

SILVER WOOD
MANAGEMENT PLAN
2012 to 2017
(Draft)

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1.0 Introduction and purpose of the management plan

Silver Wood, as part of the Borough Council's Woodland Estate, helps to make Rotherham a more attractive, enjoyable and healthy place to live, work and visit. To ensure these benefits are continued for everyone in the Borough it is vital there is an integrated and sustainable approach to the management of this estate, including Silver Wood. Therefore, this management plan provides a framework and a long term commitment to the careful stewardship of this valuable woodland. The plan provides a site description, assessment and evaluation of important features and interests, discussion of options, aims and objectives, together with a detailed work programme and review process. The plan covers a rotation period of around 120 to 150 years for the main broadleaved species, principally beech, but also the species with less of a presence such as Sessile oak and ash. The aims and objectives will undertake to cover at least one rotation length. Implementation will be achieved with detailed plans of operations reviewed every five years and a broader statement of intent for a twenty year period. It is a vital document in encouraging community involvement and helping to achieve best practice. In very general terms it explains what we want to achieve and why we want to do it, together with when and how we intend to do the work. Also, it promotes the vision for the site, which is as follows and reflects local, regional and national policies.

'Silver Wood protected and conserved as community woodland for future generations'.

1.2 Overview of the proposals during the 2012 to 2017 management plan

The preparation of this management plan has revealed that a package of work is necessary to begin a process of restructuring in the woodland to increase diversity of tree ages, ground flora and wildlife habitats. The principal works included in this, the first five year work programme, to begin to achieve this are as follows:

- Thinning of the beech plantation area by removing up to 20% of the trees by volume to allow the remaining best formed trees room to grow and develop.
- Create one 0.02 hectare felling coup in the beech area to encourage natural regeneration to begin to establish as the next generation of trees.
- Coppicing of 4 small parcels along the southern edge of the woodland to increase habitat diversity in the woodland.

2.0 General Information

National Grid Reference: SK483937

Area: 1.64 hectares (4.0 acres)

Owner: Rotherham Metropolitan Borough Council

2.1.1 Location

Silver Wood is situated on the edge of the village of Ravenfield on a gently sloping, south facing hillside between the residential development of Woodlathes, Sunnyside and Hollings Lane. The woodland is highly visible from Hollings Lane, Ravenfield and the residential area of Sunnyside making the woodland locally important in landscape terms as well as an important recreational resource. Hollings Lane adjoins the northern boundary, the access road for the residential development of Woodside Court forms the eastern boundary, a recent residential development forms the southern boundary and the western boundary is shared with privately owned woodland.

2.1.2 Ownership Information

Ownership of the woodland passed to Rotherham Borough Council on 15th April 2008 from Persimmon Homes as part of a Section 106 agreement transferring this and other land to the authority to be used as public open space. Previously the woodland was owned by Crystal Guina Lucy Macnam until 19 May 1952 when the property was sold to the National Coal Board. Ownership then transferred in title to Beazer Homes Doncaster Limited on 8 October 1996.

2.1.3 Formal designations and constraints

Silver Wood is included within the Forest Stewardship Council (FSC) certification of Rotherham Borough Council's woodland estate. Certification is awarded when it can be demonstrated that management is in line with the United Kingdom Woodland Assurance Standard.

Silver Wood, together with the neighbouring Gulling Wood, is included on the Nature Conservancy Council's Ancient Woodland Inventory (1986) as replanted ancient woodland.

The site is designated as Green Belt in Rotherham Metropolitan Borough Council's Unitary Development Plan.

The woodland is protected by a Rotherham Metropolitan Borough Council Tree Preservation Order No. 4 1997 (W1).

Silver Wood is included as a Local Wildlife Site.

The woodland falls within the Coal Measures Natural Area, as defined by English Nature (1986).

One public footpath (Ravenfield No. 6 dedicated in 1952) crosses the eastern end of the woodland. A second public footpath (Ravenfield No. 11 dedicated in 1952) crosses immediately to the west of the woodland boundary.

The woodland supports animal and plant species protected by the 1981 Wildlife and Countryside Act, a number of animal species are protected by the Conservation (Natural Habitats, & c.) Regulations 1994 ('The Habitats Regulations') and a range of species are included in the UK Biodiversity Action Plan (HMSO, 1995).

The site is constrained by Green Belt, Countryside Study and Unitary Development Plan policies related to its protection from development.

A Yorkshire Electricity pole located in the north east of the site has underground cabling associated with it. A low voltage Yorkshire Electricity line also passes along part of the northern boundary with Hollings Lane.

Silver Wood lies within the South Yorkshire Community Forest Area, one of twelve community forests in England and Wales.

2.1.4 General description of the property and its woodland

The area of Silver Wood owned by Rotherham Borough Council and subject to this management plan is small in comparison to the overall woodland complex that

comprises the privately owned area of Silver Wood and Gulling Wood. It is an ancient woodland site heavily modified by plantation forestry. This is known as plantation on an ancient woodland site (PAWS). The majority of the woodland is characterised by uniform even-aged beech established around the beginning of the twentieth century. Occasional other tree species include sycamore, sweet chestnut and Sessile oak. Little management work in the form of thinning has taken place in the last forty years or so. Consequently, the trees are tall, drawn and of a poor form, there is a very limited shrub layer and no field layer over much of the site. The eastern and southern edges of the woodland have slightly more structure with evidence of the semi natural origins still visible. There is a greater diversity of native tree species with ash and Sessile oak present. Holly and hawthorn contribute towards a better developed shrub layer and bluebell, dog's mercury, wood anemone and wild garlic are common in localised areas. The southern woodland boundary is damp. The diversity and value of the woodland edges is still, however, relatively limited because of the adjacent beech planting.

The woodland is well used for informal recreation by local people for walking, commonly dog walking. There is a good footpath network for the size of the woodland. A link path between Hollings Lane and the Woodlathes housing development was surfaced around 2003. This provides a valuable walking route between Woodlathes and Ravenfield.

The woodland is important locally in landscape terms being next to Hollings Lane, on the edge of Ravenfield Common and the Woodlathes housing development at Sunnyside.

Biodiversity records for the woodland date back to 1977. However, records are limited although a number of BAP species and ancient woodland indicator species are present.

2.2 Environmental Information

2.2.1 Physical

(a) Hydrology

There is a damp area along the southern boundary of the woodland that resembles a ditch. Although it can become boggy in places during wet weather it does not contain running water.

(b) Topography

The woodland slopes from the northeast towards the southwest, quite steeply initially, but becoming less so to a point along the western boundary where it becomes flat. There are locally very steep areas in the east of the site as a result of old quarrying works.

(c) Geology

The woodland lies on Dalton Rock on the Upper Coal Measures sandstone.

(d) Pedology

The soils are thin and moderately acidic. The change in composition of the woodland over the years i.e. the loss of the shrub and field layer across much of the sloping part of the woodland has resulted in accelerated leaching of the soils. The pH is around pH 5.0. The soils in the lower parts along the southern boundary are gleyed on account of the intermittent water logging resulting in a lack of oxygen.

(e) Climate

The following information was provided by the Weston Park Museum, Sheffield (2002), which is the nearest meteorological station to the site. The figures are based on 30 year averages.

Season	Temperature (Celsius)	Rainfall (mm)	Sunshine (hours)
Winter	Mean 4.8 Max. 7.5 Min 2.1	Mean 73 Total 150	Mean 68.3 Total 205
Spring	Mean 11.3 Max. 15.3 Min 7.2	Mean 62 Total 186	Mean 164 Total 492
Summer	Mean 13.5 Max. 19.5 Min 11.5	Mean 59.3 Total 178	Mean 169.7 Total 509
Autumn	Mean 7.3 Max. 9.9 Min 4.6	Mean 81.7 Total 245	Mean 58.3 Total 175

2.2.2 Biodiversity

This section summarises the main vegetation communities, habitats and significant floral and faunal species recorded from Silver Wood. A full list of species recorded at the site can be found in Appendix 1. The main vegetation communities present at the site are identified and classified using the National Vegetation Classification (NVC) system. From this information any UK, Regional or Local Biodiversity Action Plan (BAP) priority species or habitats present at the site will be identified and considered fully in the management plan.

The UK Biodiversity Action Plan (BAP) highlights UK habitats and species that are priorities for conservation because they are scarce, rapidly declining or highly threatened. The BAP list recognises priority species and habitats and species of conservation concern. These lists include habitats and species of which the UK has a significant amount of the Global or European resource.

In order to deliver the UK BAP targets the Action Plan needs to be implemented at a local level. Local Biodiversity Action Plans (LBAPs) identify species and habitats that are scarce, rapidly declining or threatened in the local area and take action to protect them. Any UK BAP Species and habitats present in the local area should be LBAP priorities, however LBAPS will not be constrained to the UK lists and will consider species and habitats of local significance. The Local BAP for Rotherham has been approved by Rotherham Borough Council. Future management of the site will aim to deliver the Local BAP.

To bridge the gap between the UK and Local BAPs and effectively deliver biodiversity a regional approach enables the grouping of areas with similar land use history and ecological character using English Nature's Natural Areas (see section 2.3). Any habitats and species identified as being priorities, or of conservation concern in the UK BAP, or conservation features of the Coal Measures Natural Area (English Nature 1994) will be

considered fully in the management plan. Future management of the wood will aim to contribute towards Local and National Biodiversity Targets.

2.2.2.1 The biodiversity resource

(a) Flowering plants, ferns and bryophytes

The records for the woodland are recorded principally from 1977, 1997 and 2002. There are 96 species recorded.

Although the number of records for flowering plants, ferns and bryophytes are fairly limited they probably quite accurately reflect this category of the woodland's natural history owing to the very limited shrub and field layer present across the site.

Table 2.1 Botanical species recorded at Old Spring Wood which are indicators of or have an affinity with ancient semi-natural woodland

Common Name	Scientific Name	Indicator	Affinity	
			Strong	mild
Bluebell	<i>Hyacinthoides non-scripta</i>	*		
Dog's mercury	<i>Mercurialis perennis</i>	*		*
Ramsons	<i>Allium ursinum</i>	*		*
Wood-sedge	<i>Carex sylvatica</i>	*	*	
Wood anemone	<i>Anemone nemorosa</i>	*	*	
Wood melick	<i>Melica uniflora</i>	*	*	
Yellow archangel	<i>Lamiastrum galeobdolon</i>	*		

Affinity: Based on ancient woodlands in Lincolnshire (Peterken, 1993)

Indicator: Indicators of ancient woodlands in South Yorkshire (Jones, 1995)

(b) Fungi

The records for fungi are limited to only two; tar-spot of sycamore (*Rhytisma acerinum*) and sycamore mildew (*Sawadaea bicornis*). The latter is common on several *Acer* species. However, given that the only *Acer* recorded from Silver Wood is sycamore (*Acer pseudoplatanus*) then it is likely to have been recorded from that species.

(c) Invertebrates

Twelve invertebrate species have been recorded, mostly from 1997 and 2002. Of these three are arachnids and four are from the Lepidoptera order of insects.

(d) Amphibians, fish and reptiles

There are currently no records for amphibians, fish or reptiles.

(e) Birds

Thirty one bird species have been recorded from the woodland area. These records are likely to refer to flyovers as well as resident populations. These records are more recent than some of the other faunal and floral records for the woodland, most records are from between 2001 and 2005. Quite a number are associated with gardens such as blackbird, robin, song thrush, some tit species, and a number of finches. Kestrel (1997) and sparrowhawk (2005) have also been recorded.

Table 2.2 Resident or Breeding Bird Species of Conservation Concern

Common and scientific name	Status	Habitat requirements	Threats
Sparrow hawk <i>Accipiter nisus</i>	RMBC key species	Hedges and scrub to nest. Use rough ground and glades to prey on, swoop and surprise their prey (small birds).	Persecution and egg collection. Removal of hedgerows. Numbers are on increase after the dramatic decline in the 1960s following organophosphate poisoning.
Lesser spotted woodpecker	UKBAP	Feed on invertebrates living in dead wood.	Removal of standing dead wood would threaten nest sites. Removal of fallen dead wood would threaten feeding.
Dunnock <i>Prunella modularis</i>	UKBAP BTO(M)	Scrub and woodland edge.	Uncertain, cold winters and farming practices are contributory.
Song thrush <i>Turdus philomelos</i>	UKBAP Priority BTO & RSPB red lists	Woodland edge preferring areas adjacent to farmland and gardens to feed on molluscs and snails.	The species has been in long term decline nationally. This trend may be linked to intensification in agricultural practices.
Blackcap <i>Sylvia atricapilla</i>	UKBAP	Deciduous woodland with moderate scrub, parks and gardens.	Population has been steadily rising since 1950s.
Chiffchaff <i>Phylloscopus collybita</i>	UKBAP	Deciduous woodland with good shrub layer, commons, copses and tall hedges.	Drought conditions in their over wintering habitats in Africa.
Willow warbler <i>Phylloscopus trochilus</i>	BTO(M)	Young woodland, woodland edge and scrub.	Sharp fall in woodlands in 1980s. Reasons are unclear.
Goldcrest <i>Regulus regulus</i>	BTO(H)	Conifer woodland.	Harsh winter weather.
Kestrel <i>Falco tinnunculus</i>	UKBAP	Wide range; including woodland edge and short grass for hunting.	Organophosphate pesticides, habitat loss and decline of prey.
Willow tit <i>Parus montanus</i>	UKBAP	Conifer woodland, wet woodland areas, dense cover.	Dependant on good seed years.
Coal tit <i>Parus ater</i>			
Blue tit <i>Parus caeruleus</i>			
Great tit <i>Parus major</i>			
Treecreeper <i>Certhia familiaris</i>	UKBAP	Woods, parks and gardens.	Severe winter weather, particularly ice on trees.
Greenfinch <i>Carduelis chloris</i>	UKBAP BTO(M)	Parks, hedges, woodland edges and farmland in winter.	Farming practices, particularly organochloride seed dressing.
Goldfinch <i>Phylloscopus trochilus</i>	UKBAP	Shrubs, bramble and woodland edge.	Farming practices, particularly organochloride seed dressings.
Great spotted woodpecker <i>Dendrocopos major</i>	UKBAP	Broadleaf and conifer woodland.	Lack of larger trees for nesting sites.
Blackbird <i>Turdus merula</i>	RSPB amber list	Wide range of nesting and feeding preferences. territorial	Loss of habitat through agricultural intensification.

Common and scientific name	Status	Habitat requirements	Threats
Garden warbler <i>Sylvia borin</i>	UKBAP	Deciduous mixed woodlands, woodland edge and glades	Changes in weather in Africa
Brambling <i>Fringilla montifringilla</i>	UKBAP	Beech mast is critical for the species.	Last of food sources in poor mast years combined with harsh winters.
Mistle thrush <i>Turdus viscivorus</i>	RSPB amber list	Woodlands, parklands and gardens.	

SEPC - Species of European Conservation Concern
RSPB red list species; highest conservation priority requiring urgent attention
RSPB amber list; conservation concern due to rapid declines in population
RSPB green list; no conservation concern

(f) Mammals

There are currently no mammalian records for the site.

2.2.3 Cultural

2.2.3.1 Legal obligations and constraints

(a) Conditions attached to purchase of woodland

A number of conditions are attached to the property, principally in relation the rights of British Coal for mines and mineral extraction. These are described briefly here. The title deeds should be referred to for further information.

- All interests in any mines or minerals under the property remain vested in British Coal, together with all rights, powers and easements exercisable over or in relation to the land by the owner.

(b) Forestry Acts

Any tree works must be in accordance with the Forestry Acts (1967, as amended). Therefore a Felling Licence will be required if felling more than 5 cubic metres of timber a calendar quarter, or 3 cubic metres a quarter if the timber is to be sold. These restrictions apply across the whole woodland estate, not just in Silver Wood. A licence is only required in respect of trees that have a diameter at breast height of greater than 8 cms or, in the case of thinnings 10 cm at breast height or 15cm at breast height when coppicing. Any silvicultural works will require a Felling Licence from Forestry Commission. Also, all future silvicultural management will aim to be sustainable and meet the criteria laid out in the UK Forestry Standard (2004), the Strategy for England; Trees, Woods and Forests (2007) and the UK Biodiversity Action Plan (1994).

(c) Forestry Stewardship Council

Rotherham Borough Council was awarded the Forest Stewardship Council (FSC) certificate in March 2003. This was following an audit of the Council's past and present management of its woodland estate, including amenity, wildlife, timber production and community involvement interests. Certification also demonstrates that there is an integrated, responsible and sustainable approach to the future care and development of the woodlands. The Council is committed to managing its woodland estate, including Silver Wood in accordance with FSC principals and criteria for a minimum of five years.

To ensure these high standards are maintained the Council will be strictly monitored to ensure compliance. Following an initial inspection six months after the date of certification, audits are carried out on an annual basis as a minimum. The Council may be required to carry out corrective actions if management standards fall below FSC requirements. Serious and persistent non-compliance may result in expulsion from the scheme. The Council successfully completed its second full audit in October 2007, securing its certificate until 2012. Interim audits in 2008, 2009, 2010 and 2011 identified no corrective actions. Arrangements are being made at present to ensure that certification continues beyond October 2012.

(d) Wayleaves and easements

A Yorkshire Electric Distribution Limited (YEDL) low voltage line runs along part of the northern boundary close to Woodside Court. A YEDL pole in the northeast corner of the site marks the point where cables go underground (see figure 1.4).

(e) Public rights of way and other access

There is one public footpath (Ravenfield No.6) that passes from north to south at the eastern end of the woodland. The footpath links the Woodlathes housing estate with Hollings Lane. However, the definitive route is much less commonly walked than a parallel path that has been surfaced in the past. The non-definitive route exits the woodland onto Hollings Lane at a much safer point than the right of way, perhaps explaining the preferred use. This is an important link path for local people. There is a second public footpath immediately to the west on the outside of the woodland boundary (Ravenfield No.11). Both were dedicated in 1952. There are also a couple of discretionary paths over the site. Collectively they allow for adequate access throughout the woodland. See figure 1.4.

(f) Insurance

Rotherham Borough Council is not insured for any damage or loss to any of its woodland sites. However, it is accepted that, wherever possible, as part of routine maintenance obligations the cost of repairs and replacements will be met by the council.

(g) Protected species

Wildlife and Countryside Act 1981 (as amended)

There are protected species recorded in the woodland, including bluebell and any nesting birds. Their protection must be taken into account in the management of the woodland. The legislation concerned with their protection is the Wildlife and Countryside Act 1981. Broadly the Act makes it an offence (subject to exceptions) to:

Intentionally kill, injure or take any wild bird or their eggs or nests.

Intentionally kill, injure, or take, possess, or trade in any wild animal listed in schedule 5 of the Act and prohibits interference with places used for shelter or protection and to disturb these places.

Pick, uproot, trade in or possess (for the purposes of trade) any wild plants listed in schedule 8 of the Act.

Conservation (Natural Habitats, & c.) Regulations 1994 ('The Habitats Regulations')

In addition to the above, amendments to the Habitat Regulations came into force on 21 August 2007, increasing the legal protection given to a schedule of European Protected Species in England. In respect of Silver Wood this includes all species of bat present in the woodland. The other species listed are unlikely to ever occur. However, there is water in the neighbouring area of woodland. Should great crested newt be present in that area then it is possible that the newts may make use of the council owned area, such as during breeding periods.

The amended regulation includes any damage or disturbance of a breeding site or resting place of a European Protected Species as an offence, whether it is accidental or deliberate. Therefore, how the Council's woodlands are managed and how forestry operations are carried out will require very careful consideration and planning. The risks of committing an offence may be reduced by making the necessary checks and surveys, modifying operations and following good practice guidance. Where it appears there is no satisfactory alternative, a licence application will be submitted to the Forestry Commission. The licence will be issued by Natural England. Applications needed for non forestry operations (generally not subject to the terms of the Forestry Acts) e.g. tree survey and demolition of building etc will be made directly to Natural England. Licences may be approved with conditions attached.

Table 2.3 European Protected Species (EPS) inhabiting woodland.

This table establishes the likelihood of EPS inhabiting Old Spring Wood, describes their habitat, potentially damaging activities to habitat and measures to avoid damage.

Species	Is woodland close to current known species range?	Are there records of species in the woodland?	Woodland habitats types used by the species.	Potentially damaging operations for the species.	Risk of undertaking potentially damaging operations in this woodland.	Good practice measures for the species to avoid breach of the regulations. See Forestry Commission and Natural England's good practice guidance for each species.
All 17 species of bat	Yes	No	Anywhere bats can take shelter. <u>Roosting requirements:</u> In any tree with holes, cracks crevices or loose bark. Broadleaves 80 years and over are most attractive. <u>Foraging requirements:</u> water, wet woodland, woodland edge, open areas such as parkland, glades, hedgerows and fields.	Felling of any trees with actual or potential roost sites. Opening up of the canopy around actual and potential roost sites. Removal of sheltering trees close to roost sites. Changes to flight patterns for foraging (e.g. clear felling). Damage to rich foraging areas.	Very high	Identify and protect trees with confirmed roosts. Employ Sheffield Bat Group to assist with this. Protect buffer trees also. Complete walk over survey to determine numbers of potential roost sites across the woodland. If there are only a small number of potential roost sites protect as above. If potential roost site trees are abundant a small percentage may be felled in any 10 year period. Avoid disturbance to flight paths and foraging areas. Increase volumes for standing and fallen dead wood. Identify areas of low intervention management. Good ride management.
Dormouse	May be present in a neighbouring borough.	No	Broadleaved woodland with plenty of cover from coppice and shrubs/scrub and a plentiful food source from nuts and fruits.	Disturbance to habitat from operations such as felling, coppicing and extraction, particularly during the	Low	Only undertake small scale operations. Thinning is less destructive than felling. Least damaging times of year are pre-breeding and the active period

				breeding season. The scale of the disturbance relative to the size of the woodland will also have an affect.		after breeding but before hibernation. The creation of dense scrubby and young coppice areas will benefit the species greatly.
Great crested newt	Yes	No	<u>Breeding sites.</u> Shallow ponds that warm up, together with small areas of standing water such as wheel ruts. Pond plants suitable for egg laying e.g. water plantain. <u>Resting and hibernating sites.</u> Dense undergrowth, beneath timber and log piles, tree roots, animal burrows and under stones and in dry stonewalls.	Anything that will cause disturbance to terrestrial habitat, particularly within 100 metres of ponds such as timber harvesting and extraction.	High	Limit operations in proximity to breeding ponds (up to 100 metres). Avoidance of trafficking through dense scrub. Identify areas that will not be disturbed during operations that will act as refuges. This makes re-colonisation by newts into other areas more likely following operations. Thinning and felling will increase opportunities for newts as the shrub layers improves following increased light levels. If timber is to be extracted stack well away from terrestrial habitat to avoid stacks being used as resting places.
Otter	Yes	No	Wet woodland, carr, thick scrub and quiet woodlands generally within 50 metres of rivers, canals, ponds, lakes and wetlands. Small streams and ditches are used as foraging grounds and corridors.	Sudden opening up of quiet areas for recreation. Felling, coppicing, extraction and other disturbing operations close to corridors, especially within 50 metres may damage holt and resting places.	Moderate	Avoid operations and trafficking within 50 metres of holts. Phase felling and coppicing works in corridors. Do not stack timber close to riparian corridors unless it is intended to be used as habitat piles. Changes to access for recreation should be planned carefully to avoid creating paths in sensitive areas.
Smooth snake and sand lizard	No	No	Not present in the north of England. See Forestry Commission and Natural England's guidance notes.	Not applicable in South Yorkshire	No risk	Not applicable in South Yorkshire.

(h) Artificial structures

Boundaries – refer to Figure 1.5.

The shared southern boundary with the residential properties on the Woodlathes estate is fenced with fencing erected and maintained by the individual property owners. The western and northern boundaries are open. The eastern boundary is marked with a low wet stone wall.

Roads

There is an old tarmac roadway down the western boundary (outside the boundary of the site). The surface has broken up with age. However, it would be ideal for management access, particularly the extraction of timber.

2.2.3.2 Site safety

In woodlands where public access is permitted, issues concerning site safety and conflict of interest must be highlighted and addressed to ensure risk to woodland users of accidents is minimised. Identified here are possible safety concerns for woodland users.

(a) *Dangerous trees*

Trees are living, dynamic structures which undergo a number of stages in life, including decline and senescence. Die back of branches will occur naturally at some point in the life of a tree and trees may become infected with different species of fungi that can have the capacity to cause decay. Trees are also exposed to the natural elements such as wind, lightning and snow. Trees in woodlands with public access may also be subject to vandalism. Both biotic and abiotic damage has the potential to weaken part of, or the whole tree making the tree vulnerable to partial or whole collapse. In areas where people or property are present then the tree could be considered dangerous. It is the responsibility of tree owners to ensure their trees do not pose a threat to people or property by carrying out inspections and undertaking the necessary remedial work to maintain trees in a safe condition.

(b) *Natural features - slopes and quarries*

The site slopes fairly steeply from north east to south west, though not enough to be a safety concern. There are some localised steep slopes in the east where there is evidence of possible old quarrying.

(c) *Manmade hazards*

Rope swings in the woodland appear from time to time but aren't too common because of the limited and high branching structure to most of the trees that makes them unsuitable.

(d) *Flytipping and dangerous rubbish*

Flytipping is fairly uncommon in the woodland. Occasionally bins are taken from domestic properties and set alight in the woodland.

(e) *Conflicting recreational uses*

There are no bridleways through the woodland therefore horseriding and cycling are not permitted. The commonest form of recreation is walking. The conflicts between recreational uses is therefore limited.

(f) *Fire plan*

Currently there is no fire plan for the woodland. A fire plan was produced in the late 1990s for all Council owned woodlands and other countryside sites by the then Culture, Countryside and Amenities Service in consultation with the South Yorkshire Fire Service. However, this woodland was not in the ownership of Rotherham Borough Council at that time. Fire risks at the site are presently very low relative to other woodlands because of the lack of ground flora.

2.2.4 Archaeology and historic interest

(a) *Archaeology*

Other than the small quarry area at the eastern side of the woodland there are no obvious archaeological features. Any find that is thought to be of archaeological interest will be reported to South Yorkshire Archaeology Service.

(b) *Land use history*

According to the Domesday record of 1086, Dalton Township (a part of Rotherham Parish until 1840) was predominantly wood pasture, as much of the Rotherham/Sheffield area was at this time (Victoria County History 1974):

“Dalton – Norman had 2 carucates and 6 bovates of land for geld where 2 ploughs can be. Now Rozelin has (it) of William. He (has) 1 plough there and 3 acres of meadow – Pasturable (woodland) half a league in length and half (a league) in breadth. The whole manor (has) 1 league in length and half in breadth. It was worth 20s; now (it is worth) 10s”

Wood pasture was prevalent where woods were widespread and population sparse and scattered. Woodland was exploited for its trees and used as pasture for animals. As populations grew, demands for timber increased and pressure from grazing animals prevented regeneration. Woods became scarce and valuable resources having to be fenced to prevent animals entering them. At the same time, a type of management which gave continuous and self-renewing supply of trees had to be introduced i.e. coppicing (Jones 1993).

The Ordnance Survey map of 1850 shows the woodland, together with Gulling Wood, as the same size and shape as today and treed with broadleaves.

The beech plantation that now occupies most of the site was established around 1900.

The nearby coal mine, Silver Wood Colliery took its name from the woodland. The shaft of the mine was sunk in 1900 and was owned by the Dalton Mining Company before nationalisation. It was a highly profitable and productive mine before its closure in 1994.

The woodland was owned by the National Coal Board from 1952 until 1996 when ownership transferred to Beazer Homes, Doncaster. In the fifty or so years to transfer in

title to Rotherham Borough Council there appears to have been little silvicultural or other woodland management works carried out in the woodland.

2.2.5 Access, recreation and community involvement

(a) Access and recreation

The woodland is used for informal recreation such as dog walking and often as a short cut between Woodlaithes and Hollings Lane. Children use certain areas of the woodland to meet up. Being on the edge of the very large housing estate the woodland provides good opportunity for recreation in a natural and more rural environment.

(b) Community involvement

The woodland has only been owned by the authority for a relatively short period of time. Therefore, the links with the community have had only a limited opportunity to develop. The authority did write to local residents soon after taking legal ownership of the woodland to give a point of contact in the authority and to set out a broad timetable for management. Small signs were erected at the main entrances to inform visitors that Rotherham Borough Council are owners and to give contact details.

The parish council and some local residents do take a keen interest in the management of the woodland.

(c) Education and interpretation

There is no permanent interpretation in the woodland and the authority has not, as yet, organised educational visits, guided walks etc.

2.2.6 Landscape value

The woodland is very prominent in the local landscape being on the edge of Hollings Lane, a fairly busy highway between Ravenfield and Rotherham, and on the edge of the large housing development with a high population. The woodland is valuable in dividing these two land uses.

2.2.7 Tourism

There are a number of high profile tourist attractions in the Rotherham area such as the Magna Centre, Roche Abbey, and the Tropical Butterfly House. The RSPB reserve at Old Moor is a nationally important site. Also, being close to the M1, A1 and M18 the Borough is well served by a comprehensive road network. Tourism currently contributes quite considerably to the local economy. However, attracting more people to the area and raising the profile of Rotherham as a tourist destination will depend on the area having an attractive environment. The wooded parts of Rotherham, of which the Council own 482 hectares, are significant in helping to create an attractive environment, including developing tourism and attracting investment.

Although the woods in themselves do not bring tourists to the area they may be used for passive recreation such as walking and photography by visitors during their stay. Silver Wood contributes to the desirability of the local area helping to improve the appeal of the Borough as a whole.

Table 2.4 Recreational pursuits associated with woodlands and their suitability in Silver Wood

Activity	Requirements	Impacts			Safety Issues (*)	Nature of the activity	Suitability for this woodland
		Erosion	Wildlife Disturbance	Noise			
Walking	Defined path network and waymarking. Information and interpretative signs are useful.	Low	Moderate, high with dogs.	Low	Minimal (personal due care and attention)	Formal and informal / Individual or group based	Suitable
Photography	Open areas linked by path network.	Low	Low	Low	Minimal (personal due care and attention)	Informal / Individual	Suitable
Wildlife study	Varied woodland structure but particularly open woodland linked by path network.	Low	Low	Low	Minimal (personal due care and attention)	Formal and informal / Individual or group based	Suitable
Painting and sketching	Open areas linked by path network.	Low	Low	Low	Minimal (personal due care and attention)	Formal and informal / Individual or group based	Suitable however this woodland may have limited subject appeal.
Play (children's facilities)	Close mown area linked by path network, ideally close to parking facilities. Suitable play equipment and appropriate safety surfacing would be necessary.	Low	Moderate	Moderate	Moderate. Personal (adult supervision for young children) and duty of Council to maintain equipment in a safe condition.	Informal/ Individual or group based	Unsuitable. No suitable areas for formal play equipment.
Cross country running	Defined path network that is waymarked	Low	Moderate, depending on numbers and season.	Low	Moderate depending on numbers involved at any one time.	Formal and informal / Individual or group based	Suitable for individuals.
Mountain biking	Defined bridle route that is waymarked.	High	Moderate	Low	Minimal/moderate Conflict with other path users. Personal due care and attention.	Informal/Individual	Unsuitable. There are no bridle routes through the wood.

Activity	Requirements	Impacts			Safety Issues (*)	Nature of activity	Suitability for this woodland
		Erosion	Wildlife Disturbance	Noise			
Picnicking	Close mown, open areas linked by path network, ideally close to parking facilities. Woodland furniture. High maintenance required.	Low	Low	Low/ Moderate	Minimal. Personal due care and attention and duty of Council to maintain furniture in a safe condition.	Informal/ Group based	Suitable but perhaps unappealing as there is no woodland furniture or grassed areas for sitting.
Biathlon events	Defined path and track network	Moderate	High	Low/ Moderate	Moderate – requires risk assessments and appropriate insurance from event organisers.	Formal/Group	Unsuitable. The woodland is too small to support such an event.
Horse riding	Defined bridle route. Must be well surfaced if large numbers of horses use the woodland.	High	Low	Low	Moderate/High. Conflicts with other uses	Informal/Individual	Unsuitable. There are no bridle routes through the wood.
Orienteering	Diverse woodland structure (open and closed woodland).	Moderate	High depending on the time of year	Low	Low/Moderate - requires risk assessments and appropriate insurance from event organisers	Formal/Group	Unsuitable. The woodland is too small and too open.
Archery	Open woodland areas linked by path network	Low	Low	Low	High - requires risk assessments and appropriate insurance from event organisers.	Informal/ Individual or group based	Very unsuitable. Insufficient open space available.
Camping	Open, close mown areas. Water supply, toilet facilities, refuse collection. Very high maintenance.	Low	Moderate/ High	Moderate /High	Moderate Moderate if fires were permitted. Personal due care and attention required.	Informal/ Individual or group based	Very unsuitable. No formal facilities. No 'wild' camping allowed; too close to residential areas.
Shooting (Clays, target, game and stalking)	Open ground for clays and target. Large rural woodlands required for game/ stalking.	Low	Moderate/ High	High	Very high - requires risk assessments and appropriate insurance from event organisers.	Formal/Group	Very unsuitable. Not enough open space, Woodland is too small particularly for clay pigeon shooting. Other forms of shooting conflicts with conservation objectives.

Activity	Requirements	Impacts			Safety Issues (*)	Nature of activity	Suitability for this woodland
		Erosion	Wildlife Disturbance	Noise			
Hunting	Varied woodland structure. Large woodlands with little public access. May even be necessary to close woodlands for this type of event.	Moderate	High	High	Very high - requires risk assessments and appropriate insurance from event organisers.	Formal/Group	Very unsuitable. Conflicts with conservation objectives. Woodland is too small and open. Unrestricted public access is available.
Motor sports	Large woodlands with wide rides and tracks	High	High	High	Very high - requires risk assessments and appropriate insurance from event organisers.	Formal/Group	Extremely inappropriate. The track and ride network is completely inadequate. Woodland is too small and unrestricted public access is available.
Adventure games e.g. paint ball	Large areas of multi structured woodland with good cover for participants	Low/ Moderate	High	High	High - requires risk assessments and appropriate insurance from event organisers.	Formal/Group	Very unsuitable. The woodland is too small and open and there is unrestricted public access.

(*) For the purposes of this table, the assessment of safety issues has been made on the basis that equipment and facilities necessary for the activity would be in place.

Table 2.5 Other woodland provision in the area

The table identifies other woodlands within a 10 km radius of Silver Wood. The private woodlands, particularly the larger woods, may be suitable for organised events. However, the individual policies of private owners are not expressed in the table. Landowners should be approached individually with proposals.

Name	Ownership	Distance from Silver Wood	Transport from Silver Wood	Extent of access	Benefits to community		
					Recreation*	Landscape value	Ancient woodland
Gulling Wood. (Tree preservation order)	Private (Ogden Group)	5 metres over public highway	All by adopted highway.	There are several public rights of way.	Activities appropriate for public footpaths. Owner should be approached for additional access.	Large woodland area on the edge of Sunnyside and Dalton and next to a main road. High landscape value.	Yes
Silver Wood (recently planted reclamation site)	Private (Ogden Group)	Adjoins woodland on the western boundary.	On foot by combination of public right of way network and public highway.	Access throughout on a network of permissive paths.	Activities appropriate of the footpath network. Owner should be approached for additional access.	Large area of developing woodland on the edge of a large housing development and the public highway. High landscape value.	No
Brecks Plantation	Private	4.0 Km	By adopted highway	No public rights of way.	Owner should be approached for access.	Large woodland on the edge of a large residential area. High landscape value.	No
Thrybergh Country Park	Rotherham Borough Council	4.0 Km	By adopted highway	Extensive footpath network.	Wide range of activities. Contact Green Spaces for details.	The matrix of woodlands contribute to the rural character of the area.	No
Wickersley Wood (Tree preservation order)	Wickersley Parish Council	4.0 Km	By adopted highway	Full access	Walking, photography, wildlife study, painting and sketching, picnicking, cross country running by individuals.	Forming the edge between an urban area and the wider countryside, the landscape value is high.	Yes
Wickersley Gorse	Wickersley Parish Council	4.5 Km	By adopted highway for most of the way then by public right of way along field boundary.	Full access.	Walking, photography, wildlife study, painting and sketching, picnicking, cross country running by individuals.	High landscape value – The site can be seen from the M1 motorway.	No
Dean Plantation	Private	5.0 Km	All by adopted highway.	No public rights of way.	Owner should be approached for access.	Woodland on the edge of a large residential area and connected to Brecks Plantation. High landscape value.	Yes
Gibbing Greave and Herringthorpe Wood	Rotherham Borough Council	5.5 Km	All by adopted highway.	Full access.	Walking, photography, wildlife study, painting and sketching, picnicking, cross country running by individuals.	Large, slightly elevated, woodland area on the edge of a large residential area. High landscape value.	Yes

Canklow Wood (Tree preservation order)	Rotherham Borough Council	8.5 Km	By adopted highway.	Full access, including public footpaths and permissive bridleways.	Walking, photography, wildlife study, painting and sketching, picnicking, cross country running by individuals, horse riding, cycling and orienteering. Group events should be by prior agreement.	Large woodland on the edge of Rotherham town centre with an elevated position. Can be seen from many parts of south Rotherham and the M1 motorway. Very high landscape value.	Yes
Sandbeck Estate	Private	9.0 Km	By adopted highway.	Public right of way network.	Activities appropriate on the public footpath network. Owner should be approached for additional access.	The matrix of woodlands contribute to the rural character of the area.	Yes

*The suitability of activities have been assessed in accordance with the requirements described in table 2.4 above.

(a)	Habitat Types
	<ul style="list-style-type: none"> (i) Woodland - NVC W16 (ii) Other countryside areas - large beech plantation on an ancient woodland site (Gulling Wood). Extensive planting of native, mixed broadleaved trees on a former open cast coal mining site
(b)	Viewpoints
	<ul style="list-style-type: none"> (i) External - The woodland provides an important backdrop to the Woodlathes development. (ii) Internal - There are long views through the beech plantation areas where there is no shrub layer.
(c)	Access
	<ul style="list-style-type: none"> (i) Definitive rights of way - one public footpath, Ravenfield footpath number 6 crosses the site from Green Bank Drive to Hollings Lane. A second, Ravenfield footpath number 11 passes along the western boundary, just outside the site. (ii) Casual footpaths - a number exist that link into the public rights of way, providing a suitable level of access throughout the woodland. Only the path between Green Bank Drive and Hollings Lane is surfaced. See figure 1.4 for footpath routes. (iii) Access points and boundary control - refer to Figure 1.4 <ul style="list-style-type: none"> No. 1 - This is the entrance point from Hollings Lane for footpath no. 6. There are no formal access controls at this point. No. 2 - The access point from Hollings Lane is open with no access controls. The access point leads onto a footpath surfaced with crushed stone. There is a 'welcome to' sign at this entrance point. No. 3 - This access point leads onto footpath no. 6. There is a metal kissing gate with a large box section that allows access by pushchairs and wheelchairs. There is a 'welcome to' sign at this entrance point. No. 4 - There is a metal kissing gate with a large box section that allows access by pushchairs and wheelchairs. There is a 'welcome to' sign at this entrance point. No. 5 - The formal access point is just outside the woodland boundary on footpath no. 11. There is a 4 metre wide gateway. Access is controlled by way of a single steel bar. There is a gap at the side allowing pedestrian access. Access to the council owned woodland is possible via this point. There is a 'welcome to' sign on council owned land close to this entrance point.
(d)	Car Parking
	<p>There are no formal car parks in or around the woodland. Visitors do park informally on a service road next to the Ravenfield club. This is not adopted highway but it is council land.</p>
(e)	Public Transport
	<p>There are bus stops on Hollings Lane in both directions just outside the woodland. However these are presently only used by school services. The closest bus stop is in the Woodlathes estate is approximately 300 metres away on Woodlathes Road. Alternatively, there is a stop at Ravenfield crossroads for services from Rotherham.</p>

3.1 Quantitative assessment

3.1.1 Methods of site survey and mensuration used

The woodland is divided into sub-compartments on the basis of community and age-class. Sub-compartment areas are estimated to the nearest 0.1 ha using GIS (see figure 1.2)

Following definition, the structure and composition of the vegetation of each sub-compartment was surveyed in detail. Summarised compartment descriptions are given in Section 3.1.3. In the case of sub-compartments 33a, c, d, e and f, the standing timber volume per hectare was estimated by following Procedure 9 in Forestry Commission Booklet 39 (Hamilton, 1975).

3.1.2 Summary of Inventory

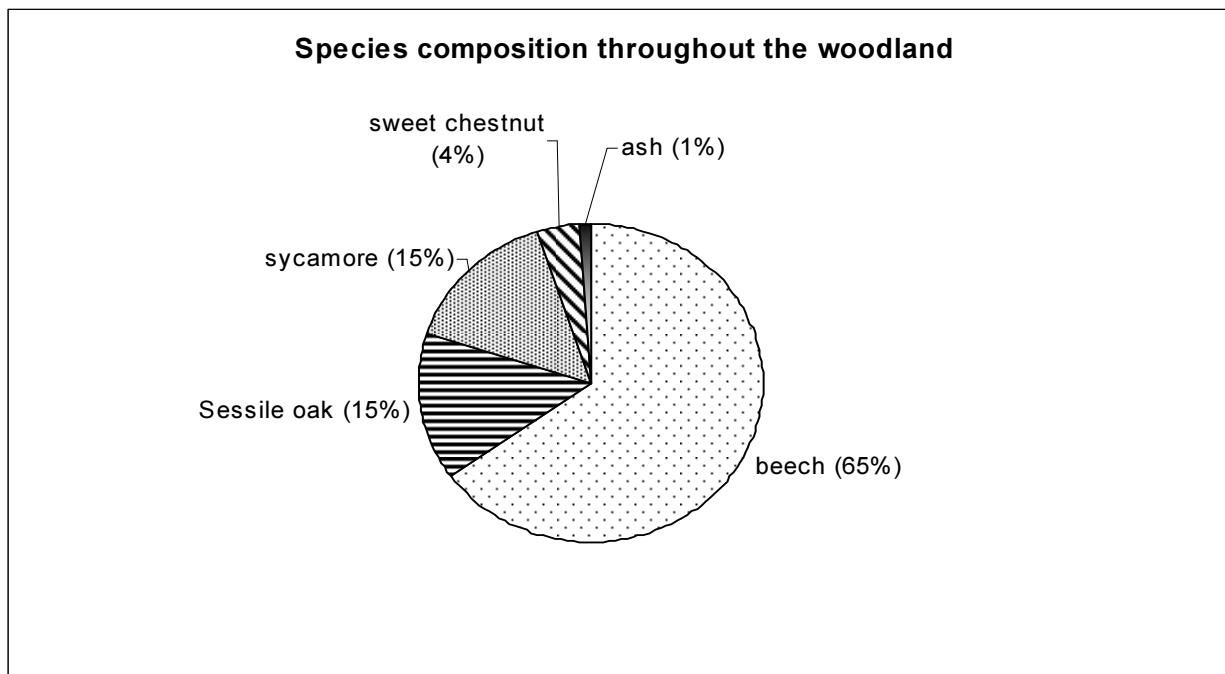
Table 3.1(a) Compartment analysis

Sub. Cmpt.	Area (ha)	Planting year	Main species	Vol./ha	Vol./cmpt	Description
44a	0.17	Mixed	Ash, sok, syc, be	253m ³ /ha	43m ³	Mixed broad leaf species [of mixed age classes] from young regeneration to mature trees.
44b	0.19	c1920	Syc	176m ³ /ha	33m ³	Mature sycamore with occasional mature silver birch and Sessile oak.
44c	0.07	c1920	Sok, holly	153m ³ /ha	11m ³	Mature Sessile oak with abundant mature holly.
44d	1.21	c1920	Be, sok, syc, swc	472m ³ /ha	571m ³	Mature closely spaced beech and sycamore with occasional mature Sessile oak and sweet chestnut.
TOTAL	1.64				658m ³	

Be-beech, syc - sycamore, swc - sweet chestnut, sok - Sessile oak

Table 3.1(b) Age class distribution of trees throughout the woodland





3.1.3 Compartment descriptions (see figure 1.2)

Silver Wood is an ancient woodland heavily modified by plantation forestry, otherwise known as plantation on ancient woodland site (PAWS). Sadly the semi-natural character, particularly within the field layer, is not evident over much of the woodland. Its ancient origins are evident in pockets along the southern woodland edge and under small remnants of Sessile oak woodland where light levels are higher than under the ubiquitous canopy of beech.

Although affected by the establishment of beech plantation the woodland would originally have been Sessile oak, silver birch woodland on the coal measures. There is a remnant pocket of Sessile oak in one area. The woodland is assigned to the National Vegetation Classification community W16 *Quercus* spp. - *Betula* spp. - *Deschampsia flexuosa*, albeit that little evidence of this remains today. The field layer of this community is often species poor, dominated by wavy-hair grass and bracken.

Sub-compartment 44a 0.17 ha

This narrow sub compartment following the southern edge of the woodland is the most diverse of the four compartments and continues to retain a certain amount of semi-natural character indicative of the site's ancient woodland status. This is likely to be as a consequence of side light infiltrating the south facing boundary and tree removal for safety reasons following completion of the Woodlathes development.

The canopy is very open with mainly pole to early mature sycamore and ash and occasional Sessile oak with occasional mature ash, beech and sycamore. The shrub layer is quite limited but dominated by hawthorn, coppiced mixed broadleaves and young regenerating broadleaves.

The ground conditions in parts along the boundary are damp. This is reflected in the field layer containing creeping butter cup and ransoms. In drier parts of the compartment (it slopes quite steeply away from the boundary) the field layer is dominated by dog's mercury and healthy populations of bluebell and wood anemone. Bramble and creeping soft grass can be found throughout.

The canopy is comprised principally of mature sycamore with occasional mature silver birch and Sessile oak. The canopy is very open, the trees widely spaced with high light levels reaching the woodland floor.

The shrub layer is limited but elder is commonest with hawthorn also present. Natural regeneration of beech and occasional Sessile oak is present throughout. Owing to the high light levels much of the field layer is dominated by bracken with bramble and creeping soft grass also common. Bluebell is present amongst the bracken areas. Stinging nettle is frequent, particularly on the woodland edges and along the footpath edge, as is ground elder. Occasional patches of dog's mercury can also be found.

Sub-compartment 44c 0.07 ha

This small sub compartment comprises solely mature Sessile oak with a dense, mature holly shrub layer over much of it. Bluebell and bramble are present where there is no holly. Beech regeneration is present also.

Sub-compartment 44d 1.21 ha

The largest compartment of the woodland it is heavily dominated by a dense closed canopy 80 to 100 year old beech with sycamore and occasional sweet chestnut and Sessile oak. Following many years without thinning or very little other active management the trees are tall, drawn and poorly formed with under developed narrow crowns. There is a healthy band of beech (and sycamore) regeneration in the centre of the compartment. The regeneration is young and its development is limited by low light levels. Throughout the rest of the sub compartment occasional beech saplings can also be located.

The shrub layer is limited, consisting mainly of occasional holly with frequent elder along the woodland edge with Hollings Lane.

There is no field layer to speak of across the eastern half of the sub compartment, having been progressively out competed over the years by the heavy shade from the dense tree canopy. Ivy is dominant through the centre of the sub compartment in the same area as the beech regeneration. The ivy is well established up the stems of some of the mature trees. There is a healthy population of bluebell in the western half of the sub compartment where a higher proportion of the trees are sweet chestnut and Sessile oak.

3.2 Silvicultural assessment and management options

Sub-compartment 44a

The most managed of all the sub-compartments of the woodland in recent years because of the proximity to the new housing development. The woodland edge is the lightest with the most varied structure. It is also the dampest of any part of the woodland. For these reasons it is the most diverse.

The trees are mixed species and include Sessile oak, ash, beech and sycamore of all ages. It is important that this diversity continues to be maintained and enhanced in the management of the woodland.

Coppicing along woodland edges is often done to continue to develop and enhance important edge habitats.

There are also one or two small areas of open space along this linear compartment. Given the importance of open space in woodland, but the lack of it in Silver Wood, it would be worth considering retaining these open areas.

The sub-compartment is perhaps the most open in the woodland. This is reflected in the amount of bracken throughout.

The openness of the area would make silvicultural work unnecessary at this stage in the development of the woodland. Essential safety works to trees close to boundaries and footpaths would of course be necessary when required.

Securing regeneration of native species should however be a priority over the next decade or so. There is presently some regeneration, mainly of beech but also some Sessile oak. Given the presence of bracken and bramble, monitoring of its development and the development of other regeneration over the first five year work programme will be necessary.

Sub-compartment 44c

This sub-compartment holds the closest resemblance to native woodland for the site. There is a shrub layer of holly under a mature canopy of Sessile oak. Some bramble, holly, bluebell and beech regeneration is present where there is no holly.

It will be important to maintain this small pocket of native trees in a woodland so heavily dominated by plantation of beech.

Given the small size of the compartment small group felling would not be possible. The only real option, if deemed necessary at this stage, would be selective thinning.

Given the very poor representation of old age classes in the woodland (100+ years) (see table 3.1(b) above), maybe some of these native trees should be selected for long-term retention to become large over mature trees, and ultimately veterans. This would enhance the habitat potential of the woodland. Presently, trees with large pieces of dead wood, holes and crevices are limited. This might require some selective thinning, including removal of beech from the neighbouring sub-compartment (44d) to provide the required light levels.

Sub-compartment 44d

Unmanaged for many decades the sub-compartment is characterised by densely spaced and overstocked trees, many with small, underdeveloped crowns. As the trees have grown, the canopy has become progressively more shady, to the detriment of the ancient woodland ground flora and shrub layer, reducing their value to other wildlife.

The lack of active management has reduced the quality of the stand as those with the greatest vigour rather than high stem quality have become dominant. The crowns of many of the best formed trees have not been allowed to develop and some may not now respond to thinning. Left unmanaged, the potential of the trees will only decline further.

Some form of silvicultural management is important and a priority to begin the process of restructuring to encourage a more varied range of age classes. Table 3.1 (b) demonstrates the disparity in age classes with few between 0 and 80 and most trees throughout being between 80 and 100 years.

Conversion of the plantation back to semi-natural woodland should be a priority. This would help any remnants of the ancient woodland ground flora to begin to thrive again. Research has shown that remnants of ancient woodland can survive amongst conifer plantation crops for a typical conifer rotation (approximately 40 to 50 years). Under beech this may be longer. Furthermore, the United Kingdom Woodland Assurance Standard (UKWAS 2006), the compliance document in the United Kingdom for FSC certification, states in section 6.3.1(b) that *'enhancement and, or restoration shall be a priority in ancient semi-natural woodlands and other semi-natural woodlands'*. This emphasis is also reflected in present Forestry Commission policies and grant structures. Presently, two substantial grants are available in South Yorkshire to target this type of

natural woodland may attract grant aid. See section 4.3 below.

Restructuring could be achieved by the selective and gradual removal of beech using one of the recognised silvicultural methods. The merits of each option are discussed here.

Clearfelling

This involves the large scale removal of trees over most of the stand, leaving perhaps only suitable seed trees if they are present, followed by restocking, either by planting or natural regeneration. Clearly, this option would have a sudden and considerable impact on the woodland's ecology, landscape and amenity value. Bearing in mind the intention to revert the woodland back to native species, restocking using natural regeneration may or may not yield the desired species. Beech is likely to regenerate readily in the clear felled areas given that there is likely to be a substantial seed bank that is trying to regenerate now under the heavy shade. Whilst the establishment of a new generation of any broadleaved species likely to regenerate in the area would be acceptable, another generation of beech across the woodland would be less desirable than a generation of mixed native species.

Clearfelling is also likely to remove the trees that have the potential to become over mature and suitable as veterans.

There are also likely to be limitations set by the Forestry Commission on the size of the area that a felling licence would be granted for.

Small group felling.

The removal of defined groups of trees approximately 2 times the height of surrounding trees. These are often termed coupes. This would create increased light levels in the localised areas where felling takes place. This would improve conditions in these areas for flora and would enhance conditions for establishing a new generation of trees. However, for the reasons discussed above under clearfelling, there may be little opportunity to control the species that regenerates. Small group felling tends to provide localised improvements to stand quality, increasing light levels in the felling coupe itself and the trees immediately surrounding the coupe as they benefit from sidelight. There are however fewer benefits to the wider compartment area.

Thinning

Thinning offers the opportunity to favour any native species (Sessile oak), together with any well formed beech. The operation reduces the shade produced by the canopy, promoting the development of the crowns of the remaining trees, development of an understorey and the recovery of a more diverse field layer. Moderate disturbance following timber extraction and the increased light levels resulting from thinning, encourage the buried seed of some species to germinate, and existing species to flower and spread more profusely. Thinning will improve stand timber quality by ensuring that future increment is concentrated on the best formed trees and to promote healthy crown development.

3.3 Sustainability and management for biodiversity

3.3.1 Sustainability

All future management of Silver Wood will aim to be sustainable in accordance with the United Kingdom Woodland Assurance Standard (UKWAS 2006) and contribute towards the national targets of sustainable forest management laid out in the Strategy for England; Trees, Woods and Forests (2007). The UK Forestry Standard (2004) gives detailed national criteria for sustainable forest management to be delivered at the individual forest management level. Table 3.3.4 below outlines how the management of Silver Wood meets each of the UK Forestry Standard Criteria for sustainable forest management. Sustainable forest management as defined in the UK Forestry Standard is:

'The stewardship and use of forests and forest lands in a way and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the

that does not cause damage to other ecosystems'.

Forest Stewardship Council (FSC) certification was awarded to Rotherham Borough Council because management of its woodland estate was demonstrated to be sustainable in all aspects of management. Although not part of the woodland estate during the initial audit in 2003, Silver Wood has been included in audits since becoming part of the council's estate in April 2008. Annual auditing of the Council's management practices by the Forestry Stewardship Council will ensure this standard is maintained. FSC standards in the UK are set by UKWAS.

3.3.2 Management for biodiversity

Biodiversity is a key test of sustainability as it enhances quality of life, provides natural assets from which economic benefits can be derived and demonstrates an environment in good health (English Nature 1999). To achieve the UK Biodiversity Action Plan national targets, a regional approach to biodiversity has been developed for the Yorkshire and Humber area. The regional approach is built upon the UK BAP priority species and habitats and English Nature's Regional Natural Area reports which describe the biodiversity and natural heritage importance of each region, the issues which impact upon them and regional objectives for nature conservation (English Nature 1999). This has resulted in the production of Rotherham's Local Biodiversity Action Plan.

In the Yorkshire and Humber region 7 habitat/landscape types, including woodlands have been identified as regional biodiversity indicators. The key management issues concerning woodland on the Coal Measures are:

- Accessibility leads to public use and abuse such as vandalism, litter and disturbance of wildlife.
- There may be conflict between exotic species and management for nature conservation.
- The resource is fragmented. Conversion of agricultural land to new woodland should aim to ensure trees local to the Natural Area are used and thought given to nature conservation. Restoration schemes should also use local stock and ensure that traditional management is restored if appropriate.
- Inappropriate management and lack of traditional woodland management.
- Woodland contains important industrial archaeology which may be neglected.
- Re-opening of stone quarries can destroy secondary woodland.

Natural England's nature conservation objectives for the Natural Area are:

- To maintain, expand and enhance the characteristic semi-natural habitats such as woodland, valley wetlands, heathland and unimproved grassland and to conserve species and geological features.
- To increase the nature conservation value of the wider countryside and urban green space within the Natural Area.
- To increase awareness and encourage appropriate use of the nature conservation resource.
- To influence land use of sites undergoing fundamental change.

The Local Biodiversity Action Plan addresses national and local biodiversity issues and identifies species and habitats of conservation priority in the local area.

Silver Wood forms a plantation on an ancient woodland site (PAWS). Ancient woodland is a high priority in the national, regional and local BAPS and is listed as a key habitat in Rotherham's BAP. The Woodland Trust regards restoration of PAWS as a top priority (Woodland Trust, 2005).

From the UK Biodiversity Action Plan (1995), the broad habitat statement for 'Broadleaved, Mixed and Yew Woodland' provides a framework for Habitat Action Plans (HAPs) for priority types of woodlands. Local HAPs have been developed to address specific issues and set targets for priority woodland types. Where appropriate, advice laid out in HAPs will be followed. The oak-birch woodland applies to Silver Wood. Although not in the upland zone oak-birch woodland in Rotherham maybe viewed as a drier, more southerly counterparts of the upland oak woods identified in the UKBAP (Rotherham BAP).

3.3.4 Biodiversity action plan species

All BAP species recorded in Silver Wood will be given special consideration during any management works and their presence monitored. The UK Biodiversity Steering Group advise that specific management recommendations focus on species that are identified as conservation priorities (formally short and middle listed species), whilst noting those species of conservation concern (formally long list species) and directing more general management practices toward their conservation. Any species on the LBAP that are present at the site during the period of this plan will also become a priority, as will any species present that is included in a Red Data Book, on the RSPB/BTO "red list", or designated as regionally or nationally notable.

The priority species and species of concern are highlighted in table 3.3.3. Additional species information is given in section 2.2.2. Sustainable management of this woodland should bring benefits to a wide range of species, not just priority species, and an overall enhancement in the biodiversity of the site.

Improving diversity within the woodland and the opportunities for BAP species depends to a large extent on the availability of dead wood and open space in the woodland. Adequate dead wood provision is vital for general habitat enhancement as well as improvements for specific species. The survival of almost a third of European forest dwelling species is threatened by the removal of dead wood from forests. Many of the long red list of endangered species are directly linked to dead wood (WWF 2004). With average forests in Europe having less than 5% of the volume of dead wood expected in natural conditions (WWF 2004) the need to increase quantities of dead wood is critical. Different forest types will naturally have different volumes and types of dead wood present. In unmanaged European broadleaved forests volumes of dead wood would be between 5 and 30 percent of the total timber volume, or 40 to 200 cubic metres per hectare. This contrasts sharply with an average of 8.5 cubic metres per hectare across Western Europe. Within this woodland the average volume is around 2 to 3 cubic metres per hectare. In particular, large diameter dead wood is very low in volume. Much of the dead wood is small in diameter resulting from branch wood in the beech plantation. Increasing the volume of dead wood when carrying out safety and silvicultural work should be a priority. However, the monitoring commitments associated with retaining standing dead wood next to paths, tracks, the highway and property must be considered.

Furthermore, the amount of open space within the woodland is very limited.

Table 3.3.1 Open space monitoring

Open space recommended in woodland by the Forest Stewardship Council.	Percentage of open space <i>considered</i> by Forestry Commission.	Actual percentage of the woodland that is open space.	Desired percentage of the woodland that is open space by 2015.
10%	20%	2%	7%

Table 3.3.2 Dead wood monitoring

Recommended volume of dead wood by WWF.	Minimum volume recommended by UKWAS.	Actual volume of dead wood per hectare.	Desired volume of dead wood by 2015.
50m ³ /ha	20m ³ /ha or 5-10% of average stand volume	2 to 3m ³ /ha	15m ³ /ha*

*The target volume at the end of the plan period is still much lower than the recommended figures in the first column of the table. However, starting from a low base, the target is something that must be worked toward and would be difficult to meet in the short 5 year period of the first work programme.

Table 3.3.3 Recorded UK and local BAP plant, mammal and amphibian species of principle importance recorded at Silver Wood. See table 2.2 above for bird species.

Species	Rotherham List	National List	Habitat
Plants			
Bluebell	Yes	Of concern	Ancient woodland

Table 3.3.4 Delivering National Criteria for sustainable forest management at Silver Wood.

Criteria for sustainability	National level indicators	Evidence of national criteria being delivered in the management plan	Plan section
<i>Forest Stewardship Council (FSC) certification is awarded on the basis that all elements of management including silviculture, health and safety, ecology, history, recreation, education and community involvement are appropriate, sustainable and all encompassing.</i>			Throughout the plan
Nature conservation in and around forests	<p><i>Biodiversity in and around woods is conserved or enhanced.</i></p> <p><i>Species and habitats subject to EU Directives and The UK BAP are conserved or enhanced</i></p> <p><i>Important but previously disturbed semi-natural habitats are restored where practical.</i></p>	<p>Nature conservation as a main objective for site management.</p> <p>All species of conservation importance will be maintained and protected.</p> <p>Guidance on biodiversity matters will be taken from the UK BAP, The Rotherham BAP and Natural England.</p> <p>Where possible, woodland management will be timed for late July to December period to reduce disturbance to wildlife.</p> <p>All recorded species listed on the UK, Regional or Local BAP have been taken into account in the management plan.</p> <p>Areas within the site are identified as wildlife refuges.</p> <p>Silvicultural management aims to develop well structured woodland sustainable over the long term.</p> <p>Native species will be favoured where possible.</p> <p>Continuous cover forestry techniques will be used to convert much of the beech plantation to native species.</p>	<p>3.3, 4.4.3, 5.4.5, 5.4.11</p> <p>2.3.3, 2.3.4</p> <p>2.2.2, 3.3, 3.3.3, 3.3.4</p> <p>4.2.3</p> <p>3.3.3, 3.3.4</p> <p>5.4.3</p> <p>3.2, 5.4.1</p> <p>3.2, 5.4.1</p> <p>5.4.1</p>
Rural development	Opportunities are actively being enhanced for each of the criteria:	Woodland work such as thinning and coppicing will be carried out by local companies, generating income in the local economy.	4.1.2

Access and recreation	<i>-rural development</i>	The woods contribute to the overall desirability of the area helping to attract companies and tourism to the area.	2.2.7
	<i>-access and recreation</i>	Maintenance of good quality, low key access on a public and casual footpath network will maintain appropriate access for users.	5.4.6
		Regular safety inspections of trees, particularly close to footpaths.	5.4.4
Quality of life in and around forest.	<i>-quality of life</i>	Maintenance of existing site entrance signs will make the woodland more welcoming to visitors.	5.4.6
		Removal of litter as necessary to continue to give the site a cared for appearance.	5.4.4
Increased awareness and participation	<i>-increased awareness and perception</i>	Seek the support of police and community to combat anti-social activity as and when it emerges as a problem at the site.	5.4.8
		Public consultation throughout the development of the management plan.	5.4.8
Community involvement.	<i>-community involvement</i>	Developing links with communities through existing community groups, the parish council and consultation to encourage the local community to become involved with the care of the site.	5.4.8
Other land uses		A multifunctional and sustainable approach to land management will be adopted to ensure all land uses and interests are carefully integrated.	5.3 (all)
Conservation of heritage features	<i>Important heritage features are protected</i>	Further research into land use history would be beneficial.	5.4.10
Landscape Quality	<i>Due account is taken of cultural, historic or designed landscapes.</i>	Work will minimise impact on the landscape. Continuous cover forestry techniques will be applied to the woodland.	5.4.9
		A full landscape assessment will be made of the site.	5.4.9

Forest soil condition	<i>Forest soil condition is stable or improving towards stable (not to the detriment of important Semi-natural habitats)</i>	Silvicultural work will be carried out at the appropriate time of the year to minimise soil disturbance (July to October would be optimal).	4.2.3
Water condition	<i>Water quality is protected or improved, water yields are maintained above critical levels and discharge patterns are disturbed only when unavoidable.</i>	Silvicultural work, especially felling, will take due account of the internal damp areas of woodland on the southern edge. Brash will be kept away from these areas and a mix of light and shade will also be maintained in these areas.	4.2.3
Air pollution and net carbon sequestration	<i>Net carbon sequestration by forests increases and air pollution is avoided</i>	Where ever possible lop and top will not be burned, but will be chipped or mulched and left in the wood as dead wood habitat.	4.2.3
Timber and other products	<i>Supply of timber and other forest products for industrial use is available at the levels indicated in long term forecasts, or is increased without reducing annual increment.</i>	Management will ensure a good age class distribution of trees, including promotion of coppicing, and conversion to high forest where appropriate.	5.4, 5.4.1
		Timber production is not a main objective, but where possible, recoverable income will be used to offset the costs of management.	4.2.2
		Any tree removal will be replaced by new regeneration to maintain long term site potential.	5.4.1
Forestry workforce competency and safety	<i>Safe and effective practices are promoted and their effectiveness kept under review.</i>	All contractors working on site will have correct qualifications, training and experience.	4.2.3
		Local community will be informed of forthcoming works.	5.4.8
		Hazard signs will be positioned around working areas.	4.2.3

4. THE ADMINISTRATION AND ECONOMY

4.1.1 The administrative organisation

Silver Wood is owned by Rotherham Metropolitan Borough Council and is managed by the Trees and Woodland Section of Rotherham Streetpride, part of Environment and Development Services.

4.1.2 Labour

Several sources exist:

(a) Contracts.

Tree work at the site, such as safety works, is included within the tree work maintenance contract. However, the organised felling of trees with a marketable value is excluded. Where this occurs tenders will normally be invited for the work from forestry/timber merchant specialists. The grounds maintenance contractor will also be asked to quote using its own employees. Other large-scale management projects, for example, hedge-laying and path and track improvements, will be tendered to contractors, following normal procedures.

(b) Rotherham Borough Council direct labour.

Services such as Streetpride or the Estate Team within the Green Spaces service are available from time to time for a wide range of small scale projects including dead hedging, path maintenance, waymarking, rubbish removal and some access related works.

(c) Community involvement and volunteers.

Where appropriate, the use of volunteers will be encouraged and co-ordinated by Trees and Woodlands, Streetpride. Voluntary Action Rotherham (VAR) is an organisation that supports volunteering by individuals and groups in the borough. VAR has been involved with a number of projects on council property, including woodlands, although not in Silver Wood to date. Volunteers working with VAR can carryout a range of maintenance tasks using hand tools.

Additionally, the authority does get approached from time to time for corporate volunteering opportunities. The Environment Agency has done some work in other woodland in recent years throughout the estate.

(d) Other programme areas within the Council

Environment and Development Services requests support from other programme areas to assist with projects from time to time. Other resources outside RMBC will be utilised as appropriate.

4.2 The forest industry

4.2.1 Markets, present and future

Timber prices vary greatly depending on the quantity and quality of the timber for sale, the current market conditions, and the species. During the late 1990s and until around 2004/05 the timber market in the UK was very depressed. There was however always a reasonably

healthy market for the top grades of broadleaved timber but prices for low-grade material fell dramatically during 1997 as a result of cheap foreign imports and over-supply.

In recent years the value has been steadily increasing in all areas of the market. New markets have been opening in the Far East and much of the timber from the Baltic Countries traditionally imported by the UK in the late 1990s is now being bought by these new markets, creating a much stronger demand.

An increase in the biofuel market is also helping to increase the value of the lower grade timber traditionally sent for firewood and perhaps pit props. In the South Yorkshire area a healthy supply and demand network has been developed for woodfuel through the work of the South Yorkshire Forest Partnership linking suppliers with customers.

Presently the market for all timber is buoyant, including the firewood market, possibly due to the increasing number of wood fuelled boilers and stoves being installed, both larger commercial and smaller domestic installations.

Traditionally the value derived from the timber during operations in woodlands with multipurpose objectives has only been sufficient to off-set some of the costs of the contract. This is partly because of the high work specification that is required for contracts in urban woodlands where, for example, brash is generally chipped to prevent nuisance fire setting at a later date. However, timber prices are presently such that this gap has reduced considerably, particularly for larger scale contracts where a higher volume of timber is being sold.

At Silver Wood the better formed mature beech is likely to be suitable for concealed furniture frames, turnery and fencing (class II) whilst their branchwood and trees of poor form are more suitable for pulpwood, firewood and wood chip (Quality Class III to IV).

4.2.2 Methods of sale

It is Council policy to sell timber "standing" following preliminary mensuration, i.e. the trees to be felled are marked by Rotherham Borough Council, but all felling and extraction work is undertaken by a contractor. Each "parcel" to be felled/thinned is described individually, giving estimated number of trees (where appropriate) and estimated total volume.

4.2.3 Methods of conversion, extraction and transport

In most cases, timber removed from Silver Wood will be sold standing and hence conversion, extraction and transportation will be organised by the contractor, subject to the Council's conditions. In each case, the methods of working expected of the contractor will be specified, for example, height of stump, disposal of lop and top, avoidance of damage to remaining trees, ditches, fences, etc.

Extraction routes will be agreed between the contractor and the council prior to commencement of works. Any important areas of wildlife and archaeological interest will be avoided. Timber extraction is possible by two main methods, vehicular and horse.

Horse extraction is generally only suited to extraction on the flat or down hill along only short routes, and only necessary where ground conditions are soft and damage by modern machinery is likely to occur. If vehicular extraction can be undertaken during periods of dry weather then this method is usually acceptable.

Vehicular access to the woodland is possible only via the field gate off Hollings Lane onto the roadway on land in third part ownership. All other entrances are restricted to pedestrians

only, either because of furniture or because access on to the highway is not suitable. Agreement to access over the third party land will need to be sought. There are ample stacking areas close to this access point in the council owned area of woodland. The surface of the roadway is very good and would be suitable for heavy vehicles, including articulated vehicles, albeit that crown lifting of the overhanging trees may be necessary.

All contractors working on the site will have to provide evidence of correct qualifications, training and experience. Adequate safety clothing to be worn at all times and hazard warning signs will be positioned around the work area. The local community will be warned of the timing of proposed works via letters, signs and where appropriate, press releases.

4.3 Sources of grant aid

4.3.1 Forestry Commission: English Woodland Grant Scheme

The woodland has not been included in any of the previous woodland grant schemes between the authority and Forestry Commission because of its relatively recent acquisition. Under the English Woodland Grant Scheme grant is available for a wide range of operations associated with management planning, public access, nature conservation, particularly conservation associated with Biodiversity Action Plan Species (BAP species) and planting and restocking woodland. Many of the grants pay a percentage of an approved cost of operations. This is usually 50% but some grants will pay up to 80%.

The total grant aid made available to the Yorkshire and Humber region is limited and much of it will be awarded on a first come first served basis. Much more detail of the grants available and rates of payment can be found in the English Woodland Grant Scheme application pack available from Forestry Commission England.

Grants that Silver Wood may be eligible for under EWGS are:

Woodland Regeneration Grant (WRG) contributes to the cost of planting or natural regeneration (regeneration in the case of this woodland) following felling works that are designed to improve the woodland's capacity for sustainable management. Thinning and group felling of the beech plantation area might therefore be eligible.

Woodland Improvement Grant (WIG) will pay a percentage of approved standard costs for management works (typically 50 - 80%). In the Yorkshire and Humber Region WIG may be paid at a rate of 50% of costs for public access works, 50% of costs for UK Biodiversity Action Plan target works, 80% of costs for works to red squirrel reserves and 80% of costs for SSSI woodland condition works. Also, for a limited period between 2009 and 2014 a WIG is available for managing ancient and native woodlands at a rate of 80% of approved costs and in South Yorkshire specifically, 80% of approved costs can be paid for woodland management works that will benefit a specific list of declining bird species in South Yorkshire. This particular grant is administered in partnership with RSPB.

The woodland may well benefit from the Biodiversity Action fund as this is targeted at the protection of ancient and semi-natural woodlands and the restoration of woodland sites. Indeed, preliminary discussion has taken place with Forestry Commission around the feasibility of including this woodland in a grant application to benefit declining bird species. For various reasons, including the present structure of the woodland and records of target bird species in the area, Silver Wood is one of the woodlands in Rotherham's woodland estate likely to qualify for this grant. Please see table 7.2 for the level of grant to be applied for, for the woodland.

The woodland would not benefit from the Red Squirrel Reserves fund as the area is not within a designated red squirrel reserve. Neither would the woodland qualify for grant under the SSSI heading.

Finally, Woodland Management Grant (WMG) is available to contribute to the additional costs necessary to provide the benefits that arise from meeting the UK Forestry Standard requirements. This woodland will be included in the next application to Forestry Commission for WMG for the council's estate in 2011/12 when the five year contract is due for renewal. This grant is payable at a rate of £30 per hectare. The total available to Silver Wood would be £49.20 per annum. Therefore, it would not be cost effective to create a separate grant scheme at this stage for this woodland alone.

5 AIMS, OBJECTIVES AND MANAGEMENT PRESCRIPTIONS

5.1 Summary of the present position

5.1.1 Silviculture

Silver Wood is an ancient woodland site, though heavily modified by plantation forestry in the early part of the 20th Century. Although the area included in this plan is only small, the total area of adjoining mature and newly planted woodland is substantial.

The majority of the site has virtually no field or shrub layer due to the very dense shade cast by the plantation beech. Many of the beech trees are poorly formed with under developed crowns owing to a lack of silvicultural management in recent decades.

5.1.2 Nature conservation

Ancient semi-natural woodlands are a declining habitat of national importance, with only 1.5-3% of the natural area still supporting this habitat. Isolation and fragmentation of ancient woodland within the natural area is also a key issue. Hence, the site's links to the privately owned neighbouring woodlands, both plantations on ancient woodland sites (PAWS) and newly planted native woodland on reclaimed mining sites, increases its importance.

The modest number of wildlife surveys undertaken to date indicate that the woodland is of regional importance for natural history, and is therefore classed as a Grade I Heritage site.

Although greatly influenced by plantation forestry the site most closely corresponds with the National Vegetation Classification woodland community W16 *Quercus* spp. - *Betula* spp. - *Deschampsia flexuosa*,

The records available for the site are limited. In some cases, such as mammals, there are no records available. It is however likely that bats will be present in the woodland. Therefore, survey would be beneficial across all areas of natural interest.

5.1.3 Recreation and access

The woodland provides a small but important resource on the edge of a large residential area. It provides opportunity for informal access to land with natural, rural characteristics. It is of benefit for walking and informal play. When linked to the areas of private woodland that have access along public rights of way the opportunities are quite extensive.

5.1.4 Archaeology and historic interest

There appears to be little of archaeological importance in the woodland. However, ancient woodland sites tend to be less disturbed than land that has been cultivated at some point in the past. Therefore, archaeological survey should perhaps be considered in the future.

5.1.5 Landscape

The woodland is of local landscape importance being on the edge of Hollings Lane and the large housing estate. The woodland also provides an effective screen between the two land uses.

5.1.6 Community involvement

There is a strong community interest in the woodland amongst individuals and the parish council. However, the links between the community and the authority are in their infancy owing to the relatively short period of time that Rotherham Borough Council has owned the woodland.

5.1.7 Education and interpretation

Presently there is no permanent interpretation, either in the woodland or in leaflet form, that has been produced by the council. Before becoming part of the council's woodland estate the authority did not undertake any events in the woodland.

5.2 General Policy of the Council

Council policies relating to woodland management are set down in the Statutory Green Belt and Unitary Development Plan documents. More specific policies relating to woodland management are contained in the non-statutory Council Policy CS8 (Countryside Study, 1989) which is given below:-

POLICY CS8

THE BOROUGH COUNCIL WILL, IN RESPECT OF TREES AND WOODLANDS IN ITS OWNERSHIP, PROMOTE, MANAGE AND SUSTAIN A HEALTHY AND SECURE STOCK OF TREES AND WOODLANDS, WHILE RECOGNISING THE IMPORTANCE OF PREVIOUS MANAGEMENT HISTORY AND ENSURE THAT THE SPECIAL FEATURES, IN PARTICULAR THE CONSERVATION HISTORICAL AND ARCHAEOLOGICAL INTEREST OF THE SEMI-NATURAL ANCIENT WOODLANDS, ARE RECOGNISED AND PROTECTED.

In addition, management aims and objectives have been drawn up in accordance with the UK Biodiversity Action Plan (HMSO, 1995) the UK Forestry Standard (Forestry Commission, 2004), and the Coal Measures Natural Area Profile (English Nature, 1997). Refer to the Appendix for details.

5.3 Aims and objectives of management

Aim 1: To ensure appropriate sustainable management of Silver Wood by developing a diverse woodland structure that will improve the nature conservation value of the woodland whilst retaining the timber producing potential where appropriate, and maintaining the genetic integrity of native species as far as is practicable.

Objectives

- To implement a thinning programme within the beech plantation to gradually introduce a group-felling programme, promoting native tree species where possible, and encouraging a more diverse shrub and field layer.
- To introduce a coppice programme along the southern boundary over the next 15 years, to increase the amount of open space in the woodland.
- To favour native tree and shrub species typical of ancient woodland within the Coal Measures Natural Area during all operations i.e. Sessile oak, silver birch, holly, rowan, hawthorn and hazel whilst incorporating a small proportion of the

introduced species; beech and sweet chestnut that are now characteristic of the woodland.

- To promote natural regeneration wherever possible in providing new trees.
- To ensure that optimal habitat conditions are provided for the RSPB's list of declining bird species present in the area, intended to benefit from the Forestry Commission's Woodland Improvement Grant 80 fund.

Aim 2: To conserve and promote the semi-natural characteristics and natural history of the woodland, in accordance with the UK Biodiversity Action Plan, and the Coal Measures Natural Area Profile, maintaining or increasing populations of key species.

Objectives

- To promote the predominantly semi-natural woodland vegetation communities present within the site during all habitat management in turn benefiting associated fungi, invertebrates amphibians, birds and mammals.
- To implement where appropriate specific management to maintain or increase populations of BAP short and middle-listed species that could reasonable be expected to be recorded at such a site i.e. song thrush, bat species and spotted flycatcher.
- To implement where appropriate specific management to maintain or increase populations of notable species within the Coal Measures Natural Area recorded from the site.
- To retain standing and fallen deadwood wherever possible, including representatives of each of the native species found on the site if possible, promoting associated fungi, invertebrates, hole-nesting birds and bats.
- To organise bat surveys of all areas where mature tree felling is proposed to ensure that the interests of bats are incorporated into all management implementation.
- To monitor the effects of all habitat management, wherever possible.
- To encourage local naturalists to visit and record the site, with particular respect to under-recorded groups i.e. fungi, bryophytes, mosses, mammals and amphibians.
- Ensure the necessary measures are taken to protect European Protected Species that may be present in or around the woodland.

Aim 3: To provide for safe and appropriate public access and informal recreation.

Objectives

- To maintain and keep secure all formal access points with appropriate furniture and discourage the use of informal entries.
- To maintain basic, low key entrance signs to show that public access is welcome.

- To maintain the public right of way and other casual routes as required.
- To visit and monitor the woodland as often as resources will allow.
- To undertake any necessary tree safety works and to ensure that all access structures, public footpaths etc., comply with the appropriate health and safety legislation.
- To carryout a full safety assessment of the site and prepare a site safety plan.

Aim 4: To involve the community in the care and management of the woodland, to encourage its use as an educational resource, and to encourage the enjoyment and appreciation of wildlife and conservation of the countryside by the community.

Objectives

- To consult the local community, specialist interest and user groups during the preparation and implementation of the management plan and prior to major management works taking place.
- To use the woodland to demonstrate to the community, through silvicultural operations, the importance of management of woodlands with such an even-aged structure.
- To organise events concerning the natural history, subject to available resources and at a scale appropriate to the size of the site.
- To support active community involvement in the care and management of the site, including where appropriate practical management tasks.
- To encourage visitors to report concerns of problems at the site, acting as the “eyes and ears” of the Council.

Aim 6: To conserve and promote the benefits associated with the woodland in respect of personal well being and sense of place.

Objectives

- To promote the woodland as a valuable setting for taking regular exercise to enable healthier lifestyles, improving the borough’s poor health statistics.
- To develop access and awareness of the natural and cultural features of the site to improve the sense of place and identity for individuals and local communities.

Aim 7: To perpetuate and promote the predominantly broadleaved character and place of the woodland in the landscape.

Objectives

- To promote predominantly native broadleaved tree and shrub species typical of ancient woodland within the Coal Measures Natural Area during all silvicultural operations.
- To minimise the landscape impact of any proposed management operations.

- To complete a landscape assessment of the site.

Aim 8: Subject to all of the above, to maximise income to offset expenditure.

Objective

- Subject to the interest of wildlife, archaeology, access and recreation and landscape, income from the sale of produce resulting from agreed silvicultural operations will be maximised.
- To maximise grant aid and investigate alternative sources of funding.

Aim 9: The performance of management planning and operations at Silver Wood will be subject to monitoring, review and regular reporting to meet the other aims and objectives of the management plan.

Objectives

- To monitor all areas of management within the woodland, taking account of all of the above aims and objectives.
- To collect monitoring information through regular management visits to the woodland, supervision during management operations, specific surveys and long-term study.
- To collect information appropriate to the intensity of operations, levels of access, according to reports and information received from the community and the other management aims and objectives.
- To maintain monitoring records in a form that will allow them to be analysed, compared over the long-term and the findings used in the management of Silver Wood, including review of the management plan.
- To include monitoring results in the annual woodland estate management report to the Council's Cabinet Member for Streetpride.

5.4 Management prescriptions

These objectives will be achieved by the following prescriptions (refer to section 6; management implementation and annual work programmes for further details). The advice set out in the UK Forestry Standard for the management of semi-natural woodlands will be followed (see table 3.3.4). The proposed silvicultural operations will be carried out in accordance with any felling licence granted for the woodland.

5.4.1 The woodland habitats

Sub-compartment 44 a

Being the most open in terms of woodland structure and with the highest light levels of any part of the woodland this long linear woodland edge provides the most diversity throughout the woodland. It provides the most varied field layer and the most cover in terms of a shrub layer. Given the lack of a field and shrub layer over most of the rest of the site this sub-compartment will continue to be management in a way that supports and improves upon this diversity.

Coppicing is a traditional form of management that will help ensure these benefits continue. It has been practiced in woodlands such as this for centuries. For example, there are records of coppicing in the nearby Wickersley Wood dating from the late 1500s. It was a means of producing a reliable and sustainable source of wood for cooking and heating and timber for manufacture and construction. The coppice system also has considerable benefits for native ground flora, invertebrates and bird species.

Therefore, a number of parcels have been identified for coppicing on a rotational basis (see figure 2.1). This will help to provide a varied structure and will be particularly beneficial until more diversity is introduced into the main parts of the woodland. The coppice programme is intended to be completed on a rotational basis of around 12 years, subject to growth rates and resources.

Sub-compartment 44 b

Given the open structure to the sub-compartment it will not be necessary to undertake any silvicultural works during this five year work programme.

It will be important to monitor how the regeneration will continue to develop and whether any further regeneration is likely to establish. Although bracken and, to a lesser extent bramble, is vigorous over the area, there are no plans during this five year work programme to undertake any control of these species. Their affects on the development of regeneration will be monitored over the five year work programme and control measures undertaken in the following five year work programme, if necessary.

Sub-compartment 44 c

The sub-compartment has quite a good structure compared with other sub-compartments, consisting principally of species native to the woodland. Given the very limited resource of very old, or over mature trees, in the woodland it will be desirable to begin a programme of work that will benefit the mature Sessile oak that have the best potential to become over mature and possibly veteran trees. The trees shall be surveyed and the desired trees selected for long-term retention. This will involve the removal of smaller surrounding trees that are competing for space, including trees in the neighbouring sub-compartment. This is discussed below.

Sub-compartment 44 d

Of any part of the woodland this sub-compartment is in most need of silvicultural works. This is for two reasons; to give the best formed trees more room to grow and develop whilst allowing opportunities for another generation of trees to begin to establish and to begin to increase the habitat potential of this, the largest compartment. Presently it offers little in the way of opportunities for bird and invertebrate species etc that require a good shrub layer, open space and dead wood for habitat.

A programme of silvicultural work will begin this process. To provide the most general benefit across the sub-compartment, selective thinning of the beech is proposed. This will be up to 20% intensity by volume. Some of the tree selection for removal will be predetermined by their condition and whether or not they would be able to respond to the increased light levels. Trees that have very small crowns because they have been suppressed over many years are unlikely to have the ability to respond to the increased light levels. Thinning will identify the trees with the best form and that have the means to respond to increased light levels. Trees adjacent to them that will affect their future development will be removed. The

best trees will then have room to grow into the space created, increasing their crowns and stem diameter. The process will also generally increase light levels reaching the woodland floor, encouraging development of a field layer. Thinning will also help the development of the existing regeneration in the central part of the sub-compartment. Particular attention will also be paid to tree thinning on the edge with sub-compartment 44c to consider whether removal of beech trees at this point would benefit the Sessile oak in 44c.

Scholes Coppice, Gibbing Greave and Herringthorpe Wood and Wickersley Wood had very similar woodland structures in parts to Silver Wood. Thinning and small group felling over the years has delivered considerable benefits and these woodlands are very good working examples of the effects of positive management.

A programme of small group felling will also help begin to address the issue of the even age structure to the sub-compartment. The approximate locations of the proposed coupes are identified in figure 2.1. The locations have been selected in such a way that will distribute the benefits over the sub-compartment. Their locations may also be somewhat predetermined by the quality and condition of the trees throughout the stand. Only one coupe will be created during the 2010 to 2015 work programme period. Two others are proposed in two future plan periods (see table of outline management works to 2033 below). The timing between the creation of the coupes is designed to begin the process of creating a multi-aged woodland. The size of the coupes will be around 0.02 hectares. This work is very likely to encourage the regeneration of beech but also Sessile oak and other broadleaved species. Native broadleaved species will be favoured over beech but where native species are limited in number, or absent, then beech will be used.

Restocking and management of regeneration

Wherever possible, natural regeneration will be the primary method of providing new trees and shrubs at Silver Wood. Operations will favour species native to the Coal Measures Natural Area. However, as beech and to a lesser extent sweet chestnut are now characteristic of the site, a small proportion of these replacements will be encouraged.

Areas of released regeneration will be periodically re-spaced as required to ensure that an appropriate mix of species is encouraged, and to promote healthy tree and crown development.

Compartments 44a to 44d outline management to 2030

The proposed silvicultural operations for the first five years from 2010 to 2015 are described in detail above. The following fifteen years are briefly set out below to give a general over view of anticipated silvicultural works to 2030.

Compartment	Activity	Fifteen year period between 2017 and 2032
44a	Coppicing of identified parcels	2 in 2016, 2 in 2020, 2 in 2021 and 2 in 2023
44b	Control of bracken if necessary.	Around 2020.
44c	Monitoring of the trees identified for long term retention to ensure they continue to have the proper conditions.	2020 and 2025 and 2030
44d	Small group felling (2 coupes)	1 in 2018* and 1 in 2025*
	Further 15% selective thinning	2022*

*The dates are selected as the optimal in terms of intervals between works. However, these are only guides and may vary for a number of reasons, including availability of resources, grant availability and perhaps influences of weather conditions and tree health in the interim.

Shared boundaries with other woodland owners

The eastern boundary is shared with woodland owned by the Ogden Group of Companies. This is a small area of woodland approximately the same age as the area subject to this plan. Beyond this is a large area of land reclaimed from open cast coal mining and planted in the mid 2000s by the same company. The company is also responsible for the large area of woodland at the other side of Hollings Lane. This is the same age, structure and composed of the same species as the woodland area subject to this management plan. There is contact between the authority and the Ogden Group as required for issues associated with tree management and access issues.

Non-native plant and animal species

There are no proposals to introduce non-native plant and animal species into the woodland over the period of the plan, this includes the introduction of non-native tree species. However, an element of the already present non-native tree species, principally beech will be retained. An element of this species helps to add diversity to the woodland, providing an additional food source from the beech mast for bird and mammal species. Beech also forms part of the character of the woodland. Increased diversity of species may also help the woodland to be better able to adapt in the future to a changing climate.

Burning of woody arisings

There will be a presumption against burning of arisings such as branch wood following thinning and felling operations to limit atmospheric pollution. Woody arisings from silvicultural operations will ordinarily be dealt with in the following ways; extracted from site, chipped on site or left as whole wood in the woodland as large stems or habitat piles to undergo natural decay processes. Given the proximity of the site to a large population, small pieces of wood left as habitat piles are likely to be set on fire and large pieces of dead wood on the ground are likely to attract people using the logs as seats. This can have knock on problems of litter and noise late at night that will inevitably result in complaints from the properties closest to the woodland. Therefore, the location of any dead wood will need to be carefully considered.

Management of wild animals, excluding deer

The woodland has a resident population and possibly a transient population of grey squirrel. There is some evidence of grey squirrel damage throughout the woodland. There is little evidence of a rabbit population in the woodland, nor is there any indication of rabbit damage to the existing trees. The woodland is only small, has quite a high number of dog walkers and there is presently little cover for rabbits.

Management of wild deer

It is very unlikely that there is a resident deer population in the woodland given how small the woodland is, how little cover there is and the high level of access. It is possible that deer is resident in the adjacent privately owned woodland and may therefore be transient in Silver Wood. There is no evidence of deer being problematic to the tree stock, including young regenerating trees, making the management of wild deer unnecessary at this stage. This situation will be monitored over the course of the plan.

Use of chemicals in the woodland

Occasionally it may be necessary to use chemicals in some form to protect the important habitats of this woodland from aggressive pests, diseases or invasive vegetation that may

threaten biodiversity or compete with newly planted trees. In addition, fertilisers may be considered to control mineral deficiencies during plant establishment. Rotherham Borough Council has a policy statement regarding the use of chemicals which addresses issues of appropriate and responsible use to safeguard the health of the general public, operators and the environment, together with a desire to use alternative control measures and reduce the amount used.

No operations have currently been identified during this plan period that will require chemical or fertiliser application. However, this position will continue to be assessed and reported upon as part of monitoring during this plan period. Should chemical use need to be considered then the need will be assessed against possible alternatives and the least hazardous chemical used. No chemical on the Forest Stewardship Council's highly hazardous list that does not have a current UK derogation will be used.

Ride and open space management

The amount of open space in the woodland is currently very limited. There is some limited open space in compartments 44a and 44b however this is inadequate for this woodland. The creation of coupes during small group felling operations over the next 20 years will provide some open space. This will only be temporary, as trees develop in the coupes. Nevertheless, the space will be valuable to ground flora in the early years as well as invertebrates, birds and bats.

Coppicing along the southern boundary will also provide some valuable open space.

5.4.2 Boundary and access management

The northern and western boundaries are presently open. There would be no benefit at this stage in installing structures along these boundaries. The eastern boundary is marked by a low but sturdy wet stone wall. No other boundary controls are necessary at this point. The southern boundary is demarcated by individual fences erected by the residents or householders of the private properties. This boundary control is adequate.

Presently the access controls at entrances are adequate. There are no gates at the entrances off Hollings Lane. However, there is little evidence of problems with illegal access into the woodland at these points. Installation of gates would cause unnecessary hindrance to legitimate users.

If this situation changes then the matter will be reconsidered at future reviews of the plan.

5.4.3 Over-mature trees, dead wood and other areas of long-term retention

Standing dead and rotting wood provides nesting sites for hole-nesting birds, roosts for bats and a source of food and habitat for fungi and invertebrates. As well as providing wildlife habitat, old trees and dead wood can have considerable intrinsic appeal and add diversity to woodland structure.

At Silver Wood very old and over mature trees are scarce across the woodland. The trees are very even-aged at round 80 to 100 years. Furthermore, because the stand has been under thinned the trees are very closely grown. Therefore, in many cases their stems are smaller and their crowns very limited compared to trees of a similar age that have had more room to develop. This also limits the benefit that the trees can provide for wildlife. It is important therefore to identify and retain as many of the older, well developed trees as possible, particularly mature trees with good potential to grow beyond maturity becoming very large, over mature and possibly veteran trees. Any misshapen trees will also be

retained during silvicultural operations for their intrinsic character. There are only generally found in 44a and 44c.

Where necessary and practical, footpaths will be diverted away from any trees that develop as important over mature or veteran trees to prevent safety conflicts. However, due to the relatively young age of most of the trees in the woodland it will be some years before veteran tree management will need to be considered in depth.

Dead wood, both standing and fallen, will be retained in large pieces during thinning and felling operations to undergo natural decay processes. Standing dead wood will be left at heights of between 3 and 12 metres depending on individual trees and locations of trees. Large diameter timber is particularly valuable, and will be left uncut where possible. Representatives of each of the native species found in the woodland will be treated in this way.

A rich fauna is supported by dead wood in partial shade, however, a mix of dead wood in sunlight, partial and full shade, as well as in wet and dry conditions is optimal (Kirby, 1992). Large diameter standing dead wood will be individually tagged and recorded allowing better records to be maintained of old and dead trees in the woodland. Tagging will also assist in undertaking wildlife surveys and will provide a better safety monitoring record for the older trees in the woodland.

The woodland area is only small and access is high, therefore it will be difficult to create quite wildlife refuges. However, as regeneration and a shrub layer develops following silvicultural work visitors will instinctively avoid these areas creating quieter areas. These will be mapped and recorded as they develop.

5.4.4 Site safety

a) Dangerous trees

All trees close to definitive and permissive paths, formal access points, those adjoining the highway and the residential properties will be inspected annually for signs of disease and damage. Trees away from these areas will be inspected during routine visits, wherever possible. Action will be taken as necessary.

b) Natural features - steep slopes and water

Silver Wood is a woodland located for the most part on a fairly steep, continuous slope. However, the footpaths tend to cross the site in such a way that either avoids the slopes or takes the least challenging route. The only path where there was concern over the gradient of a slope was parallel with the eastern boundary wall. This was re-graded slightly in 2010 to address the problem.

There are some very steep slopes and in the area of woodland immediately to the west of the woodland. However, this area is in private ownership.

c) Flytipping and dangerous rubbish

Fortunately, flytipping is not a common problem in the woodland. It will however become an issue from time to time. When it does it will be dealt with in the following ways:

General waste will be removed by the Council's contractor.

Asbestos removal will be arranged by the Council's Health and Safety Officer.

Drugs litter will be removed within three hours at any time of day or night, seven days a week by the Council's contractor.

In the case of other dangerous waste, advice will be taken from the Council's Environmental Health Officer and disposal carried out appropriately in accordance with their advice.

d) Manmade hazards

The main man-made hazard at the site is from rope swings. They can be a hazard when not tied properly or when tied to branches that are not strong enough, causing the potential for injury. For this reason all rope swings will be removed.

e) Conflicting recreational uses

Conflict between user groups within this woodland is limited. There are no bridleways to cause conflict between horseriders/cyclists and pedestrians. The woodland is relatively quiet and tends mainly to be used for walking, limiting the potential for conflict.

f) Fire plan

The acquisition of this woodland took place after the fire plan from the council's countryside sites was written. However, a fire plan for the woodland is included at the back of this plan. See figure 1.6. Presently the fire risk for the site is low as there is very little in the way of combustible material such as ground vegetation or shrubs. This will however change as the woodland is restructured and the amount of ground flora increases. Mowing of footpaths as necessary in the future will create useful fire brakes.

5.4.5 Sustainability and biodiversity

Silver Wood, together with Gulling Wood and Silverwood Colliery reclamation site form a Local Wildlife Site.

Further research into the natural history of the woodland would be beneficial for all groups which, to date, have been sparsely recorded, particularly, bryophytes mosses, fungi, invertebrates, amphibians and reptiles. Local naturalists and wildlife groups will be encouraged to visit this site more often to aid this process.

5.4.6 Access and recreation

At present, recreation and access at Silver Wood is informal and low key, with generally limited impact on the wildlife interest and no serious conflicts.

The existing definitive and casual footpath network is adequate for the size of the woodland and provides good opportunity for visitors to access the woodland. The paths link sensibly with the definitive footpath network through the private woodland areas. For these reasons there are not plans to increase the footpath network throughout the woodland.

The formal access points will be maintained and furniture replaced as necessary.

Basic signs were erected at the woodland entrances in 2008 when the authority became responsible for the woodland. These make it clear that public access is welcomed and a contact number for enquiries is given. It is felt that these signs are adequate and in keeping with the size of the woodland and the level of use. Therefore, there are no plans at the moment to upgrade these signs.

5.4.7 Education and interpretation

As the woodland is being managed for low key access there is no intention to undertake any permanent interpretation such as production of a leaflet or installation of signs, at this stage. This is a point that can be reconsidered at future plan reviews if necessary.

Guided walks by Council staff or other local groups may take place for time to time, including during the Walking Festivals. These walks can be used to provide more personalised interpretation about the woodland.

5.4.8 Community involvement

Historically there have been few links between the authority and the community in connection with the woodland because it was in private ownership.

When the authority became responsible for the woodland in 2008 Trees and Woodlands wrote to all residents sharing a boundary with the woodland in the interests of neighbourliness and to begin to create links with the community.

Ravenfield Parish Council has a keen interest in the woodland and has close links with the community. From time to time enquiries about the woodland come via the parish council.

Consultation with the local community, parish council, ward members and other interested groups concerning the management proposals will take place whilst the plan is at the draft stage and the results of the consultation considered prior to the management plan being put to committee for approval. Consultation will continue as implementation proceeds.

Visitors to the woodland will continue to be encouraged to report concerns and act as the “eyes and ears” of the authority.

5.4.9 Landscape

Management proposals include thinning, group felling and coppicing. The impact of these operations on the landscape from within and out with the woodland must be considered. The visual impact will depend on the location and size of the operations proposed. Because the woodland is only small and in particular a linear shape, the interior is easily visible from many of the boundaries, particularly from the northern boundary with Hollings Lane and the southern boundary with the residential properties. Furthermore, the groups will be large relative to the size of the woodland making the work appear more obvious.

The thinning proposals are unlikely to have any real adverse impact from out with or within the woodland.

It will be difficult to complete the small group felling work without it being visible from out with the woodland, or without it appearing to have a considerable impact from within. The sloping nature of the site is also likely to increase its prominence from the southern boundary. To minimise the impact of the work the locations of groups in relation to the woodland edges, each other and the time period between felling of each group will be important.

The impact will not necessarily be negative however. The benefits that increased light levels will bring with increased ground flora and a shrub layer, followed by another age class of trees will be desirable. The same arguments apply to thinning and coppicing, particularly as a series of vegetation structures develops.

Furthermore, a new generation of trees will ensure the long-term future of woodland in the landscape is protected.

Clearfelling was discounted in 5.4.1 above, partly on the grounds of negative landscape impact.

5.4.10 Archaeology and historic interest

There is little documented evidence available to the authority of any significant archaeology at the site. There is a small quarry area close to the eastern boundary of the woodland. Otherwise, there is little evidence of anything very obvious at the site. Any findings over the course of the plan will be reported to South Yorkshire Archaeology Service. No surveys are planned for this five year work programme.

5.4.11 Ecological survey and monitoring

The flora in the woodland is very limited. The silvicultural work is intended to improve conditions for ground flora. Monitoring and ecological survey following the silvicultural work will be important to determine the affects of the silvicultural work.

The silvicultural work will also increase the amount of dead wood habitat in the woodland because some trees will be topped and left and standing dead wood instead of being felled. Others will be left on the ground, where appropriate, for ground dead wood. The impact this has on fungi and invertebrates that rely on dead wood habitat will be monitored, together with the affects this will have on bird and bat species that not only rely on dead wood directly but that rely on invertebrates in dead wood as a source of food.

Monitoring of regeneration in the felling coup will be necessary for numbers and species present, together with the condition of the young trees and whether there is any damage from browsing.

A bat survey of the thinning and felling areas will be undertaken prior to work taking place. There will also be a wider survey at the same time to get an indication of populations of different bat species in the woodland.

Local naturalists and voluntary groups will be encouraged to continue surveying within the site. A “before” and “after” photographic record will be kept during all major management operations. As required, basic floristic surveys of these areas where management is concentrated will be carried out to help identify/quantify the spread and distribution of plant species.

Repeat surveys will be carried out, particularly for species that are identified in the local BAP, or as threatened, rare or declining species at a local, regional or national level. To ensure up to date species records are available specialist surveys of particular interest groups (birds, plants, fungi, invertebrates and mammals) will be periodically commissioned.

The Biological Records Officer will be kept informed of all recording activities, and provided with copies of collected data for input into RECORDER where appropriate.

6. MANAGEMENT IMPLEMENTATION

Silvicultural Works	Years				
	1	2	3	4	5
Essential safety works as necessary	√	√	√	√	√
Coppicing (4 parcels) in 44a	√				
20% by volume thinning in 44d	√				
Small group felling (1 coup) in 44d	√				
Maintain trees next to Hollings Lane with adequate clearance of the highway.	√	√	√	√	√

Access Works	Years				
	1	2	3	4	5
Maintain site entrance signs as necessary	√	√	√	√	√
Maintain access furniture as necessary	√	√	√	√	√
Maintain surfaced footpath as required.	√	√	√	√	√

Other Site Improvements	Years				
	1	2	3	4	5
Removal of litter/flytipping as necessary	√	√	√	√	√
Mowing and strimming of footpaths as necessary	√	√	√	√	√

Surveys, Plans and Consultation	Years				
	1	2	3	4	5
Tree safety inspections.	√	√	√	√	√
Undertake bat survey prior to thinning, felling and coppicing works.	√				
Monitoring of the regeneration in 44b	√	√	√	√	√
Invertebrate survey	√				√
Ground flora survey	√				√
Bird survey	√				√
Complete site safety plan.		√			
Include woodland in English Woodland Grant Scheme renewal for woodland estate.	√				
Apply for an EWGS woodland improvement grant and felling licence for proposed silvicultural operations.	√				
Carry out a landscape assessment of the woodland, subject to resources.			√		
Monitor and review the impacts of the work programme.	√	√	√	√	√
Photographic monitoring of the site.					
Review management plan.					√

6.1 Annual work programme (years 1-5)

Annual Work Programme Year One – April 2012 to March 2013												
	April	May	June	July	August	September	October	November	December	January	February	March
Silvicultural Works												
Essential tree safe works as necessary.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Selective thinning (20% by volume) of compartment 44d.						✓						
Coppicing of 4 parcels in compartment 44a.						✓						
Create one 0.2 hectare felling coup at a suitable location in 44d.						✓						
Maintain trees next to Hollings Lane with adequate clearance of highway, as necessary.						✓						
Access Works												
Maintenance of site entrance signs as necessary.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Maintain access furniture as necessary.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Maintain surfaced footpath on the eastern edge as necessary.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Other Site Improvements												
Removal of rubbish and fly tipping from within the woodland as necessary.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mowing and strimming of footpaths where necessary.		✓			✓							
Survey, Plans and Consultation												
Tree safety inspections						✓						
Undertake bat survey prior to thinning, felling and coppicing works				✓								
Monitoring of regeneration in 44b					✓							
Apply for felling license for all proposed tree felling operations					✓							
Invertebrate survey				✓								
Ground flora survey		✓										
Bird survey		✓										
Include in English Woodland Grant Scheme renewal for the woodland estate.	✓											
Apply for felling licence for proposed silvicultural works	✓											
Photographic monitoring of the site.	✓				✓	✓						

Annual Work Programme Year Two – April 2013 to March 2014

	April	May	June	July	August	September	October	November	December	January	February	March
Silvicultural Works												
Essential tree safety works.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Maintain trees next to Hollings Lane with adequate clearance of highway, as necessary.					✓							
Access Works												
Maintenance of site entrance signs as necessary.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Maintain access furniture as necessary.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Maintain surfaced footpath on the eastern edge as necessary.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Other Site Improvements												
Removal of rubbish and fly tipping from within the woodland as necessary.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mowing and strimming of footpaths where necessary.		✓			✓							
Survey, Plans and Consultation												
Tree safety inspections						✓						
Monitoring of the regeneration in 44b				✓								
Complete site safety plan			✓									
Photographic monitoring of the site.			✓			✓			✓			✓

Annual Work Programme Year Three – April 2014 to March 2015

	April	May	June	July	August	September	October	November	December	January	February	March
Silvicultural Works												
Essential tree safety works.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Maintain trees next to Hollings Lane with adequate clearance of the highway, as necessary.						✓						
Access Works												
Maintenance of site entrance signs as necessary.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Maintain access furniture as necessary.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Maintain surfaced footpath on the eastern edge as necessary.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Other Site Improvements												
Removal of rubbish and fly tipping from within the woodland as necessary.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mowing and strimming of footpaths as necessary.								✓				
Survey, Plans and Consultation												
Tree safety inspections						✓						
Monitoring of regeneration in 44b				✓								
Carryout a landscape assessment of the woodland, subject to resources			✓									
Photographic monitoring of the site.			✓			✓			✓			✓

Annual Work Programme Year Four – April 2015 to March 2016

	April	May	June	July	August	September	October	November	December	January	February	March
Silvicultural Works												
Essential tree safety works.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Maintain trees next to Hollings Lane with adequate clearance of the highway, as necessary.						✓						
Access Works												
Maintenance of site entrance signs as necessary.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Maintain access furniture as necessary.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Maintain surfaced footpath on the eastern edge as necessary.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Other Site Improvements												
Removal of rubbish and fly tipping from within the woodland as necessary.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mowing and strimming of footpaths as necessary.								✓				
Survey, Plans and Consultation												
Tree safety inspections						✓						
Monitoring of regeneration in 44b				✓								
Photographic monitoring of the site.			✓			✓			✓			✓

Annual Work Programme Year Five – April 2016 to March 2017

	April	May	June	July	August	September	October	November	December	January	February	March
Silvicultural Works												
Essential tree safety works.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Maintain trees next to Hollings Lane with adequate clearance of the highway, as necessary.						✓						
Access Works												
Maintenance of site entrance signs as necessary.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Maintain access furniture as necessary.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Maintain surfaced footpath on the eastern edge as necessary.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Other Site Improvements												
Removal of rubbish and fly tipping from within the woodland as necessary.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mowing and strimming of footpaths as necessary.								✓				
Survey, Plans and Consultation												
Tree safety inspections						✓						
Monitoring of regeneration in 44b				✓								
Invertebrate survey				✓								
Ground flora survey		✓										
Bird survey		✓										
Photographic monitoring of the site.			✓			✓			✓			✓
Review management plan	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

6.3 Forestry Operations

6.3.1 Thinning Proposals

S.cpt	Spp	P.Year	Year 1				Year 2				Year 3				Year 4				Year 5			
			Proposed		Actual		Proposed		Actual		Proposed		Actual		Proposed		Actual		Proposed		Actual	
			Area (ha)	Vol M ³	Area (ha)	Vol M ³	Area (ha)	Vol M ³	Area (ha)	Vol M ³	Area (ha)	Vol M ³	Area (ha)	Vol M ³	Area (ha)	Vol M ³	Area (ha)	Vol M ³	Area (ha)	Vol M ³	Area (ha)	Vol M ³
44a	Ash, sok, syc, be	Mixed	0	0			0	0			0	0			0	0			0	0		
44b	syc	c1920	0	0			0	0			0	0			0	0			0	0		
44c	Sok, holly	c1900	0	0			0	0			0	0			0	0			0	0		
44d	Be, sok, syc, swc	c1910	1.19	115			0	0			0	0			0	0			0	0		
TOTAL			1.19	115			0	0			0	0			0	0			0	0		

6.3.2 Felling Proposals

S.cpt	Spp	P.Year	Year 1				Year 2				Year 3				Year 4				Year 5			
			Proposed		Actual		Proposed		Actual		Proposed		Actual		Proposed		Actual		Proposed		Actual	
			Area (ha)	Vol M ³	Area (ha)	Vol M ³	Area (ha)	Vol M ³	Area (ha)	Vol M ³	Area (ha)	Vol M ³	Area (ha)	Vol M ³	Area (ha)	Vol M ³	Area (ha)	Vol M ³	Area (ha)	Vol M ³	Area (ha)	Vol M ³
44a	Ash, sok, syc, be	Mixed	0.024	9			0	0			0	0			0	0			0.028	9		
44b	syc	c1920	0	0			0	0			0	0			0	0			0	0		
44c	Sok, holly	c1900	0	0			0	0			0	0			0	0			0	0		
44d	Be, sok, syc, swc	c1910	0.02	9			0	0			0	0			0	0			0	0		
TOTAL			0.044	18			0	0			0	0			0	0			0.028	9		

Sok – Sessile oak, syc – sycamore, be – beech, swc – sweet chestnut

6.3.3 Woodland inventory

Hectares	Average volume per hectare (m ³)	Total woodland volume (m ³)	Total annual increment (m ³)	Total annual cut				
				2011/12	2012/13	2013/14	2014/15	2015/16
1.64	401	658	10*	133 [^]	0	0	0	9

*estimated yield class of 6.

[^]Whilst the annual cut in 2011/12 is significantly higher than the annual increment for the woodland this restructuring work follows a period of some decades without any silvicultural operations. The cut in 2011/12 represents around 13 years of annual increment. However, the last silvicultural operation was more than 13 years ago. Therefore, there has been a net gain in timber over the decades.

7. FINANCIAL STATEMENT

7.1 Financial Forecast for Year 1-5

The cost of the more routine management works in Silver Wood will be largely met by Rotherham Borough Council from existing resources for the five years of the work programme. The silvicultural works will be substantially be met by a woodland improvement grant from Forestry Commission and there will be a small, annual contribution towards other management costs from Forestry Commission through the English Woodland Grant Scheme.

The relatively high costs in this financial statement, particularly in respect of the silvicultural operations, reflects the constraints required because of public access at the site.

After such a long period of under-management, it is normal that management costs over the next few plan periods will be higher than the long-term average because of the relatively short period of increased active management to complete the restructuring process. However, in the medium term, expenditure should reduce as a more healthy, uneven age structure is created.

The management approach adopted is one of relatively gradual change and improvement, spreading cost and any potential revenue over time. Felling and regeneration works could be implemented at a faster rate than proposed, increasing the potential for improved economies of scale. However, this could be detrimental to the other interests of the site, for example landscape and wildlife.

Table 7.1 Estimated expenditure at Silver Wood

Operation	FINANCIAL YEAR					TOTAL
	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	
Silvicultural Operations						
Essential safety works.		250	250	250	250	1,000
Selective thinning and felling in Cpt 44d.	3,000	0	0	0	0	3,000
Maintenance of trees next to Hollings Lane	0	0	0	1,000	0	1,000
Coppicing in 44a	500	0	0	0	600	1,100
Access Works						
Maintenance of access furniture as required, including signs.	240	264	290	320	350	1,464
Maintenance of the surfaced footpath as required.	0	0	0	250	250	500
Other Site Improvements						
Removal of litter/flytipping as necessary.	350	367	385	405	425	1,932
Mowing and strimming of footpaths as necessary.	50	55	60	65	70	300
Surveys and Plans						
Bat survey prior to silvicultural works.	75	0	0	0	0	75
Invertebrate survey	100	0	0	0	100	200
Ground flora survey.	100	0	0	0	100	200
Bird survey	100	0	0	0	100	200
TOTALS	4,515	936	985	2290	2245	10,971

7.2 Estimated income

The woodland will be included in an English Woodland Grant Scheme contract for the estate beginning in 2011/12. This will pay a small annual management grant based on a rate of £30.00 per hectare together with woodland improvement grant to meet some of the costs of thinning and felling operations.

Table 7.2 Income for Silver Wood and net costs to RMBC

	FINANCIAL YEAR					Totals
	Year 1	Year 2	Year 3	Year 4	Year 5	
Income - Forestry Commission	*1122.35	49.20	49.20	49.20	49.20	1,319.15
- Timber sales	**3325.00	0.00	0.00	0.00	300.00	3,625.00
Expenditure	4515.00	936.00	985.00	2290.00	2245.00	10,971.00
Net cost to RMBC	67.65	886.80	935.80	2240.80	1895.80	6,026.85

*£919.60 for thinning and felling, £110.35 for monitoring, £43.20 for coppicing and £49.20 for management grant. ** based on £25 per m³ for 133m³

8. MONITORING AND REVIEW

8.1 Monitoring

Monitoring is important to ensure that management operations and their effects are properly considered during management planning reviews. Monitoring at Silver Wood will take place in accordance with the information outlined in the Council's policy statement for monitoring; *Statement for RMBC Woodland Estate – Monitoring*, to ensure that monitoring of the woodland is appropriate, consistent and replicable over time.

(a) General Management

Management work for which the Forestry Commission pay grant may be monitored at any time to ensure the work is being carried out in accordance with the contracts. Within this management plan work programme this will include thinning, felling and regeneration works included in a Woodland Improvement Grant and work included in Annual Management Grant.

A strict programme of monitoring, as described in section 1.2.3(c) is also carried out by the Forest Stewardship Council to ensure management of the woodland is in accordance with the Forest Stewardship Council's strict requirements for sustainable woodland management.

The effects of work at the site will be monitored over the plan period, specifically with regard to regeneration of the woodland and the BAP species present. Additionally, trees alongside the footpaths and woodland edges will be inspected annually for safety. All wildlife records will be collated on the Biological Record Centre's database. Incidents of damage to wildlife will be reported to the police as part of an approach to reduce wildlife crime on Council owned sites.

The woodland will be monitored generally for problems of off road vehicles, littering and flytipping to ensure sufficient resources are directed to dealing with problems if, and when, they arise.

(a) Natural History

The flora and fauna of the woodland will be monitored, with particular emphasis on the effects of management proposals on access, recreation and conservation. Any species presently identified on the local, regional or UK Biodiversity Action Plan will be monitoring priorities.

Local naturalists and voluntary groups will be encouraged to carry out survey within the site, particularly the little recorded invertebrate and fungi interest.

As required, basic floristic surveys of the areas where management is concentrated will be carried out to help identify/quantify the spread and distribution of plant species. The biological Records Officer will be kept informed of all recording activities and provided with copies of collected data for input into RECORDER where appropriate.

A “before” and “after” photographic record will be kept during all major management operations.

8.2 Review

The progress of the plan will be reviewed annually and adjustments made to the coming year's work programme as required. The development of the plan will be fully reviewed at the end of this five year period in 2016, taking into account the long term implications of the previously stated management objectives, previous interim reviews and the views of interested parties.

Provided there are no major changes to the aims and objectives the consultation process for the revised plan will remain in accordance with the consultation procedure to ensure continuity in implementing plans of operations. The period of formal consultation with professional bodies will be 7 working days. The wider consultation phase with the community will continue to use local Area Assembly meetings as a platform, together with letters to Ward Members, the Parish Council, local interest groups and residents. This is in accordance with the document *Consultation procedure for the development, review and implementation of management plans for council-owned woodlands*, prepared by Economic and Development Services (2001).

Copies of the reviewed management plan and new plan of operations will be made available for inspection at local libraries and in the Council's offices and on the internet. Also, a plan showing the locations of tree felling or other sensitive works will be attached to the consultation letters.

Any adverse reactions that cannot be resolved by normal discussion will be reported to the Cabinet briefing meeting. Otherwise the work will continue.

9. Communications

9.1 List of contacts and consultees

The following matrix of contacts has been compiled so that those with particular knowledge or who have an interest in a particular area of management can be quickly identified. This includes departments within the Council, external organisations and interest groups in and across Rotherham. All management issues should be directed through the Trees and Woodlands Section, Streetpride.

Table 9.1

Contact Person				
Rotherham MBC Staff	Position	Number/email	Department	Reason for Contact
Streetpride	Call centre	336003 streetpride@rotherham.gov.uk	Streetpride	Primary contact for all issues in respect of management of the site.
Burke, Kevin	Countryside Manager	822457	Culture and Leisure	Responsible for the Estate Team in Green Spaces that can undertake access improvement and maintenance work.
Barber, Carolyn	Ecologist	822462	Culture and Leisure	Ecological advice.
Donaldson, Jane	Assistant Rights of Way Officer	822932	Streetpride	Request to close Public Right of Way for management works.
Leonard, Paul	Biological Records Officer	822435	Culture and Leisure	To access biological records of the site. Link with interest groups who carryout survey work.
Darren Smithson, area manager	Area Assembly Officer (Wentworth South)	336772	Policy and Partnerships	For consultation and developing links with the local community.
Haydon, Anita	Planning Technician	823839	Planning and Transportation Service	Issues regarding planning constraints, including the tree preservation order.

Outside Rotherham MBC.	Organisation	Contact Details	Reason for contact
Mr Alan Scholes, Clerk	Ravenfield Parish Council	01709 700954	Consultation and links with the local community.
Grice, Chris	Forestry Commission	01904 448778	General enquiries relating to grants, Forestry Legislation etc.
Clough, Debbie	Forestry Commission	01904 448778	Enquiries specific to EWGS administration
Whiteley, Derek	Sheffield Bat Group		For bat surveys and general advice relating to bats. A contact phone number is available in an emergency situation when bats are found.
McNeil, Jim	South Yorkshire Archaeology Service	01142 736428	Advice regarding management operations in relation to archaeological features.
Sergeant Bill Bell	Safer Neighbourhood Team	01709 832422	Problems of nuisance and antisocial behaviour.
SY Police		01142 202020	In the event of repeated problematic behaviour
SY Fire Service		01142 727202	Notify the service of any controlled burning in accordance with the Councils' fire plan.
Ridley, Robin	South Yorkshire Forest	0114 2571199	Sourcing markets for timber.
Police/Fire		999	In the event of an emergency situation.
Professor M. Jones	Landscape historian		Advice on historical matters and management of the site.
Hurley, Kate	Groundwork Dearne Valley	01226 740077	Possible links to regeneration projects in the area.

GLOSSARY OF TERMS

Ancient semi-natural woodland – woodland believed to have been in existence since at least 1600AD, and which supports stands of unplanted **native** trees and shrubs.

Canopy – collectively, the mass of branches and foliage formed by the crowns of trees.

Coupe – A small clearing created by felling all the trees in a defined area. Usually 1.5 to 2 times the height of the adjacent trees.

Clear-felling – the complete felling of a whole **stand** of trees at the same time.

Coppicing – the periodic felling of broadleaved trees and shrubs to ground level, every 8-25 years. These are then allowed to re-grow forming many stems called poles. This process can be repeated many times.

Definitive footpath – A statutory public right of way.

Favoured tree – selected for retention during **thinning** and given favourable treatment by the removal of competing vegetation.

Glade – an area within a woodland managed as open space.

Group-felling – where a patch of trees covering less than 0.5ha is cut down to open a gap in the woodland, providing light and space for young trees. The minimum size of a gap is generally 1.5 – 2 times the height of adjacent woodland.

High forest – areas of trees, managed to promote a woodland of predominantly mature trees.

Natural regeneration – trees which have developed from natural seeding i.e. they have not been planted.

Native species – those tree and shrub species which have colonised Britain by natural means i.e. without the intervention of man.

Permissive footpath – non-statutory access routes, actively encouraged by the Authority.

Rotation - the length of time between the establishment of an area of woodland and its removal. Mature broadleaved high-forest is normally managed on a 100-200 year **rotation**, coppice on an 8-25 year **rotation**.

Silviculture – the growing and tending of trees.

Stand – a group of trees, often applied to groups of trees of the same age or species composition.

Thinning – the removal, at certain stages of growth, of a proportion of trees from a **stand**. For example, to allow the remainder more growing space, to favour a particular species mix, or to maintain or encourage a diverse ground vegetation.

Windthrow – the blowing down of trees by the wind.

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