

Kinnoull & Paddockmuir F D Plan 2012-2022

Tay Forest District

Kinnoull and Paddockmuir

Forest Design Plan



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EIA Determination form if required

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Summary of Proposals

Table 1: Relevant issues under SFS and Tay Forest District Key Themes

SFS Key Themes	Relevant issues identified for Kinnoull, Deuchny, Binn Hill and Paddockmuir FDP
Climate Change	Carbon sequestration increased by managing these forests largely through LISS and continuous cover forestry. Some opportunities for contributing towards national targets for renewable energy via woodfuel.
Timber	Continue to grow quality timber sustainably, producing a wide range of timber products from the continuous cover management, including large logs
Business Development	Through provision of a visitor attraction, timber harvesting, woodland establishment and maintenance. Woodland contributes to attractiveness of Perth as a quality location for business.
Community Development	Joint management with PKC of Woodland Park. Community involvement in the management of the forest, through User Group. Specialist interest groups – orienteers, mountain bike groups – also use the forest
Access and Health	Maintain wide range of access routes, including all abilities trail, for multi use. Links to neighbouring access routes also maintained. Provision of downhill mountain bike trail. Work in partnership with the other members of the Kinnoull Hill Management Group to develop Woodland Park as a whole
Environmental Quality	Continuous cover management will maintain the positive landscape impact of these woodlands as a setting to Perth and River Tay. Continue to work with Historic Scotland to protect the Deuchny hill fort
Biodiversity	Work with SNH to protect the SSSI. Enrich woodland with native species where possible. Contribute to grey squirrel control and maintain habitats for red squirrel

1.0 Introduction

1.1 Setting and context

Kinnoull Hill, Deuchny Hill, Binn Hill and Paddockmuir Woodlands are located to the east of Perth overlooking the River Tay Together they are combined into one Forest Design Plan, called the 'Kinnoull Hill and Paddockmuir FDP'.

They are well-established woodlands, largely of mixed conifers, with broadleaves dominating on the Kinnoull Crag and at Paddockmuir. The larger woods have been extensively managed under a continuous cover system, with many areas of open grown Scots pine along side mixed conifer planting and more recently planted spruce.

The larger woodlands are located on steep sided hills and crags that rise directly from the former floodplain of the river. The crags and Binn Hill in particular are highly visible and contribute to the setting of Perth and the wider setting of the River Tay. Paddockmuir is a small low-lying and far less prominent woodland located directly adjacent to the River Tay approximately 7 km east of Deuchny Hill. (See Map 1: Location Map & Key Features Overview)

The forest plan area is 259 hectares, and extends over land ranging from 5m (at Paddockmuir) to 230m (Deuchny Hill) above sea level.

Kinnoull and Deuchny form part of the Kinnoull Hill Woodland Park, an area of 305 hectares established in 1991 which is jointly managed with Perth and Kinross Council, who own the woodland on the west facing flanks of Kinnoull Hill. It is an extremely popular and important recreation resource, not only for local residents, but also attracting visitors from further afield. It is managed by the Kinnoull Hill Management Group. The Kinnoull Hill Users Group was established in 2001 as a forum for users and local residents.

The Kinnoull Hill Woodland Park Strategic Woodland Management Plan was prepared jointly by Perth and Kinross Council and the Forestry Commission Scotland in 2005.

The Kinnoull Hill Woodland Park is thought to attract 70 000 visitors per year.

The woodlands lie adjacent to privately owned farmland, including land to the immediate north of Kinnoull and Deuchny which is owned by the Gannochy Trust.

Part of Kinnoull Hill is designated as an SSSI, and Paddockmuir lies adjacent to the River Tay, a designated SAC, SPA, Ramsar Site and SSSI. The reed beds at Paddockmuir are a bird reserve managed by the RSPB.

Core paths extend through the woodlands, and the Coronation Road, a right of way, extends through eastern Deuchny. The woodlands are linked to a wider network of paths which extend through the farmland and along the Sidlaws to the east. There is also a core path at Paddockmuir which allows access along the Tay. A number of important historic features are located in the woodlands, including the Kinnoull and Binn Hill towers and the SAM fort site on Deuchny.

1.2 History of the forest

Kinnoull Hill and Paddockmuir are subject to an existing Forest Design Plan: Forest Enterprise Reference 504/01/28-29 until 7 May 2012.

The Forestry Commission acquired Kinnoull, Deuchny and Binn Hill from Kinfauns Estate in the 1930's. Perth and Kinross council (PKC) own the neighbouring western section of Kinnoull Hill wood, which was gifted to the people of Perth in 1924.

The PKC and FCS have worked together to develop the Woodland Park since 1991.

2.0 Analysis of previous plan

2.1 Aims of previous plan

The values of the forest identified in the previous plan were:

Producing wood and marketable timber – high value

Landscape – high value

Conservation and heritage – moderate value

Recreation – very high value

The previous plan proposed an alternative to clearfell (ATC) system for the entire holding, reflecting that the soils, gradients and crops were considered suitable for continuous cover forest practice. The species proportions were not expected to significantly change over the lifetime of the plan.

It was noted that some additional thinning may be required to maintain the regeneration of more light demanding species during the lifetime of the plan.

Deer control was not considered to be a major issue, and rabbit netting for individual sites was to be implemented on a site by site basis as necessary.

2.2 How previous plan relates to today's objectives

Following review and discussion of the previous plan at the Scoping Meeting (see the Consultation record), the following issues were identified:

- Alternative to Clearfell (ATC) will remain the primary management technique for this area. However, options need to be reviewed to ensure that specific techniques are realistic and that thinning continues in younger crops to create a suitable crop for ATC in the future;
- The very high value placed on recreation use continues, and woodland management continues to take these interests into account. Access route maintenance, linked to the use of forest roads by harvesting operations will be reviewed and prioritised.
- Diversity of structure and species continues to be important for visitor amenity;
- The landscape value of the woodland remains high – and ATC will assist in maintaining the visual and landscape quality of the woodland from both external and internal views;
- Nature conservation continues to be of moderate priority, although FC will work with SNH to protect the SSSI, and grey squirrel control is likely to be a higher priority in the future
- The heritage value of the woodland continues to be a moderate value, with the main focus of activities associated with maintaining views from the iron age fort at Deuchny Hill

3.0 Background information

3.1 Physical site factors

3.1.1 Geology Soils and landform

Kinnoull, Deuchny and Binn Hill are all sited on craggy hill tops, largely volcanic in origin. The underlying rock type is predominantly extruded igneous rock, with banded lava flows which are exposed along the Kinnoull

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Hill crags. The soils are largely brown earths, and to the south are generally calcareous, while north facing slopes are more acidic.

Some of the soils may be shallow and dry, rendering the trees susceptible to drought in long periods of drier weather.

Paddockmuir lies on wetland and low-lying floodplain adjacent to the River Tay.

3.1.2 Water

There are no private water supplies taken from these forests.

Watercourses from all the woodlands drain both south and rather circuitously north into the Tay.

The River Tay Catchment Plan identifies the River Tay as a priority catchment under the Water Framework Directive. One objective of the plan is to ensure that there is no deterioration in water quality which has already been assessed as having high or good status.

When felling and restocking are carried out, the Forest and Water Guidelines (2011, fifth edition) will be strictly adhered to. Timber extraction will normally avoid crossing burns or main drains, but, where necessary, each crossing point will be piped or bridged. Branches will be kept out of watercourses and trees will generally be felled away from the watercourses.

All felling and restocking will comply with the Controlled Activities Regulations (CAR) 2011 General Binding Rules with respect to appropriate buffer strips between any new planting and the watercourses and waterbodies.

Site assessment prior to forest operations will identify recommended actions to meet these requirements.

3.1.3 Climate¹

Mean annual temperatures in this region are about 7-8 degrees centigrade, with January the coldest month and July is the warmest month. Much of

¹ Extracted from the Met Office Regional Climate site for northern Scotland:
<http://www.metoffice.gov.uk/climate/uk/es/>

eastern Scotland is sheltered from the rain-bearing westerly winds. The average annual rainfall for eastern Scotland varies between 700mm and 1500mm, considerably drier than the west coast of Scotland.

Therefore, while the forest is generally accessible all year round, both thinning and felling programmes need to take into account rainfall levels associated with sudden cloudburst, which may cause significant short term water run off, and possibly landslips on steeper, unstable slopes. In addition, the elevation of the forest means it is exposed to winds, which have an effect on assessing the stability of continuous cover and planning the timing and sequence of felling proposals.

3.2 Biodiversity and environmental designations

Kinnoull Hill Site of Special Scientific interest (SSSI) is 72.8ha. It has been designated because of both flora and geological interests. The majority of this designated area lies within the neighbouring Council owned woodland to the west, but a small amount (6%) extends along the top of the FE-owned steep south facing cliffs which are included within this Plan. The key features are:

- igneous petrology (exposed in the nearby Corsiehill quarry); and, on the FE owned site:
- andesite cliffs and associated flora;

Paddockmuir Wood lies adjacent to the River Tay SAC, SPA, Ramsar Site and SSSI, designated for Atlantic Salmon, sea lamprey, river lamprey, brook lamprey, clear-water lochs, otters and the freshwater pearl mussel.

Both Kinnoull Hill/Corsie Hill and Deuchny Wood lie within the Kinnoull Hill Woodland Park.

Nearby Kinfauns Castle sits within a designed landscape which is listed in the 'Inventory of Designed Landscapes in Scotland', although none of the Woodland areas have been identified as part of that landscape.

Nevertheless, some fine policy trees, such as the giant redwood near the Jubilee carpark, are likely to be remnants of this designed landscape.

All of Kinnoull Hill, Deuchny Hill, Binn Hill, and 95% of Paddockmuir are shown as Ancient Woodland Sites (AWI) on the inventory.

(See Key Features Maps 2 and 2a).

Red squirrel is present in all the forests, but there is also grey squirrel. Some local control of grey squirrel is carried out by neighbouring landowners.

Peregrine are present at Kinnoull and Deuchny, while March Harrier and Bearded tits can be found at the RSPB reserve at Paddockmuir.

Bats are also to be found in all the forests.

3.3 The existing forest

3.3.1 Age structure, species and yield class

The main change over the forthcoming plan period, relative to the previous plan period will be a more area specific approach to future management of the 'ATC' sites established in the previous plan and recommendations to initiate ATC in the younger single species areas. There is also more emphasis on using silviculture to enhance the recreational environment in targeted areas, rather than as simply a tool to perpetuate and regenerate forest cover.

Table 2 illustrates species change by 2032.

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Table 2: Species change over the Plan period (Deuchny Block)

Species	Area_Ha_2012	Area_Ha_2032	Area Change Ha	%
SP	58.3	58.5	0.2	0%
SS	45.8	41.7	-4.1	-2%
SY	39.1	34.4	-4.7	-2%
OG	21.7	24.7	3	1%
BI	12.6	13	0.4	0%
EL	11.9	14.3	2.4	1%
JL	7.4	7.4	0	0%
NS	7	6.7	-0.3	0%
BE	6.4	8.4	2	1%
AH	4.6	3.7	-0.9	0%
MB	4.2	5.8	1.6	1%
DF	4	4	0	0%
Other broadleaves	2.6	3	0.4	0%
Other Conifers	3.5	3.5	0	0%
	229.1	229.1		

Paddockmuir species unchanged over plan period

3.3.2 Access

Kinnoull, Deuchny and Binn Hill are all accessed from a minor road. Paddockmuir is accessible from the B958, itself directly accessible from the A85. All woods are accessible to timber lorries, and well-roaded. Kinnoull is managed by off road access through the forest to limit impacts on the public access routes.

The road in Binn Hill has been undermined by badgers and will require to be re-aligned during the lifetime of this plan. No need for new roads have been identified, although timber stacking space at Kinnoull and Deuchny is limited, and additional space for turning wagons and timber stacking is required.

3.3.3 LISS potential

The whole of the woodland was identified as having potential for 'Alternative to Clearfell' in the previous plan.

The current ATC extends over the whole of Kinnoull Hill, Deuchny Wood, Binn Hill and to Paddockmuir. The few minor clearfells are small enough to be considered group fellings.

These areas will be continue to be managed with varying degrees of intervention, from thinning and small group harvesting to the creation of natural reserves with minimal management intervention. There is the opportunity to manage more recently planted younger spruce to establish the potential for future continuous cover management for the whole of the forest area. These younger conifer areas require active management early in the rotation to facilitate the conversion process to ATC. While the initial approach for these areas is a uniform shelterwood the subsequent crop development and the impact of environmental factors may suggest a transition to an irregular shelterwood approach.

3.4 Landscape and landuse

3.4.1 Landscape character and value

Knnoull, Deuchny and Binn Hill are important landmark hills which provide an attractive and containing backdrop to Perth and the valley of the River Tay as it extends eastwards. They form the very western end of the Sidlaw Hills, and their rugged appearance is further emphasised by the steep hill slopes and cliffs which characterise their south facing flanks.

The hills are largely surrounded by farmed land and estate policies, including the designed landscape of Kinfauns Castle to the south. The western end of the forest plan lies adjacent to Corsiehill and almost seamlessly integrates with the Perth and Kinross Council owned Kinnoull Hill woodland, which reaches down towards the outskirts of Perth.

Paddockmuir lies adjacent to the Rover Tay as it widens to become a more discernable firth. It has a much more low-lying and setting, surrounded to the north by carse farmland.

Despite its relatively low elevation (the highest point is Deuchny Hill at only 230m), the steepness of the slopes and high degree of relief on Kinnoull, Deuchny and Binn Hill (the cliffs begin at almost sea level), creates a dramatic prospect when viewed from the south.

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The two castle-like follies – Kinnoull Tower and Binn Hill Tower both emphasise the drama of the cliffs as they are perched above steep slopes.

The varied woodland, including varied autumn colour, contributes to the diversity of the landscape by providing a contrast to the farmed land and policy landscapes.

The scale of the woodlands relate well to the landscape, both in terms of hilltop and riverside locations. The external boundaries are generally well related to the shape of the landform or to the pattern of field boundaries which is typical of this area.

The internal forest landscape is relatively diverse, with varied species, stand type and ages providing an appropriate context for recreation at Kinnoull and Deuchny, the areas most used for public access. The most extensive areas of single species are the well thinned Scots pine on the northern slopes of Deuchny, and areas of younger planted sitka spruce on the southern plateau of Deuchny. The latter are not highly visible, as they are largely surrounded by open space and scattered young broadleaved planting.

Paddockmuir gives excellent access to the River Tay, and provides a secluded setting for quiet recreation.

3.4.2 Visibility

The views from these elevated forests can be panoramic, especially from the forest edge, along the top of the Kinnoull crags, or from viewpoints such as the fort at Deuchny Hill or Kinnoull Tower. The woodland is well used for recreation, and both internal views, and views from the forest, should be considered when preparing management proposals.

The steep south facing slopes of Kinnoull and Binn Hill are extremely visible especially from the south, from the M90, Moncrieffe Hill and various viewpoints across Perth. (See computer generated visual from Viewpoint 1 – Moncrieffe Hill carpark)

3.4.3 Neighbouring landuse

The main neighbouring land uses is farming, largely in cultivated fields or pasture, with some more open hill land to the immediate east and several extensive areas of horse paddock at Kinfauns and Gannochy. There are three livery stables close to Kinnoull, Deuchny and Binn Hill. Housing at Corsiehill and along the minor road at Deuchny are also important neighbours.

3.5 Social factors

3.5.1 Recreation

Kinnoull and Deuchny Woods in particular are extremely well used for public access. Management of the woodlands for a range of different user groups has become a high priority over the period of the previous plan, and this was highlighted also in the Strategic Plan for the Kinnoull Woodland Park.

The woodlands attract dog walkers, walkers, runners, cyclists and horse riders. There is also provision for downhill mountain bikers and organised events for orienteers and other specialist recreation groups.

The FC owned Jubilee carpark lies between Kinnoull and Deuchny Hill, and the Council also provide a car park at Corsiehill. Many people access the woodlands directly from Perth through Barn Hill and Kinnoull from the east, while horseriders and cyclists also access the woodlands from a number of access points from minor roads, neighbouring farmland and tracks, including the Coronation Road.

There is an extensive network of access routes, waymarked, formal and informal, associated with these woodlands, a number of core paths and two public rights of way – the Coronation Road (east Deuchny), and a link from that road to Perth, via the north side of Deuchny Hill and over Corsie Hill (See Key Features Map 2).

The path network has been upgraded on Kinnoull Hill, in a joint initiative with the Council, which has included the provision of a circular all abilities trail.

Visitors to the Woodland Park are both local and from further afield. Additional provision for visitors includes occasional planned events at the Shed.

There is a small arboretum close to the Jubilee carpark, which focuses on small trees for small gardens. It is managed by an offshoot of the Kinnoull Hill Users Group.

PKC maintain a number of dog waste bins within the Woodland Park. There are no formal toilet facilities.

A public engagement event conducted in the Woodland Park to inform the preparation of this plan identified a number of potential additional access routes and areas where the path network could be improved. These are listed in the Public Consultation record in Appendix II, supported by Maps 3 and 3a. In addition, it was noted that while many paths were in good condition, some paths are suffering from poor drainage.

Binn Hill, although accessible to the public is much less well used, although both bikers and horse riders use this wood.

At Paddockmuir, there is access to and along the River, which is also a core path route.

Visitor Zones were also identified as part of the site survey work. These are mapped on Map 3b Visitor Zones.

3.5.2 Community

There is no specific community local to Paddockmuir, although St Madoes is within 3km of the woodland. Nevertheless, it is used for informal recreation by small numbers of people.

Kinnoull and Deuchny Hill are very much seen as woodlands local to Perth and Corsiehill as well as smaller communities and user groups based in the locality. The Kinnoull Hill User Group was set up in 2001. It works closely with the PKC and FCS, organises activities and events and is the main focus for resolving issues arising out of potential conflicts between user groups.

A public engagement event conducted in the Woodland Park to inform the preparation of this plan identified a number of issues but much anecdotal support for both the Forestry Commission and the PKC for the way the forests were managed. Comments are listed in the Public Consultation record in Appendix II, supported by Map 3 and 3a.

3.5.3 Heritage

The iron-age fort on the summit of Deuchny Hill is the only scheduled ancient monument within the Plan area. The fort is largely hidden from view within the forest, being surrounded by young spruce, but from its summit there are fine views, especially north and west. A management plan has been prepared and agreed by Historic Scotland for this site. Management proposals agreed include removing tree cover, establishing an access route to the summit and possible interpretation.

Kinnoull and Binn towers were built on steep ground overlooking the River Tay in the 19th century, apparently to emulate the castles on the River Rhine. Kinnoull Tower is owned by the PKC although it is surrounded by land which is owned by FCS and subject to the proposals set out in this plan. Binn Tower is privately owned and also lies within the FC woodland.

The Coronation Road, a PRoW, was used by the Kings of Scotland on their way from Scone Palace to ferries across the River Tay.

3.6 Statutory requirements and key external policies

A small part of this woodland – the upper edge of the cliffs at Kinnoull, falls within an SSSI. The relevant designated interest on the cliffs of andesite lava and their associated flora. In terms of vegetation interest, the feature categories include broadleaved, mixed and yew woodland within upland oak woodlands.

FC will also review and if possible monitor invasive seeding of conifers along the top edge of the cliffs, although it is recognised that removal of any regenerating trees is likely to be extremely difficult due to the instability and steep gradient of the cliff top.

4.0 Analysis and Concept

4.1 Analysis

Maps 6, 6a, 6b and 6c and Table 3 below illustrate the factors, through consultation and review, which have significantly influenced the design and long term vision for the forest.

The main issues addressed by the plan are:

- **Timber production:** Identifying opportunities to produce commercial, high quality timber output with a particular focus on maximising the range of timber products through practicing a range of ATC management options and some clear felling on a modest scale where necessary, for example when removing windblow, opening and retaining internal viewpoints and removing species which are inappropriate at Kinnoull;
- **LISS/ATC:** The area of forest managed as continuous cover has been reviewed, and clearer, more site specific ATC management options have been defined to reflect site potential. These will underpin timber production, forest sustainability, biodiversity and recreation interests;
- **Clear zoning:** Each woodland area identified in this plan has a clear character which is reflected in the forest management, species choice and level of recreation infrastructure identified as being applicable to the character zone;
- **Biodiversity:** Opportunities to expand broadleaves, including shrub species, by underplanting appropriately thinned areas, enrichment planting for example with holly, yew, lime, cherry, bird cherry, sloe and aspen and by restocking small areas of clearfell have been identified;
- **Landscape:** Species diversity, including retention of policy woodland type species, establishing a wider range of shrub species, including holly, viburnum, rosa spp, opening up views and increasing the diversity in density of established tree cover has been used to enhance the experience of these woodlands. Enrichment planting will also include wellingtonia and other non-invasive policy type species to increase options for visual drama in the future woodland. Continuous cover of Kinnoull, Deuchny and Binn Hill will result in very little visual change being perceptible from external views;
- **Recreation:** Continuous cover management options extend throughout the main areas identified for recreation within this woodland. This approach should create a diverse woodland where management will reflect small scale interventions appropriate for a high use recreation woodland;
- **Historic sites:** The iron-age fort at Deuchny will be opened up to reveal and maintain views, and if resources allow, an access route will improve access to the hill top.
- **Deer and grazing damage:** The plan recognises that while the forest is not deer fenced, the high recreation use and well established deer control methods by FE and neighbouring estates, continue to minimise deer damage

4.2 Concepts of the plan

Maps 7, 7a, 7b, 7c Design concept and Table 3 below, illustrate how the issues identified in analysis have been taken into account in relation to the forest plan management proposals.

In summary the design concept aims to:

- During the lifetime of this plan, bring all areas of the forest to a stage where ATC potential can be fully realised
- Maximise the opportunities for alternative to clearfell, to benefit recreation, landscape and biodiversity interests, the setting of Perth and the River Tay;
- Over time, continue to diversify both conifer and broadleaved species, to mitigate against the effects of climatic change, and provide the basis for a diverse resource for timber, environmental and recreational needs;
- Open up and maintain views from the iron age hillfort at Deuchny, and from key viewpoints along the edges of the woodlands
- Take into account views to and from the forest, as well as within the forest along key access routes when planning the woodland management proposals, by felling trees to reveal views
- Use small group fellings to create an interesting sequence of views along the access routes;
- Over the lifetime of the plan, identify opportunities to consolidate and expand the access network to make best use of the forest, as and when resources allow. Within the Woodland Park, the priority should be to consolidate the existing network and provide trails which encourage the many user groups within the forest to use the woodland responsibly;
- Where opportunities arise, aim to enrichment plant and establish shrub layer to enhance the experience of the woodland and the biodiversity interests within identified areas;
- Identify and programme improvements to recreation infrastructure, so that these can be taken into account when undertaking forest operations.

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Table 3: Analysis of opportunities, constraints and concept

Factor	Opportunity	Constraint	Concept
Timber production	Continuous cover (ATC) management will result in diverse timber products well suited to local markets, as well as sustainability and environmental objectives	Early thinning of younger crops to establish ATC may be uneconomic. Windblow may create natural clearfell scale openings. Larger timber sizes may limit market options.	The long term benefits of continuous cover (ATC) management are likely to outweigh costs associated with early thinning. Aim to consolidate thinning proposal into contracts which are most efficient. Continue to source markets for large timber sizes
Forest used for recreation	Potential to continue to diversify age and species diversity, and to open up and retain views as part of forest management. Continuous cover (ATC) management can be used to maintain a stable recreation environment	Recreation usage all year can limit operational access	Continue to manage the main recreation area as ATC, establishing species which can be used for timber production as well as adding to internal visual diversity. Expand enrichment planting where possible, including shrub layer to diversify structure.

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Table 3 continued:

Factor	Opportunity	Constraint	Concept
Conservation interests	Extensive network of forest roads and access routes, well used and appreciated by many different user groups.	Difficult to access the steep and unstable cliffs to remove trees.	Monitor the regenerating woodland with the help of SNH. Establish the necessity and assess health and safety implications of tree removal, if and when required.
Deer	Joint working with neighbours. High visitor numbers and dogs reduce the impact from deer. ATC, with early thinning of thicket stage conifer, reduces the availability of cover and facilitates deer control. Neighbouring farmland offers enhanced nocturnal grazing over the internal forest environment.	Deer control is required to reduce the impact of deer on regeneration, biodiversity and neighbouring farmland. Deer control is extremely difficult and sensitive within the forest area, due to high recreation use and public interest.	Monitor damage levels and respond to these in a targeted way as required. Working with neighbours on deer control may provide a safer control environment outwith the forest and help to diffuse any conflict in relation to crop damage.

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Table 3 continued:

Factor	Opportunity	Constraint	Concept
Rabbits	Work with local farming interests to fence and trap rabbits as appropriate.	These are a potential threat to floral biodiversity, the diversity of tree species regeneration, regeneration success and damage to established timber particularly during heavy snowfalls.	The drier slopes of Binn Hill and Deuchny should be monitored for the impact of rabbit grazing on regeneration, particularly as light levels are increased post thinning.

5.0 Forest Design Plan Proposals

5.1 Clear felling

No substantial areas of clear felling are proposed. Very small group felling coupes have been identified to open up views from the fort on Deuchny Hill and to improve the sequence of open spaces along the path sides in Deuchny Wood. In addition an area of windblown Sitka Spruce requires clearance, and a small strip of unthinned, and now unstable SS adjacent to the windblow on a steep slope requires removal.

Some additional felling may be required to create and maintain open views from access routes. These are shown on Maps 8 and 9.

A further opportunity for group felling is the area of Sitka Spruce which lies on the march fence with the PKC owned woodland on Kinnoull. Felling here offers an opportunity to open up the woodland around older pine which are within the crop, and establish a different species mix through regeneration and enrichment planting. (See Map 8: Continuous Cover Types)

5.2 Thinning

Thinning will be carried out in most recently planted areas to help develop these stands for future ATC management options, as shown on Map 9: Priority Silvicultural Operations.

5.3 Continuous cover forest

All management is to be carried out as Alternative to Clearfell (ATC), also known as continuous cover management, with area-based specifications drawn up to reflect crop potential. Continuous Cover types for Kinnoull, Deuchny and Binn Hill are shown on Map 8 and, for Paddockmuir, on Map 8a.

5.4 Future habitats and species

The continuous cover management will limit the adverse impacts of forest operations on many of the current habitats. The very small areas of group

felling over the lifetime of the plan will have very little impact on forest habitats and emulate natural processes.

Woodland is expected to regenerate naturally, and density of planting will be reviewed to assess the light levels required to ensure regeneration. Some additional enrichment planting, of shrubs and broadleaved native species will also be undertaken to diversify the woodland to benefit wildlife and visitor experience.

Continuous cover will help maintain the population of red squirrel, woodland birds and other species which benefit from a stable habitat.

5.5 Management of open land

There is very little open land within the FDP area. Most of the open land will be allowed to revert to a semi-natural state over the plan period, with the exception of areas required to be cleared to maintain views.

5.6 Deer management

The forest is not deer fenced, but deer control has not been identified as an issue. In addition, the forest is well used by the public giving a high degree of disturbance which helps to limit deer damage.

5.7 Critical success factors

ATC – monitor levels of shade tolerant species, such as beech and western hemlock, in relation to species diversity and adjust felling regimes accordingly. Adapt silvicultural systems to reflect the distribution of regeneration and the impact of wind damage. Explore local niche marketing of forest products to enhance returns for ATC. Establish a targeted thinning programme that will bring the entire plan area into ATC during the lifetime of the plan, including early initiation of thinning of young, unthinned SS.

Rabbit control – it is vital that during the period of establishing shrub and enrichment planting that rabbits are prevented from damaging regeneration and enrichment planting. Aim to work with local farmers to reduce rabbit numbers as necessary.

Recreation – maintain the quality and scope of the trail network by consolidating and expanding use of the existing forest at Deuchny and Kinnoull before expanding any further into Binn Hill. Monitor potential conflicts between user groups and aim to resolve issues through negotiation, increased user involvement and network expansion as appropriate and as resources allow

Appendix I: Forest Design Plan Consultation Record

Forest Design Plan Consultation Record: Kinnoull, Deuchny, Binn Hill and Paddockmuir

Consultee Type	Consultee	Date Contacted	Reply Received	Issues raised	FD Response to issue
Statutory Consultees	Perth and Kinross Council (Jerry Evans)	22/11/11	21/12/11 Scoping meeting	Extensive network of core paths, including at Paddockmuir. Access routes can become wet and churned up. Generous access provision generally Consider link to Binn Hill from Deuchny	Core paths and links noted identified for future review and monitoring. Review and prioritisation of path maintenance has been identified in the plan Link between Deuchny and Binn Hill has been identified for action in the plan
	Perth and Kinross Council (Dave Stubbs)	22/11/11	03/12/11	Issued map of core paths Promote responsible access Continue to work jointly on access Core path at Paddockmuir awaiting clarification, but improved access along the Tay would be a benefit	Core paths and links noted identified for future review and monitoring. Improvements will be made when resources allow. Continue working with PKC on access priorities and management
	Scottish Natural Heritage (Colin Castle)	22/11/11	21/12/11 Scoping meeting	Management of the SSSI, especially removing self seeding conifers on the cliffs. Opportunities to extend heathland interests	Self seeding conifers are larch, which provide only limited shade. Situation will be monitored, but trees are difficult to remove due to steep and mobile terrain. Thinning of Scots pine likely to extend

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					heathland interests in Deuchny
	SEPA (Bruce Meikle)	22/11/11	01/12/11	Implement good practice according to Forests and water Guidelines.	Forest practice will follow the Guidance set out in the 5th issues of the Forests and Water Guidelines (2011)
	Forestry Commission Scotland (Dave Bruce)	22/11/11	21/12/11 Scoping meeting	No additional comments	No issues
Community Groups	Kinnoull Hill Users Group (Bill Gray)	22/11/11	21/12/11 Scoping meeting	Regenerating woodland is beginning to obscure views from the top of the cliffs Viewpoints along east facing margins of the forest require opening up The quarry behind the Shed is unsightly. The 'Drop in' event has been advertised and will be used to elicit views from community	FE to review the practicability of clearing views along the cliff top Clearing views elsewhere are included in the plan. Quarry, setting of the Shed and lorry turning area will be the subject of a more detailed FE landscape plan
	Perth and Kinross Heritage Trust (Sarah Malone)	22/11/11	08/12/11	The iron age hill fort on Deuchny Hill is a SAM. There is also a site (but no extant traces) of a small Roman camp at the edge of the woodland at Paddockmuir Various finds have been recorded across the forests Kinnoull and Binn Hill Towers are upstanding but unscheduled monuments.	Historic Scotland will be consulted on felling proposals associated with Deuchny hill fort.
Non-	RSPB (Karen			Not present.	No issues

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Governmental Organisations	Cunningham)				
Others	Gannochy Trust	22.11.01		Not present.	No issues
Public Consultation	SEE SEPARATE SHEET				
Detail below issues still unresolved (if any) between the proposal and stakeholders					

Appendix II

Forest Design Plan Public Engagement Record: Kinnoull, Deuchny, Binn Hill and Paddockmuir

Event	Topic	Issues raised	FD Response to issue
Public Engagement – ‘Drop in’ Event 6/7 January 2012			
	Access - general	Path condition poor in places, possibly partly due to poor drainage but exacerbated by multi-use, with horses and bikes adding to ‘churned up’ conditions	Carry out a path audit to identify priority areas for drainage and associated works to improve paths to create all weather trails during the plan period when resources become available. CRT to liaise with forest ops to reinstate paths after forest management and coordinate path repairs and upgrades
		Multi use causes problems – not all users mix well especially on narrow paths or steep slopes. Could more separation not be encouraged in some areas, or obstructions to some user groups be put in place.	The Scottish Outdoor Access Code requires all users to be treated equally on paths, but FE will encourage responsible use and try to mitigate against dangerous situations whenever possible

Kinnoull & Paddockmuir FDP

		Dog mess is not always picked up, despite dog waste bins, could there be more of these supplied?	Dog waste bins have to be on vehicular accessible routes. FE to discuss this issue with the Council, who are responsible for dog waste bins
		Could 'off road' cycling be discouraged in the Kinnoull area, especially dangerous exits onto the 'all abilities' trail, where small children and less able people can be surprised by cyclists	All access routes are multi use and no one type of user can be excluded. FE will review how to promote responsible use, and will look at options to extend access options which may reduce potential conflict
	Mountain bikes	Finish the mountain bike trail	This is in hand
		Consider expansion of the mountain bike trail	There are no plans to do this at present
		Develop a 'beginners' bike trail associated with the mountain bike route, which can be used for learning new skills in a supervised environment by children and other learners	FE has already considered this in the new trail design, and will liaise with local groups.
		Review location of warning signs for non bikers at appropriate points on the MB trail	Warning signs will be reviewed along side other signage during the forthcoming plan period
		Consider a wider-based bike user group (names left with FE)	FE to consider how best to take forward user groups with the PKC and other bodies
	Horse riders	Liaise with Gannochy Estate to improve access from the neighbouring fields and woodland onto the Deuchny Hill	Some of these access issues relate to the poor drainage and access on Gannochy land, which discourages horse riders in particular from accessing Deuchny directly. FE will

Kinnoull & Paddockmuir FDP

			liaise with Gannochy estate at partnership meetings to coordinate improvements
		Consider opening up an informal parallel route through Deuchny Wood above Muirhall	There are no plans to do this at present, but the situation will be kept under review after outstanding access issues have been resolved
		Consider a Horse riders access group (Contact details left with FE)	FE to consider how best to take forward user groups with the PKC and other bodies
	New access routes	Improve the link between Deuchny and Binn Hill/minor road to be suitable for horses and cyclists	A new track will be programmed into future work plans
		When opportunities arise, expand network of trails suitable for horses and bikes in Deuchny Wood, prioritising links between existing routes	This will be kept under review and opportunities identified through forest operations
		Consider extending a small path around the Deuchny pond	There are no plans to take a path around the whole of the pond, which is attractive because of its relative seclusion and 'hidden' quality. The existing situation will be reviewed to identify if any remedial works are required.
		Formalise access to the Deuchny fort	FE will liaise with Historic Scotland on the management of the fort site
	Parking	Expand the 'disabled' car park	This is in hand
		White line the Jubilee car park	This is in hand
	Seating	Additional seating at:	A review of seating options is in hand

Kinnoull & Paddockmuir FDP

		Kinnoull, looking east along the Tay Kinnoull, near the big beech tree, overlooking Dundee Road on the less-abled trail Deuchny, looking east towards Kinfauns Deuchny pond – with picnic tables	
	Views	Open up views at: Kinnoull, looking east along the Tay Deuchny, looking east towards Kinfauns Deuchny, looking west along the Tay	This will be programmed into the plan and is in hand
		Open up views from the fort	This will be programmed into the plan
	Wildlife	Control grey squirrels	Joint control already in place with PKC
		Increase native trees and shrubs for wildlife and birds	This will be programmed into the plan
		Assess the build up of algae in the curling pond – there are no longer tadpoles in the pond	FE Biodiversity officer will review the condition of the pond
	Forest management	Assess the potential fire hazard from brushwood build up	This will be reviewed, but is not considered a problem at present. It was noted that there were complaints about people starting unauthorised fires, and this will be investigated
		Remove felled timber promptly so that access roads can be re-instated quickly	Delays in removal of timber stacks is dependant on market demands. End of loads will be prioritised for removal in main visitor areas first.

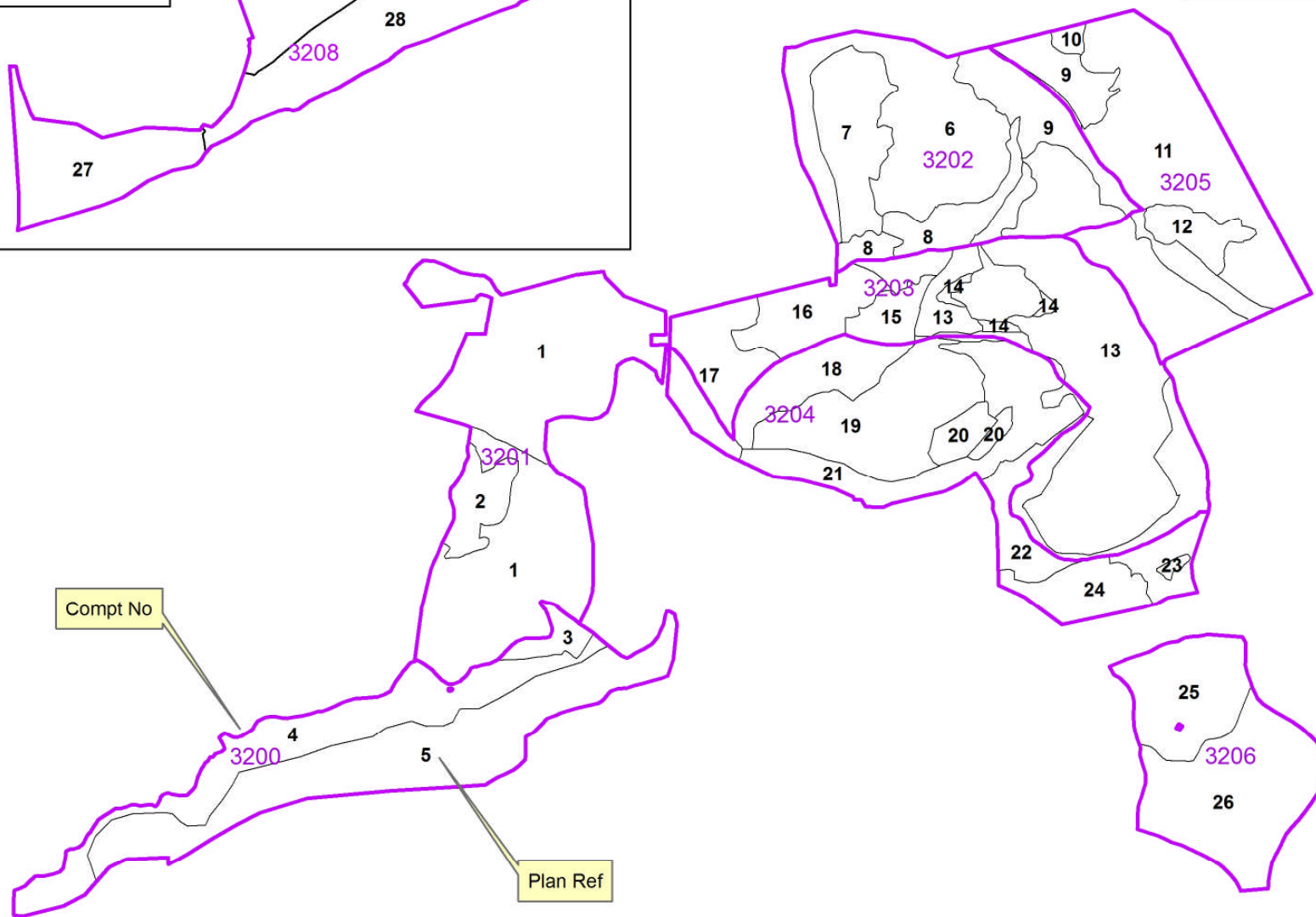
Kinnoull & Paddockmuir FDP

	Other suggestions	Consider re-opening the cafe	This would be up to a private operator, FE would not run a café itself.
		Open public toilets	It is not possible to maintain public toilets to a satisfactory standard in this location
		Review signage, especially for minor paths and access direct from the town	A review of signage will be undertaken during the lifetime of the plan, in conjunction with management partners
		Provide leaflets to the Park in accessible locations in Perth	The leaflet is likely to be reviewed during the lifetime of the plan
		Consider having ranger walks and activities for school children in the holidays	These already take place, through the Kinnoull Hill User group and private individuals and are advertised at the Shed
		Review the management of the arboretum and address its appearance and use, especially the need for the exclosures	These comments have been passed to The Arboretum Management Group, a sub-group of the Kinnoull Hill Users Group
		Review the status of the 'ICONIC' trees project	The ICONIC project will remain in its current status until the trees are no longer considered vulnerable.

Paddockmuir
Continuous Forestry
Plan Ref Numbers



Kinnoull
Continuous Forestry
Plan Ref Numbers



Appendix III: Continuous Forestry and Open Space prescriptions

Plan ref and compt range	FCIN 40 Ranking	Reason for selection	Long-term structure* or objective** and expected species	Silvicultural system	CCF: Rotation/ Conversion /Return period (years)	BLVD: Target tree cover (%) – Timescale (years)	Observations (e.g. likely barriers to achieving objective)	Next treatment required	Proposed monitoring
1 Cpt 3201 Map 8: CCF	N/A	Continuum of past management. Soil slope and drainage suitable. Recreational imperative for CC. Good species mix of high quality trees with regeneration.	Complex SP/MC/BLs	Irregular shelterwood	130/130/150	50% 50 years	High recreational use. Beech becoming dominant. Narrow species range suggests some enrichment planting in group fell areas may be appropriate. Area of GF,WH and LC in NW requires light touch active management to progressively remove WH while retaining stand integrity.	Moderate uniform thinning with small group fellings in SP areas to release suppressed regen and attempt to secure some SP regeneration.	Next FDP review

2 Cpt 3201 Map 8: CCF	N/A	Unthinned SS with small element of unstable SP past thinning window and in prime recreational location.	Complex BLs	Clear felling, or small group felling within a matrix of irregular shelterwood.	150	70% 30yrs	BE is likely to dominate on site, but clean disturbed seedbed and high light levels may favour SP, BI and AH	Clearfell SS leaving any stable SP if present.	Next FDP review
3 Cpt 3200 See Map 8: CCF	Mod	Small group of thinned larch with high recreational value and impact on views out from wood	Simple L/BLs	Uniform shelterwood	150	40% 100yrs	Manage for recreational aesthetics with clear stems fairly dense canopy and limited regeneration during plan period. Open views by removal of regeneration at viewpoint. In longer term need to balance low regeneration and low light levels with Larches poor response to under thinning and need to maintain forest cover.	Light uniform thinning, clear viewpoint.	Next FDP review
4 Cpt 3200 See Map 8: CCF	N/A	Mature BLs on un-harvestable slope with scree and rock outcrops.	Natural Reserve	Minimal Intervention	N/A	N/A	Monitor levels of exotic regen	None	Next FDP review

5 Cpt 3200 See Map 8: CCF	NA	Continuum of past CC management. Slope stability maintained by CC, high value MB on sheltered site with good drainage and soil for present MB crop. Good seed source, crop of good form. The stand structure and harvesting practicalities suggest a uniform shelterwood approach as optimal. Near the road and where access is more forgiving, then small group fellings may be possible and this may benefit ash vs beech and sycamore.	Simple AH/SYC/BE	Uniform shelterwood.	100/100/140	100% achieved	Progression towards sycamore and beech likely at the expense of ash unless light levels are increased by moderate uniform thinning or creating small groups where this is possible in terms of harvesting practicalities. A uniform approach is also preferable in landscape terms as a group felling or irregular shelterwood approach could create a moth eaten appearance, given the high visibility of this woodland, with group fellings showing up clearly because of slope.	Uniform thinning favouring ash where possible.	Next FDP review
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6 Cpt 3202 See Map 8: CCF	N/A	Continuum of past CC management. Good seed source, crop of good form well suited to site. Regeneration developing.	Simple SP	Group shelterwood	130	N/A	Aim to retain SP dominance in this area. Additional uniform thinning may lead to an increased windblow risk and a loss of a sense of forest environment. Moderately sized group fellings at this stage will retain the feel of a forest area while favouring SP with pockets of high light levels.	Area recently thinned, further group fellings in next 5 yr period.	Next FDP review
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7 Cpt 3202 See Map 8: CCF	MOD/LOW	Mainly unthinned DF/NS with L & SP. Not an ideal candidate for CC, but recreational priority to maximise CC. May need to adapt silviculture in light of outcomes.	Simple MC	Uniform shelterwood	120	30% 80 years	The area has self thinned and the first light thinning should concentrate on the removal of heavily suppressed/dead crop, twin leaders or other heavily branched trees with heavy crowns vulnerable to windblow. Leave SP area to west (6) unthinned during transition period to maintain stability.	Light thinning of suppressed and heavily crowned unstable trees. Leave area of SP to west unthinned.	Next FDP review
8 Cpt 3202/ 3203 Map 8: CCF	Good	Area with high recreational impact in vicinity of pond. Mixed species and age with mainly a younger age class dominant. Site and crop features make this a good candidate for Single Tree selection. Area of mature SS/OG in Cpt 3203	Complex MIXED	Single Tree Selection	200	N/A	Seek to retain mixed MC & BLs. Monitor any invasives. Area of mature SS in cpt 3203 has been well thinned, retain stable SS as specimen trees within matrix of mixed regeneration.	Light thinning around path environment for aesthetics. Initial uniform thinning to initiate process at end of ten year plan period. Selective thin of mature SS area.	Next FDP review

9 Cpt 3202 Map 8: CCF	MOD	High recreational value along main outlying path routes. Area of mixed species at low densities with small blocks of unthinned SS. Sheltered site with potential for SS to provide contrast.	Complex MIXED	Single Tree Selection	200	N/A	The pockets of SS within the area will require uniform thinning during the conversion process prior to single tree selection, the more diverse areas are suitable for single tree selection from the start.	Uniform thinning of SS stands. Light thinning around high quality BL stems. Large areas of OG require no action.	Next FDP review
10 Cpt 3205 Map 8: CCF	N/A	Area of windblown NS	Complex Mixed (post felling & regeneration)	Clear felling, or small group felling within group felling area.	150	50% 50 years	BI & SP regen anticipated	Clearfell fallen and unstable NS	Next FDP review
11 Cpt 3205 Map 8: CCF	N/A	As for area 6							
12 Cpt 3205 Map 8: CCF	MOD	As for area 8							

13 Cpt 3203/32 02/3205 Map 8: CCF	MOD/LOW	Large areas of unthinned even aged young SS monoculture with areas of mature thinned SP/EL at the northern end. Both areas suitable for a uniform selection system, but different thinning approaches needed in each area. While the young SS is not an ideal candidate for CC, recreational considerations override silvicultural factors, and the crop has its young age as an advantage.	Simple (SS/SP/L)	Uniform shelterwood	120/150/150	20% 80 yrs	The proposal is to manage the mature SP and EL areas to retain an open stand with limited regen during the plan period. Regeneration priorities can be put on hold for the plan period, to maintain an open forest recreational environment that diversifies the whole forest environment. The SS area is best suited to a uniform approach although areas of suppressed crops and the pathside environment would benefit from small targeted group fellings.	Uniform moderate/heavy thin of SS area with pockets of OG created along the path and to release suppressed MB. Remove heavily checked trees where heather viable. Uniform light thinning of mature SP & L areas.	Next FDP review
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14 Cpt 3203 Map 8: CCF	N/A	Clearfell of small targeted areas of SS to retain enhance views from Deuchny Hill summit.	N/A	N/A	N/A	N/A	Areas of OG may benefit from more active management. The creation of interesting herb rich or shrub habitats can add greatly to the recreational experience, and in the longer term may reduce ongoing management costs in relation to keeping OG clear.	Monitor regeneration, retain OG.	Next FDP review
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15 Cpt 3203 Map 8: CCF	MOD	High recreational impacts, sheltered site, mix of BI and SS suitable for conversion.	Simple (SS/BI)	Irregular shelterwood	100/20	N/A	Use the balance and distribution of SS and BI in this area to create discrete small pockets of BI and SS to create a contrasting woodland area to the usual CC jumble. Accept that this may be a transient structure, but fading BI pockets will evolve within the SS matrix into interesting successional habitats.	Thin area to produce pockets of pure BI and pure SS on a small scale. Monitor contractors to ensure concept is understood.	Next FDP review
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16 Cpt 3203 Map 8: CCF	GOOD	High recreational impact, thinned BI already under CC management. SS area well suited for creating specimen stand of SS with impacts on two path sections.	Simple progressing to complex (SS/BI)	Uniform shelterwood, consider Irregular shelterwood progression.	200/30	40% 50yrs	Enrichment planting of the birch area with a wider range of species would provide linkages with the arboretum and provide high impacts in a key area. Species such as aspen, yew, cherry, grand fir and wellingtonia are potential species that would add interest.	Thin SS area with long term specimen trees in mind. Consider small scale enrichment planting of open areas within the BI area.	Next FDP review
17 Cpt 3203 Map 8: CCF	N/A	Arboretum					Consider integration and setting of this area with the wider forest area. Consider linking theme of iCONic conifer project?		Next FDP review

18 Cpt 3204 Map 8: CCF	GOOD	Area with high recreational impacts and a wide range of species. Area consists of OG/BL in west with denser SS/BL area to east.	Complex (SS/BLs)	Single Tree Selection	150/200	50% 50yrs	Control WH regen in small area at east of site. Use light levels to control spread of WH from specimen trees, this might include heavy thinning to tip the competitive equilibrium in favour of more light demanding species. Retain structure of open glades.	Thin to remove WH regen, uniform thinning of SS area. OG/BL area no action at present, but consider enrichment planting.	Next FDP review
19 Cpt 3204 Map 8: CCF	N/A	High recreational impacts with mature tree cover already under CC.	Complex MC	Irregular Shelterwod	200	10% 50yrs	Windblow is the main threat to this well thinned and mature stand. Monitor windblow and stand integrity.	Remove high value windblown stems.	Next FDP review
20 Cpt 3204 Map 8: CCF	N/A	Remove discrete windblown element following Jan 2012 storm and unthinned SS adjacent to this area.	Complex Mixed	Single Tree Selection (Progression to this)	200	40% 10yrs	Consider enrichment planting of wide range of mixed species of interest, within a matrix of regen.	Clear windblown trees and CF unstable SS.	Next FDP review

21 Cpt 3204 Map 8: CCF	MOD	An area of lightly thinned MC on the steep slope is better suited to CF, however the high landscape impacts of this area effectively rules out this option. The eastern end of this area contains flatter ground with crops/ground more suitable to CC.	Simple MC/BLs/SS	Uniform Shelterwood	80/120/80	60% 80yrs	In the longer term an increase in BLs managed at a low intensity may be better suited to the steeper slopes. Small areas of mature BLs have the potential to produce quality logs. The younger SS crop at the east end should be managed in the same style as area 13.	Thin mature SS along slope with a moderate thinning. Thin small areas of mature BLs to produce good quality stems. Thin young SS at same time as area 13.	Next FDP review
22 Cpt 3204 Map 8: CCF	GOOD	High recreational impact with scattered young BLs and OG	Complex BLs/OG	Single Tree Selection	200	80% 50yrs	Retain key OG element to preserve views. Select final crop stems and thin accordingly, consider park type environment of widely spaced BLs.	No action	Next FDP review
23 Cpt 3204 Map 8: CCF	N/A	CF of small pocket of SS on visible slope	Complex BLs/OG	Single Tree Selection (Progression to this)	200	80% 50yrs	As above	Clearfell SS element during adjacent thinning operations.	Next FDP review

24 Cpt 3204 Map 8: CCF	MOD/LOW	Area of mature MC with high landscape, but moderate recreational impacts. Although new proposed formal access through this area will increase significance.	Simple MC	Uniform Shelterwood	120	N/A	Lightly thinned mature MC on site suitable for CC, but thinning window closing.	Moderate uniform thinning with potential new path formation in mind.	Next FDP review
25 Cpt 3206 Map 8: CCF	N/A	High Landscape impacts within a recreational context	Simple BLs/MC	Uniform Shelterwood	80/80	70% 50yrs	Thin to favour ash with blend of MC and retention of SP for winter colour. Rabbits are a potential threat to regeneration post thinning.	Uniform thinning	Next FDP review
26 Cpt 3206 Map 8: CCF	N/A	High Landscape impacts within a recreational context. Slope stability.	Simple BLs	Irregular Shelterwood	100	N/A	As above	Irregular thinning to create pockets to favour ash regeneration.	Next FDP review
27 Cpt 3208 Map 8: CCF	N/A	Area of mainly OK under CC	Simple BLs	Irregular Shelterwood	150	N/A	Thin to favour ash, monitor progression of dieback.	Thin to retain viable undamaged stems.	Next FDP review

28 Cpt 3208 Map 8: CCF	N/A	Area of mixed BLs under CC	Complex BLS	Single Tree Selection	200	N/A	Very light thinning to retain diverse nature of stand, use selective removal of SYC to retain NBL element.	Light thinning of SYC, follow up treatment of Rhody control.	Next FDP review
29 Cpt 3208 Map 8: CCF	N/A	Area of mixed BLs under CC	Complex BLS	Single Tree Selection	200	N/A	Stand fairly open at present, drainage an issue due to blocked drains.	Light thinning of SYC, follow up treatment of Rhody control. Deepen drains running E/W.	Next FDP review

Appendix IV: Tolerance Table

	Adjustment to felling coupe boundaries	Timing of restocking	Change to species	Windthrow response
FC Approval not normally required	0.5 ha or 5% of coupe – whichever is less.	Variation of less than 2 planting seasons from standard restock year, 4 years post-felling.	Up to 5% species exchange	Up to 1.0 ha.
Approval by exchange of letters and map	0.5 ha to 2.0 ha or 10% of coupe – whichever is less.		>15% species change	1.0 ha to 5.0 ha – if mainly windblown trees. Between 5.0 ha to 10.0 ha in areas of low sensitivity.
Approval by formal plan amendment	Greater than 2.0 ha or 10% of coupe.	Variation of greater than 2 planting seasons from standard restock year, 4 years post-felling.	Change from broadleaf to Conifer	Greater than 5.0 ha in areas of medium to high sensitivity.
			Reduction in native broadleaves by >5%	
			Reduction of >10% of productive net area	