Moray and Aberdeenshire Forest District

The Bin & Deveron Woods

Land Management Plan

Plan Reference No: LMP 33

Plan Approval Date: *****

Plan Expiry Date: ******

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

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

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FOREST ENTERPRISE - Application for Forest Design Plan Approvals in Scotland

Forest Enterprise - Property

Forest District:	Moray & Aberdeenshire FD
Woodland or property name:	The Bin & Deveron woods
Nearest town, village or locality:	Huntly
OS Grid reference:	NJ590450

Areas for approval

	Conifer	Broadleaf
Clear felling	167.4ha	5.5ha
Selective felling	None	None
Restocking	215.0ha	157.2ha
New planting (complete appendix 4)	None	None

1. I apply for Forest Design Plan approval*/~~amendment approval*~~ for the property described above and in the enclosed Forest Design Plan.

2. * I apply for an opinion under the terms of the Environmental Impact Assessment (Forestry) (Scotland) Regulations 1999 for ~~afforestation* /deforestation~~*/ roads*/ ~~quarries~~* as detailed in my application.

3. I confirm that the initial scoping of the plan was carried out with FC staff on

4. I confirm that the proposals contained in this plan comply with the UK Forestry Standard.

5. I confirm that the scoping, carried out and documented in the Consultation Record attached, incorporated those stakeholders which the FC agreed must be included.

6. I confirm that consultation and scoping has been carried out with all relevant stakeholders over the content of the of the design plan. Consideration of all of the issues raised by stakeholders has been included in the process of plan preparation and the outcome recorded on the attached consultation record. I confirm that we have informed all stakeholders about the extent to which we have been able to address their concerns and, where it has not been possible to fully address their concerns, we have reminded them of the opportunity to make further comment during the public consultation process.

7. I undertake to obtain any permissions necessary for the implementation of the approved Plan.

Signed…… Signed……

Forest District Manager Conservator

District Moray & Aberdeenshire Conservancy Grampian

Date…… **Date of Approval**……

Date approval ends……

Contents

Support documents:

Appendices:

Land Management Plan Summary

This plan is a review of Forestry Commission Scotland's management of the Bin, Ardonald & Deveron Woods forest blocks.

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

The main priority for these woodlands is the production of a sustainable timber crop while at the same time maximising their biodiversity value. Areas not considered for commercial management include permanent woodland and open habitats.

Large parts of the plan area have been highlighted as suitable for growing productive broadleaves due to the soil types and benign climatic conditions. The broadleaves will be managed for production of woodfuel as the primary product but opportunities to grow quality hardwood timber to produce a high value crop will be taken in appropriate areas.

Areas of the highest biodiversity value have been identified and will be retained and managed in a network of natural reserves, long term retentions and open space to create habitat networks within a forest environment.

1.0 Introduction

Refer to Map 1: Location.

1.1 Setting and context

The Bin & Deveron Woods are situated in the agricultural landscape of western Aberdeenshire and eastern Moray. They are a loose cluster of 12 small woods in the Deveron river valley with the exception of South Balnoon, which is further to the east, away from the river.

These woodlands originally were split into four design plan areas. The Bin, Ardonald & Milleath, Deveron Woods and South Balnoon. However, due to their close proximity and similar character they have now been amalgamated into one plan.

Together they cover a total area of approx 2070 hectares.

The woodlands are mostly of a small size, are surrounded by farmland and are reasonably visible within the local landscape. The focus of the management will be on producing a sustainable timber crop while maintaining and enhancing the environmental and biological value of the woodlands.

In terms of the draft Moray & Aberdeenshire Forest District Strategic Plan the Bin & Deveron woods are located in a key area for:

- Growing productive broadleaves due to suitable site conditions;
- Producing high quality timber;
- Creating functional habitat networks due to their high environmental potential;
- Accommodating a significant number of visitors;
- Use by the local community;
- Open habitat restoration to develop bog habitat.

1.2 Land Management Objectives

The purpose and objectives for managing this block of woodland have been identified following a review of:

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

Analysis of the available information has lead to the **primary objective** for these blocks being the management of the woodland to grow a quality crop of timber and restocking with a wider range of conifer and broadleaf species.

Additional **secondary objectives** for the future management of the woodland have been identified as:

- Managing the blocks to further encourage the use of the woodland by the local community ;
- Manage the existing open habitats with biodiversity interest to increase their biological potential.

1.2 History of the woods

The Bin has a long history of afforestation with the first tree planting undertaken by the Duke of Gordon in the 1840s. Much of the forest is now in its second or third rotation.

The eastern part of Ardonald contains much younger crops and wasn't planted until the early 1990's. The western part was planted between 1966 and 1990's. Milleath was planted between 1973 and 1993.

Research of the old maps has shown:

- The 1636-1652 James Gordon, Strathbogie & Aenzie manuscript shows trees along the north side of the River Deveron between St Peter's Kirk and Inschtammack as well as the lower eastern slopes of Dunbennan Hill.

Section of manuscript reproduced by kind permission of the National Library of Scotland

- The 1747 – 1752 Roy's Military Survey of Scotland shows a continuous area of woodland along the north and south side of the River Deveron between St. Peter's Kirk round to Dunbennan including woodland on the lower slopes of Dunbennan Hill.

- The 1876 1st Edition OS Sheet 86 for Huntly shows the Bin Hill, northern plantation blocks and Hill of Milleath as wooded and aligned to today's forest cover. Dunbennan Hill and the Ardonald blocks are unforested during this period.

South Balnoon is the youngest woodland being a new acquisition of farm land in the early 2000's and being planted in 2008 & 2009 with productive conifers and broadleaves, including an experiment with short rotation forestry.

2.0 Analysis of previous plans

The main objective stated in previous plans are rationalised and included in the table below, along with the progress made to date on the achievement of the objective and how this will be carried forward into the new plan.

Objective (in current approved plan)	**Management action**	**Progress to date** **1** – Nominal progress **2** – Some progress **3** – Progress as per FDP	**Proposed action (in this plan)**
Restock with species appropriate to the site and climatic conditions.	Replant with conifer species appropriate to the site. Accept broadleaf regeneration on sites designated for broadleaved woodland.	**3** – Sites replanted with the species approved in the current FDP.	Continue to use the ESC decision support system to guide the selection of species appropriate to the climate and soil conditions of the sites. Continue to accept natural regeneration of broadleaves and conifers where this meets the objectives of the FDP.
Increase areas of retention of old growth areas.	Area of old growth crops recorded in SCDB increased.	**3** – Appropriate levels of deadwood retention agreed in work plans and checked at 75% visits Process lead by conservation team.	Continue with this action in the new plan as part of the wider objective of increasing the biodiversity of the plan area. Link existing retention sites with other biologically valuable habitats to create networks of such habitats.

Area of LISS management to be maximised where site conditions allow.	LISS designation applied at levels appropriate to site conditions and recorded at 75% visits.	**3** – Sites identified as LISS recorded in FDP and GIS layers. Thinning undertaken in appropriate crops in 2010 or 2012.	Ensure the LISS designation is appropriate to the crop, site conditions and objectives. Any areas that are not appropriate will have the designation changed. Other areas found to be suitable will be designated if site objectives are met by LISS prescriptions.
Increase the area of forest cover in the plan area.	Plant up area of South Balnoon as per the approved FDP.	**3 –** Planting completed and successfully established.	Reassess original plan for Balnoon to determine if there are additional areas of the block suitable for planting given current FDP objectives and site habitats.
Increase the production and use of woodfuel in the local area.	Plant areas to demonstrate woodfuel production in short rotation forestry on new planting sites.	**3 –** Demonstration areas successfully planted and established.	Identify areas of the broadleaved element in the current inventory that can be managed for woodfuel production. Ensure all new areas of broadleaves are suitable for management either for fuelwood or hardwood timber production, unless other site objectives have an over-riding importance.
Maximise the production of timber in the plan area.	Use clearfell and restock management system across much of the plan area.	**3** – All felling coupes undertaken as per plan.	Timber production will continue to be a high priority objective and as wide a range of species as site conditions allow will be used in the restocking to diversify the FDP species structure as much as possible. However opportunities to use LISS prescriptions will be taken.
Increase the area of broadleaf woodland and thus the potential for hardwood timber production.	Gradually remove conifers during thinning operations to favour broadleaf regeneration.	**2 –** Thinning operations have been undertaken to favour the most suitable final crop species.	Continue to increase the area of broadleaf woodland using natural regeneration where appropriate. Restocking will also be used if naturally regenerated species are not appropriate or are not present in sufficient numbers.

Enhance the landscape value of the plan area.	Create a more diverse age & height structure. Remove geometric hard edges and create more natural woodland shapes. Create better links to adjacent woodland and mature hedgerows.	**3** – Felling coupes identified in FDP for landscape reasons completed.	This will continue to be a driver in the new plan. All coupes will be planned to maintain and where possible enhance how the FDP area fits with the landform and surrounding landscape.
Continue community involvement through liaison over FDP.	Enhanced relationships between FCS and local communities.	**2** – Details of community responses to consultation included in consultation record.	The relationship and consultation with local communities will be maintained during this FDP process but there will be little opportunity to increase it.
Maintain and enhance existing recreational facilities.	Explore potential for expansion of existing path network.	**1** – No new recreation facilities have been created during the plan period due to resource issues.	There will be no provision for any additional recreational facilities in the new FDP. Informal access will be maintained under the auspices of SOAC.
Improve existing car parking facilities.	A well-managed car park that encourages usage by the public.	**3** – A plan of improvements was drawn up with assistance of FCS landscape architect. All improvements undertaken and now complete.	Additional improvements for the environs of the car park are proposed for this plan period.

Liaise with Aberdeenshire Council to improve pedestrian access from Huntly to the Bin.	An improvement in the quality of pedestrian access into the Bin and an increased in the number of users.	**3** – There has been a big improvement in this access route but there are no statistics on number of users.	There will be no provision for any additional recreational facilities in this FDP. Informal access will be maintained under the auspices of SOAC.
Increase provision of trails suitable for equestrian use.	Provide a network of trails suitable for equestrian use at South Balnoon.	**3 –** Informal trails established and maintained by twice yearly mowing.	Informal trails will continue to be maintained to the current standards. No new provision will be provided in the new plan.
Create buffers of riparian woodland along watercourses.	Fell conifer crops and encourage broadleaf natural regeneration in riparian zones.	**3** – Sites identified and recorded in FDP and GIS layers. Coupe plans produced and operations undertaken to manage sites as appropriate.	This will continue to be a driver in the new plan. All areas adjacent to riparian zones will be maintained and, where possible, enhanced.
Undertake bog restoration at Moss of Ardonald.	An increase in the area of open habitat recorded in SCDB.	**0** – No progress has been made on this. Discussion with FCS open habitat advisory highlighted the fact that the bog is too degraded for successful restoration.	This are will be highlighted for large scale planting of native broadleaved woodland suitable to the site conditions. This will include a major objective of being productive in the longer term.

Retain veteran Scots Pine and open habitats.	Fell under planting around veteran Scots Pine. Retain areas of check and allow moorland vegetation to colonise.	**3** – Under planting of SP felled during plan period. Areas of checked SS retained.	This will continue to be a driver in the new plan. All areas with biodiversity value will be maintained and, where possible, enhanced.
Manage Bin Quarry and Mortlach Moss SSSI's according to management plans agreed with SNH.	SSSI's that are managed according to agreed management plans that increase their biodiversity value.	**3** – All agreed operations have been completed in consultation with SNH	This will continue to be a major driver in the new plan. All proposals in the FDP will fit with the SSSI management plans currently in place.
Protect, enhance and expand Red Squirrel habitat by managing suitable areas under LISS prescriptions.	An increase in the area of habitat suitable for red squirrel.	**3** – Sites identified as LISS recorded in FDP and GIS layers. Thinning undertaken in appropriate crops in 2010 or 2012.	Ensure the LISS designation is appropriate to the crop, site conditions and objectives. Any areas that are not appropriate will have the designation changed. Other areas found to be suitable will be designated if site objectives are met by LISS prescriptions.
Increase conservation value of forests in plan area.	Increase the area of the plan managed by ATC and the area of broadleaved woodland.	**3** – Sites identified and recorded in FDP and GIS layers. Coupe plans produced and operations undertaken to manage sites as appropriate.	This will continue to be a driver in the new plan. All areas with biodiversity value will be maintained and, where possible, enhanced.

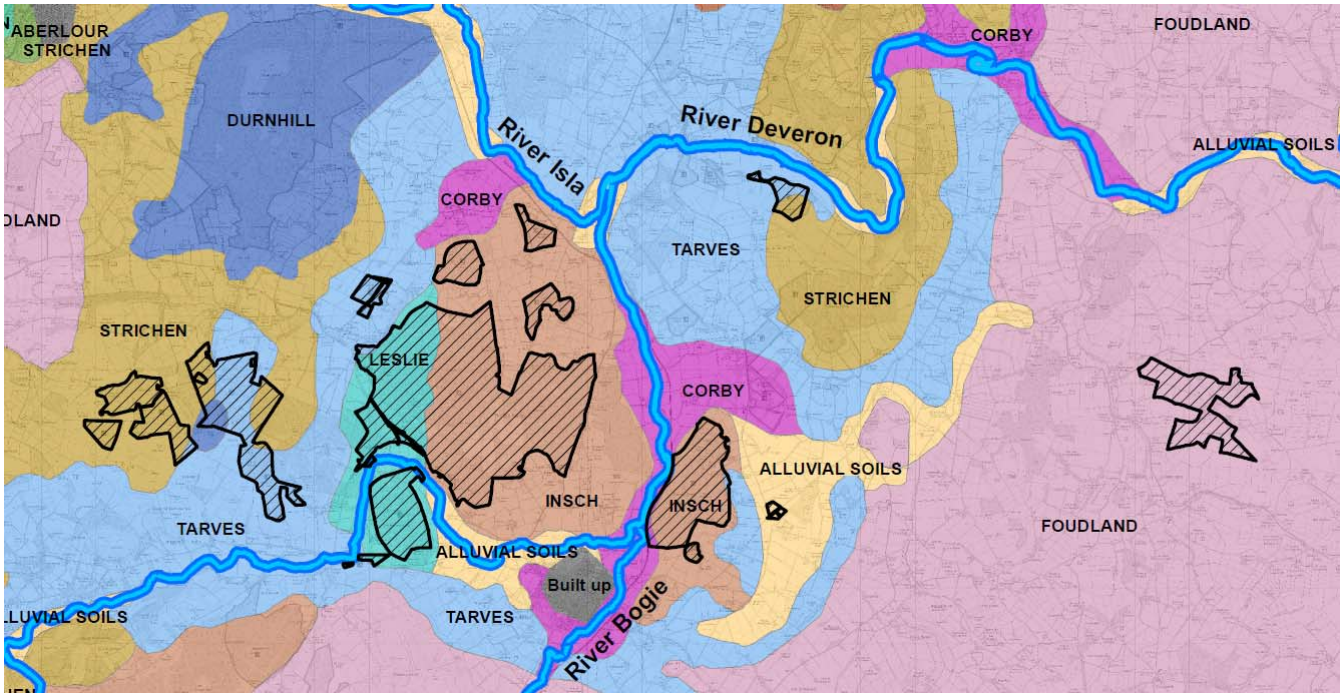
3.0 Background information

3.1 Physical site factors

Refer to Map 2: Key Features.

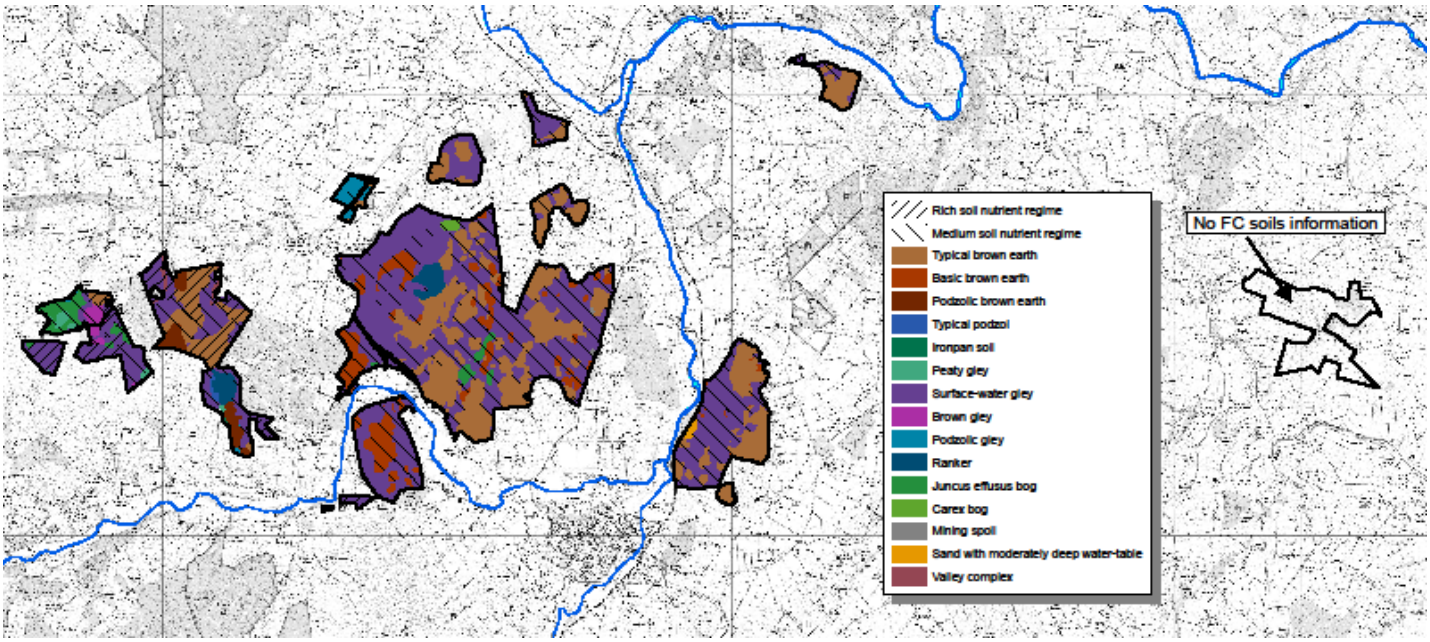
3.1.1 Geology, Soils and topography

Geology – Due to the dispersed nature of the blocks in this plan there is a range of under laying geology that influences the soil types. The map of the British Geological Survey 1:625,000 scale survey shows that South Balnoon is located on an area of Quartz-mica-schist, grit, slate and phyllite of the Upper Dalradian supergroup. Kinnoir is underlain by Gabbro and allied types. While the remainder of the forest design plan area is underlain by igneous rocks (including gabbro and olivine gabbro) of the Huntly-Knock Pluton of the Caledonian igneous supersuite. Around Hill of Milleath rocks (including pelite and psammite) of the Ballachulish sub-group of the Dalradian Supergroup.

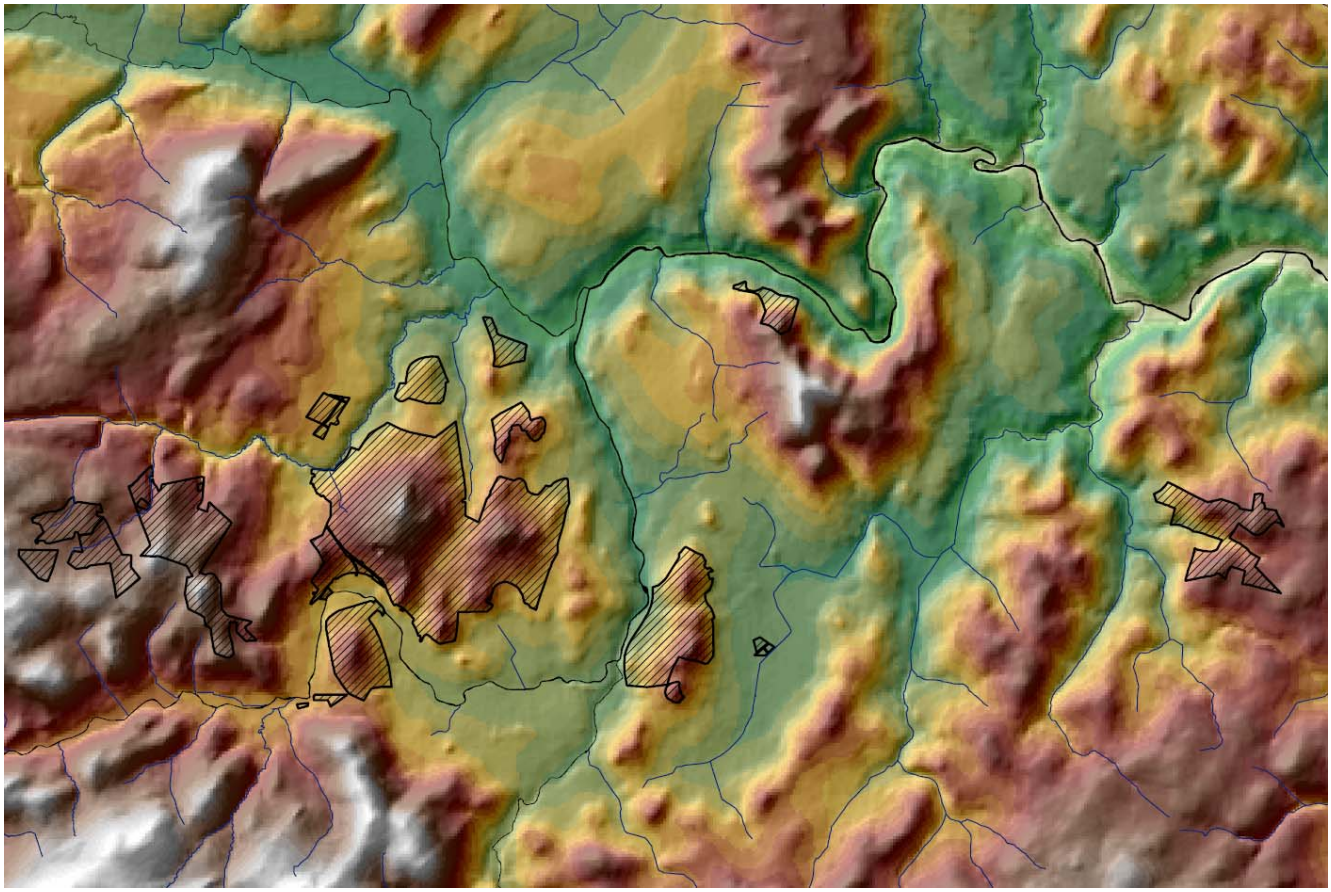


Soils –The mixed under laying geology leads to a mix of soils types. The map above shows how these are distributed. The soils of the Foundland Associations at South Balnoon are mostly humus-iron podzols with some brown earths, peaty gleys, peaty podzols and peat. These mostly have medium nitrogen level availability. The Insch associations under Kinnoir and the east of the Bin are brown earth with peaty gleys, humus-iron podzols and gleys. These all have a high level of nitrogen availability. The Strichen and Tarves associations are a mix of free draining podzols and brown earth with medium nitrogen availability. The Leslie association comprises magnesian gleys with some freely or imperfectly drained magnesian soils with a high level of nitrogen availability.

In the Bin and Deveron woods blocks 9% of the soils have a rich nutrient regime and 50% have a medium nutrient regime. This compares to 5% rich and 10% medium for the district as a whole. This gives the opportunity to grow productive broadleaves and a wider range of conifers.



Topography - The elevation of the design plan area runs from about 75m, for the blocks along the river Deveron, to just over 300 meters at the top of both the Bin and Milleath blocks. The blocks are situated across the smooth flowing hills of the north Aberdeenshire countryside.



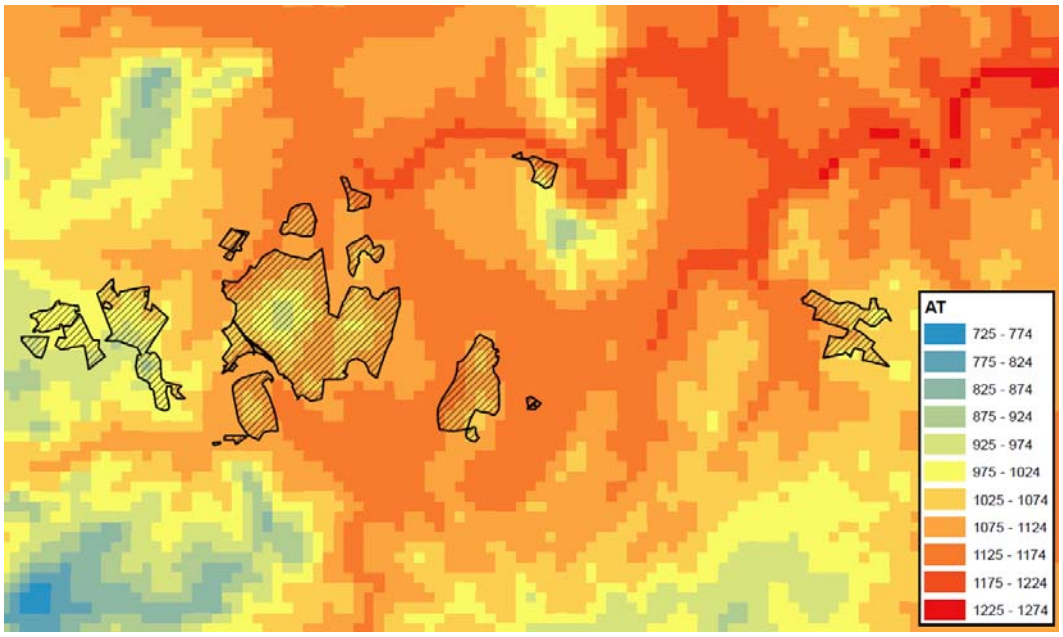
3.1.2 Water

All the Deveron Woods Blocks are not surprisingly in the River Deveron catchment area. This is a catchment identified by SEPA as a priority catchment for improvement. Initial assessment by SEPA reveals that there are diffuse pollution issues in relation to poaching of watercourses by livestock and cultivation of land likely to cause pollution. Despite these not being an issue on the land covered by this design plan we will endeavor to do what is feasible to help improve the current situation.

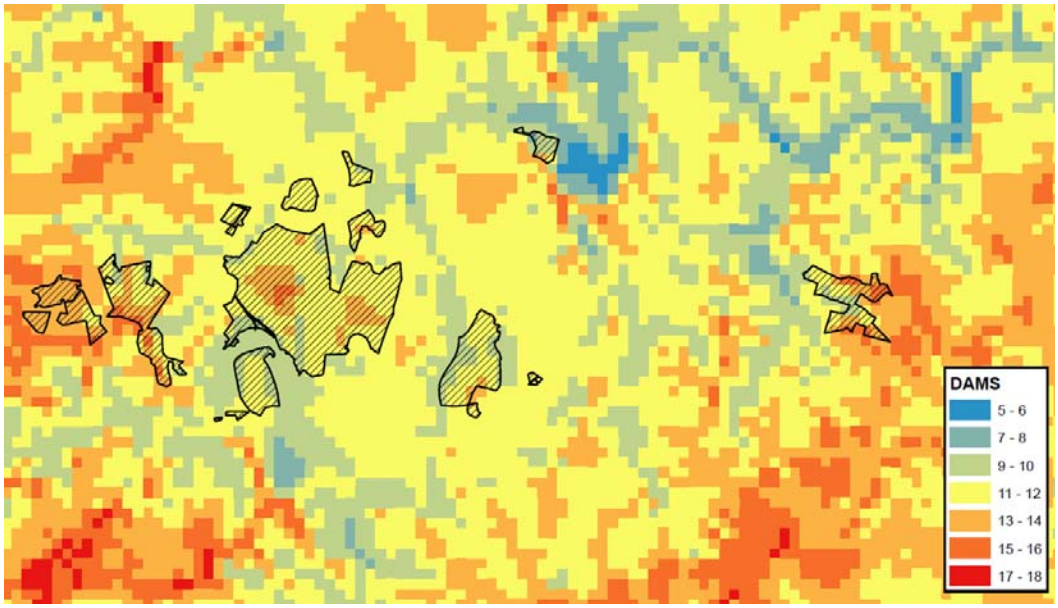
3.1.3 Climate

The climate data for the design plan area is obtained from the Ecological Site Classification system (ESC).
The results of interrogating this system gave the following data.

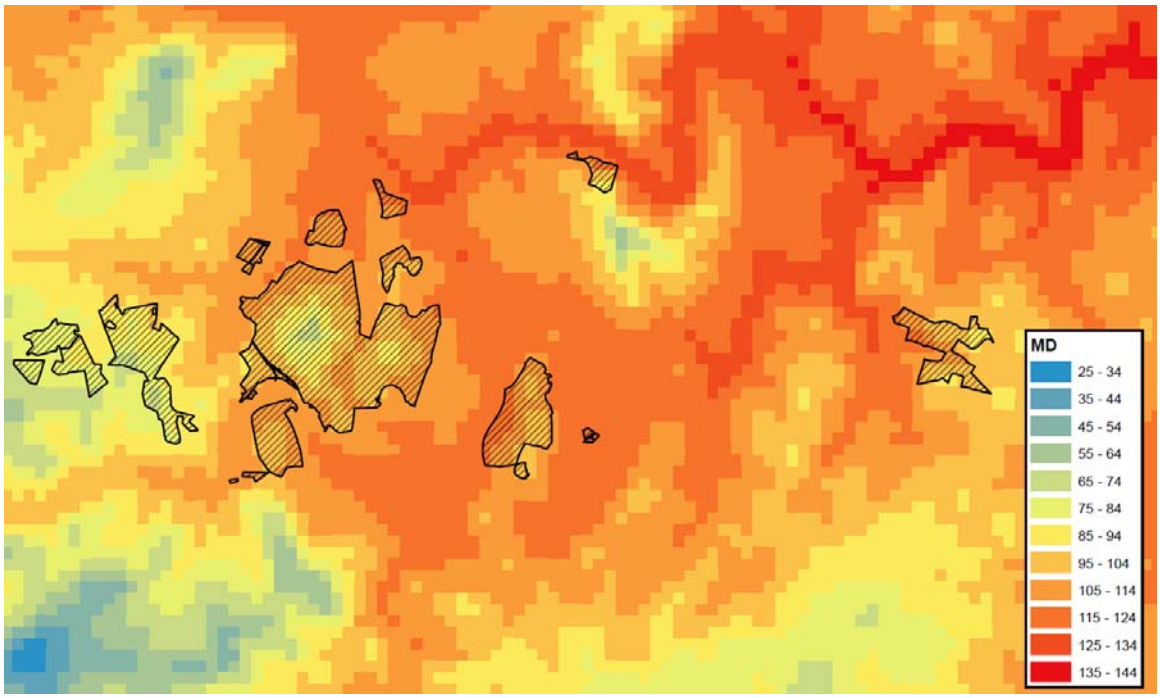
AT5	DAMS	MD
725 - 1239	5 - 18	25 - 143



AT5 is the accumulated total of the day-degrees above the growth threshold temperature of 5º, which provides a convenient measure of summer warmth. The results for AT5 place these blocks in the “cool” zone.



DAMS is the Detailed Aspect Method of Scoring. This represents the amount of physically damaging wind that forest stands experience in the year.
The range of DAMS is from 3 to 36 and windiness is the most likely limiting factor to tree growth at higher elevations in Britain.



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

place the blocks on the boundary of the “moist” and “wet” zones.

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

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

3.2 Biodiversity and environmental designations

There are two designated sites within the Bin Forest.

Mortlach Moss (NJ505449) is designated a Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC) for the base-rich fen habitat. The 12.02ha designated area covers a small alkaline fen (or moss), with associated flushes, which has developed in an isolated peat hollow which was once a small loch. The wetland vegetation is influenced by the underlying base-rich geology and the moss receives water from springs and rainwater. The condition of the designated feature was assessed by SNH in 2005 as Favourable, Maintained. See appendix 3 for more details.

The past management of the 2.48ha Bin Quarry geological SSSI (NJ498431) has resulted in the exposure of part of a large body of basic igneous rocks, known as the Huntly-Knock intrusion. The outcrops are designated because they show very distinctive layering features in the rocks, caused by varying concentrations of different minerals in the layers. These layering features are of importance in understanding the processes that were occurring deep within the Earth at the time these rocks were formed. The condition of the designated feature was assessed by SNH in 2007 as Favourable, Maintained. See appendix 4 for more detail.

Species records are maintained by and held on the Forestry Commission Scotland database.

Vascular plants: Two UK Priority species, Twinflower (*Linnea borealis*) and Juniper (*Juniperus communis*), have been recorded in the Forest Plan area.

Mammals: Two UK Priority mammal species occur on the site. Red squirrel (*Sciurus vulgaris*) and Otter (*Lutra lutra*) activity has been noted in the Bin Forest. In addition badger (*Meles meles*) activity has been noted.

Fish: Atlantic salmon (*Salmo salar*), a locally important species of conservation concern, are present in the Rivers Deveron and Isla.

Birds: The forest area is of importance for a number of raptor species. This includes kestrel (*Falco tinnunculus*) on the amber list as a Species of European Conservation Concern.

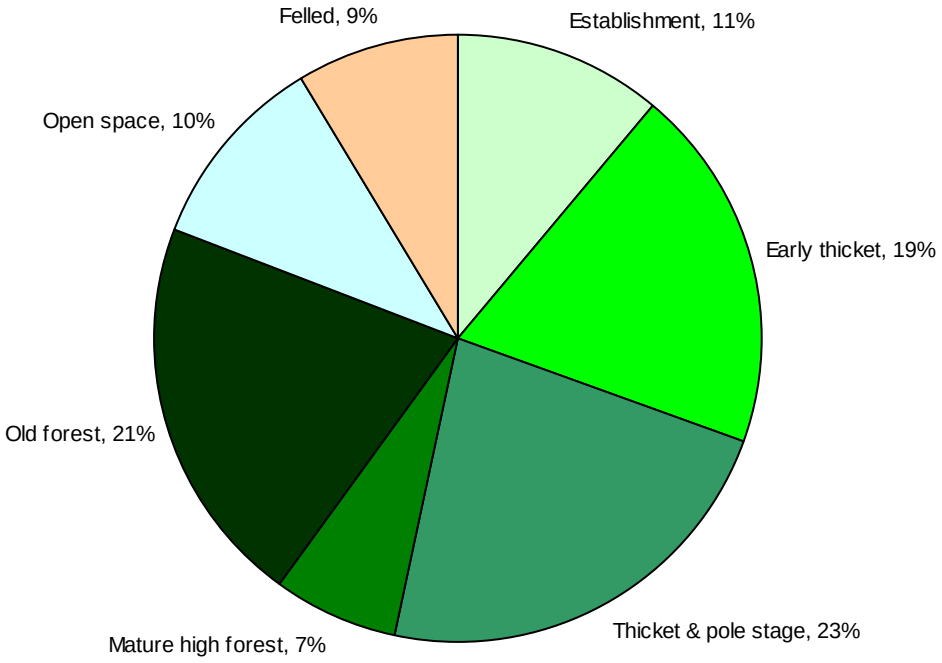
3.3 The existing forest

3.3.1 Age structure ,species and yield class

i. Age Structure

There is a fairly even spread of the successional stages across the forest blocks. This plan will aim to maintain this structural diversity.

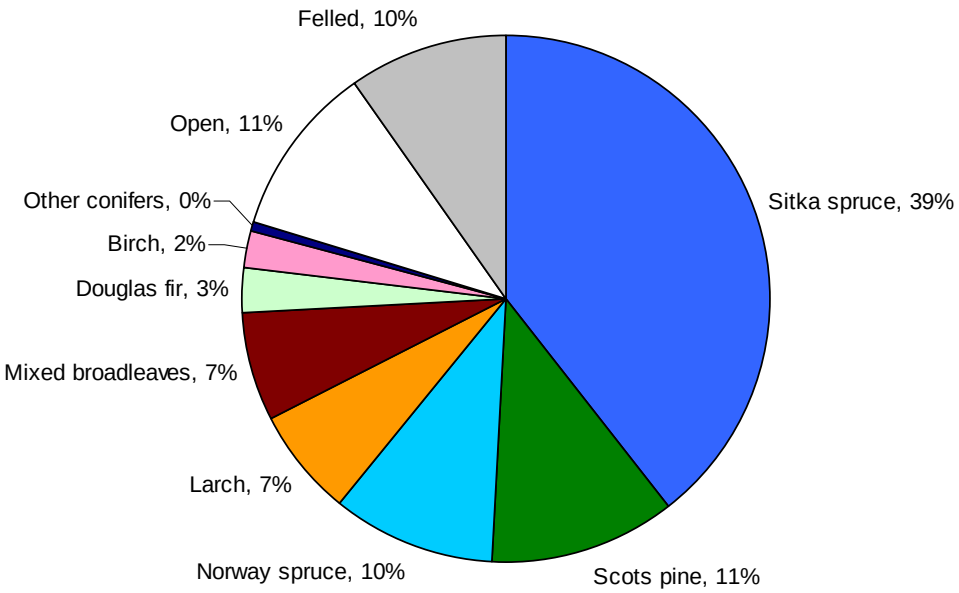
Ages of Trees (years)	Successional Stage	Area (ha)	%
	Felled (awaiting restock)	202.2	10%
0 -10	Establishment	217.4	11%
11 – 20	Early Thicket	303.3	15%
21 – 40	Thicket & Pole Stage	568.9	28%
41 – 60	Mature High Forest	127.4	6%
61+	Old Forest	427.5	21%
	Open space	217.9	11%



ii. Species

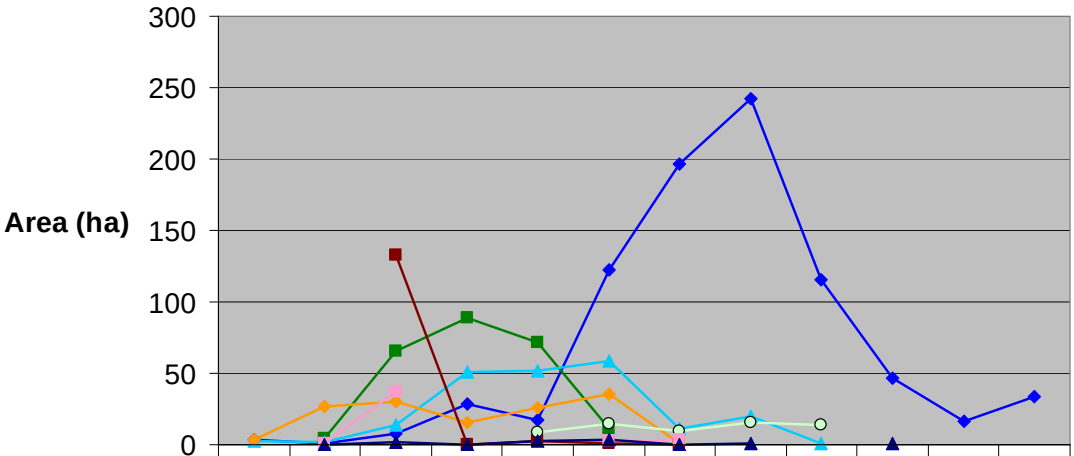
Approximately two fifths of the plan area is currently stocked with Sitka spruce. Scots pine is the next most abundant species at just over 10%. Broadleaves are at 7%, already above the minimum required under the UK Forestry Standard. A range of other conifer species makes up the rest of the planted area. The aim of this plan will be to maintain and where site conditions allow increase the species diversity in these blocks.

Species	Area (ha)	Percentage
Sitka spruce	812.6	39%
Scots pine	235.3	11%
Norway spruce	207.7	10%
Larch	139.9	7%
Mixed broadleaves	135.0	7%
Douglas fir	60.9	3%
Birch	43.9	2%
Other conifers	6.9	1%
Open land	217.9	11%
Felled	202.2	10%



iii. Yield Class

The yield classes for the various species vary, as would be expected, across such a large area with a variety of soil types. Sitka Spruce, the dominant species, has a range of yield class 12 to 24, this would be considered to be average for this species. The majority of the Scots Pine lies in the range of yield class 6 to 10, again average for this species.



	2	4	6	8	10	12	14	16	18	20	22	24
Sitka spruce	3.85	0.83	7.36	28.3	17.3	122	196	242	116	46.5	16.6	33.3
Scots pine		3.91	65.7	89	71.7	11.2						
Norway spruce	2.48	1.3	14.1	50.5	51.3	58.8	11.5	20.1	0.58			
Larch	3.69	26.7	30.1	15.5	26.2	35.7	0.82					
Mixed broadleaves			133	0.11	2.9	1.23	0.23					
Douglas fir		0.66			8.84	14.7	9.25	15.4	13.5			
Birch		0.8	37			3	3.3					
Other conifers		0.15	1.74	0.11	2.85	3.47	0.22	1.11		0.91		

Yield class

3.3.2 Access

Access both to and within the majority of this forest design plan area is good. The Bin, Dunbennan and Kinnoir all have access within 5k of the A96 and are connected to it by short stretches of A and B public roads, as well as minor roads (generally more than 4m wide). Ardonald is within 5kms access of the A96 via sections of shared track and minor public roads (generally less than 4m wide). There have been restrictions on some harvesting operations within Woodfold due to limits on the volume of timber we can transport on the access roads.

Access within all the blocks is mostly good but there is a need for new forest road construction in South Balnoon to allow harvesting operations to be undertaken.

3.3.3 LISS potential

Currently just under 20% of the area of this plan has been designated for management under LISS (Low Impact Silvicultural Systems).
These management systems are defined as: 'Use of silvicultural systems whereby the forest canopy is maintained at one or more levels without clear felling.' With LISS there will be no clearfell areas larger than 2 ha. The tree canopy will continue to be thinned (crown thinning) until the trees reach a suitable are for successful conversion (80-100years).

There are a range of species under LISS including Scots pine, Sitka spruce and Norway spruce.

The past thinning regimes of crops, the soil types, the DAMS scores and the suitability of the current species to their sites indicates that around 30% of the current crops could have good potential to be managed under LISS.

3.3.4 Current and potential markets

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

Material	End product	Percentage
Short roundwood	Chip board, Orientated strand board (OSB), Paper	35%
Fencing	Posts & rails	5%
Short log	Pallets & slats	20%
Log	Construction	40%

The vast majority (95%) of this production is sold into markets in the north east of Scotland, with very little travelling more than 50 miles to the processing facility.

The only changes to this are likely to be the increase in material going into the local fuelwood market and the production of hardwood timber, in the long term. Both these markets will be of a very limited scale and will have only minor impacts on the current product percentage breakdown.

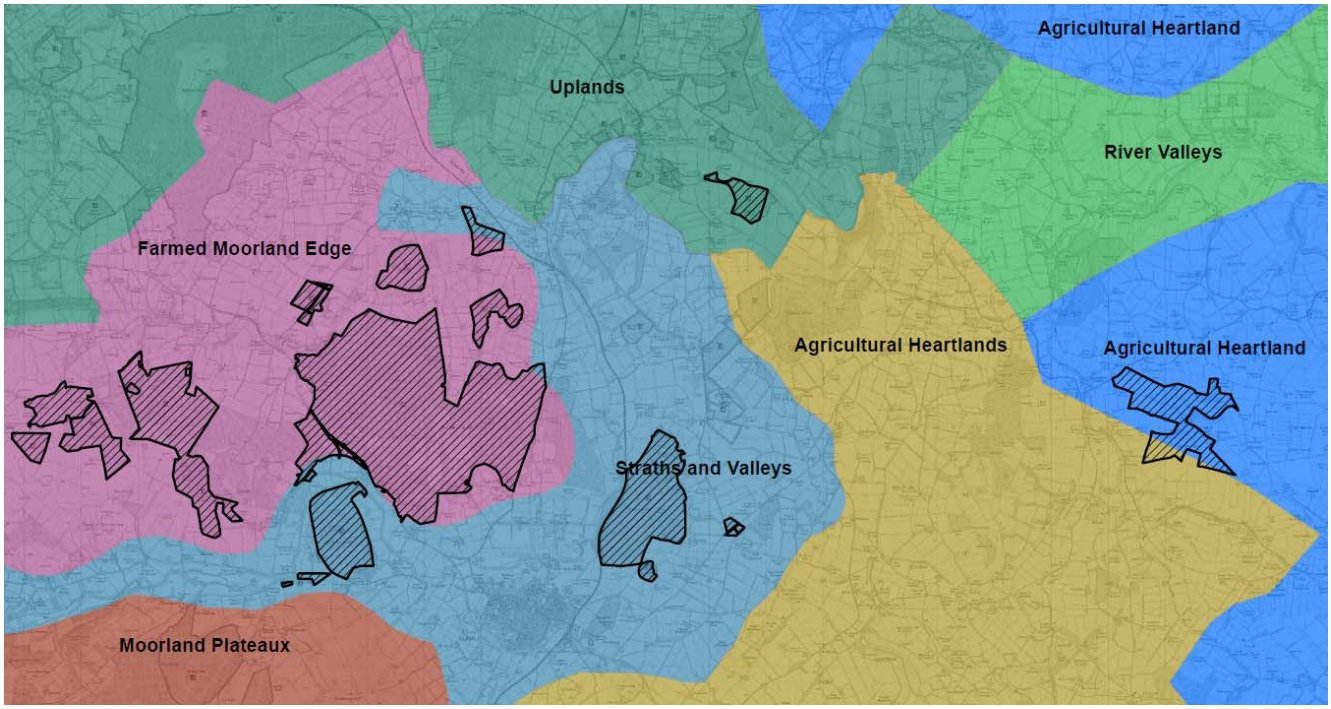
3.4 Landscape and land use

3.4.1 Landscape character and value

The visual amenity of Deveron Woods is important in the context of the local area.

Scottish Natural Heritage, in partnership with local authorities and other agencies have carried out a National Programme of Landscape Character Assessment. This programme aims to improve knowledge and understanding of the contribution that landscape makes to the natural heritage of Scotland. It considers the likely pressures and opportunities for change in the landscape, assesses the sensitivity of the landscape to change and includes guidelines indicating how landscape character may be conserved, enhanced or restructured as appropriate.
These assessments are considered during all Forest Design plan reviews and where appropriate all efforts are made to follow the guidance given, where it matches with current FCS policy.

The design plan area is covered by three Scottish Natural Heritage Landscape Character Assessment reports. No101, Moray and Nairn, produced in 1998 by Turnbull Jeffrey Partnership, No102, South and Central Aberdeenshire, produced in 1998 by Environmental Resources Management and No37, Banff and Buchan, produced in 1997 by Cobham Resource Consultants.



The majority of the Forest plan area is located within the **Farmed Moorland Edge** Landscape Character Type, Daugh of Cairnborrow Landscape Character Area 14. This is a small scale landscape characterised by an intricate pattern of fields and woods and tightly undulating relief often including areas of quite compact, hummock landscape. This is essentially an agricultural landscape with livestock farming and small scattered woodlands usually as block plantings within the field pattern. The Bin forms small wooded hills (part of the Grampian Outliers Landscape Character Area 17) is a feature which enhances the upland character of the landscape and dominates the skyline.

Specific guidance on the integration of commercial forestry recommends:

- Commercial plantations may occur within the landscape or encroach from adjacent upland areas; the siting of woods within hollows and Straths especially at the junction of with the Moorland Plateaux, to emphasise landform and link visually with the upland plantations.
- Small plantations with a mix of species, including broadleaves, will be more appropriate in the small scale landscape of some of these upland areas.

Dunbennan and Kinnoir lies within the **Straths and Valley**s Landscape Character Type, the Deveron and Bogie Straths

Landscape Character Area 21. The Deveron valley contains more thickly coniferous wooded slopes west of Huntly with a patchwork of pasture within the woodland framework. Although an essentially agricultural landscape, the moorland backdrop to most views is a key aspect of the area's character, lending a grand sense of scale.

Specific guidance on retaining the small scale farmed character and diverse land-uses of the valley slopes recommends:

- Small blocks of commercial forestry to fit within the existing farmland pattern.

South Balnoon is on the boundary of this area and the Upland Ridges South of the Deveron area of the Agricultural Heartland zone of the Banff and Buchan Assessment. This is an area on either side of the Deveron valley with convex slopes of hill ridges. The broad hill tops of these ridges are open and divided by the numerous, yet insignificant, streams that feed the main rivers.
Tree cover is sparse in this well cultivated agricultural landscape. Scattered beech and other deciduous species occasionally fringe the skyline or cluster around farm buildings.

South Balnoon seen from the NW on the B9001

3.4.2 Visibility

The majority of the forestry blocks are located on the hill tops and undulating slopes and are a feature within an agricultural landscape.

The plantations are most visible from the A96 (giving close views of the forest) and the B9002 public roads, with the Bin being the most prominent feature. The forest plan area is also visible from Huntly, as well as the villages of Cairnie and Ruthven.

Bin seen from the A96/A97 junction near Huntly.

3.4.3 Neighbouring land use

Land use around the woodlands in the plan area is almost completely agricultural.

The Ardonald and Bin forest blocks are joined by a significant area of conifer plantation under private ownership and management.

Bin from the western outskirts of Ruthven village.

3.5 Social factors

3.5.1 Recreation

There are a number of formal waymarked trails within the Bin block only however most of the other blocks are used by locals who know the woods and the accessible routes and do not need formal waymarking to direct them.
With the exception of the Bin car park there are no formal car parks however most of the access points into the blocks have sufficient room for some informal car parking. The blocks will continue to be used under the auspices of the Scottish Outdoor Access Code.

There are five waymarked walking trails for the public through the Bin Forest, promoted through leaflets and the Forestry Commission Scotland website.

These include:

- Bin Hill Trail 6.5kms/ 4 miles
- Queen Tree Trail – 5.5kms/ 3.5 miles
- Ferny Knowe Trail – 2.5kms/ 1.5 miles
- Ord Brae Trail - 2.5kms/ 1.5 miles
- Gallon of Water Trail – 1km/ 0.75 miles

Car parking and site information is located off the A96 public road at NJ5052 4195. There is a charge to the public of £2.00 per day for using the car park. Informal car parking is also undertaken at a number of points around the Bin associated with access points onto forest extraction roads.

3.5.2 Community

The largest settlement located 2 miles from both the Bin and Kinnoir blocks is the town of Huntly with a population of approximately 4,500. Due to the close proximity there is strong community usage of both blocks.
The villages of Cairnie, Ruthven, Rothiemay and Glass surround the forest plan area as well as a number of homes and farms. Other communities are made up of scattered homes and farms rather than specific villages. Occasionally a group of houses occurs, such as at Largue, but this is the exception.

3.5.3 Heritage

There are no Scheduled Monuments in the design plan area but a large number of non-scheduled monuments have been located and recorded. Information on these is held in the Forestry Commission S.M.R. sheets.
This information will be used when work plans are produced to ensure no heritage features are damaged. The management of these sites is informed by the UKFS Forests and Historic Environment guidelines.

Dyke, Kinnoir

Retanach farmstead

Drumblair enclosure bank

3.6 Statutory requirements and key external policies

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

Biodiversity

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

Climate Change

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

Historic Environment

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

Forests & People

- Control of Substances Hazardous to Health Regulations 2002
- Employers Liability (Compulsory Insurance) Act 1969
- Equality Act 2010
- Gangmasters (Licensing) Act 2004
- Health and Safety at Work Act 1974
- Management of Health and Safety at Work Regulations 1999

- Occupiers' Liability (Scotland) Act 1960
- Provision and Use of Work Equipment Regulations 1998
- Reporting of Injuries, Diseases and Dangerous Occurences Regulations 1995
- The Highways Act 1980

Soils

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

3.7 Pathogens and diseases

3.7.1 Hylobius

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

3.7.2 Chalara fraxinea

Chalara dieback of ash is an aggressive fungal disease and is caused by
Chalara fraxinea, including its sexual stage, Hymenoscyphus
pseudoalbidus. The disease causes leaf loss and crown dieback in affected trees, and usually leads to tree death. Ash trees suffering with the infection have been found widely across Europe since trees believed to have been infected with this newly identified pathogen were reported dying in large numbers in Poland in 1992. These have included forest trees, trees in urban areas such as parks and gardens, and also young trees in nurseries. Currently the closest recorded outbreaks are approximately 7.5km south west around Brechin.

3.7.3 Phytophthora ramorum

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

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

3.7.4 Heterobasidion annosum

Heterobasidion annosum is a fungus that can infect most of the conifer tree species regularly planted. It spreads by spores that readily colonize freshly cut stump surfaces, enabling it to spread over long distances between forests and to build up rapidly within forests. It lives by decaying infected wood. The highest levels of disease are usually found on sites with a woodland history extending for two or more rotations, which is the case for the main Bin block.

H. annosum causes root and butt rot in most commercial conifers and on site types that favour the disease trees of most species may be killed. Losses from butt rot in second or third rotation spruce may reach 30% of volume, with 70-80% of trees affected. This concurs with observations made during past clearfelling operations in the eastern part of the Bin where a 3m butt length needed to be cut from 70% of the felled crop.

A report written in 1954 highlighted the extent of butt rot infection in parts of this plan area. This will be a major factor in the choice of restocking species.

3.7.5 Dothistroma needle blight

This is a major fungal pathogen affecting the woods within Moray & Aberdeenshire.This is an economically important

disease affecting a number of coniferous trees, in particular pines. It causes premature needle defoliation, which results in the loss of timber yield and, in severe cases, tree mortality. However there is very little lodgepole pine, the most severely affected pine within this plan area, 3.2ha or <1% of the area.

4.0 Analysis and Concept

Refer to Map 4: Analysis and concept.

Issue (from The role of Scotland's National Forest Estate and strategic directions)	**Analysis**	**Concept**
Helping the Estate to adapt to climate change and become more resilient to pressure.	The soils on average are better than many in other areas of the district. This will allow a wider range of species to be grown successfully.	The choice of tree species will take into account potential future climate change scenarios as well as the current benign site conditions.
Manage at least a quarter of our expanding broadleaved woodlands to produce quality hardwoods and fuelwood.	The soils on average are better than many in other areas of the district. This will allow a wider range of broadleaves to be grown successfully.	Plant and manage areas of broadleaves to increase their marketable potential, which will include supplying the local fuelwood market.
Encourage local people to get involved with using and managing local Estate woodlands.	There is currently a very low level of community involvement within the plan area.	Continue to work to increase the involvement of the various user communities in the planning and management of the woods.

Encourage the use of the Estate for health benefits and outdoor learning.	There is currently a good provision of informal facilities for a range of recreation activities in the plan area.	Maintain the level of provision at its current level and standard.
Maintain the best open habitats in good ecological condition.	A number of priority and none priority open habitats are present within the woodlands.	Plan management regimes and operations to improve the ecological value of the open habitats and link them to a wider habitat network.

5.0 Forest Design Plan Proposals

5.1 Management

Refer to Map 5: Management.

5.1.1Thinning

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

- Thinning is likely to significantly increase the risk of windblow;
- A single thinning operation is likely to require an unacceptably large initial investment in relation to the potential benefits due to access or market considerations;
- The area is out with the thinning window;
- The basal area of the crop does not meet the required level;
- Thinning is unlikely to improve poorly stocked or poor quality crops.

In Deveron woods this means that most of the area will be thinned in order to improve timber quality. It is assumed that the only commercial areas, which will not be thinned, are those with stability or terrain issues or are outwith their thinning window.

All the blocks are split into thinning coupes, which will be worked on 5 or 7 year cycles depending on species (this may vary in Continuous Cover areas, see detailed prescriptions). See Map 6 – Thinning.

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

5.1.2 Clearfell

The main silvicultural system employed in British forestry is ‘patch’ clear-felling followed by planting or occasionally natural regeneration. There will be areas of woodland in the plan area stocked with fast growing conifers on soils which are not

considered stable enough for continuous cover systems. In order that the timber in these areas is harvested before the onset of windblow, clearfell will remain an appropriate silvicultural system.

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

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

This will continue to be one of the silvicultural systems employed in Deveron woods as it presents the opportunity to implement the objective of greatly increasing the proportion of broadleaves in a reduced timescale.

The scale of clearfells will be in keeping with the scale and topography of the local landscape.

Some of the area currently identified as clearfell will be converted to LISS in the next rotation as species more appropriate to the site conditions are planted at restocking.

5.1.3 Low impact silvicultural system (LISS)

Management under LISS is becoming more common and some sites within the existing design plan have been designated for management under this system.
These are mostly areas that are growing a mature crop of Scots pine.

The main objective of this plan is the management of the woodland to grow a quality crop of timber and the sites that are currently designated as LISS are some of the most suitable for growing a range of less commonly planted conifer species or broadleaves due to the combination of soils and climate conditions. Current evidence from the LISS areas suggests that

using natural regeneration to produce the next rotation will not produce a quality timber crop without an unacceptable level of input. This would be better achieved by clearfelling the current crop and replanting with a suitable species.

The felling years will be spread over an extended time period so the change in structure will be gradual. This is possible as the current Scots pine stands have the potential to continue growing for another 100 years or more.

The areas that are clearfelled will be replanted with a conifer or broadleaf species that is suited to the site conditions. This will include a number of less regularly planted conifers to increase species diversity both within the plan area and the wider district.

Areas that will retain be retained as LISS are areas of existing broadleaves that can be managed for the production of fuelwood. These areas will be thinned along with the adjacent coupes.

5.2 Future Habitats and Species

Refer to Map 7: Future habitats and management.

5.2.1 Restocking

The choice of restock species in this plan has been guided by the ESC results for this climatic area and the local soil types. Due to the “medium” and “rich” soil nutrient regimes the choice of potential species is fairly wide. Where this is the case efforts have been made to select as wide a range of species as possible to create a diverse woodland rather than a more limited species mix, with potentially more susceptibility to future climate change or pathogens. Heterobasidium annosum is a fungus that is endemic in much of the main Bin block and will have a major impact on the choice of restocking species (see section 5.9 Pathogens).

The emphasis has been placed on increasing the proportion of broadleaves, particularly productive broadleaves, which may not always be native. Few other blocks in the Moray & Aberdeenshire district offer the same potential as is found in this LMP area due to its combination of soils and climate.

From 2008 FCS has introduced a default four-year fallow period for clearfell sites. This allows for the *Hylobius* population to peak and then drop to acceptable levels before restocking is carried out. Fallowing has been shown in studies to be the most effective method of establishing trees without intensive chemical input. Although the default fallow period is four years, restocking may take place before then if monitoring, using the Forest Research *Hylobius* Management Support System shows that it is safe to do so (see section 5.9 Pathogens).

Areas highlighted for broadleaf woodland will be managed as commercially productive woodland provided the site and access is appropriate and this does not compromise other objectives set for the area. Commercial management will range from the production of fuelwood to the growing of high quality hardwoods. The management for high quality crops will be limited to areas with the greatest potential due to the resources required for this. Restocking will be undertaken to achieve a

spacing of 5,000 stems per hectare on most sites to allow this management to be undertaken successfully. Thinning and other management operations will be carried out as appropriate for the crop and the final objective.

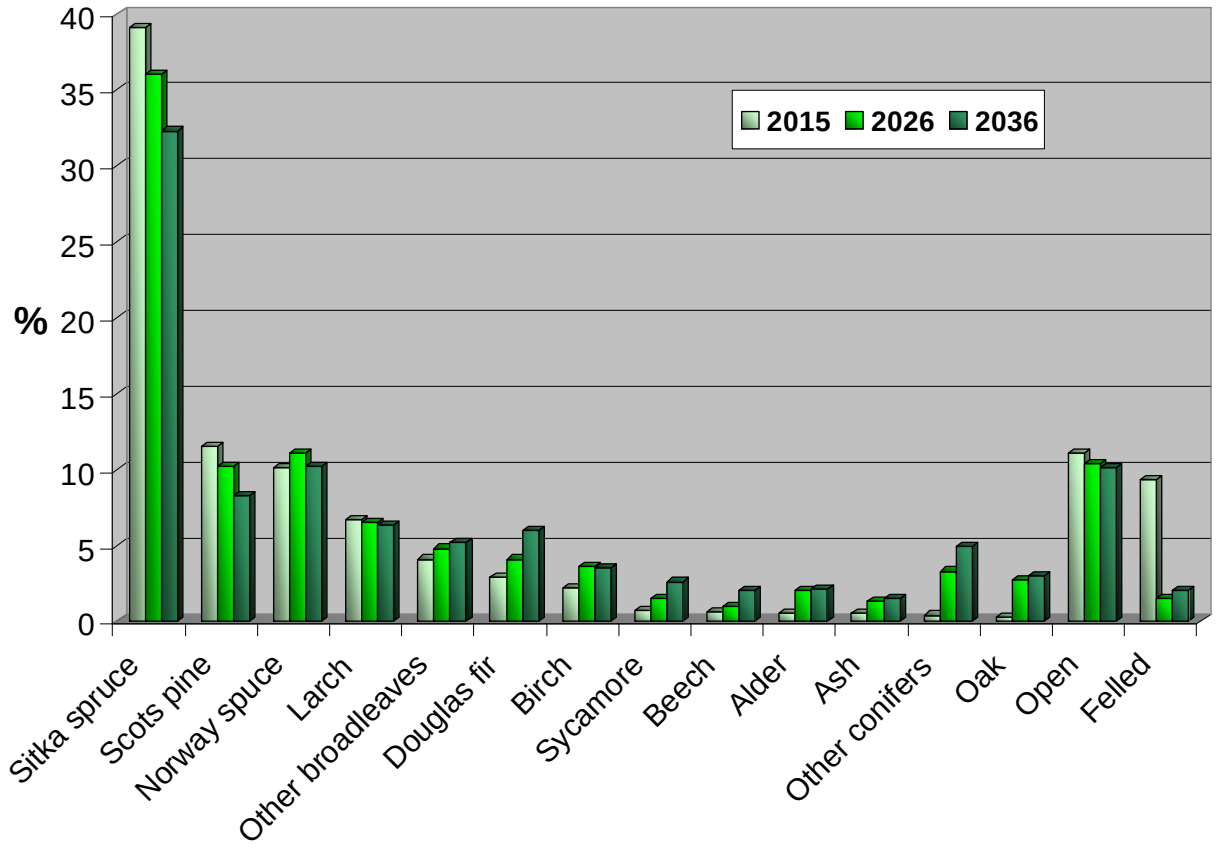
The forester on the ground will take the site-specific decisions, with their intimate knowledge of the individual sites, but they will be guided by the objectives set for the area in the design plan.

Non Commercial Areas

Areas not considered for commercial management include permanent woodland and open habitats, which will require monitoring to ensure they deliver the required objectives (see section 5.6 – management of open land). These will be located to improve the habitat networks in the plan area. Non-desirable species, such as non-native conifer regeneration, will be removed if they are not appropriate for the habitat being created.

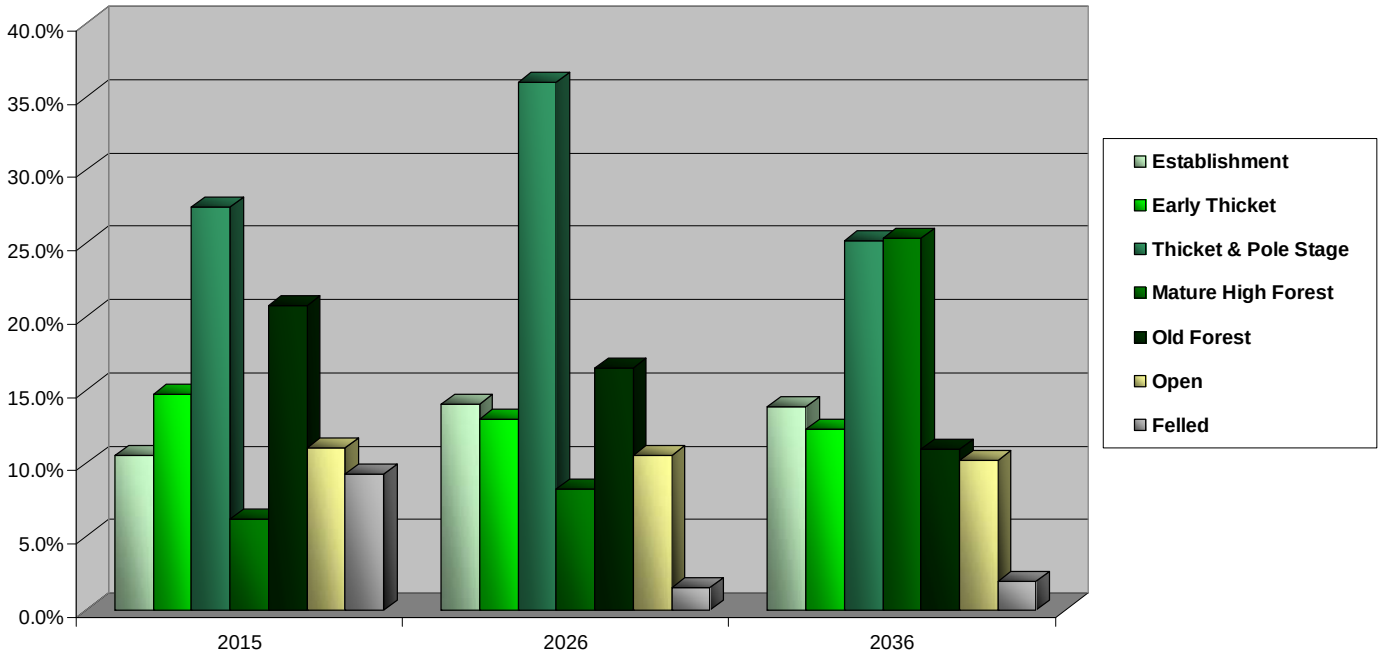
5.3 Species tables

Species	Current distribution 2015 (%)	Projected distribution 2026 (%)	Projected distribution 2036 (%)
Sitka Spruce	39.1	36.0	32.3
Scots Pine	11.5	10.2	8.3
Norway spruce	10.1	11.1	10.2
Larch	6.7	6.5	6.3
Other broadleaves	4.1	4.8	5.2
Douglas Fir	2.9	4.1	6.0
Birch	2.2	3.6	3.5
Sycamore	0.7	1.5	2.6
Beech	0.6	1.0	2.0
Alder	0.5	2.0	2.1
Ash	0.5	1.3	1.5
Other conifers	0.4	3.3	4.9
Oak	0.3	2.7	3.0
Open land	11.1	10.4	10.1
Felled	9.3	1.5	2.0



5.4 Age structure

Age of Trees (years)	Successional Stage	Current distribution 2015 (%)	Projected distribution 2026 (%)	Projected distribution 2036 (%)
0 -10	Establishment	10.5	14.1	13.9
11 – 20	Early Thicket	14.7	13.0	12.3
21 – 40	Thicket & Pole Stage	27.5	36.0	25.2
41 – 60	Mature High Forest	6.2	8.3	25.4
61+	Old Forest	20.7	16.5	11.0
	Open space	11.1	10.5	10.2
	Felled (awaiting restock)	9.3	1.6	2.0



5.5 PAWS restoration

There are no PAWS in the plan area.

5.6 Management of open land

There are two designated sites within the Bin Forest, both open land habitats.

Mortlach is designated a SSSI and SAC for the base-rich fen habitat. The 12.02ha designated area covers a small alkaline fen (or moss), with associated flushes, which has developed in an isolated peat hollow which was once a small loch. The wetland vegetation is influenced by the underlying base-rich geology and the moss receives water from springs and rainwater. The condition of the designated feature was assessed by SNH in 2005 as Favourable, Maintained.

A Conservation Management Plan has been prepared in consultation with Scottish Natural Heritage (SNH) and this details how the area is managed to conserve the protected natural features of the SSSI. See appendix 3.

Site Management Objectives:

1. To maintain the current extent of base-rich fen communities.

Any operations within the catchment which have the potential to lower the water table, such as clearance of drains should be avoided. It may be beneficial to consider blocking a number of drains crossing the fen using plastic piling to maintain a high water table and dependant wetland communities.

The conifer plantation surrounding the moss was clearfelled in 2012 and will be restocked with native broadleaves, principally birch. Any remaining scrub encroachment onto the moss, including conifer regeneration and re-growth from cut stumps, will be cut and the stumps treated with Glyphosate. Cut material will be removed to prevent the moss from drying out. The site will be monitored by FCS staff on a 3-year cycle using fixed-point photography to monitor the location, abundance and potential spread of *Juncus acutiflorus* as well as scrub encroachment.

2. To maintain the present hydrological regime whereby the specialised plant communities are not compromised by nutrient rich water flows and sediment deposition from the surrounding slopes.

Any increase in the fertility of the site such as the deposition of silt and nutrients from surrounding slopes associated with felling or restocking operations, would result in deterioration of the special interest of the site.

No ground preparation or tree planting will be undertaken on the peat area of the clearfell adjacent to the fen and the boundary of the peat area marked to monitor habitat development in this area.

The past management of the 2.48ha Bin Quarry geological SSSI (NJ498431) has resulted in the exposure of part of a large body of basic igneous rocks, known as the Huntly-Knock intrusion. The outcrops are designated because they show very distinctive layering features in the rocks, caused by varying concentrations of different minerals in the layers. These layering features are of importance in understanding the processes that were occurring deep within the Earth at the time these rocks were formed. The condition of the designated feature was assessed by SNH in 2007 as Favourable, Maintained.

Site Management Objectives:

1. To maintain unobscured rock outcrops and access to these.
Any natural regeneration close to, i.e. within 10m of the main face will continue to be cleared if it begins to obscure the rock faces. Any growth will be monitored as part of the ongoing FCS programme.

2. To encourage interpretation for education and public awareness.
Interpretation material is provided at the site.

5.7 Deer management

Wild deer on the National Forest Estate (NFE) are managed in accordance with the Scottish Government's strategy "Scotland's Wild Deer a National Approach" and under the auspices of the Code of Practice on Deer Management.
The strategy and Code of Practice takes recognition of the fact that Wild deer are an asset, an integral part of Scotland's biodiversity and provide healthy food and recreational opportunities. The challenge of managing wild deer originates in a need to balance the environmental, economic and deer welfare objectives of the Scottish nation with the objectives of private landowners for forestry, agriculture, sporting and other forms of land use.

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

It is therefore FCS deer policy to

- Prevent adverse deer impacts on commercial tree crops and the wider habitat. In doing so carry out deer culling in an exemplary and humane way.

- Work closely with relevant organisations and neighbours to make sure that there are integrated deer management plans which seek to recognise the interests of all parties.
- Take opportunities to optimise income from venison from sporting where this does not conflict with our primary objective of maintaining deer impacts at an acceptable level, in line with Quality Meat Scotland accreditation in the form of The Scottish Quality Wild Venison (SQWV) Assurance Scheme

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

All deer management will be carried out in accordance with OGB 5 - Deer management.
Our aim is to manage deer density safely and humanely at a level which is consistent with acceptable impacts on forests and other habitats. This is likely to be at a deer density level of 5 to 7 deer per 100 hectares.

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

5.8 Access

The only access issue that needs to be addressed in the period of this plan is the construction of the roads in South Balnoon to allow access to a coupe due for felling in the first phase of the plan. The proposed line of the new road is indicated on map 6 – Thinning. Planning permission has already been obtained for this line but continued discussions are being undertaken with the planning authority about an alternative access point straight onto the B9024.

5.9 Pathogens

Large Pine Weevil, *Hylobius abiatis*

In common with the majority of Forest Enterprise Scotland estate, most restocking in the design plan area has traditionally taken place within two years of sites being clearfelled. However, many seedlings were badly damaged or killed by the Large Pine Weevil, *Hylobius abiatis.* This species lays its eggs in deadwood/stumps on clearfell sites and the emerging adults feed on the bark of young trees, often with devastating effect on newly planted conifer crops.

Previously this damage was countered by the planting of seedlings treated with insecticide, followed by 'top-up' spraying of the trees during spring and summer. However Forestry Commission is committed to a policy of chemical reduction on the national forest estate, in line with current European Union directives on chemical use, which has had a significant effect on the way we manage this pest.

From 2008 FCS has introduced a default four-year fallow period for clearfell sites. This allows for the *Hylobius* population to peak and then drop to acceptable levels before restocking is carried out. Fallowing has been shown in studies to be the most effective method of establishing trees without intensive chemical input. Although the default fallow period is four years, restocking may take place before then if monitoring, using the Forest Research *Hylobius* Management Support System shows

that it is safe to do so. Please refer to the district fallow policy for details.

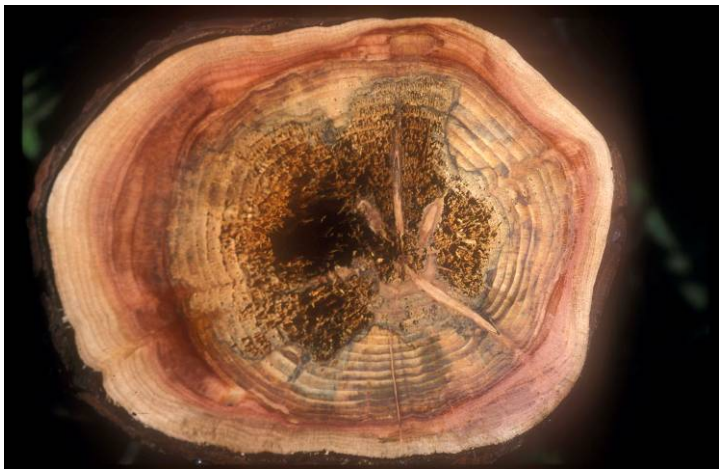
Ash dieback, *Chalara fraxinea*
FCS published a Chalara Action Plan for Scotland in March 2013.

Although no evidence of the disease has not been seen in this LMP area to date the situation will be kept under review and the above action plan will be followed should and outbreak be discovered.

Phytophthora ramorum
Although there is no evidence of Phytophthora ramorum in this LMP area to date the situation will be kept under review.

Heterobasidion annosum
Experience gained during previous harvesting operations suggests that Heterobasidion annosum is endemic and widespread within the main block of the Bin with significant losses of timber volume likely.

The recommended stump treatment of urea immediately after felling is unlikely to have a significant effect in reducing disease on sites where it is already well established. Under these circumstances control can only be achieved in future rotations by the use of resistant species including broadleaves and some conifers such as grand and noble fir, and to a lesser extent, Douglas fir.



Decay and stain in 40 year old sitka spruce caused by this Heterobasidion annosum.

5.9 Critical Success Factors

- Undertake the planned thinning programme in order to increase the quality of the timber within the plan area.
- Continue with the maintenance of the forest road network to allow forest operations to be successfully completed.
- Planting of suitable species of broadleaves at a spacing to allow them to be managed to be productive in the future.

Appendix 1 – Consultation record

Statutory Consultee	Date contacted	Date response received	Issue raised	Forest District Response
Aberdeenshire Council – Eleanor Munro	13/10/11 By email.	None to date		
Scottish Natural Heritage – Julia Galley	13/10/11 By email.	19/10/11 By email.	"We advise consideration is given to all protected species that may be affected by the proposed operations."	No response required.
Scottish Environment Protection Agency – Barry Lucraft	13/10/11 By email.	02/11/11 by email.	"In general, with regards to woodland management, if the proposals accord with the latest edition of the Forest and Water Guidelines and follow best practice it is unlikely that we would have any major concerns about the proposals."	No response required.
Royal Society for the Protection of Birds – Ian Francis	13/10/11 By email.	20/10/11 By email.	"I don't think we have anything to say about any of these woods."	No response required.
Huntly Development Trust – Donald Boyde	13/10/11 By email.	None to date		
Auchterless and Inverkeithny Community Council - Cathy Lillie	13/10/11 By email.	None to date		
Strathbogie Community Council - Mrs Pat Scott	13/10/11 By email.	None to date		
Strathisla Community Council - Mrs Fiona Wallace	13/10/11 By email.	None to date		

Aberdeenshire Council Archaeology – Moira Greig	13/10/11 By email.	None to date		

Appendix 2 – Tolerance table

	Adjustment to felling coupe boundaries	Timing of restocking	Change to species	Windthrow response	Changes to roadlines	Designed open space
FC Approval not normally required	0.5 ha or 5% of coupe – whichever is less.	Up to two planting seasons after felling.		Up to 0.5 ha in areas of high sensitivity. Up to 2 ha in areas of low sensitivity.		Location of temporary open space e.g. deer glades if still within overall open space of design.
Approval by exchange of letters and map	0.5ha to 2ha or 10% of coupe whichever less.		Change within species group e.g. conifers, broadleaves.	0.5 ha to 2 ha in areas of high sensitivity. 2ha to 5ha in areas of low sensitivity.	Additional felling of trees not agreed in plan Departures of >60m in either direction from centre line of road.	Increased of 0.5ha to 2ha or 10% whichever is less
Approval by formal plan amendment	2ha or 10% of coupe.	Over two planting seasons after felling.	Change from specified native species. Change between species groups.	>2 ha in areas of high sensitivity. >5 ha in areas of low sensitivity.	As above depending on sensitivity.	More than 2ha or 10%. Any reduction in open space in sensitive areas. Colonisation of agreed open space

Appendix 3 – Mortlach Moss SSSI

FE Ref: FM 12/4/1 Grid Ref: NJ 505 449

SNH Ref: SIT/SSSI/1191

FORESTRY COMMISSION SCOTLAND

MORAY & ABERDEENSHIRE FOREST DISTRICT

MORTLACH MOSS
SITE OF SPECIAL SCIENTIFIC INTEREST
CONSERVATION MANAGEMENT PLAN

1 April 2011 – 31 March 2016

Plan revised by: Philippa Murphy
Signed…….
Environment Manager
Date…….

Plan agreed by:
Signed…….
Area Officer SNH
Date…….

Plan approved by: John Thomson
Signed…….

Forest District Manager
Date…….

Introduction

Mortlach Moss is located in the Bin Forest, 3.5miles north west of the town of Huntly in Aberdeenshire. The forest is owned and managed by Forestry Commission Scotland.

The area was notified as an SSSI in 1991, with the notification reviewed in 2009 under the 2004 Act and designated an SAC in 2005.

This Management Plan has been drawn up with the assistance of Scottish Natural Heritage to ensure the area is managed as carefully as possible to conserve the protected natural features of the SSSI. The plan has been compiled with consultation between FCS and SNH to ensure that the unique features of the area are maintained and, where appropriate, enhanced.

Access & Third Party Interests

Access is from the A96 Aberdeen to Inverness Road at Bin Hill and then forest road to the edge of the site.

There are no reserved rights or third party interests in the site.

Detailed Description

The total area of the SAC/SSSI is 12.02ha and this is completely within the ownership of Forestry Commission Scotland (FCS).

Mortlach Moss consists of a fen developed in a depression amongst deposits of boulder clay overlying basic rocks. The basin fen and associated flushes are alkaline, with a characteristically rich assemblage of both sedges and so-called “brown mosses”. The basin-fen community, with abundant bottle sedge *Carex rostrata* and lesser tussock sedge *Carex diandra*, is nationally rare and the best example of its type in north east Scotland. The locally-rare black bog-rush *Schoenus nigricans* dominates the adjacent flushes.

The moss receives water from springs and rainwater. Historically, the site was once a small loch. It is evident that the water level has since lowered as a result of artificial drainage. There are drains on the edge of the mire but these have largely been re-colonised with vegetation.

The tree crop surrounding the moss is predominately Norway Spruce planted in 1935/6. There is also some mixtures of Sitka Spruce and Lodgepole Pine and some areas of Scots Pine and scrub Willow encroachment on the moss.

Management

Forest management operations which involve any activity on the SSSI or which are likely to affect the SSSI will be subject to liaison between SNH and FCS staff and will be covered by agreed consents. No operation will take place prior to consent being granted by SNH. See appendix 7 for list of operations requiring consent.

Deer Control

This will continue as a part of a wider deer management strategy across Bin Forest, to maintain a population of around 5-7head/100ha.

Monitoring

FCS staff have set up fixed-point photography monitoring to monitor the location, abundance and potential spread of *Juncus acutiflorus*. If this species spreads from the margins and spring line it could indicate an unfavourable alteration in condition of the moss. Monitoring will be carried out annually and FCS will notify SNH of the monitoring results.

Scrub / Regeneration Removal

Some Willow scrub was felled on the Moss in 2010, with some debris dragged from the moss into the surrounding trees and the stumps treated with Glyphosate. Some cut Willow remains on the fen and there is some re-growth from stumps.

FCS will remove the remaining cut Willow from the moss, dragging it clear onto the drier heath or into the surrounding tree crop. Remaining Willow scrub will be cut in manageable patches and dragged from the moss and stumps treated with Glyphosate. The Scots Pine will be felled at the same time as the Norway Spruce is clearfelled and skidded and processed away from the Moss.

The site will be monitored on a 3-year cycle by FCS staff for further scrub encroachment, conifer regeneration and re-growth from cut stumps. This will be cut and treated as required.

There are 2 Juniper bushes on the moss. These will not be removed.

Felling

The conifer plantation is due for clearfell in 2012. Prior to clearfelling, FCS will mark the boundary of the peat. Where practical, all brash will be removed from the peat area. A method statement for the clearfell and extraction operation will be forwarded to SNH for approval prior to works commencing.

Following on from the clearfell of the conifers, the area will be restocked as per the approved forest plan. There will be no ground preparation or tree planting on the peat area. And the remaining area will be restocked with native broadleaves.

Other

No fertilising operations are envisaged

Drainage

There are a number of drains crossing the fen. It may be beneficial to consider blocking these to maintain the conditions of the fen. This would be done using plastic piling. Should this be considered during the life span of this plan then further discussion will be held with SNH prior to works commencing.

Boundary

FORESTRY COMMISSION SCOTLAND

MORAY & ABERDEENSHIRE FOREST DISTRICT

MORTLACH MOSS
SITE OF SPECIAL SCIENTIFIC INTEREST
CONSERVATION MANAGEMENT PLAN

1 April 2011 – 31 March 2016

Following the completion of the felling described above, FCS will mark out with wooden stakes the edge of the fen. This will allow for future monitoring of the development of habitats on the peat area adjacent to the existing fen.Monitoring

SNH staff carry out Site Condition Monitoring (SCM) on a 6-year cycle. This monitoring examines the condition of the designated features on SSSIs. Any issues will be notified to FCS staff, who will draw up plans in consultation with SNH staff to deal with issues.

FD staff will continue to monitor the site for willow, birch or conifer regeneration on a three-year cycle.

Consents

It is proposed to control scrub encroachment by cutting by chainsaw or scrubsaw and by the chemical treatment of cut stumps and re-growth using a weed-wiper.

Operations Requiring Consent

- Application of pesticides, including herbicides (weedkillers)
- Changes in tree and/or woodland management including planting, coppicing or cessation of management

FCS will provide SNH with a method statement covering any felling works on or adjacent to the SSSI.

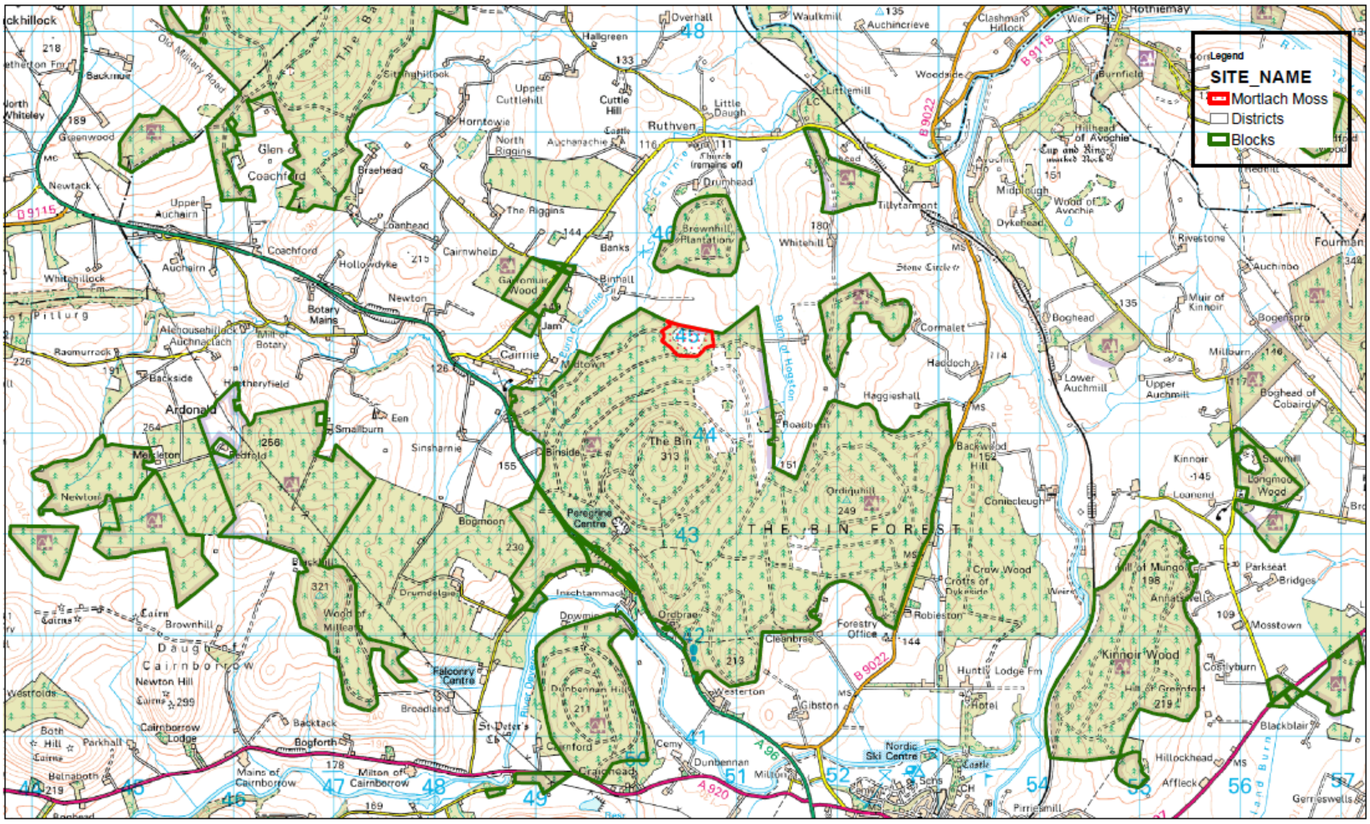
Any management described in this plan will be approved by SNH in accordance with section 14 (1) (e) of the Nature Conservation (Scotland) Act 2004. FCS must consult with SNH on any proposed operation not covered by any existing consents or the agreed management plan if the operation is likely to damage any protected natural feature of the SSSI.

Liaison meetings will be held as necessary between SNH staff and can be called by either party. SNH staff are granted permission to access the site, following the route marked on the map in Appendix 4, for the purposes of monitoring and providing it is not closed for operational reasons.

Plan revised by: Philippa Murphy
Signed……
Environment Manager
Date……

Plan agreed by:
Signed……
Area Officer SNH
Date……

Plan approved by: John Thomson
Signed……
Forest District Manager
Date……



Forestry Commission Scotland
Coimisean na Coilltearachd Alba

a4 landscape

MORAY and ABERDEENSHIRE
FOREST DISTRICT

Title: Location Plan

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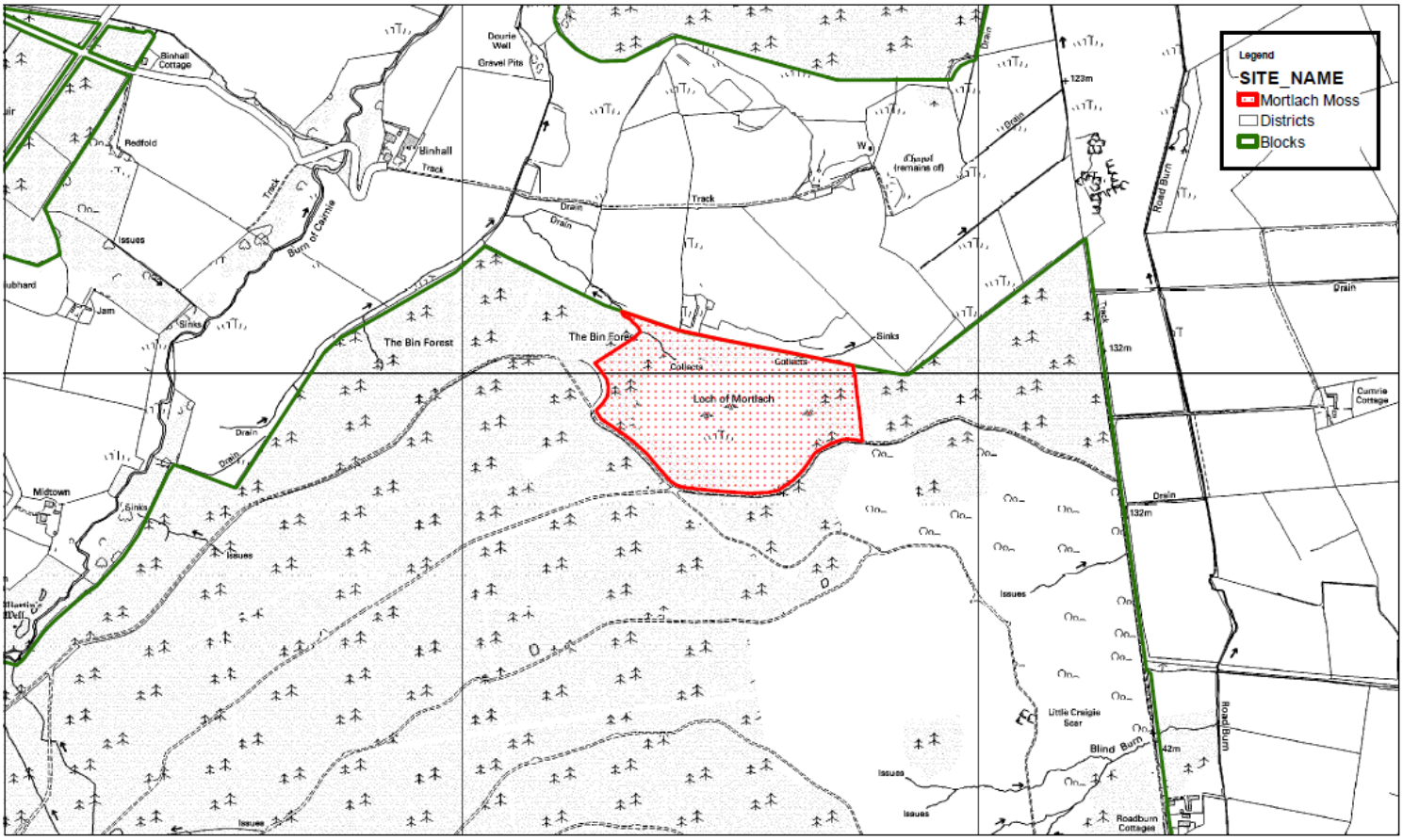


Forestry Commission Scotland
Coimisean na Coilltearachd Alba

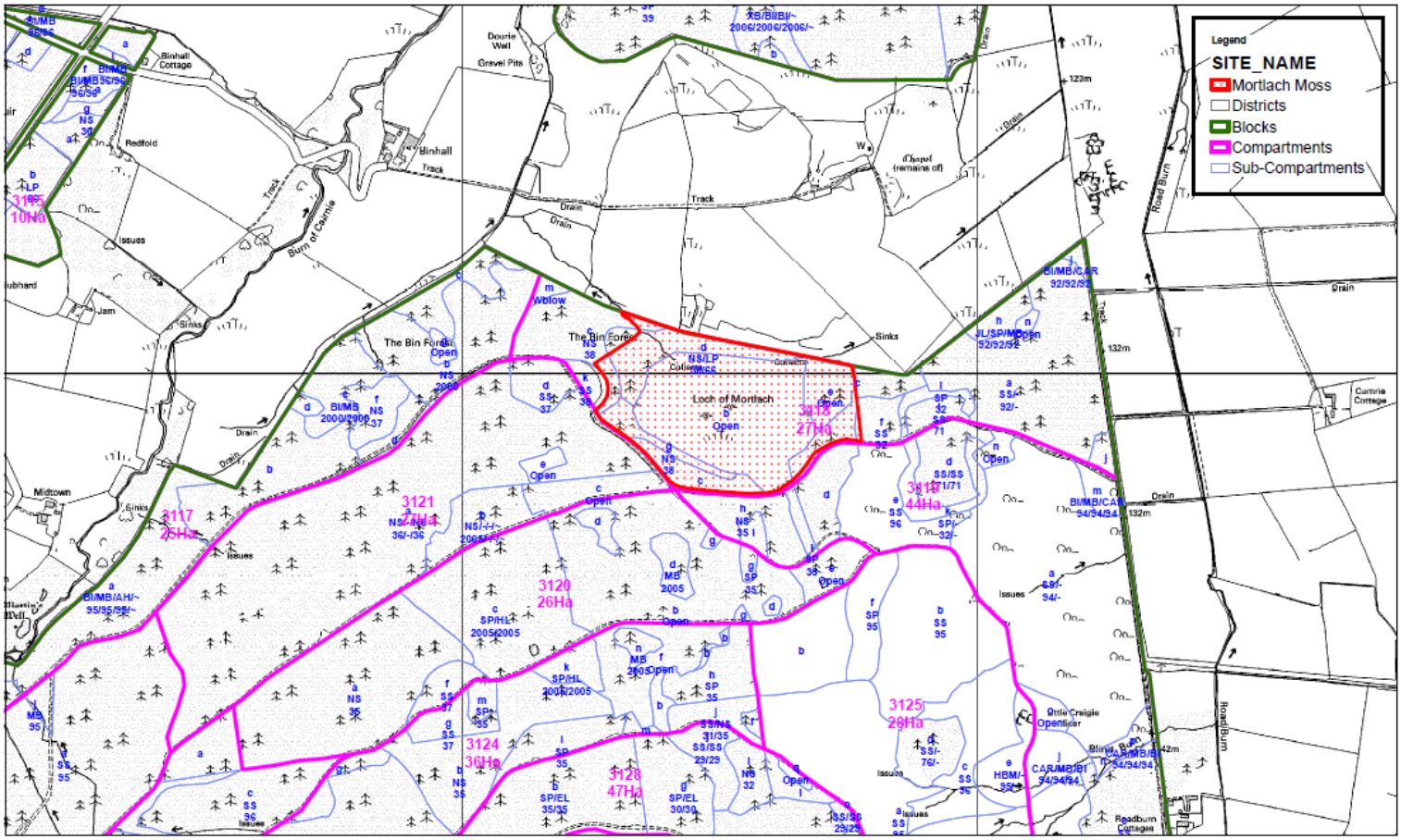
a4 landscape

MORAY and ABERDEENSHIRE FOREST DISTRICT

Title: SSSI Boundary Plan

Date :

Scale: 1:10,000



Forestry Commission Scotland
Coimisean na Coillearachd Alba

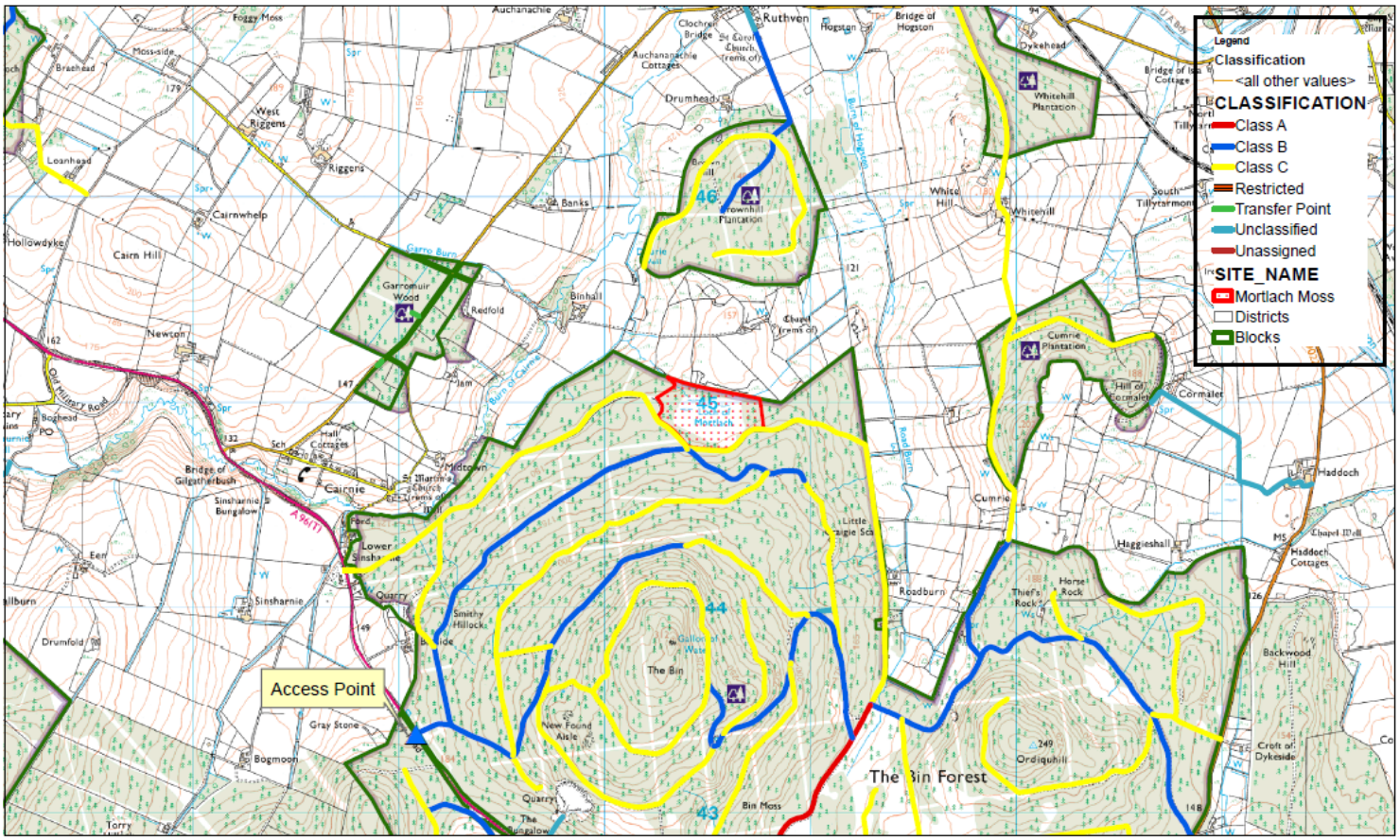
a4 landscape

MORAY and ABERDEENSHIRE FOREST DISTRICT

Title: FCS Stock Map

Date :

Scale: 1:10,000



Forestry Commission Scotland
Coimisean na Coillearachd Alba

a4 landscape

MORAY and ABERDEENSHIRE FOREST DISTRICT

Title: Access Plan

Date :

Scale: 1:25,000

CITATION

MORTLACH MOSS
SITE OF SPECIAL SCIENTIFIC INTEREST
Aberdeenshire

Site code: 1191

NATIONAL GRID REFERENCE: NJ505449

OS 1:50,000 SHEET NO: Landranger Series 29
1:25,000 SHEET NO: Explorer Series 425

AREA: 12.02 ha.

NOTIFIED NATURAL FEATURES

Biological : Fens : Basin fen

DESCRIPTION

Mortlach Moss is located 5 km north of Huntly, on the margins of Bin Forest. It consists of a fen developed in a depression amongst deposits of boulder clay overlying basic rocks. The basin fen and associated flushes are alkaline, with a characteristically rich assemblage of both sedges and so called 'brown mosses'. The basin-fen community, with abundant bottle sedge *Carex rostrata* and lesser tussock sedge *Carex diandra*, is nationally rare and the best example of its type in north-east Scotland. The locally-rare black bog-rush *Schoenus nigricans* dominates the adjacent flushes. Other sedges found on the moss include greater tussock sedge *Carex paniculata*, a number of smaller sedges, such as flea sedge *C. pulicaris*, tawny sedge *C. hostiana* and dioecious sedge *C. dioica*, and both common and broad-leaved cottongrasses (*Eriophorum angustifolium* and *E. latifolium*). Brown mosses include *Campylium stellatum*, *Scorpidium revolvens* and *Calliergonella cuspidatata*. The base-tolerant sphagnum moss *Sphagnum contortum* also occurs. Grasses and herbs of richer fens include quaking grass *Briza media*, grass of Parnassus *Parnassia palustris* and lesser butterfly orchid *Platanthera bifolia*. Other fen plants include bladderwort *Utricularia* species, bogbean *Menyanthes trifoliata*, bog pondweed *Potamogeton polygonifolius*, bog asphodel *Narthecium ossifragum* and round-leaved sundew *Drosera rotundifolia*.

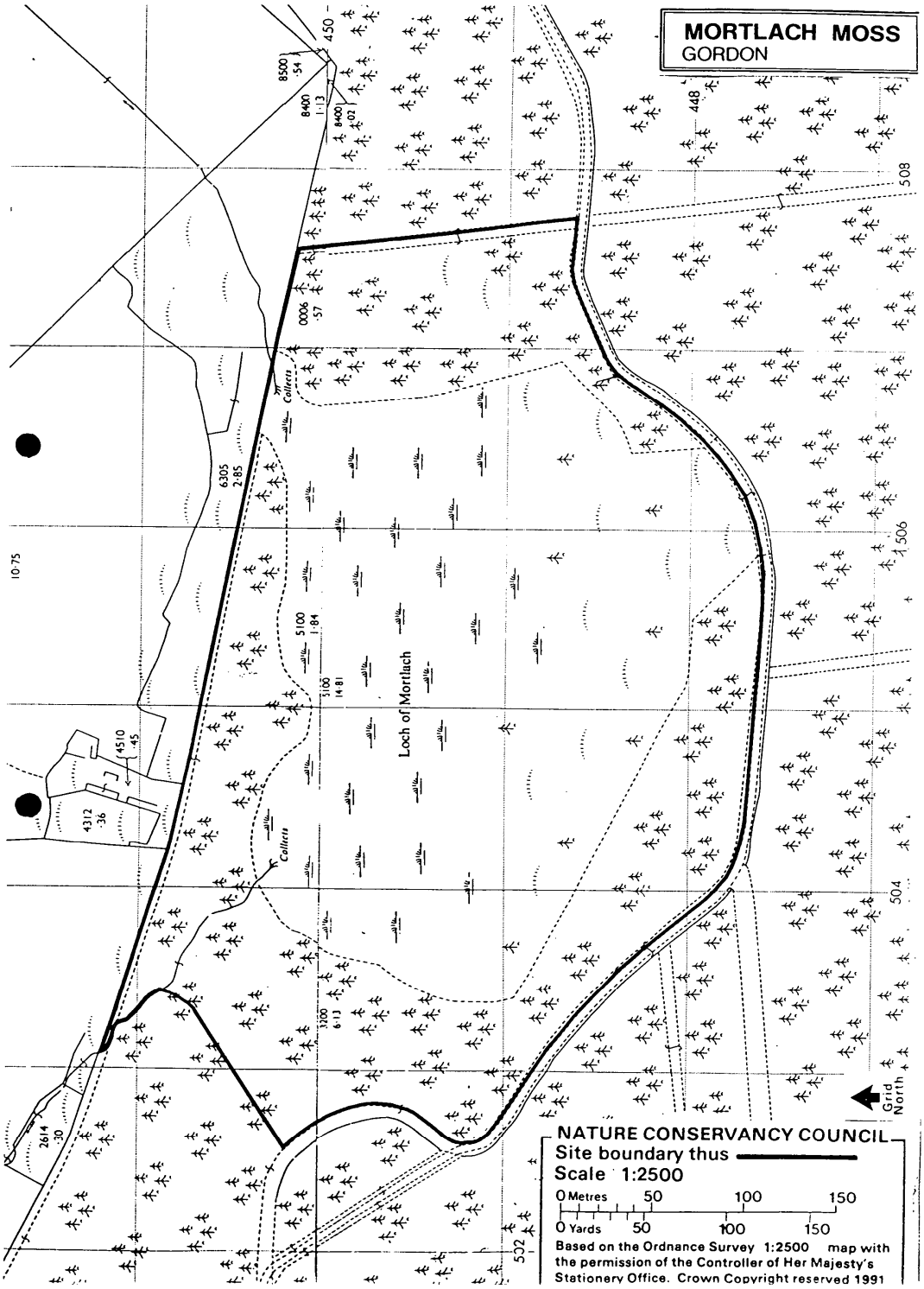
NOTIFICATION HISTORY

First notified under the 1981 Act on 28 March 1991.
Notification reviewed under the 2004 Act: 29 May 2009.

REMARKS

Measured area of site corrected (from 12.3 ha).

Mortlach Moss SSSI is designated as Mortlach Moss Special Area of Conservation (SAC) for the European habitat Base-rich fens.


MORTLACH MOSS
GORDON
Loch of Mortlach
Culterts
Culterts
Grid North
NATURE CONSERVANCY COUNCIL
Site boundary thus
Scale 1:2500
0 Metres 50 100 150
0 Yards 50 100 150
Based on the Ordnance Survey 1:2500 map with the permission of the Controller of Her Majesty's Stationery Office. Crown Copyright reserved 1991

29 May 2009

MORTLACH MOSS SITE OF SPECIAL SCIENTIFIC INTEREST
OPERATIONS REQUIRING CONSENT FROM SCOTTISH NATURAL HERITAGE

If you propose to carry out, or permit to be carried out, any of the operations listed below, you must first obtain consent from SNH unless a local authority has granted you planning permission (under Part III of the Town and Country Planning (Scotland) Act 1997) or a designated regulatory authority has given you written permission (under s.15 of the Nature Conservation (Scotland) Act 2004). If you have such a permission, you may proceed without obtaining consent from SNH for the same operation.

Standard Ref. No	*Type of Operation*
1	Cultivation, including ploughing, rotovating, harrowing and reseeding.
2	The introduction of grazing.
3	The introduction of stock feeding.
4	The introduction of mowing or other methods of cutting vegetation.
5	Application of manure, fertilisers and lime.
6	Application of pesticides, including herbicides (weedkillers).
7	Dumping, spreading or discharge of any materials.
9	The release into the site of any wild, feral or domestic mammal or bird.
11	The destruction, displacement, removal or cutting of any dead or decaying wood, moss, turf or peat.
12	Changes in tree and/or woodland management including planting, coppicing and cessation of management.
13a	Drainage including the use of mole, tile, tunnel or other artificial drains.
13b	Modification of the structure of water courses (e.g. springs, ditches, drains), including their banks and beds, as by realignment, re-grading and dredging.
13c	Management of aquatic and bank vegetation for drainage purposes.
14	The changing of water levels and tables and water utilisation (including irrigation, storage and abstraction from existing water bodies and through boreholes).
15	Infilling of ditches, drains, pools and marshes.
20	Extraction of minerals, including peat, topsoil, subsoil and spoil.
21	Construction, removal or destruction of tracks, walls, fences, hardstands, banks, ditches or other earthworks, or the laying maintenance or removal of pipelines and cables, above or below ground.
23	Erection of permanent or temporary structures, or the undertaking of engineering works, including drilling.
26	Use of vehicles or craft likely to damage or disturb the vegetation.

Appendix 4 – Bin Quarry SSSI

FE Ref: FM 12/4/7 Grid Ref: NJ 498 432

SNH Ref: SIT/SSSI/205

FORESTRY COMMISSION SCOTLAND

MORAY & ABERDEENSHIRE FOREST DISTRICT

BIN QUARRY
SITE OF SPECIAL SCIENTIFIC INTEREST
CONSERVATION MANAGEMENT PLAN

1 April 2013 – 31 March 2023

Plan revised by: Philippa Murphy
Signed…….
Environment Manager
Date…….

Plan agreed by:
Signed…….
Area Officer SNH
Date…….

Plan approved by: John Thomson
Signed…….

Forest District Manager
Date…….

1. Introduction

Bin Quarry SSSI is located within Bin Forest, 4km northwest of Huntly. The SSSI covers an area of 5.4ha.

The area was notified as an SSSI in 1956 and re-notified in 1984.

This Management Plan has been drawn up with the assistance of Scottish Natural Heritage to ensure the area is managed as carefully as possible to conserve the protected natural features of the SSSI. The plan has been compiled with consultation between FCS and SNH to ensure that the unique features of the area are maintained and, where appropriate, enhanced.

1. Access & Third Party Interests

Access is from the A96, Aberdeen to Inverness Road with good parking and access from the Huntly Peregrine Wild Watch Centre. The access route is as shown in Appendix 4.

There are no third party interests affecting the SSSI area.

2. Detailed Description

The site is well known locally as the Bin Quarry, which was formerly worked by the local county council for road material. These operations have long since ceased and there has been no quarrying for a considerable number of years.

The site of the quarry provides a classic example of layered cumulate rocks (formed by crystals settling to the bottom of a magma body) which developed at a relatively early stage of gabbroic magma crystallization. The quarry exposes part of the Huntly-Knock intrusion and undoubtedly provides the best example of small-scale layered structures within the “Younger Basic” intrusions (formed during the Caledonian mountain-building event). The rocks are broadly troctolitic (plagioclase and olivine bearing) to gabbroic (plagioclase, augite and olivine bearing) in composition, though individual layers may be ultramafic peridotites (olivine only).

The narrow veins within the layered gabbris at Bin Quarry carry an unusual suite of hydrated calcium silicate minerals, in particular scawtite and tacharanite, two rare Scottish minerals. The quarry has produced some of the finest silky vein xonolite specimens known in the United Kingdom, which are of outstanding museum quality.

The SSSI designation is directed at the exposed walls of the quarry, which rise in a crescent ranging in height from 1metre to 30metres. This site is particularly important because rock in the area is often poorly exposed.

The quarry is set within predominately mature woodland, a mix of Scots Pine, Larch and Spruce with some younger planting between the quarry and the A96.

The quarry is also home to a pair of Peregrine Falcons, the focus of the Huntly Peregrine Wild Watch centre. Peregrines have nested in the quarry since 1985 with the centre opening in 2003. A forest trail runs from the visitor centre adjacent to the A96 up to a hide over-looking the quarry. The HPWW centre has been closed in September 2012 and will not re-open, although the trail will remain.

3. Management

All specific management and forest management operations likely to impact on the SSSI are detailed below and are covered by this management plan. Any operations that are not covered below would require additional consent from SNH.

Deer Control

This will across the wider Bin Forest, with the aim of not exceeding a population of 7 head/100ha

Fences

The fence will be inspected as part of the quarterly inspections undertaken on trails.

Monitoring

FD staff will continue to monitor the site for conifer and scrub colonisation on a three-year cycle. The site was monitored prior to work carried out in 2011 and will next be monitored in 2014.

Scrub / Regeneration Removal

Shrub and tree regeneration was cleared from the quarry floor in 2011. Future regeneration will be removed as required, using chainsaws and/or scrubsaws. Cut material will be removed from the quarry area.

Forest Operations (Thinning, Felling & Establishment)

The physical nature of the quarry will not be affected by normal forest operations. The next thinning is due in 2017, however the crop immediately surrounding the quarry is natural reserve and will not be thinned.

Access & Interpretation

Rocks were removed from the quarry under the guidance of SNH in 2012, these were placed adjacent to the viewing hide. Interpretive guidance was also received and together, these are used as tools by FCS rangers to educate visitors on the features of the SSSI. No further interpretation or facilities are planned for the site.

Other

No fertilising operations are envisaged

4. Monitoring

SNH staff will carry out Site Condition Monitoring (SCM) every 24years. This monitoring examines the condition of the designated features on SSSIs. Site checks will be carried out by SNH in between

cycles of SCM to identify any significant changes in management, pressures etc. Any issues will be notified to FCS staff, who will draw up plans in consultation with SNH staff to deal with issues.

FD staff will continue to monitor the site for conifer and gorse colonisation on a three-year cycle.

5. Consents and Liaison

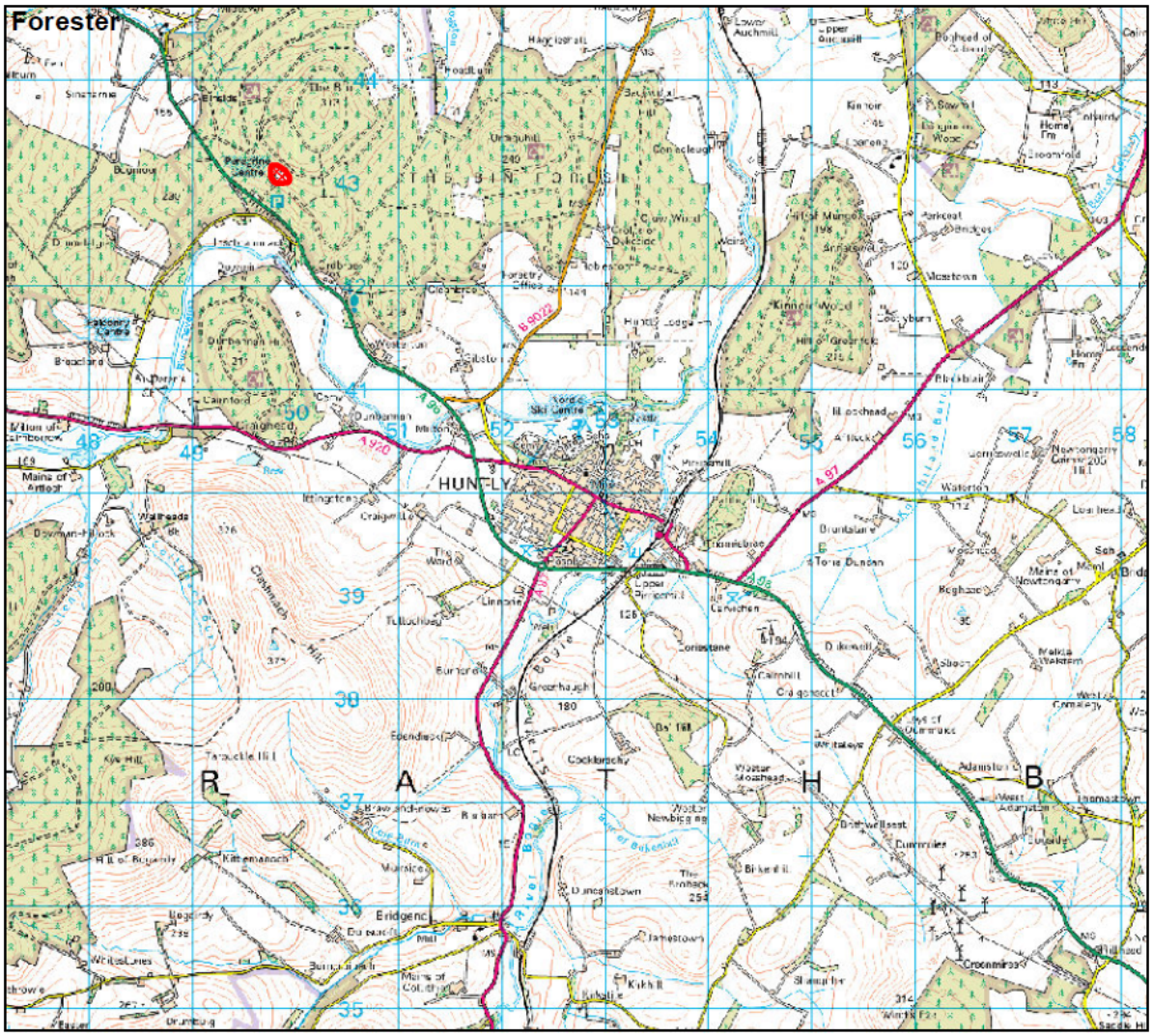
It is proposed to maintain the tracks within the wood, and carry out non-native tree regeneration and gorse removal using scrub cutters / chainsaws and subsequent chemical stump treatment as and when necessary, for which consent will be required.

(i)Operations Requiring Consent

- Fence inspection and maintenance

Any management described in this plan will be approved by SNH in accordance with section 14 (1) (e) of the Nature Conservation (Scotland) Act 2004. FCS must consult with SNH on any proposed operation not covered by any existing consents or the agreed management plan if the operation is likely to damage any protected natural feature of the SSSI. The operations requiring consent are listed in appendix 3.

Liaison meetings will be held as necessary with SNH staff and can be called by either party. SNH staff are granted permission to access the site, following the route marked on the map in Appendix 4, for the purposes of monitoring and providing it is not closed for operational reasons.

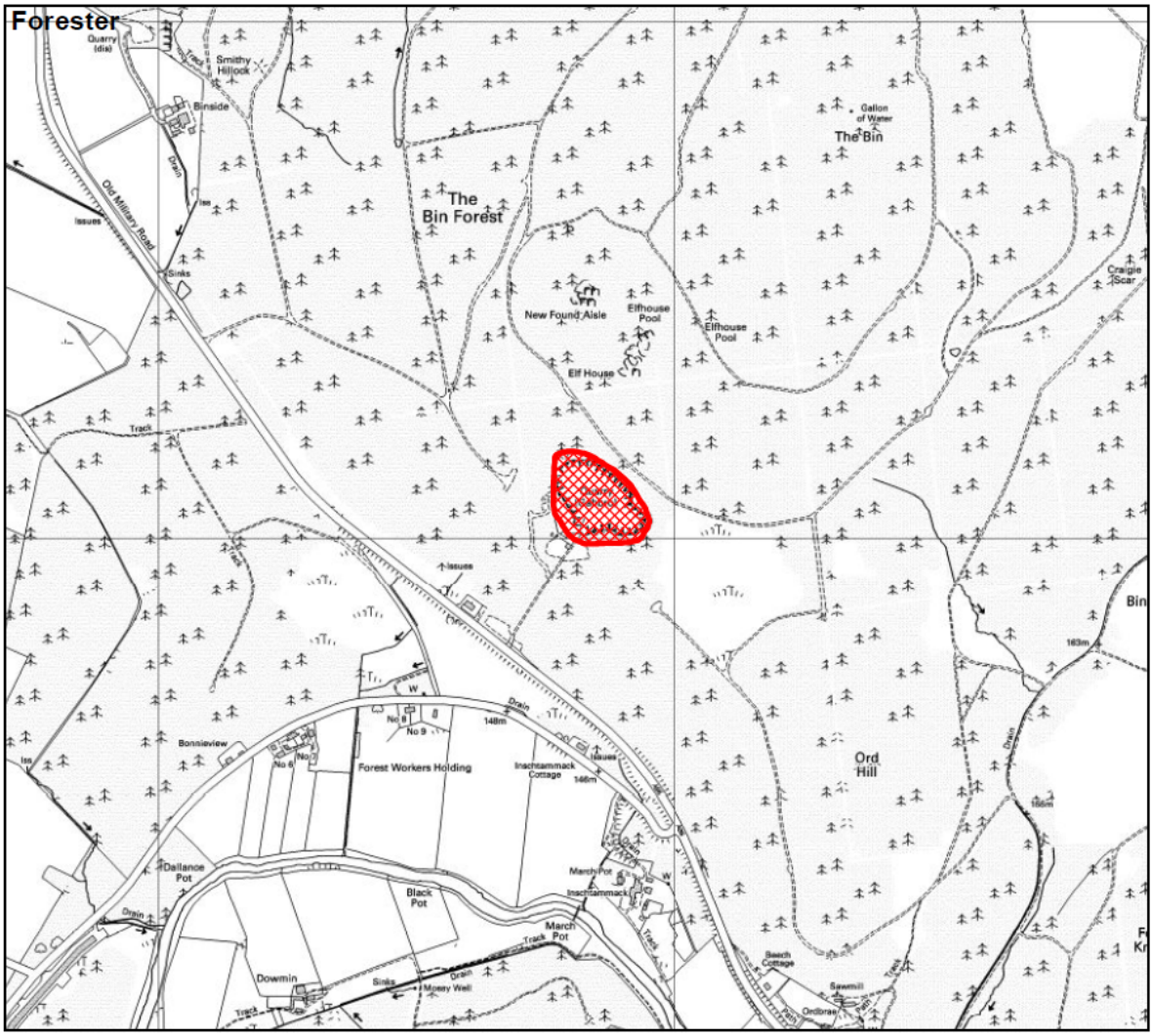


Forestry Commission Scotland
Coimisean na Coilltearachd Alba

MORAY & ABERDEENSHIRE
FOREST DISTRICT
Title Appendix 1 - Location Plan
Type of Map Stock
Scale 1:50,000
Date 25/03/13

Legend

SSSI



Forestry Commission Scotland
Coimisean na Coilltearachd Alba

MORAY & ABERDEENSHIRE FOREST DISTRICT
Title Appendix 2 - SSSI Boundary
Type of Map Stock
Scale 1:10,000
Date 25/03/13

Legend

SSSI

21 April 2011

BIN QUARRY SITE OF SPECIAL SCIENTIFIC INTEREST

OPERATIONS REQUIRING CONSENT FROM SCOTTISH NATURAL HERITAGE

If you propose to carry out, or permit to be carried out, any of the operations listed below, you must first obtain consent from SNH unless a local authority has granted you planning permission (under Part III of the Town and Country Planning (Scotland) Act 1997) or a designated regulatory authority has given you written permission (under s.15 of the Nature Conservation (Scotland) Act 2004). If you have such a permission, you may proceed without obtaining consent from SNH for the same operation.

Standard Ref. No.	*Type of Operation*
7.	Dumping, spreading or discharge of any materials.
15.	Infilling of quarry.
20.	Extraction of minerals.
21.	Construction, removal or destruction of roads, tracks, walls, fences, hard-stands, banks, ditches or other earthworks, or the laying, maintenance or removal of pipelines and cable, above or below ground.
22.	Storage of materials on or against any rock outcrop.
23.	Erection of permanent or temporary structures, or the undertaking of engineering works, including drilling.
24.	Battering, buttressing or grading rock faces.

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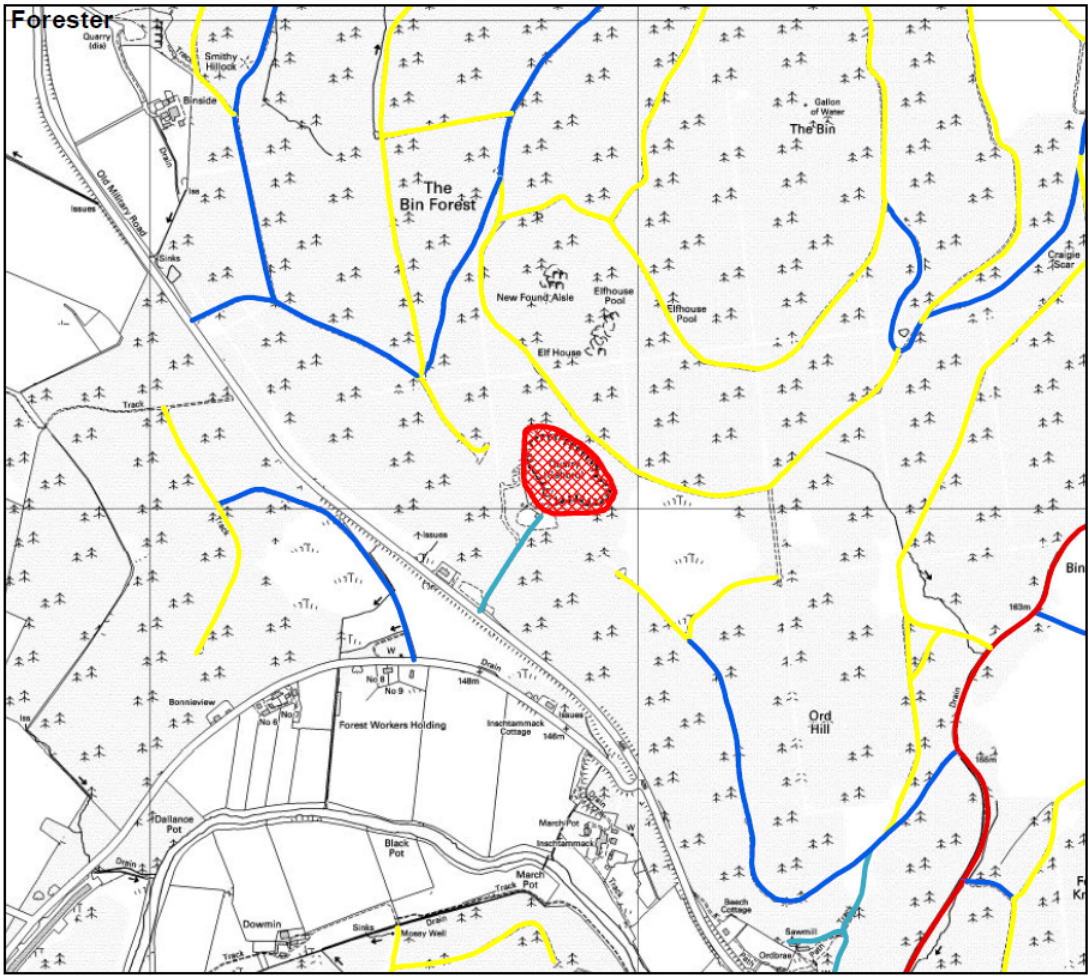


Forestry Commission Scotland
Coimisean na Coilltearachd Alba

MORAY & ABERDEENSHIRE
FOREST DISTRICT
Title Appendix 4 - Access plan
Type of Map Stock
Scale 1:10,000
Date 25/03/13

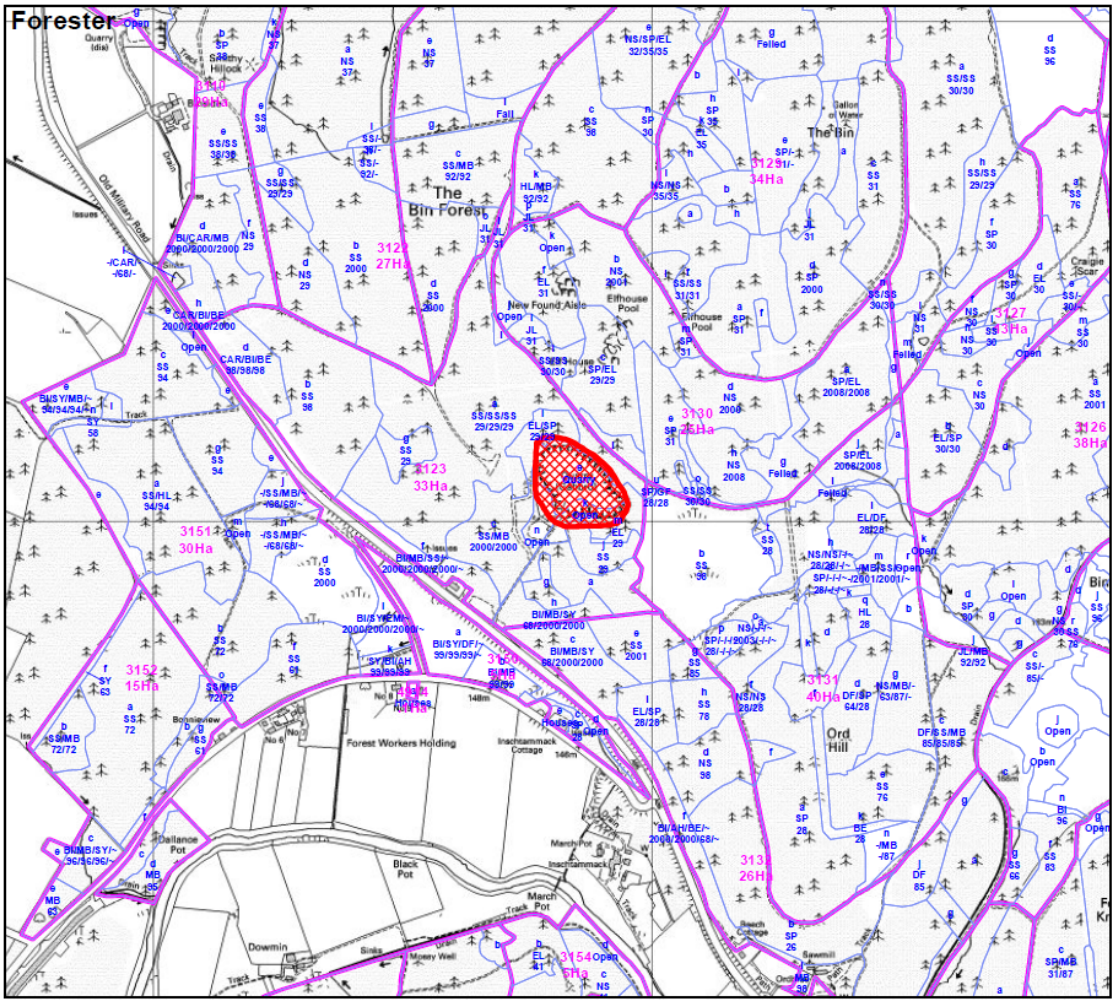
Legend

Classification

<all other values>

CLASSIFICATION

- Class A
- Class B
- Class C
- Restricted
- Transfer Point
- Unclassified
- Unassigned
- SSSI



Forestry Commission Scotland
Coimisean na Coilltearachd Alba

MORAY & ABERDEENSHIRE
FOREST DISTRICT
Title Appendix 5 - FCS Stock Map
Type of Map Stock
Scale 1:10,000
Date 25/03/13

Legend

- SSSI
- Sub-Compartments
- Compartments

CITATION

BIN QUARRY
SITE OF SPECIAL SCIENTIFIC INTEREST
Aberdeenshire

Site code: 205

NATIONAL GRID REFERENCE: NJ498431

OS 1: 50 000 SHEET NO: Landranger Series 28
1: 25 000 SHEET NO: Explorer Series 425

AREA: 2.48 hectares

NOTIFIED NATURAL FEATURES

Geological : Igneous petrology : Caledonian Igneous
: Mineralogy : Mineralogy of Scotland

DESCRIPTION

Bin Quarry is located 4 km to the north-west of Huntly. The site provides a classic example of layered cumulate rocks (formed by crystals settling to the bottom of a magma body) which developed at a relatively early stage of gabbroic magma crystallization. The quarry exposes part of the Huntly-Knock intrusion and undoubtedly provides the best example of small-scale layered structures within the 'Younger Basic' intrusions (formed during the Caledonian mountain-building event). The rocks are broadly troctolitic (plagioclase and olivine bearing) to gabbroic (plagioclase, augite and olivine bearing) in composition, though individual layers may be ultramafic peridotites (olivine only). Sedimentational structures, such as graded bedding, provide evidence of gravity accumulation of crystals, and a 'way-up' indicator for the rocks. This shows that the layering, which dips steeply westwards, is overturned, indicating tectonic activity after the intrusion formed. There are also some minor granite-pegmatite sheets cutting the troctolites, which are in turn cut by later narrow veins.

The narrow veins within the layered gabbros at Bin Quarry carry an unusual suite of hydrated calcium silicate minerals, in particular scawtite and tacharanite, two rare Scottish minerals. Scawtite development within the veins is unusual because normally it is found only at limestone contacts thermally metamorphosed, usually by heat from adjacent magma intrusions. The quarry has produced some of the finest silky vein xonotlite specimens known from the United Kingdom, which are of outstanding museum quality.

NOTIFICATION HISTORY

First notified, under the 1949 Act: 1956.
Re-notified under the 1981 Act: 13 December 1984.
Notification reviewed under the 2004 Act: 21 April 2011.

REMARKS

Measured area of site corrected (from 5.4 ha).

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