



Please refer to the Management Plan Guidance note for advice on how to complete your management plan.

You must submit the Management Plan before any related Forestry Grant Scheme application. We will not approve your grant application until your Management Plan has been approved.

1. Details

Management Plan Details			
Management Plan Name:	Muirshiel Country Park		
Business Reference Number:		Main Location Code:	
Grid Reference: (e.g. NH 234 567)	NS316632	Nearest town or locality:	Lochwinnoch
Local Authority:	Renfrewshire Council		
Management Plan area (hectares):	29		
List associated maps:	MCP01 Location Map MCP02 Map of compartment locations MCP03 Constraints - ecological and silvicultural MCP04 Constraints - designations, classifications and access MCP05 Opportunities MCP06 Felling works MCP07 Planting works MCP08 Ancillary works		

Owner's Details			
Title:		Forename:	
Surname:			
Organisation:		Position:	
Primary Contact Number:		Alternative Contact Number:	
Email:			
Address:			



Postcode:		Country:	
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Agent's Details			
Title:		Forename:	
Surname:			
Organisation:		Position:	
Primary Contact Number:		Alternative Contact Number:	
Email:			
Address:			
Postcode:		Country:	

Approval - to be completed by FCS staff:			
Management Plan Reference Number:			
Plan Period: (ten years) (month/year)	From:	To:	
Operations Manager Signature:		Approval Date: (dd/mm/yyyy)	



2. Woodland Description

Give information about the following:

- past management of the woodland
- current species and ages
- statutory and non-statutory constraints (e.g. designations, archaeological interests)
- existing or potential public access
- woodland protection

Use the [Land Information Search](#) to help you complete this section. For more detailed information on the Native Woodland Survey of Scotland use the [FC Map Viewer](#).

2.1 Maps required

Provide maps to support your plan, as outlined in the guidance note. Please list all of the maps that you are including with your management plan in section 1 Management Plan Details.

2.2 History of management

Since the 19th Century there have been three distinct phases of woodland management on the ground now covered by Muirshiel Country Park.

Prior to the middle of the 19th Century, only vestiges of semi-natural woodland survived, clinging to the steep sides of small watercourses and other locations which were relatively inaccessible to livestock. Evidence of these persisting fragments of woodland can be found in today's groundflora, which includes some good ancient woodland indicator species, e.g. *Allium ursinum*, *Anemone nemorosa*, *Conopodium majus*, *Glechoma hederacea*, *Hyacinthoides non-scripta*, *Listera ovata*, *Lysimachia nemorum*, *Veronica montana*.

During the second half of the 19th Century Muirshiel House was built as the focal point for a hunting estate and this brought about the first phase of woodland management. Extensive tree planting occurred, presumably to create an appropriate setting and to provide game cover for species not associated with the open moor, e.g. pheasants, rabbits. The 1st Series Ordnance Survey map for the park shows well-established woodland either side of the main access drive (current compartments 3, 8c, 8d, 8f and 8k from the 2004-2009 Management Plan). Woodland was also well-established around Muirshiel House, where the main car park and Visitor Centre are now located, notably in what are now compartments 10b and 10c. On the other hand, what is now compartment 10a close to Muirshiel House was unwooded. Similarly, Gate Wood (now Compartment 9) was an open field. Most significantly in terms of the issues facing the current management plan, the ground covered by the dense Sitka Spruce plantations of compartments 8a and 8b was an agricultural field. In addition, Orblis Hill (compartments 6a, 6b, 6c, 7, 12, 8j and 8g) was completely unwooded, although shown as rough grazing. Monument Hill (compartments 2, 4, 5a and 5b) was well-wooded and there was a continuous fringe of woodland along the western boundary between Monument Hill and the River Calder (in



what are now compartments 1a and 1b).

This extent and locations of woodland stayed much the same up until WW2, as shown by the 1891-1912 and 1913-1939 Ordnance Survey maps, with the woodland on Monument Hill becoming sparser during this period and three small roundels being planted in the open ground to the north of the drive. The main change was outside the Country Park area, where quite extensive woodland was planted immediately to the west.

The second phase of woodland management effectively started on 21st June 1952, when Keir & Cawder Estates disposed of the ground and surrounding estate to Renfrewshire County Council. In fact, an extensive area of the Renfrewshire Heights was acquired by the public sector in this period, with the intention of constructing a large reservoir. The plan was never implemented and Muirshiel Country Park was created in 1970. The Lower Clyde Water Board controlled the surrounding estate and issued a lease for farming the surrounding hill pasture and moorland in 1975. Existing tree age suggests that it was at this point that a decision was made to plant up the fields and open land left by the Victorians, using a mixture of Sitka Spruce, Norway Spruce and Larch at commercial densities. Because Muirshiel Country Park was excluded from the wider agricultural lease, it would have been easier to afforest former fields than to maintain a grazing regime.

Muirshiel Country Park became part of the wider Clyde Muirshiel Regional Park in December 1990 and the new Park Authority instigated the third phase of woodland management, which has comprised an incremental naturalisation of Muirshiel's woodlands. In the first few years this was driven by external forces in the form of extreme weather events, when the Park Authority experienced damaging repercussions from the previous plantings of dense conifer stands on thin soils in exposed locations.

In 1994 sub-compartment 8c was clearfelled because of windblow problems and replanted with mixed native broadleaves.

In 2001 sub-compartment 8d was clearfelled, again because of wind throw problems, and replanted with mixed native broadleaves.

In 2002 a mature stand of Scots Pine, Larch and Norway Spruce was underplanted with mixed broad-leaves in Compartment 3 in the expectation of an early need to replace the conifers.

Sub-compartment 8f was also clearfelled of Sitka Spruce and replanted with native broadleaves before 2004.

In 2003/04 sub-compartment 8j was clearfelled of Sitka Spruce and replanted with Scots Pine in tubes at commercial planting density.

Replacement of the older policy woodland areas was also being anticipated at the same time. For example, from 1996 onwards mature Sycamore, Horse Chestnut and Beech were underplanted with mixed broadleaves in Compartment 3.

The Muirshiel Country Park Management Plan 2004-2009 was a statement of the Regional Park Authority's intention to consciously plan changes to the structure and composition of Muirshiel Country Park's woodlands, anticipating problems and responding to wider conservation agendas, rather than waiting for severe



weather events to intervene and force the hands of the managers.

The Management Plan's vision saw Muishiel Country Park as "a microcosm of Scotland from river's edge to upland moor" and its objectives encapsulated an agenda of naturalisation of the woodlands for educational, recreational, conservation and biodiversity benefits.

Implementation of the 2004-2009 Management Plan, assisted by FCS grants through both the Woodland Grants Scheme (WGS 032000107) and the Scottish Forestry Grants Scheme (SFGS 032900097), resulted in some significant changes, particularly in those compartments most frequently used by park visitors. Works are summarised below.

Compartment 1a saw the near eradication of *Rhododendron ponticum* from its understorey by spraying backed up by manual weeding and selective underplanting.

Compartment 1b also had *Rhododendron* control undertaken, along with selective underplanting.

Compartment 2: eradication of *Rhododendron ponticum* + small scale planting.

Compartment 3: underplanting of canopy established in 19th Century with selected broadleaves, supported by bracken control by spraying and whipping.

Compartment 4: eradication of rampant *Rhododendron* "monoculture" with partial replanting away from the monument viewpoint.

Compartment 5a: eradication of huge stands of mature *Rhododendron* + replanting with Scots Pine, Downy Birch, Rowan and Juniper.

Compartment 5b: manual control of *Rhododendron ponticum* which had been colonising a valuable blanket bog area (with back-up herbicide applications to regrowth); fertilising previously planted Scots Pine; small scale planting of selected broadleaves; heather management by burning and swiping.

Compartment 6a: 0.15ha Sitka Spruce selectively felled and attempts made to control subsequent self-sown colonisation by Sitka Spruce.

Compartment 6b: 0.5ha of Sitka Spruce selectively felled to favour Scots Pine. Further 0.15ha selectively thinned to waste and attempts made to control further spread of self-sown Sitka Spruce by cutting.

Compartment 6c: mature stand of Scots pine underplanted with Juniper and Scots Pine in shelters.

Compartment 8c: area of planted native broadleaves maintained by beating up and weeding.

Compartment 8d: planted with native broadleaved trees and shrubs and then maintained by beating up and weeding.

Compartment 8e: 0.25ha of Sitka Spruce selectively felled to waste to maintain important open ground habitats. Apart from restricted planting and establishment of Scots Pine and native broadleaves in shelters, emphasis remained on controlling invasion by scrub and Sitka Spruce.

Compartment 8g: emphasis also on controlling Sitka Spruce by cutting + maintaining previously planted trees by beating up and weeding.



Compartment 8h: over-mature Norway Spruce plantation was felled, followed by planting and establishment of Scots Pine and native broadleaves.

Compartment 8j: planted with Scots Pine in shelters and then maintained by beating up and weeding.

Compartment 8k: the practice of encouraging this area to regenerate naturally was continued through a programme of controlling Sitka Spruce regeneration and scrub.

Compartment 8m: planted with native broadleaves in tree shelters and then maintained to establishment through a programme of beating up and weeding.

Compartment 9a: previously planted trees established through a maintenance programme including bracken control, beating up and weeding.

Compartment 10c: Rhododendron ponticum cut by machine and cleared spaces replanted with native broadleaves. New stock maintained by beating up, weeding and spraying of Rhododendron regrowth.

Compartment 11a: over-mature Norway Spruce with windblow problems felled and area replanted with native broadleaves in shelters - then maintained by beating up and weeding.

Compartment 12: previously replanted area was maintained to establishment by beating up, weeding and spraying of regenerating Rhododendron ponticum.

These compartment specific works were complemented by a series of other works designed to help people to enjoy and appreciate the woodlands, e.g. 2000m of path upgrading works, bridge construction, design and installation of interpretative signs at 17 locations within the park, production and printing of both A3 and A4 leaflets.

2.3 Species and age

As part of the preparation for this management plan, all of the sub-compartments at Muirshiel Country Park were subject to a field survey to collect data equivalent to that available from the 2011 Renfrewshire Council Woodland Audit (which omitted woodlands within Clyde Muirshiel Regional Park). These data sheets are available separately for consultation.

Analysing the field survey data shows that the largest component is the 6.35ha of the (intermittently) surviving Muirshiel House policy woodlands from the 19th and early 20th Centuries. This belt of woodland covers 21.9% of Muirshiel's 29ha of woodland and lies mainly to the south of the main access drive. It is shown on the FCS Map Viewer Native Woodland Survey of Scotland layer mainly as "lowland mixed deciduous woodland". No single species is dominant but canopy trees exceeding 50 years in age (perhaps 100 in some cases) include non-natives like Sycamore, Beech, Horse Chestnut, Lime, Larch, Scots Pine (dubiously native here), Sweet Chestnut and even Monkey Puzzle. Native veterans include Ash, Pedunculate Oak, multi-stemmed Alder and Wych Elm.

Another significant component is the 5.37ha (or 18.5% of Muirshiel's 29ha) of



woodland which remains under 40-45 year old Sitka Spruce plantation.

Another significant component is the 3.5ha (12.1%) of regenerating "Upland Oakwood" which has been established on former Spruce plantations in the last 10 - 20 years. The most frequent species in this area is Downy Birch but other natives are well represented, e.g. Silver Birch, Pedunculate and Sessile Oak, Rowan, Hazel, Grey Willow and Goat Willow.

2.4 Constraints and designations

The Country Park designation of itself does not pose any constraints but any such site includes countryside access infrastructure, e.g paths, countryside furniture, which would have to be avoided or reinstated following operational works.

Within this same public access context, 2,481m of the paths within Muirshiel Country park have been designated as Core Paths by Renfrewshire Council. These are part of wider networks leading north-west to the disused Barytes Mine on Queenside Muir, northwards to Kilmacolm via Hardridge and eastward to Barnbrock Farm via Windyhill and Ladymuir Community Woodland.

Although not covered by the designation itself, the Renfrewshire Heights Special Protection Area is almost wrapped right around Muirshiel Country Park. In fact, 86% of Muirshiel's 2.9km boundary impinges directly on to the SPA. Therefore the woodland management plan has to recognise potential roles as both buffer zone and entry point to the SPA.

Approximately 2.7ha of the northern fringe of Muirshiel Country Park is covered by peat deep enough to support typical blanket bog vegetation. Carbon sequestration concerns mean that trees should not be planted or allowed to colonise this zone, in case their presence leads to the breakdown of the peat substrate and release of carbon dioxide into the atmosphere. In addition, the UK Forestry Standard requires the avoidance of peat soils over 50cm in depth.

Access for forestry plant and transport vehicles is constrained by the fact that Muirshiel Country Park is located at the end of the 3+ mile single track road which is already in sub-optimal condition and which might deteriorate more quickly under pressure from heavy vehicles.

Within Muirshiel Country Park steep slopes and infrequent operational tracks pose further access constraints for mechanised management works and timber extraction.

2.5 Public access

Muirshiel Country Park has been managed as a countryside recreation, outdoor activities, environmental education and public participation facility since its designation in 1970. Whilst it is the most remote and therefore quietest venue within the Clyde Muirshiel suite of visitor attractions, it still received an estimated total of 35,721 visitors in 2012/13. Therefore public access is a key driver for the woodland management plan.

Today Muirshiel Country Park has a staffed visitor centre with interpretative



exhibitions, classroom facilities, leaflet dispensers, toilets/washrooms, shop and simple catering facilities. As well as acting as a welcoming point for visitors, it plays an important role in acting as the hub for Ranger led activities and self-programming groups. The building attracted 9,844 visitors in 2012.

Beside the visitor centre there is the main car park with space for up to 40 cars. Between this car park and the entrance are five smaller car parks with a combined capacity for at least another 50 cars. A vehicle counter installed outside the visitor centre recorded 13,470 vehicles in 2012/13.

There are 5,572m of path within the Country Park, of which 2,481m were designated as Core Paths by Renfrewshire Council in 2009. A people counter at the start of one of the more challenging routes - to Windy Hill - recorded 16,640 walkers in 2012/13.

In recent years the Country Park has become popular with mountain bikers as a safe, entry level facility for family groups, in particular.

2.6 Woodland Protection

Plant Health (including tree health and invasive or noxious plants)

Rhododendron ponticum has been dramatically reduced through the implementation of the 2004-2009 Management Plan and is being controlled effectively through ongoing management by estate workers, supervised volunteer groups, etc. The species persists at a low level, however, and constant monitoring and remedial action is required to ensure that it does not become widely established again.

The three invasive alien plant species which cause most problems in Renfrewshire - Japanese Knotweed, Himalayan Balsam and Giant Hogweed - are all absent from Muirshiel Country Park.

Bracken and Rosebay Willowherb both occur sporadically and achieve local dominance in a small number of compartments. Bracken was controlled in Compartments 3 and 9a as part of the 2004-2009 Management Plan. No evidence was found during 2015's fieldwork, however, that either species was holding back regeneration of tree stocks.

The most serious problems found have, in fact, been caused by Sitka Spruce self-seeding into locations where it potentially damages the regeneration of native broadleaves or valuable open ground habitats.

As yet there have been no signs of Chalara dieback found in any Ash trees.

Similarly, there has been no evidence of Phytophthora ramorum infecting the Larch trees.

Deer, Livestock and other mammals

Roe Deer are present in Muirshiel Country Park but in low numbers. It is difficult to find signs of damaged trees, the only evidence of their presence apart from droppings found during 4 days of fieldwork in September and October 2015 was a single brashed Rowan sapling.



Grey Squirrels
Grey Squirrels are present but in relatively low numbers compared to urban fringe woodlands in Renfrewshire. Apart from sporadic finds of squirrel-chewed Spruce cones, no tree damage was seen during the 4 days of fieldwork.
Water & Soil (soil erosion, acidification of water, pollution etc.)
<p>The presence of actively growing peat along the north-east fringe of the site has to be considered in current and future plans.</p> <p>Changes anticipated through implementation of proposals in this management plan are too small scale to effect water acidification at a catchment level. Best forestry practice will be followed, however, including proposals to reinstate a riparian buffer zone along the small watercourse which flows through Compartment 9. This has become completely overshadowed by uncontrolled Sitka Spruce spread in this vicinity and the burn is starting to lose its marginal flora due to low light levels, leaf litter accumulations and presumed soil changes.</p> <p>Felling will be organised to minimise the risk of particulate pollution of the small watercourses which feed into the River Calder.</p> <p>No new drains will be excavated as part of the replanting programme in treated compartments.</p>
Environment (flooding, wind damage, fire, invasive species etc.)
<p>The changes anticipated through this management plan are too small scale to have a significant impact on flooding issues associated with the River Calder. the Country Park should, however, be seen as a model for sound environmental land management practices. Therefore, protecting the blanket bog habitats along the northern fringes of the Country park will ensure active Sphagnum moss growth and its water retention capacities are retained at a local level.</p> <p>Wind damage to canopy cover trees has been a recorded problem for the past 15 years and management proposals include measures to reduce the amount of vulnerable Sitka Pruce stands in the 40+ age group.</p>
Climate Change Resilience (provenance, lack of diversity, uniform structure)
<p>In line with the aim to naturalise the woodland, native trees will be sourced from as local a provenance as is practicable.</p> <p>Proposed works will further diversify the structure of the woodland in Muirshiel Country park and provide resulting biodiversity benefits.</p>

3. Vision and Objectives

Tell us how you intend to manage the woodland in the long term and your goals for its development.

3.1 Vision

Describe your long term vision for the woodland(s).

The 2004-2009 Woodland Management Plan stated the vision for the country park as it becoming a "microcosm of Scotland from river's edge to upland moor,



for the benefit of the Park's visiting public and as an example of sustainable recreational and conservation development for the 21st century".

Within this general context, the vision for the woodlands in the 2015-25 period is that they should be managed in ways which continue and consolidate the naturalisation process which has been happening since the Country Park was incorporated into Clyde Muirshiel Regional Park in 1990 and which was accelerated through the implementation of the 2004-2009 Management Plan.

3.2 Management objectives

Give your objectives of management and also how you will manage the woodland sustainably. Your objectives should be specific and you should also be able to measure their outcomes.

No.	Objectives (including environmental, economic and social considerations)
1	Increase the % of woodland at Muirshiel Country Park which is categorised by FCS as either "native" or "nearly native" in the Native Woodland Survey of Scotland. The figure currently stands at 15.68ha or about 54% of Muirshiel's woodland.
2	Maximise the contributions which the woodlands at Muirshiel Country Park make to the implementation of the Scottish Biodiversity Strategy, the Local Biodiversity Action Plan and the Renfrewshire Local Green Network, whilst providing a key buffer zone to the Renfrewshire Heights Special Protection Area. (86% of Muirshiel Country Park's 2.9km boundary abuts directly on to the SPA).
3	Further reduce the extent of mature Sitka Spruce stands within the Country Park by clear felling selected compartments to harvest timber economically, mitigate against windblow, minimise public safety hazards, diversify woodland habitats, remove the risk of acidification of watercourses flowing through the site and improve the visitors' experience of the Country Park. At the same time it will be important to continue removing self-sown Sitka Spruce which has been spreading into woodland and open ground habitats of greater value to biodiversity.
4	Maximise public enjoyment and the Renfrewshire Community Plan benefits provided by the woodlands by continuing to maintain the 5,572m of path at Muirshiel Country Park, plus the ancillary access infrastructure (seats, signs, etc.), whilst providing outdoor education, training and volunteering opportunities for individuals and organised groups, particularly where these involve practical participation in woodland management.
5	Maximise the opportunities for Renfrewshire Council/Clyde Muirshiel Regional Park Authority to benefit from external funding support, available principally through FCS's Forestry Grant Scheme 2014-2020 - particularly the Habitats & Species option of WIG capital grants + the Sustainable Management of Forests/Public Access - Rural Woods annual payments.

4. Stakeholder Engagement (if required)



This may be required depending on the work you intend on carrying out in the woodland and the constraints or designations that have been identified.

Individual/ Organisation	Date contacted	Date feedback received	Response	Action
FCS Conservancy				
SNH Area Officer				
User group representatives				
CMRP Authority and Consultative Group				

5. Analysis and Management Strategy

Analyse the information from the previous sections and identify how to make best use of your woodland and its resources to achieve your objectives.

5.1 Constraints and Opportunities

Using the table below analyse any issues raised or relevant features within your woodland and record the constraints and opportunities.

Feature/Issue	Constraint	Opportunity
Physical environment of site	Muirshiel has an elevated location, rising quickly across the site from c200m to 274m. It is also exposed to westerly gales. Drift geology shows many of its soils are shallow and on steep slopes. Therefore, FCS Map Viewer shows that the site is marginal or unsuitable for several woodland types which otherwise would be suitable for growing in Renfrewshire.	Muirshiel Country Park has a south facing aspect, meaning that it has a microclimate more suitable for tree growth than might be expected from its altitude, general exposure and poor soils. Careful planning and design mean that a wide range of trees can be grown, e.g. Victorians successfully grew Sweet Chestnut, Monkeypuzzle, Yew, Horse Chestnut.
Works access	Muirshiel Country Park located at end of 3+ mile single track road with limited passing places. Some sub-compartments	"Market testing" to gauge level of interest from timber harvesting industry.



	have difficult access for works plant and vehicles.	
Public access / use of site	Country Park paths well used by the public. Some paths are designated core path routes, designed to access destinations further afield.	Use felling works as opportunity to upgrade paths in affected compartments, e.g. Orblis Hill, as part of comprehensive project package. There may be opportunities to build in new recreational activities on the back of woodland management works.
Changes in local government since the last management plan.	Since 2010 public sector savings mean reduced resources available to manage Country Park, in terms of both staff and capital budgets.	Investigate partnership approach in the longer term.
Peat	Estimated 2.7ha of Country Park lies over active peat in which tree establishment should not be permitted.	Emphasise how woodland management is being shaped to optimise environmental benefits.
Biodiversity	Several species and habitats from the Scottish Biodiversity Strategy and LBAP priority lists recorded at Muirshiel Country Park.	Tailor management plan accordingly.
Carbon management	Minimise carbon dioxide emissions arising from management works.	Renfrewshire Council has an ambitious Carbon Management Plan covering the period 2014-2020. Council's Carbon Management Team has investigated options for swithing institutional boilers to biomass, specifically woodchip. Also interested in opportunities for locally sourced wood chip to contribute towards a sustainable biomass fuel



		<p>stream, with potential benefits for local employability. Biomass Renfrewshire Feasibility Study currently underway.</p> <p>Peat "restored" will contribute towards Council's carbon balance - saving figures to be obtained.</p>
Additional detail:		

5.2 Management Strategy

Following your analysis, provide a broad statement describing your management strategy. Consider all aspects (economics, access, biodiversity, landscape) and pay particular attention to your silvicultural strategy for meeting your management objectives.

The main focus for the management strategy is the continuation of the incremental naturalisation of the woodland at Muirshiel Country Park.

The small size of Muirshiel Country Park and the awkwardness of its operational access probably precludes it economically as a commercial forestry resource.

Even within the context of steering the woodland structure towards a more natural woodland, economic factors will need to be accommodated. Previous reliance on an in-house maintenance squad cannot be sustained due to reductions in staffing levels. Therefore, commercial contractors will need to be used for felling works in particular. This consideration may need to be extended to the replanting works, as the Country park no longer has its own site-dedicated Countryside Ranger Service and the wider Clyde Muirshiel Regional Park Ranger Service has been significantly depleted in numbers since 2010. therefore works have to be selected and designed with a view towards economic viability to minimise the net deficit for Council budgets.

Management will be designed to maintain and preferably improve public access over the period of the management plan.

Biodiversity conservation lies at the heart of this management plan, with interventions to reduce the level of non-native canopy, control the levels of colonisation by non-native tree species and to mould open ground habitats to maximise benefits for vulnerable blanket bog species and habitats.

6. Management Proposals

Tell us the management operations you intend to carry out over the next 10 years to help meet your management objectives for the woodland.

It is intended that concentrated management operations will be restricted to



compartments 6a, 6b, 8b, 8e, 8g and 9. Detailed felling and restocking proposals for these six sub-compartments are shown in a separate table but a summary of the management operations is included below.

Felling proposals in the compartments prioritised for treatment are as follows:

Compartment 6a: fell an estimated 0.55ha of Sitka Spruce (mostly self-seeded spread from other parts of the country park); approximately 900 trees with average age 15 years; notional volume of 100 cubic metres but probably not much saleable timber present.

Compartment 6b: fell an estimated 1.4ha of 30 year old Sitka Spruce; 2240 trees with estimated 703 cubic metres of timber.

Compartment 8b: fell 2.00ha of Sitka Spruce c45 years old and showing wild blow problems; 3200 trees with 1000 cubic metres of timber.

Compartment 8e: fell to waste 1.03ha of self-seeded Sitka Spruce regeneration, mostly in 0-15 year age range. Estimated 350 trees totalling less than 50 cubic metres of timber.

Compartment 8g: selectively clear to waste 0.45ha of Sitka Spruce, c15 years old; estimated 700 trees with notional 100 cubic metres of timber.

Compartment 9: selectively fell 0.7ha of Sitka Spruce around small watercourse and southern edge; c1120 trees about 15 years old affected with estimated volume of 200 cubic metres.

Proposed restocking

Compartment 6a: 0.26ha on peat to be left unplanted; 0.29ha to be planted @ 1,100 stems/ha with broad-leaved species representative of "Upland Birchwood" NVC type.

Compartment 6b: 0.30ha on peat to be left unplanted; 0.2ha to be planted @ 2,500 stems/ha with Scots Pine to reinforce plantation in 6c; 0.2ha to be managed OG improving path sight lines; 0.7ha to be planted @ 1,100 stems/ha with "upland birchwood" and "upland oakwood" mixed broadleaves

Compartment 8b: 1.6ha to be replanted @ 1,100 stems/ha with "Upland Birchwood" and "Upland Oakwood" native tree mixtures; 0.4ha to be designed open ground to improve path sight lines.

Compartment 8e: no replanting as sub-compartment comprises peat >500mm deep.

Compartment 8g: 0.45ha to be replanted at 1,100 stems/ha with "Upland Oakwood" tree mixture.

Compartment 9: 0.5ha to be retained as open ground as active sphagnum lawns present, indicating deep peat, to naturalise woodland edge and to allow more light into watercourse. Natural regeneration to be encouraged over 0.2ha up to 1,100 stems/ha of native broadleaves.

Other compartments: monitoring, maintenance, weeding and low key interventions to be programmed in order to retain benefits gained during 2004-2009 Management Plan.



Other activities for public benefit: to be confirmed.