

Forest Plan

Castle Milk & Corrie Estates

by

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Forest Plan

Castle Milk & Corrie Estates

Part A – Description of Woodlands

A.1 Property

Name of Property	Castle Milk & Corrie Estates
RDC Proposal Numbers	3886113 & 3886114
Forest Plan Area	969.26 ha & 1054.23 ha
BRN	162952
Main Location Code	323/0013
Area to be Felled (yrs 1-10)	484.39 ha
Area to be Thinned (yrs 1-10)	1322.98 ha
Area to be Restocked (yrs 1-10)	484.39 ha
Payee	Castle Milk Woodlands Estate Office, Norwood, Lockerbie, Dumfriesshire DG11 2QX

A.2 Location and Background to Castle Milk

Castle Milk and Corrie Estates is a long established family business with 10,000 hectares of agricultural, forestry and industrial land in and around Lockerbie in the middle of Annandale, Dumfriesshire. The Estate has been in the ownership of the Buchanan-Jardine family since the 19th Century.

The Estate covers a large area and shows a broad diversity of landscape, soil types, farming land use and plantations in various sizes, species and characteristics. The Estate stretches from the fertile lowlands of the River Annan between Lochmaben and Lockerbie, over to Burnswark hill-fort in the East, then in a long corridor North East up the river Milk and Corrie Water valleys up to Corrie Common and beyond.

Approximately 2,085 hectares of forest is found on the Estate, with the vast majority of this being productive conifer plantations. The largest block is Whitcastles forest, some 600 hectares to the North of Corrie Common. This forest is a southerly extension of the "Eskdalemuir Complex". Birkshaw forest is found 3 kilometers to the South of Lockerbie and extends to approximately 200 hectares of productive lowland forest. Turnmuir forest near Lockerbie is heavily used for recreation and differs from Birkshaw and Whitcastles, which are predominantly Sitka Spruce woodlands, in being composed of primarily mature Scots Pine.

Estate Forestry Department

The Estate's Forestry Department is very long established, with planting records and diaries dating back to the late 1800's. It employs a full time Woodlands Manager and a squad of full time Woodsmen who do the planting and maintenance work in the forests. Harvesting and Thinning is primarily by direct production with local contractors, but also with Standing Sales to local merchants. The Estate makes a positive contribution to the forestry industry in Lockerbie through employment and timber production, but also through sensitive management to realise and increase the environmental and wildlife benefits of the Estate's woodlands. Recreation has been encouraged for many years, and all the major blocks are heavily used by local people.

This forest plan seeks to build on the strengths of the Forestry Department and provide a sustainable long term future to continue the positive contribution of the Estate's forests.

Description of Main Forest Blocks

Birkshaw Forest ~ 240 ha's

Birkshaw Forest is the most Southerly large block of Forest and is found South and East of Bengall farm. It is fertile land that produces phenomenal rates of growth in conifers. It consists of primarily Sitka Spruce with much new planting having taken place between 1999 and 2004. There are just a few compartments left with mature Scots Pine, Larch and Norway Spruce.

The Western end of Birkshaw, bordering Copewood Farm, consists primarily P1980's plantings of Sitka Spruce and some Sitka Spruce and Scots Pine mixtures. These will be important future productive areas once the P1970's areas at Whitcastles have been felled. All compartments in Birkshaw over 18 years old have now at least been line thinned, and several have had second and subsequent thinnings. Birkshaw is an important part of the Estate's ongoing thinning programme, with thinning blocks being worked here every few years.

Birkshaw was the site of the APF show in 2002 and is also the site of a foot and mouth burial pit from the outbreak in 2001. This has not been restocked yet and is awaiting the agreement of the Scottish Governemnt to restocking. Birkshaw has several scheduled Iron Age Hill Forts.

Turnmuir Forest ~ 100 ha's

Turnmuir Forest is an primarily P1942 Scots Pine forest felled by Commonwealth forestry workers and re-planted during the Second World War. It is an attractive forest, with some smaller areas of Larch and odd Douglas Fir planted at the same time as the Pine. Some areas were felled and restocked with Sitka during the 90's and most recently in 2006 the block opposite the Cemetery was felled, then restocked in 2009 with Hybrid Larch, Sitka and Douglas Fir.

There is very heavy recreational use at Turnmuir, with an excellent network of forest roads, paths and rides. There is a wildlife reserve in the forest at Eskrigg, which is rented from the Estate by the Lockerbie Wildlife Trust. This is based around one of the old Estate curling ponds, and has had much development over the years into an interesting and attractive place for people to observe birds, red squirrels and amphibians. In 2010 the Eskrigg Centre was opened by Sir Rupert Buchanan-Jardine. The centre is a hide and resource centre for visitors.

Troutbeck Forest ~ 200 ha's

This attractive forest is found to the South of Corrie Common and consists of connected blocks of forest around the Corriehills and Corriehalls farms. Much of the forest is in fact shelterbelts, although there is main block found further South onto the banks of the River Milk. Here, by the old Troutbeck farm steading, is some very good ground for timber production. The forest here is relatively sheltered compared with many of the forested areas on the Estate, with a significant area that is East facing. There is a very attractive feature in this forest at Troutbeck Glen, where there is a significant riparian feature of open ground with mature Scots Pine, hardwoods and other conifers planted sensitively around the watercourse.

Most of Troutbeck forest was badly affected by the boxing day gales of 1998, and in the early years of the new millennium most of the forest was felled and restocked. A large section was also replanted in 2010 after areas of old blow were cleared up. This has left a primarily young forest, but with some excellent compartments of Sitka still retained in the sheltered area near Troutbeck Glen. There will be some scope for felling here, but in future years much opportunity for thinning. Troutbeck forest benefits from a widespread road network.

Whitcastles Forest ~ 550 ha's

Whitcastles Forest has been the main production block on the Estate for the last decade. It forms a Southerly extension of the Eskdalemuir complex, and is a fairly standard forest for the Southern Uplands. Whitcastles is the site of a scheduled prehistoric Stone Circle, and several unscheduled features.

The forest was planted primarily between 1968 and 1974, a short timescale, and it is now all mature timber. Species choice was primarily compartments of pure Sitka, with significant areas of Lodgepole Pine on the particularly soft and peaty areas.

There is an excellent roads network in Whitcastles. A gas pipeline runs through the middle of the Southern block. General growth rates of Sitka are excellent at Whitcastles for an upland site, and there has been significant thinning of some of several compartments.

The forest suffered badly from the gales at the end of the 1990's and much of the forest, particularly in the Western areas (phases 1 and 2), have already been felled or are succumbing to windblow. This make restructuring Whitcastles very challenging as only very wide areas of open ground are likely to generate a windfirm edge. Phase 3 is more sheltered and consists of the slopes of the main hill, Hart Fell, that slopes down to the East towards the Estate march. The Sitka has grown very well here and this Eastern section of Whitcastles will be the main production area over the next ten years.

Description of Significant Outliers, Shelterbelts, Small Blocks

Castle Milk ~ 100 ha's

There are several smaller blocks between Castle Milk home farm and Kettleholm village. These include some areas of very fast growing young Sitka Spruce, as well as very old mixed conifer / broadleaved policy woodlands. Target Wood on the southern Estate march is a fine old stand of broadleaves planted in the early 1900's.

Species and ages are very mixed here with blocks of Douglas Fir along the River Milk, and Scots Pine in the East of this area near the M74 Motorway.

East Mid Plantation ~ 80 ha's

East Mid Plantation and its outliers are found on the hills just to the East of Lockerbie. This is an attractive old forest that has had about half of its area cleared and restocked in the mid-noughties. A probable Roman Road runs through this block on its way between Burnswark Roman siege camps and the Roman camp at Ladyward (near Johnsfield). This forest had an area of Larch and Douglas Fir felled recently in 2011. Most recent restocking has been with Sitka, with the remaining crops dating to mainly the 1960's and consisting of Norway Spruce.

Burnswark ~ 50 ha's

These are old plantations around the nationally important Burnswark archaeological site. This site features Celtic hill forts and Roman siege camps. The plantations are found around the sites and consist of mainly P1980's Sitka Spruce and Scots Pine mixtures. A small area near Burnswark farm house was felled and restocked in 2011 with Norway Spruce.

Raggiewhates, Slodahill, Murdochs Loch ~ 100 ha's

These are smaller plantations linked with shelter belts found between Lockerbie and Corrie. They are frequently riparian in nature, with much of Raggiewhates and Slodahill having been felled over the last ten years. Raggiewhates has been restocked with Sitka and broadleaves, while Slodahill has been restocked with Norway after yielding a fantastic crop of Norway 4.9m logs. Broadleaves have been retained in the riparian areas and are an attractive feature, with a very old block of hardwoods and large standing Douglas Fir. Some old P1950's/60's Norway Spruce and Japanese larch remain at Raggiewhates.

There are several PAWS sites in the Raggiewhates area, and management will aim to remove conifers from areas that have residual Ancient Woodland features and potential for regeneration as hardwood woodlands.

Gillenbie and Hencastles ~ 120 ha's

These shelterbelts and small plantations lie to the West of Troutbeck forest. Hencastles Plantation is found above an old iron age hill fort, and is currently being restocked with Norway Spruce. The Gillenbie blocks are primarily of Sitka Spruce dating to the 1970's and 1990's. There is a fine block at nearby Stobohill of probably the best Sitka Spruce on the Estate, lightly thinned, P1951.

Heithat and Blood Moss ~ 160 ha's

Between Corrie Common and Boreland are several large blocks of primarily Sitka Spruce. There was a significant new planting here of 50ha's in 2001. most dates to this period when there was some felling and restocking. Heithat includes an interesting plantation of Norway, Larch and Sitka alongside the Corrie Water.

Bankshill Area ~ 12 ha's

These are a series of small scattered shelterbelts and woods such as Castlehill Plantation and Crow Wood. There is also an interesting block around the old Lockerbie reservoir at Bankshill. Access to most of these compartments is difficult and across fields, which makes working them quite problematic. They consist of mainly Scots Pine and Sitka Spruce planted in the 1950's and 60's.

A.3 Existing Grant Schemes and Felling Licenses

There are several Felling Licenses, SRDP grant schemes and WGS grant schemes in force on the Estate at the time of writing. These are listed below.

Scheme	Contracts / Licence No's.
SRDP	3724021, 3791479, 3895101, 3895103, 4128005, 4128006, 4129356, 4338928, 4338931, 3886113, 3886114, 4421709, 4421707, 4457799, 4596825, 4631490
Felling Licence	034/89/08-09, 034/189/08-09, 034/188/08-09, 034/109/09-10, 034/123/09-10, 034/135/09-10, 034/109/10-11, 034/226/10-11, 034/242/10-11, 034/80/11-12
WGS	034000435/010

A.4 Stakeholder Engagement

A thorough Scoping Exercise was undertaken to engage all relevant Stakeholders in the Forest Plan process. Approximately 80 CD-ROMs with a copy of the Scoping Document were sent out to various NGO's, the local council, neighbours, tenants, and other interested parties. In addition, a Scoping Meeting was held at St Mungo Hall, Kettleholm on the 25th of November 2011. This was advertised in the local press as being open to all members of the Public. The Scoping Document CD's also advertised the meeting.

The main features highlighted during scoping were:

- 1) The need to target broadleaves and open space along watercourses.
- 2) Continued importance of Site Surveys for environmental, wildlife and archaeological features.
- 3) The need to manage archaeological features in a positive way, and desire to improve interpretation of monuments such as the Burnswark Celtic and Roman Forts.
- 4) The very high level of public amenity access at Turnmuir and Birkshaw forests, and associated desire for more facilities.
- 5) The desire to maintain mature conifers at Turnmuir as long as reasonable to provide seed sources for red squirrels.
- 6) Riparian Management issues – including continued retention of deadwood in riparian zones.
- 7) Request to plant “red squirrel friendly” broadleaves in Whitcastles and its' outliers – part of the Eskdalemuir red squirrel sanctuary.

A.5 Long Term Vision and Management Objectives

The long-term vision is to manage the forest on a commercial basis, to maximise the value of standing crops through the production of quality sawlog material, to restructure the forest to diversify age class distribution and to support the local economy. The Estate aims to maintain and diversify the biodiversity and recreational value of the forests.

The management objectives are:

- Maximise economic value of the forests.
- Create a long term, restructured forest with perpetual timber production.
- Sequester carbon and help combat climate change.
- Create a long term forest structure consisting of 60-65% primary coniferous species, 20-25% secondary coniferous species, 10% open ground, and 5% broadleaves.
- Continue to manage the forest in line with UKWAS and the UK Forestry Standard.
- Restructure the forest to meet our aim of perpetual production, while carefully planning to minimise the risk of devastating windthrow which has been a feature on Castle Milk in the past.
- Protect sites of archaeological value
- Maintain and where possible encourage use of the forests by the public.

A.6 Site and Species Description

Table 1: Species Distribution

Species	Area (ha)	% of Total	Est. Yield Class	Species	Area (ha)	% of Total	Est. Yield Class
SS	1109.95	53.2	18	SYC	0.27	0	8
SS/SP	313.25	15	18	OG	42.95	2.1	na
SS/JL	1.14	0.1	18	OL	10.44	0.5	na
SS/NS	2	0.1	18	FELLED	76.69	3.7	na
'PINE'	3.33	0.2	12	AR	1.54	0.1	6
SP	77.26	3.7	12	AG	0.6	0	6
SP/JL	2.94	0.1	12	ROK	0.81	0	6
CP	0.59	0	12	SP/DF	1	0	12
MP	1.77	0.1	12	BARE	7.17	0.3	na
LP	26.89	1.3	12	SY	5.45	0.3	8
JL	87.69	4.2	14	MC/MB	5.28	0.3	6
HL	18.34	0.9	14	SS/SP/MB	2.69	0.1	6
EL	0.7	0	14	NS/MB	1.2	0.1	6
NS	111.11	5.3	14	BI	1.31	0.1	6
NS/DF/JL	3.6	0.2	14	JL/SS	2.32	0.1	14
NS/DF	2.3	0.1	14	POP	1.44	0.1	8
NS/HWDS	6.79	0.3	14	MBLS RETENTI ON	0.1	0	6
DF	22.49	1.1	18	OG/MBLS	0.89	0	6
DF/JL	1.04	0	16	MBL	0.09	0	6
WRC	0.31	0	12	BE	2.29	0.1	6
DF/NS	4.53	0.2	14	JL/NS	1.92	0.1	14
MC	10.96	0.5	14	SS/LP	1.98	0.1	12
MBLS	102.14	4.9	6	HB	0.24	0	6
SCRUB	0.75	0	6	TOTALS	2084.83	100	
OAK	4.26	0.2	6				

Table 2 Summary of Species Description by Species Class

Species Class	Area (ha)	% of Total	Est. Yield Class
SS	1271.12	61	18
OC	545.48	26.2	14
MBLS	129.96	6.2	6
OG (mapped, ex rides)	60.77	2.9	na
FELLED	77.5	3.7	na

All Species Areas can be assumed to include 8% Open Ground as rides, spaces etc. This is generally not included in the mapped Open Ground total above.

Table 3: Planting Decade by Area – Whole Forest

	1815-1920	1921-1930	1931-1940	1941-1950	1951-1960	1961-1970	1971-1980	1981-1990	1991-2000	2001-2010	2011	Felled	Open	Totals
Area	65.05	18.4	15.63	60.29	103.58	281.48	251.96	235.58	248.63	631.98	49.56	77.5	45.21	2084.85
PYear %	3.1	0.9	0.7	2.9	5	13.5	12.1	11.3	11.9	30.3	2.4	3.7	2.2	100.00 %

Topography, Aspect, Elevation & Rainfall

The topography of the Estate is dominated by rolling hills gaining altitude towards the North and East. There are many water courses and valley systems, focused on the Milk and the Annan, which drain towards the West and South. Elevation ranges from around 30 metres in the South of the Estate, to 330 metres at Whitcastles in the North. Average annual rainfall is 1200mm.

Soils

Soils are an important consideration in the management of the forests on the Estate. Soils range from upland brown earths to peat on the higher ground, and alluvial brown earths on the lower land. Over much of the area, soils are dominated by shallow gleys, peats and brown earths, overlying inorganic clays. This results in a higher than might be expected risk of windblow across many of the forests on the Estate.

Windthrow Hazard Class

The Wind Hazard Classification for the forests on the Estate range from 5/6 on the upper ground to 2/3 on the lower more sheltered areas. However, due to clay soils many of the woodlands are prone to windblow. The storms of December 1998 had a tremendous effect on the forests and resulted in large areas of windblow.

Generally our experience in recent years are that thinned compartments have stood the blast better than their unthinned neighbours. It is our intention to continue to pursue timely thinnings as good forestry practice and to reduce our exposure to windblow.

Part B – Survey Data

Survey Data of the Forests on the Estate is held as follows:

Survey	Date	Data Location
Compartment Schedule	Revised 2012	Estate Computer Systems
Timber Sales & Planting Record Systems	2008 to date	Estate Computer Systems
Woodland Constraints	2002 to date	Woodland Managers Office
GIS Layers	2000's to date	Estate Computer Systems
Compartment Data Books	1970's to 2000's	Woodland Managers Office
Harvesting Output Data	1970's to date	Woodland Managers Office
Forest Compartment Survey	Mid 1960's	Woodland Managers Office
Aerial Photography	~1963	Woodland Managers Office
Mensuration Data	1960's to date	Woodland Managers Office
Estate Forest Map	1950's	Woodland Managers Office
Planting Grant Records	1920's to date	Woodland Managers Office

Part C – Analysis

Updated Concept Maps from Scoping Process:

C.1 Constraints and Opportunities Analysis (see Map 2)

C.1.1 Site Constraints Impact

Factor	Constraints	Opportunities
Windthrow	Clay soils and exposure impacting on tree wind firmness (wind blow has already occurred in many forests)	Introduce wind firm restructuring compartment boundaries to follow features such as watercourses, dry ridges and roadsides. Maintain drains and ensure curtain drains catch field tiles in affected compartments.
Roads	Several outlying blocks have no access roads.	Where possible construct new roads and seek grant assistance for these to bring these outlying woodlands into production.

C.1.2 Archaeological Impact (See council Archaeology Maps in Appendix)

Factor	Constraints	Opportunities
SAMS	Control measures are required to reduce ground damage during harvesting operation.	Open ground around SAMS to protect them for the future. Opportunities for interpretation for members of the public. Obtain SAM consent from Historic Scotland prior to operations.
Other features	Similar risks of damage.	To be identified before clearfelling and managed as per Forests and Archaeology guidelines.

C.1.3 Ecological Impact

Factor	Constraints	Opportunities
Watercourses	Conifers planted close to watercourses causing shade.	Development of riparian zones and introduction of broadleaves and open ground
Red Squirrels	Red squirrel populations under threat from the greys.	Retain Lodgepole and Scots Pine areas at Whitcastles. Retain occasional mature Scots Pine at Turnmuir.
Broadleaves	Estate has a large area of broadleaves in its woodlands, mapped as specific blocks but also within the conifer crops.	Retain broadleaves as far as possible on clearfells for environmental, soil and aesthetic benefits.
Mature Conifers	Several stands of very mature conifers on Estate.	Retain some stands as Long Term Retention for biodiversity benefits. This will also meet specialist timber markets.

Hedgerow broadleaves	Many/most hedgerow trees are now reaching maturity, many are being lost due to winds. Great potential loss to landscape and biodiversity.	Estate has started a modest programme in recent years of replanting and guarding new hedgerow trees. Grant assistance would help us greatly in this endeavour.
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C.1.4 Herbivore Impact

Factor	Constraints	Opportunities
Deer	High resident population.	Develop deer management plan and liaise with neighbours More open ground will assist with deer control.

C.1.5 Social Impact

Factor	Constraints	Opportunities
Employment	Fragility of rural economy	Estate already employs a significant number of people in the forestry department relative to our size. Maintaining a constant programme of felling and restock retains services of employees and builds resilience of local economy. Continued value adding to our products and opportunities for more local production.
Public Access	Parking limited at Turnmuir for access to forest and Eskrigg. Under utilisation of Mid-Annandale by tourists	Continue to explore parking options at Turnmuir forest Much potential exists on the Estate to further develop tourist and leisure facilities in the forests and generate local employment in this sector.

C.2 Landscape Analysis

The landscape character at Castle Milk varies according to the location. Generally speaking the Estates forest can be divided into three areas, one West of the M74 and one East of the M74, with a final group North of Corrie Common.

West of the M74 – Birkshaw, Turnmuir, Castle Milk areas

This group consists of the forests of Birkshaw and Turnmuir, various scattered shelter belts, and the woodlands around Kettleholm and Castle Milk home farm.

The landscape here is of mixed farmland, with hedgerows, hedgerow trees, and woodlands.

Most of the woodlands and forest are on the higher ground, such as Birkshaw, which was planted on moorland above Bengall farm.

These forests form a significant part of the landscape, however since elevations are generally low and the forests on flat moors visibility is usually restricted to the edge of the forest. The Estate has done some work on this in the past, for example the retention of a line of mature Scots Pine at Turnmuir Forest compartment 76. This has retained a visual benefit of the trees from the main Dumfries to Lockerbie road, and has also provided wildlife and wind-break benefits. Similarly, recent fellings at Turnmuir and Birkshaw have retained many mature broadleaves within the compartments. This has reduced the visual and environmental impact of clearfelling in these forests and will continue.

Thinning is pursued strongly in these woods and will continue to generate open, attractive and airy forests for people to experience, as well as the inherent timber value, environmental and windfirm benefits.

East of the M74 – East Mid Plantation, Burnswark Plantations, Troutbeck Forest, Gillenbie

These areas are found on the uplands above Lockerbie. These areas are generally less cluttered visually and feature fewer hedgerows and field boundary trees. The landscape is open and there is more relief, with islands of woodland amongst the fields and rough grazing. Much woodland and forests are found associated with gullies and watercourses. There are more shelterbelts in these areas, and the ground is more undulating.

Visibility is less restricted to forest edge, and from some roads (for example the Lockerbie to Langholm road and the Lockerbie to Corrie road), there are better views of the forests, if fleeting.

In this area the forest cover is more broken into shelterbelts, and the current method of gradually felling and restocking these shelterbelts works well in the landscape.

North of Corrie Common – Heithat, Whitcastles

This third group is different again and is more standard upland forestry. It is similar in many respects to the large plantation forestry found at Eskdalemuir, and in fact Whitcastles forms a Southerly part of this complex.

Visibility opportunities for both these forests is low. The main viewing point is from the Corrie Water glen between the two forests. This glen is sparsely populated, and viewing is primarily of very distant forest edges.

There is a good view of the Southern end of Whitcastles from Corrie Common. There has already been some broadleaved planting here, as well as retention of a small block of Scots Pine at the Southern tip right on Corrie Common. This has provided a visual break and benefits the local Red Squirrel population.

Both forests are relatively flat , particularly around Corrie. Further East, the Westerkirk road and Birsca farm have good views of the Eastern side Whitcastles beyond Hart Fell. However, most of this is just forest edge with the interior of the crop, bar CMPT 269 at the top end, well screened by the Southern edge.

C.2.1 Concept Design

West of the M74 – Birkshaw, Turnmuir, Castle Milk areas

- Continue to work in small felling Coupes to reduce visual impact, both from outwith the forest and also for large numbers of walkers and recreational users.
- Plant a wider variety of conifers, utilising Douglas Fir and where possible Larch, alongside Sitka Spruce. Where the site suits these will be planted in larger compartments rather than just corners of Sitka woods.
- Retain and improve the hardwoods in these compartments, while clearing scrub at restock.
- Continue the programme of planting new hedgerow trees, and continue maintenance of existing hedgerows.
- Clear back SAM hillforts and do not replant, as per Historic Scotland guidance.
- Where possible retain some old Scots Pine trees at Turnmuir forest to benefit red squirrels and landscape.
- Several areas of CCF have been identified in this area, such as at Turnmuir and Birkshaw, and these will benefit the environment by retaining continual mature tree cover.

East of the M74 – East Mid Plantation, Burnswark Plantations, Troutbeck Forest, Gillenbie

- Continue to work shelterbelts off and where possible aim to have some separation between felling in a locality.
- Work areas identified as PAWS sites carefully and follow Estates PAWS management plan. Where PAWS sites show indicator species and residual hardwoods then work to benefit these features – gradual removal of conifers where appropriate and enrichment of resource through planting hardwoods. Where no indicator species restocking after felling to introduce some hardwoods with sensitive conifer planting.
- Troutbeck Glen is to be carefully managed, and at clearfell retain some mature Scots Pine in the riparian areas. Introduce more hardwoods and restock conifers back from the waters edge as per Forests and Water Guidelines.
- At Burnswark there will be opportunities at restock to plant more sensitively to the historic remains. Also there is an old block of Mountain Pine right on the side of Burnswark. If this can be felled sensitively, it will not be replanted. All this will be done carefully in consultation with Historic Scotland.

North of Corrie Common – Heithat, Whitcastles

- Whitcastles has suffered badly from windblow in the current rotation. On restocking

Whitcastles, the Estate will aim to establish windfirm edges to make the next rotation less susceptible to Windblow. Four main buffer zones have been identified, these subdivide Whitcastles into five areas that will hopefully be more windfirm when worked in the future:

1. The Gas Pipeline existing boundary between Phase 1 and 2 – see concept maps. This wide open ground / scrub zone is already a relatively effective wind buffer.
 2. The main Whitcastles Hope / Booths Burn watercourse riparian area running through the middle of Phase 2
 3. The crest of the ridge to the East of Hartfell, the existing boundary of Phase 3.
 4. The Cowan Cleuch buffer running through the middle of Phase 3.
- Wind buffer zones tend to be along roadsides, crests of hills or along watercourses. Riparian management presents opportunities here and open ground in combination with broadleaves will both assist the water quality and improve the buffers potential to stop the wind. Similarly, areas of broadleaves and Scots Pine have been allocated at restock in buffer areas to improve windfirmness.
 - Large areas of Lodgepole Pine have been allocated as natural reserve and will be retained for Biodiversity benefits, providing important food sources for red squirrels. They also contribute to species diversification generally at Whitcastles.
 - There are restocking opportunities for other conifers at Whitcastles. For example, several compartments in Phase 3, particularly those on the lower slopes, have been allocated for restructuring with Norway Spruce rather than Sitka.
 - Red squirrel friendly broadleaves will be primarily planted in this area and also from the Troutbeck area northwards. The approximate line of this will be the Parish march at Hope Burn / Corrie Water.

Part D – Management Proposals

D.1 Silvicultural Policy

The silvicultural policy of the Estate will focus on restructuring the present forests and to continue to pursue production of high quality timber.

The Estate has been allocated into 5 main Management Categories:

Management Category	Abrev.	Area (ha)	% of Total
Productive High Forest	PHF	1769.24	84.9
Long Term Retention	LTR	159.45	7.6
Continuous Cover Forestry	CCF	15.69	0.8
Biodiversity	BIO	53.09	2.5
Spinneys (non-commercial)	SPN	26.91	1.3
Others inc. Wayleaves		60.47	2.9
Totals		2084.85 ha	100.00%

Productive High Forest (PHF)

Will be managed along traditional lines with the aim of producing productive coniferous timber. They will be managed at close to commercial rotation lengths, being held over or felled early where this suits restructuring of the forest. These areas will be planted with conifers, thinned where appropriate, felled usually under harvester/forwarder clearfell systems and restocked after drainage and mounding by planting. PHF areas are found across the Estate.

Long Term Retention (LTR)

These areas will be retained standing for longer than normal commercial rotations. This is primarily for environmental and aesthetic benefits. They may well be felled eventually. These areas are found primarily in the Policy Woodlands near the Castle, and also across many of the broadleaved sub-compartments.

Continuous Cover Forestry (CCF)

These areas will be managed using Continuous Cover Forestry techniques. See section D.2.7 below. There are only three small areas scheduled for CCF – parts of Turnmuir Forest, Compartment 22 at Birkshaw Forest, and Compartment 218 Nutholm Gorse.

Biodiversity (BIO)

These are areas primarily retained for improve biodiversity and wildlife benefit, for example the Lodgepole Pine areas in Whitcastles Forest.

Spinneys (SPN)

We have defined Spinneys as being very small blocks of woodland, often out of the way and isolated, that are difficult and expensive to work using standard harvesting equipment. They have not been included as part of the Productive High Forest area. They will be felled and restocked as opportunities present themselves to bring these small blocks into production.

Felling, Restructuring and Thinning and proposals are shown in Maps 3, 4 and 5.

D.2 Management Prescriptions

D.2.1 Felling

Felling Phase	1 – Red	2 - Amber	3 - Yellow	4 - Green
Fell Years	2012 – 2016	2017 – 2021	2022 – 2026	2027 - 2031
Area to be Felled (ha's)	242.12	242.27	261.33	169.97

Felling coupes are generally expected to be between 5 and 60 hectares in size. On average in recent years our clearfells have been around 10-20 hectares. We expect to maintain felling the larger coupe sizes in upland areas such as Whitcastles, with a tendency towards smaller sizes in the lowland forests. Our aim is to create a sustainable, constant annual harvesting and restock programme in restructured 'Normal' forests of balanced age class distributions.

This will generate consistent and constant timber income for the Estate. It will also provide continuity of employment and help to retain skills and equipment that have been built up over many decades.

It will also help retain our customer base and help supply local sawmills with the timber they need to provide industry with high quality Scottish timber. Castle Milk's forests will therefore continue to play their part in the wider Scottish economy.

A constant, sustainable harvesting programme will enable us to restructure our forests to a more balanced age class structure. This will allow us to have perpetual production from our forests, while leaving us less susceptible to sudden events such as the 1998 gales.

As a general rule we will avoid felling a coupe until any adjacent restocking is at least 5 years old or 2 metres in height. Any divergence with this will be discussed with Forestry Commission Scotland. At present CMPTS 262, 255, 260, 256, 268, 280, 288, 289, 163 & 24 are in this position because of significant windblow.

Harvesting Programme

The current age class of the forest is actually fairly well balanced, other than the large amount of cutting over the last ten years and the large weighting to Whitcastles forest by area for harvestable timber in the current felling decade.

Part of the challenge will be to manage the Whitcastles cut to maintain as even production as possible, while dealing with ongoing windblow.

Other forests will also play their part, with the likes of the Scots Pine at Turnmuir being a useful

resource to harvest in future years at a steady pace.

It is estimated that an annual cut of 40-50 ha should be sustainable over the long term if carefully managed.

In recent years timber prices have recovered somewhat from historically very low rates. If this recovery can be sustained then this will go a long way to helping us achieve our restructuring aims.

Recent Timber Harvesting

There has been significant timber harvesting on the Estate over the last ten years or so, particularly since the Boxing Day gales of 1998.

These gales were catastrophic for the Estate and saw several hundred hectares of forest affected by windblow over night. The next years were spent clearing these blown areas as quickly as possible and restocking.

Following on from the windblow clearance, the second part of the decade saw Whitcastles Forest come into production and approximately half of this 600 ha forest has now been cleared.

Whitcastles has until now been very much at the mercy of the wind, and harvesting plans have had to follow the course of nature to a great extent.

Other forest harvesting on the Estate over the last 5 years, Whitcastles aside, has primarily been in the smaller shelterbelts as they have come to maturity, or where ongoing windblow has had to have been rationalised.

Troutbeck forest had a very large area of windblow cleared following the Boxing Day gales and future plans will try and keep an occasional production coupe from this forest to diversify the age class as much as possible.

Birkshaw has had ongoing production with usually a coupe a year coming out of this already fairly diverse age structure forest.

Turnmuir has a large area of Scots Pine which up until recently has still been maturing. Turnmuir is also a recreation honeypot which will require careful harvesting in future years.

In general harvesting has been reduced over the last 5 years after the clearance of the Boxing Day blow to approximately 50ha a year on an ongoing basis. This has supplied between 15,000 to 25,000 tonnes a year annual timber production.

D.2.2 Thinnings

In the past Castle Milk has had an extensive thinnings programme which has helped create the excellent timber and attractive woodlands on the Estate.

Thinnings will be attempted as far as possible across the Estate, with a first line thinning aimed at ages 16-22 taking usually one row in 7. The vast majority of thinnings will be conducted with harvester/forwarder teams.

Second and subsequent thinnings will be carried out every four years, taking the poorer stems out of the crop matrix. This will focus growth on the better stems, increasing quality timber production and making the forest more windfirm.

D.2.3 Restructuring

Conifers

Restocking will be primarily with conifers. In particular Sitka Spruce has been shown to grow very well on the Estate and will be the main species choice, especially in the more upland North of the Estate. We will aim to grow other conifers in sizeable blocks where the soil and circumstances suit. Norway Spruce will be the next largest component, particularly on lower slopes and frost hollows in the North of the Estate.

In the Southern end of the Estate soils improve somewhat with some deeper sands and brown earths alongside the clay. Here we will plant more Douglas Fir, as well as Norway Spruce. Some areas of Hybrid Larch may be planted, pending the development of the Phytophthora ramorum outbreak. The Estate will also seriously consider less frequently planted conifers such as Noble Fir, Western Red Cedar and Western Hemlock.

Scots Pine is an historic feature of the Estate, however slow growth and the emergence of Red Band Needle Blight mean it will likely feature only as a token element in the future.

The Estate has had considerable success with planting onto excavator mounded sites and this will continue. Establishment is fast with trees usually getting away within 2 years. Excavator mounding with thorough draining helps greatly on the clay soils which often predominate on the Estate.

All conifers will be planted to achieve a target density of 2500 stems per hectare at year 5.

Broadleaves

The Estate already has significant areas of broadleaves and already meets the UKWAS target for broadleaved coverage. These are over a wide area and a varied range of ages and species.

Therefore further planting of native broadleaves on the Estate will focus on where they can generate best value in terms of environmental and production benefit. Most future planting is to be focused around water courses to improve the riparian environment. Where suitable existing mature broadleaves and deadwood will be retained in these areas. There will be replanting of broadleaves in CMPT 185 to compensate for birch felled in CMPT 59A.

Some recent plantings of native broadleaves have occurred in small spinneys and other accessible areas, in future the species mix in these areas will primarily focus on those that can produce quality hardwood timber and usable firewood. It is hoped to manage some of these small blocks as coppice and so generate further environmental and economic benefit from these woodlands.

All broadleaves will be planted to achieve a target density of 1100 stems per hectare at year 10.

Table 4a: Species Distribution in 10 years time

	Sitka Spruce	Other Conifers	Broadleaves	Open Ground (mapped & in crop 8%)	Total
Area (ha)	1264.63	570.13	150.77	256.03	2082.72
Species %	55.86	25.18	6.66	12.29	100.00%

Table 4b: Species Distribution in 20 years time

	Sitka Spruce	Other Conifers	Broadleaves	Open Ground (mapped & in crop 8%)	Total
Area (ha)	1280.73	549.41	153.02	259.63	2084.59
Species %	56.57	24.29	6.76	12.47	100.00%

D.2.4 Protection & Maintenance

The forests on the Estate have the services of a full-time gamekeeper who is employed by the Estate primarily to keep deer numbers down. Roe deer pose the main browsing threat and trees will be protected by deer culling according to the Estates deer control plans. The Estate is working on producing a Deer Management Plan. Fences will be kept stockproof next to agricultural land.

Other maintenance operations will include beating up, spraying against Pine Weevil and spot application of herbicide to control weeds where required.

D.2.5 Public Access

Recreation

Several of the Estate's forests are heavily used for recreation.

Turnmuir Forest, near the Cemetery at Lockerbie, is very heavily used by walkers and mountain bikers. It is a very attractive Scots Pine forest, which has been well thinned in the past to create a beautiful woodland environment. There is a thorough network of paths as well as the main forest road which runs right through the middle of the forest. Paths network to all the main roads around the forest, and a footpath runs to West Acres on the Western side of Lockerbie. It is possible to walk from the High Street of Lockerbie all the way to the Eskrigg Nature Reserve in Turnmuir Forest by pavement or footpath.

The Eskrigg Nature Reserve is a major asset to the forest. It is managed by a wildlife group led by retired Biology Head teacher Jim Rae. It is focused on the old Estate curling pond, which has a valuable range of birds, amphibians and insects and some locally and nationally rare plant species. In 2010 Sir Rupert Buchanan-Jardine opened the Eskrigg Centre which is an impressive hide and classroom resource centre on the edge of the reserve.

Due to the proximity of Lockerbie, Turnmuir has been identified as a Woodlands in and around Towns (WIAT), forest.

Birkshaw Forest, to the South of Turnmuir, is a larger scale woodland with an excellent network of forest roads. This was the forest that hosted the Association of Professional Foresters (APF) exhibition in 2002 which was a fantastic showcase of Scottish Forestry that was very well received by the public and the industry. The excellent roads network is very popular with both walkers and horse riders, and most of the access points have walkers cars parked beside them every day.

The final forest that has a particularly high level of use is Whitcastles forest above Corrie Common. This Sitka Spruce forest has an excellent network of long roads and also has a network of waymarked walks. It has two car parks and excellent views of Queensberry, upper Annandale and on a clear day over the Border to the hills of the Lake District.

The Estate aims to build on these strong foundations and will seek support from other groups to assist in delivering improvements to these facilities.

D.2.6 Road Operations

No new roads have been identified as requiring to be built at this stage. Any future requirements will be dealt with at the time.

D.2.7 Continuous Cover Forestry (CCF)

Three Compartments have been identified as having potential at this stage for conversion to Continuous Cover Forestry.

CCF Compartment	Area (ha)	Current Species	CCF Prescriptions
76 Turnmuir	0.42	P1800's Oak P2009 Oak	This is a small area of scattered standing mature Oak within a coniferous compartment. CCF has already begun here with retention of the mature Oak at felling and underplanting of young Oaks. These will be gradually thinned out and managed where time allows, to create an attractive CCF coupe.
77A Turnmuir		P42 SP	Gradual thinning and extend existing holes in canopy to allow further light to reach forest floor. Plant gaps with mixed conifers such as Douglas Fir, Scots Pine, Sitka Spruce to encourage new conifer crop.
77B Turnmuir – by Eskrigg Reserve	1.98	P56 SS/LP	This crop will have a similar treatment as 77A, with much of the existing dead timber and windblow removed. It is felt that this compartment may be very susceptible to windblow so Continuous Cover is likely to be aspirational here.
22 Birkshaw Fox Covert	6.35	P33/58/64 JL/NS/SP	This is an attractive mixed crop of primarily Larch with elements of Scots Pine, Norway Spruce as well as Western Hemlock and others. There is significant evidence of an understorey of Larch regenerating here. The plan for this wood is to continue to thin out the Larch and other conifers to encourage the natural regeneration. Where possible underplanting will also take place of semi-shade tolerant species such as Douglas Fir and Sitka Spruce to augment the coupe. Some of the Norway is succumbing to windblow and dying back due to exposure. It is planned that these areas be gradually cleared and replaced with a planted mixture containing a variety of conifers, such as Douglas Fir, Sitka Spruce and Western Hemlock. This Compartment provides an interesting element into this relatively large, production forest.
218 Nutholm Gorse	3.47	P52 NS/JL	This is a highly attractive riverside compartment with a flat area of beautiful Norway Spruce and a banking of Larch.

			There has been thinning here in the distant past. The compartment will be thinned again, with a view to trying to open up existing small gaps further to let more light in. Where suitable, mixed conifers will be planted in these gaps with species such as Douglas Fir and the Spruces.
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The moves to CCF are not expected to be major, mainly because our clearfell and restock practices are so effective and suited to modern machinery and markets. We will re-assess our CCF commitment in 5 years time, drawing on experience gained.

D.2.8 New Planting

There are no plans for new tree planting on the Estate.

D.2.9 Biodiversity

The Estate has a very mixed landscape of forest, lowland pasture and crops, and upland grazing. As such it has an impressive range of wildlife, including many birds such as buzzards, kestrels, owls, siskins and crossbills.

Open Ground will be used to maintain the riparian zones and establish broad coupe boundaries along these water courses for the future forest design.

Red squirrels predominate on the Estate, and grey squirrel control measures have been in place in the far South of the Estate for some years. In the last year this has led to the re-colonisation by the reds of the one or two woodlands where greys had become dominant. The Estate proposes to continue to pursue the grey squirrel.

D.2.10 Historical Environment

There are several Scheduled Archaeological sites on the Estate, some of which are shown on the Concept Maps. A comprehensive list and management prescriptions are given in the table below. Most are Iron Age Hill Forts and Settlements, with a recumbent Stone Circle at Whitcastles. There is a very impressive, nationally important site at Burnswark which has a Celtic Hill Fort atop the flat hill. This dominates the surrounding countryside and also communications North. Either side of the Celtic fort are two Roman fortlets, thought to have been used to besiege the Celts. Ballista mounds are very obvious.

Forest SAM	Name / Location	Our Description Eastings / Northings	Prescriptions
MDG7009	Castlehill / Pilmuir Common	Celtic Hill Fort 312250 / 578940	Careful felling then leave as open ground when restocking with buffer.
MDG7018	Castlehill /	Celtic Hill Fort	Careful felling then leave as open

	Pilmuir Common	312280 / 578640	ground when restocking with buffer.
MDG7020	Hallmuir	Celtic Hill Fort 312760 / 578580	Already felled, retain as open ground and buffer around feature. Potential for an historic trail around these first three features linking with high recreation in Turnmuir and Birkshaw forests.
MDG9671 etc	Burnswark	Celtic Hill Forts and Roman Camps 318771 / 578482	Will liaise closely with Historic Scotland like all SAMS – careful felling and sensitive restock to buffer around features. Opportunities for an interpretation board here.
MDG7159	Raggiewhates	Celtic Hill Fort 317470 / 581881	Outwith forest boundaries but near access roads, will be aware when planning forest operations.
MDG7110	Hencastle Rig / Old Craighouse	Celtic Hill Fort 318560 / 585130	Adjacent forest crop already felled, will maintain buffer on restock.
MDG7508	Whitcastles / Little Hartfell	Neolithic Stone Circle 322400 / 588060	Will remove planted hardwoods and conifers adjacent to circle as required by Historic Scotland.

There are also various other Unscheduled Monuments across the Estate. We will aim to protect these and manage our operations around them sensitively, following the Forest and Archaeology guidance.

The Forestry Department aims to protect these features and hopes with outside assistance to provide better interpretation for these features to the public.

Part E - Production Forecast

See Appendix:

Basic crop data for Castle Milk & Corrie Estates is supplied via the Forestry Commission Scotland Production Forecast Spreadsheet

**Part F - Agreed Operational Tolerances
for ammendment purposes**

See Appendix – Tolerance Table

Part G – Maps

See Appendix:

Map 1 – Location Maps

Map 2 – Opportunities & Constraints Maps

Map 3 - Felling Maps by 5 year Felling Phases for 20 years

Map 4 - Restructuring Maps

Map 5 – Thinning, CCF, LTR and Biodiversity Maps

Map 6 - Attached Maps for minor outlying areas (North and South) with Felling Maps and Restructuring Maps.

Map 7 – Archaeology Maps supplied by Dumfries and Galloway Council

Map 8 – Ancient Woodland Maps

Part H – Deer Management Plan

See Appendix: