to the Grampian operations team through the work plan process by highlighting the objectives of the plan and relay all the pertinent environmental, archaeological, recreation and protection issues. It will also flag-up the relevant natural reserve prescriptions, appropriate assessments and statutory designations with our management proposals described in detail.

5.1.1 Clear felling

Clearfell and restock is and will remain the predominant silvicultural regime.
This approach accounts for 80% of the area that is currently felled in Elchies. This system is consistent with the rolling landscape and is the most economically sustainable at present. The wind hazard class (WHCL) average is 4 (See Map 10 - Wind Hazard Class). However, there are significant areas of 5 and an area of 6 at the most northerly point of Elchies. The main area of WHCL 2 & 3 centres in and around the Ballintomb burn to the south of the forest block and this is where the bulk of the LISS and natural reserves with broadleaves will be considered.

It is the intention that the clearfell areas in the capercaillie lek zones will be smaller and more intimate. However, within the next decade we are going to witness a number of sizeable clearfells in an attempt to reduce the areas of SLP, LP infected with RBNB, and windblow (see Map 3 – Analysis and Concept).



Summary of Silvicultural Systems in the Forest Plan (2010).

5.1.2 Thinning (see Map 5 – Thinning coupe map).

A large area of Elchies is not suitable for thinning and what was perhaps suitable was thinned too late making it vulnerable to windthrow. There are localised areas throughout Elchies that do not reconcile with the broad-brush WHCL classifications and therefore maybe suitable for thinning. Any area planted after 1989 will be considered for thinning within the confines of the allocated thinning coupe. Each area will be considered on its merits and a documented rationale supplied if area is not thinned (see Moray and Aberdeenshire Thinning Plan 2010). If an area receives a first thinning then it will be re-evaluated at the time of validation prior to subsequent thinning. Coupes will be assessed initially on a 7 year cycle and strata assessed on a site by site usually sub-cmpt level. Early first thinning has been made more of a reality by the potential offered by the biomass markets. With the emergence of these outlets the marketing of such material should be less of an issue. Therefore it is envisaged that the economic argument against thinning should be less than in the previous plan. Coppice birch will be managed on a 10 year cycle.

5.1.3 LISS (see Map 3 – Concepts & analysis and Map 4 – Management map).

With the present age class structure, species composition and generally high windthrow classification Elchies does not lend itself at the present time to the application of low impact silvicultural systems. As a result the three areas identified for LISS are on the agricultural margins on the lower southern edge of the forest where the risk of windthrow is lower and the soils are marginally better. All three sites will be managed following shelterwood approaches (see individual prescriptions and coupe records). It is too soon within the life of this plan to determine which is the most appropriate therefore we will continue to thin on a seven year cycle. When the light regimes are deemed to be conducive and an assessment of natural regeneration made then we can make a better informed decision on the most appropriate approach for each area.

5.2 Future habitats and species

The emphasis will be on the establishment and maintenance of five main habitats. These are:

- Habitat suitable for Capercaillie.
- Riparian habitat (following burn network) See appendix vi, Map 7
- Forest/ moorland interface (north eastern and western edges)
- Open ground network (centred on archaeological sites, roadside edges, wider organic shaped rides and water pipelines) See point 5.7
- Open mosaic habitat (as part of the working quarry).

Habitat suitable for capercaillie will include a diverse forest structure with open stands adjacent to thicket stage stands. Blanket bog areas being left unplanted to encourage cotton grass and associated insects. Provision of small pools utilising concavities created by operational machinery. Where possible managing light regimes to encourage spread of existing blaeberry populations. Sensitive flailing in capercaillie areas to leave roadside hedges for protection. Good perch trees will be identified at validation and where applicable marked for retention. This will involve a joint effort from the conservation and planning teams with conservation taking the lead.

Riparian habitats will created by the continuing removal of non-native conifer whilst retaining discreet pockets of NS for red squirrel. Brash will be removed from the flood/alluvial plains to reduce leaching and extraneous material that may cause issues if picked up in spate. Standing deadwood over 20cm diameter will be left at circa 18 stems per ha both in the open and on the periphery of the felling. Woodhouse piles will be created to support the plethora of invertebrates but also afford protection for otters. Sizeable areas of fenced* multi objective broadleaves will be planted in the meanders of the Ballintomb and tributaries. The tree species will reflect those seen in the SSSI in the lower reaches of the burn outwith our ownership. These include Wych elm, alder, Downy birch, aspen, hazel and to a lesser extent ash and oak. Species and water quality monitoring will be carried out at 5 yearly intervals prior to review until objectives met. Although there are specific habitat objectives and the site will be designated as a natural reserve this does not preclude the area being creatively managed through thinning or coppicing.

Forest/ moorland interface (transitional edge) will be created by not restocking within 100-250m of the forest boundary in the designated natural reserve and allowing the area to fill with natural regeneration. This will happen at different times and varying densities away from the seed source. As and when these areas eventually fill in with mature trees they will ultimately be considered as clearfell and be removed in a mosaic pattern to restart the process again. The aspiration is that at any one time there will be sufficient transitional forest to encourage black grouse to re-establish in the area. This can only be of benefit if our neighbours on Rothes and Knockando estates adopt similar practices.

The conservation team will generate a natural reserve prescription for the open mosaic habitat, which encompasses the quarry and immediate environs. The existing pond will be developed to provide a valuable habitat within this part of the forest. Interim guidance will be provided to FCE to outline the relationship between continued quarrying and the reserves ultimate objectives.

*Liaise with SNH over fencing and capercaillie.

5.3 Restructuring

Restructuring is an ongoing process and will not be fully resolved in the life of the plan. This is as a result of Elchies being predominantly even age forest at the time of establishment. Elements have been felled prematurely to help the process but as the majority of the crop reaches terminal height the decision process becomes more acute especially as the local wind hazard reduces the opportunities for alternative silvicultural approaches. Where possible coupes have been identified for long term retention or delayed felling. This has been further complicated by the high incidence of RBNB, localised windblow and snow snap. These areas will be prioritised and to some extent will dictate other areas that can be potentially delayed.

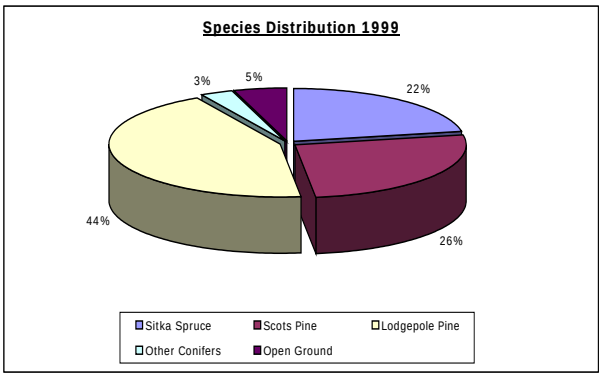
Illustration showing diverse age structure including the use of open space.

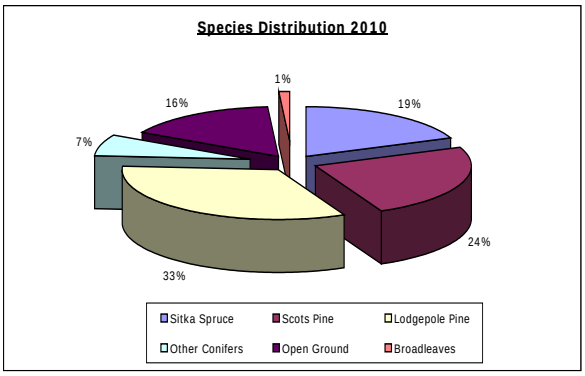
5.4 Future management

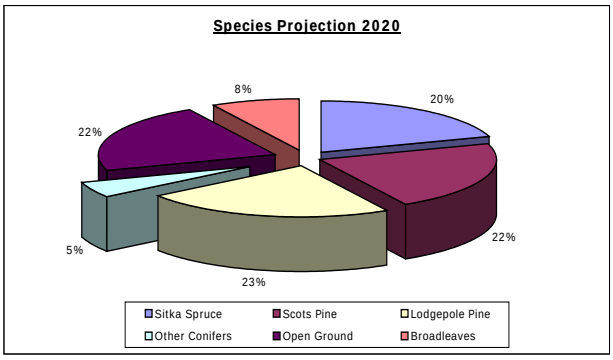
5.5 Species tables - Species Percentage Distribution comparison

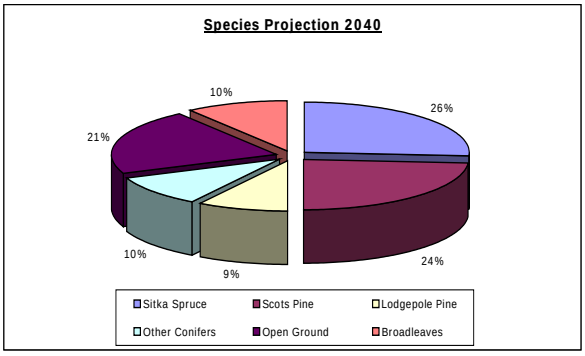
Summary Table

Species	Previous Plan 1999	Current Distribution 2010	Restock Projection 2020	Restock Projection 2040	Projected restock for 2036 from 1999 plan
Sitka Spruce	22%	19%	20%	26%	51%
Scots Pine	26%	24%	22%	24%	33%
Lodgepole Pine	44%	33%	23%	9%	0%
Other Conifers	3%	7%	5%	10%	1%
Open Space	5%	16%	22%	21%	15%
Broadleaves		1%	8%	10%	









There will be modest increase in Sitka spruce distribution from the present day to 2040 of 7% from 19% to 26% this will make SS the principle productive conifer.
It is closely followed by Scots pine which remains static at 24%. The most significant change is the reduction in Lodgepole pine from 33% to 9%. Other conifers principally the larches rise from 7% to 10%. This is as a result of much of the larch being designated long term retentions (LTR) and the use of larch as a nurse species to replace LP. Open space is set to rise from the current distribution of 16% to 21%. An element of this will be transitional open space to provide suitable black grouse habitat. Another addition will be the areas surrounding the archaeological heritage sites and associated linkages. A small element of 1% open space is included from the silvicultural approaches of which it is an integral part.

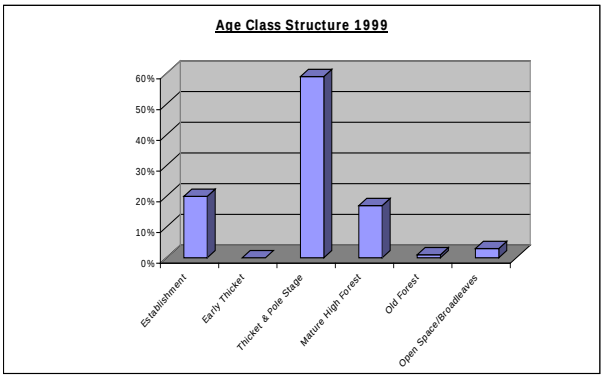
Sitka spruce in mixteure with Scots pine. Note LTR in background.

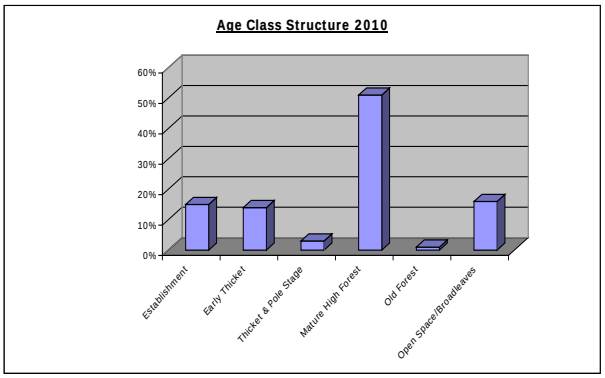
5.6 Age diversity - Comparison of forest structure overtime

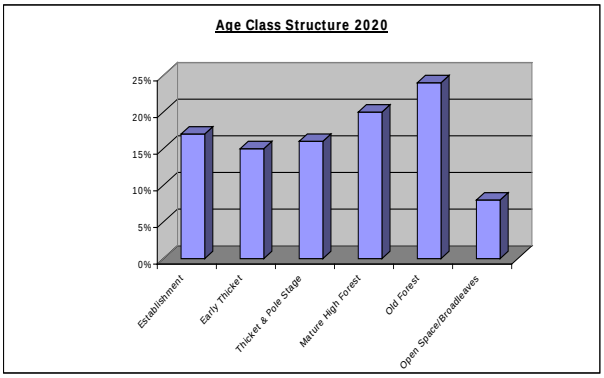
Summary Table

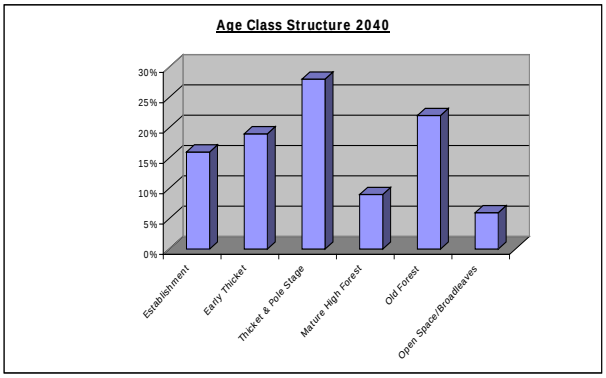
The table and associated tables clearly show that the age class distribution is currently very poor with over 50% of the forest at the mature stage and therefore at or around terminal height. The positive results of restructuring are reflected in the tables and graphs fro 2020 and 2040. They clearly demonstrate a more evenly distributed age structure that should be able to provide a more consistent regular yield while delivering all our other main objectives.

Ages of Trees (years)	Successional Stage	Previous Plan Structure 1999	Current Distribution 2010	Restock Projection 2020	Restock Projection 2040	Projected restock for 2036 from 1999 plan
0 – 10	Establishment	20%	15%	17%	16%	12%
11 – 20	Early Thicket	0%	14%	15%	19%	22%
21 – 40	Thicket & Pole	59%	3%	16%	28%	26%
41 – 60	Mature High	17%	51%	20%	9%	26%
61+	Old Forest	1%	1%	24%	22%	4%
-	Open Space	3%	16%	8%	6%	10%









5.7 Management of open land

The only definable areas of managed open ground will be in and around the archaeological interests. This will be managed in conjunction with operations in adjacent areas. If remedial works are required then they will be organised by the conservation team. Similarly water pipeline, roadside drifts and ride network will be approached in this way and managed through the workplan process.

The site contains good heath, especially the large open area on Cairn Cattoch which should be cleared of conifer regeneration. The large clearfell on Hunt Hill is also suitable for heath reinstatement and should be left unplanted. The shallower slopes in the northern and western parts of the site contain many blanket bog fragments on compartment margins and along rides. Most of the area is suitable for blanket bog reinstatement.

Open areas on the south-eastern margin of the site are suitable for broad-leaved woodland types and should be kept clear of non-native conifer regeneration.

5.8 PAWS restoration

Not applicable in Elchies Forest Block

5.9 Wildlife management

The impact of deer is once again becoming an issue and is exacerbated by the increase in red deer. Contractor support has recently been added to assist the current ranger provision. This should continue to be considered as and when required. Ranger support and advice will be sought over the life of the plan in relation to corvid control and the maintenance of capercaillie populations.
Broadleaf planting and their subsequent protection will be a major discussion point, as will the associated resourcing issues. The increase in red deer numbers will also require a rethink in strategy. For the protection of broadleaves tubes will only be used in exceptional circumstances. Economies of scale must be considered in determining the size of broadleaf planting and the cost of fencing. When fencing is the preferred option capercaillie will have to be factored in

Deer management will continue at least in the short to medium term with a dedicated FCS beat wildlife ranger. This will be augmented by a contractor resource as appropriate. The planning team will liase with the wildlife ranger manager (WRM) over the appropriate protection for the restock and natural regeneration program. The primary vehicle for this

process will be the restock work plan or natural reserve prescriptions. With the increased emphasis on broadleaved species, fencing will have to be a serious consideration although some creative management will be required in the capercaillie/ black grouse areas.

Resources will be required for corvid control and efforts will be made by the environment team to secure funding from the EU and other sources.

5.10 Critical success factors

- Increased percentages of appropriate tree species and the continued removal of Lodgepole pine.
- Continued use of improved planting stock with the potential increase in YC. Increase in log production and potential revenues.
- Producing suitable material for the biofuel markets through coppicing, short rotation forestry and the recovery of windblow and snap.
- Increase in suitable habitat for capercaille and black grouse. The aspiration is to sustain present populations. However, it is accepted that there are a number of factors outwith our control that may ultimately affect these outcomes.
- Increased species and biodiversity value. Adherence to the plan will see an increase in tree species predominantly broadleaves. The potential improved water quality and riparian habitat may see the return of salmon, brown trout and otters. These will be key markers of success.
- Improved water quality. Simple testing will establish success in the area as well as the return of key species. Target status is good quality by 2021.
- Maintenance of visitor satisfaction. This will be gauged through consultation with statutory bodies, partners and the community council at the five-year review.

CSM 6 Appendix 1b

FOREST ENTERPRISE - Application for Forest Design Plan Approvals in Scotland

Forest Enterprise - Property

Forest District:	
Woodland or property name:	
Nearest town, village or locality:	
OS Grid reference:	
Local Authority district/unitary Authority:	

Areas for approval

	Conifer	Broadleaf
Clear felling		
Selective felling		
Restocking		
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 permission necessary for the implementation of the approved Plan.

Signed …….. Signed ……..
Forest District Manager Conservator

District …….. Conservancy ……..

Date …….. **Date of Approval** ……..

Date approval ends:……..

*delete as appropriate.

Support documents: Maps

- Map 1 Location map
- Map 2 Key features map
- Map 3 Analysis and concept map
- Map 4 Management map
- Map 5 Thinning map
- Map 6 Future habitats and management (Restock & open space).
- Map 7 Future habitats and management (Natural & habitat reserves).
- Map 8 Age class structure visualisations
- Map 9 Lines of force map (Landscape)
- Map 10 Wind hazard class
- Map 11 View points map
- Views 1 -5 , Felling and restock 3D visualisations

Appendices:

i) Consultation record.
ii) Tolerance table.
iii) FP brief.
iv) Appropriate assessment (Ballintomb Burn).
v) SSSI Description.
vi) **Natural Reserve** coupe record (Riparian).
vii) Habitat Network coupe record (Forest/moorland interface – transitional forest).
viii) Habitat Reserve coupe record (Open mosaic habitat).
ix) Habitat Network coupe record (Open space and bog habitats).
x) Yield Class Comparisons.
xi) Description and background to coppice management.
xii) Glossary of terms.