



**Sheffield &  
Rotherham**



**Management Plan for  
Moss Valley Woodlands Nature Reserve  
April 2016 – March 2021**

## Acknowledgements

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## Summary

Moss Valley Woodlands nature reserve covers 26.3 hectares of semi-natural ancient woodland, scrub and grassland. It lies on the southern fringes of the city, adjacent to Norwood and Owler Carr Wood, within the Moss Valley. The woods are the property of Sheffield City Council and have been managed by the Sheffield and Rotherham Wildlife Trust (SRWT) since 2001.

Moss Valley Woodlands is a semi-natural ancient woodland. Historical research and archaeological evidence suggests that the woodland was managed as coppice with standards in the post-medieval period, reverting to mature woodland with a beech and sycamore component by the Victorian period. Today the woods are designated as a Local Wildlife Site and contain a Public Rights of Way network, including both footpaths and concessionary bridleways, which provide access across the site. The reserve has long been used as a place for recreation, and enjoyed by generations of Sheffields for walking, picnicking, blackberry picking and horse riding.

Moss Valley Woodlands nature reserve has numerous features of (biological) conservation interest, including its areas of semi-natural ancient woodland, the ancient woodland ground flora, the semi-improved grasslands of Dowey Lumb and several birds of conservation concern. Together with adjacent woods, their age and continuity of use make the woodlands an important historical site which must be managed to ensure that their unique characteristics, so appreciated by its users, are retained.

This management plan covers the period from April 2016 to March 2021. Physical works contained in the plan are aimed at conserving and improving the priority habitats on the site and maintaining features of interest. Works to maintain and improve recreational infrastructure are also included. A survey and monitoring programme will be implemented over the course of the plan, providing data on ecological conditions which will inform future management works.

In addition to these physical works, the Trust plans to engage the public in the management of the reserve through the Reserve Advisory Group. On site information provision will be limited, rather the site will be promoted through the Trust's website. An annual programme of volunteer work days and guided walks will be held to promote public understanding of its wildlife and history and offer opportunities to participate in its management.

Through the implementation of this plan, the Trust intends to ensure the reserve remains true to the vision:

*Moss Valley Woodlands will be a place that offers visitors the opportunity to enjoy nature in a peaceful, natural setting. Rich in wild flowers, birdlife and other wildlife, it will provide a tranquil haven away from the bustle of everyday life, where people of all ages can come to relax and explore. A network of well-maintained footpaths and bridleways offer a variety of walks and rides, through woods and along streams, and will link the reserve to the wider landscape of the Moss Valley. Users of the area will be encouraged to have a sense of ownership over the woodland and participate in its management.*

*Management of the woodlands will be sustainable and will contribute to the local economy where possible. The woods will be managed in the context of the wider landscape, with the Trust working with adjacent woodland owners, farmers and others, as necessary, to achieve this.*

# 1.0 Introduction

Moss Valley Woodlands nature reserve covers 26.3 hectares of semi-natural ancient woodland, scrub and grassland. The reserve lies on the southern fringes of city, adjacent to Norwood and Owlter Carr woods, within the Moss Valley. The woods are the property of Sheffield City Council and have been managed by the Sheffield and Rotherham Wildlife Trust (SRWT) since 2002, for the purposes of conservation and public recreation. The woods form part of the South Sheffield Greenway Living Landscape area and act to combat climate change by acting as a carbon store and prevent flooding and soil erosion by retaining and slowly releasing rainfall.

SRWT is part of a national association of 47 local Wildlife Trusts, which work with communities throughout the UK to protect wildlife in town and country.

Our vision is to see a Living Landscape – an amazing, green landscape for the wildlife and people of Sheffield and Rotherham, a landscape which is understood, enjoyed and cared for by local people and organisations. In order to fulfil this vision, we:

- i) Work to create and manage a more resilient network of natural spaces, to support a greater diversity and abundance of wildlife and habitats across Sheffield and Rotherham;
- ii) Help local people to visit, understand, enjoy, value and be inspired by nature;
- iii) Support local people and organisations take action for nature and wildlife.

## 1.1 Purposes and formulation of the plan

This management plan has been formulated for the following reasons:

- To provide comprehensive and cohesive information about the Moss Valley Woodlands nature reserve in one document, with reference to other documents where necessary.
- To outline the key long-term aims and the associated objectives which form the framework of management.
- To outline the rationale for management so as to give a clear and comprehensive explanation of why aspects need management and in what form that management will take place.
- To provide a key document from which projects are developed and associated funding sought.
- To provide consistency and continuity, so that when changes of staff take place, or changes in ownership or disposal of the land occurs, then management aims, objectives and prescriptions are continued.

The work programme is set out within this document. However, the nature of work programmes is such that they vary and are modified due to unanticipated changes or developments such as the availability of funding. Therefore the full annual work programmes are kept and updated electronically at the Sheffield and Rotherham Wildlife Trust offices.

## 1.2 How to use this plan

This plan is written in 11 sections; for a detailed list of contents, please refer to the **Contents** pages.

Section 1 contains the **vision statement** for Moss Valley Woodlands nature reserve and lists the **management aims** on which this plan is based.

Sections 2-7 contain the **site description** and, where appropriate, evaluation against key management aims.

Section 8 comprises a **table of aims and objectives**. This describes the work that will be delivered to achieve each aim during the period covered by this management plan. The primacy of individual objectives is given as HIGH, MEDIUM or LOW. This system will be used to prioritise works when resources are limited. It is, however, our intention to deliver all objective contained within this plan.

Section 9 is the **work programme**, which is used to schedule management works and shows when individual pieces of work will be carried out. Costings for the work programme for the first three years of the plan are given here.

Section 10 contains the **Figures** – maps and charts that support the plan and which are referred to in the text.

Acronyms are used throughout the plan. A **glossary** of acronyms is included as Appendix I.

## 1.3 Vision statement and management aims

The following vision for Moss Valley Woodlands Wood nature reserve is derived from statements made by members of the public that set out why they value the reserve:

*Moss Valley Woodlands will be a place that offers visitors the opportunity to enjoy nature in a peaceful, natural setting. Rich in wild flowers, birdlife and other wildlife, it will provide a tranquil haven away from the bustle of everyday life, where people of all ages can come to relax and explore. A network of well-maintained footpaths and bridleways offer a variety of walks and rides, through woods and along streams, and will link the reserve to the wider landscape of the Moss Valley. Users of the area will be encouraged to have a sense of ownership over the woodland and participate in its management.*

*Management of the woodlands will be sustainable and will contribute to the local economy where possible. The woods will be managed in the context of the wider landscape, with the Trust working with adjacent woodland owners, farmers and others, as necessary, to achieve this.*

To deliver this vision, the Trust has set the following aims for the management of Moss Valley Woodlands:

**Aim 1:** To safeguard and enhance the woodland's biodiversity value by promoting structural and species diversity in canopy, understory and ground flora, and to increase the proportion of native broadleaf regeneration in areas where this is absent or low.

**Aim 2:** To increase the cover of woodland ground flora and enhance regeneration of tree saplings in Long Wood. Sustain these features in other woodland compartments.

**Aim 3:** To increase the volume of standing dead wood in the woodlands.

**Aim 4:** To continue management of Dowey Lumb to optimise condition and extent of species-rich grassland.

**Aim 5:** To safeguard the streamside flora from damage by management works, recreational pressures or deep shading from trees and shrubs.

**Aim 6:** To survey and monitor the impacts of management on Moss Valley's biodiversity.

**Aim 7:** To secure, maintain and restore the reserve's infrastructure.

**Aim 8.** To facilitate public access to the woodlands.

**Aim 9.** To protect, preserve, research and communicate the reserve's archaeological and historical interest and significance.

**Aim 10.** To promote and encourage participation in the management of Moss Valley Woodlands nature reserve.

**Aim 11.** To develop ongoing sources of grant aid and other funding to support the management of the nature reserve.

**Aim 12.** To increase public support for SRWT through our work in Moss Valley Woodlands nature reserve.

These aims were informed by the history of the woods, their current biodiversity value, national and local conservation and recreational strategies, public opinion (through consultation) and the Trust's own charitable aims and objectives.

## 2.0 Site Details

### 2.1 Location and extent

The Moss Valley Woodlands nature reserve is a narrow, linear group of woods extending in an arc from Jordanthorpe to Norton, within the Moss Valley in the county of Derbyshire (**Figure 1**). The reserve covers 26.3 hectares and includes Coalpit Wood (centred at SK 372 807, 3.6 ha), Long Wood (centred at SK 378 808, 13.19 ha) and parts of Newfield Spring Wood (centred at SK 372 807, 6.5 ha) and Bridle Road Wood (centred at SK 374 813, 0.94 ha), but is continuous with other woods in the area. It also includes 1.4 ha of grassland known as Dowey Lumb (centred at SK 376 805).

### 2.2 Landscape value and context

Moss Valley Woodlands nature reserve falls inside Natural England's Natural Character Assessment (NCA) Profile 38: Nottinghamshire, Derbyshire and Yorkshire Coalfield. This NCA is characterised by underlying shallow coal measures and consists of the relatively low-lying land to the east of the Peak District National Park and the wool and engineering towns (in this case Sheffield) of the South Pennine Fringe to the west.

The Moss Valley, including the nature reserve, lies on the Lower Coal Measures Series, and is so underlain by bands of sandstone with (relatively) few coal seams. The result is a landscape of broadly undulating wooded hills, valleys and small ridges. The valley soils are predominantly heavy and seasonally wet. Crops are grown in free-draining areas, with cow pasture in wetter areas. Remnants of ancient semi-natural woodland on steeper slopes or wet valley bottoms are characteristic of the valley, which provides a number of ecosystem services for the area, notably in terms of carbon sequestration, flood mitigation and recreational provision.

The Moss Valley is situated to the south of the city of Sheffield, with housing development to the north and west. This contrasts sharply with the character of the valley itself, which has retained a diverse mosaic of topographic features and vegetation types. The Moss Brook meanders through a largely arable landscape, dissected by old hedgerows, ditches and scrub belts. Linear belts of woodland, of which the reserve forms part, define the valley bottoms and stream-sides. Together with the old lanes and packhorse routes, these woodlands now act as corridors for the passage of people and wildlife across the modern-day, arable landscape.

The whole of the Moss Valley contains 280 hectares of woodland, which is 10% of the total of woodland in lowland Derbyshire. Of this, 150 hectares is Ancient Semi Natural Woodland (ASNW) or Plantation on Ancient Woodland Sites (PAWS).

### 2.3 Site ownership and tenure

Moss Valley Woodlands nature reserve is owned by Sheffield City Council, but was let to Sheffield and Rotherham Wildlife Trust on a long lease in 2002.

## 2.4 Designations and policy context

The Moss Valley, including the area covered by the reserve, is designated as the Moss Valley Conservation Area (source: Derbyshire County Council). A Conservation Area is defined as "an area of special architectural and historic interest, the character or appearance of which it is desirable to preserve or enhance". In the execution of its duties as a planning authority, North East Derbyshire District Council is required to pay special attention to the character and appearance of its conservation areas when considering applications for planning permission.

The reserve's woodlands have also been designated as a Wildlife Site by Derbyshire County Council and Derbyshire Wildlife Trust. This local government designation is used to identify sites of importance for nature conservation that lie within Derbyshire but outside of the Peak District National Park and to offer them protection under the planning system. Long Wood and Coalpit Wood are part of the Owler Car Wood Complex Wildlife Site (number N233), Dowey Lumb is Wildlife Site number N270, and Newfield Spring Wood is Wildlife Site number N269. In addition, the adjacent Whinacre Wood, to the south of Long Wood, is part of Moss Valley Woods Site of Special Scientific Interest.

The lower (southern) section of Dowey Lumb is within the Moss Valley Floodzone (source: Derbyshire County Council).

The reserve contains a complex network of Public Rights of Way (PROW), and a concessionary bridle route (**Figure 2**). Both footpaths and bridleways pass through the reserve, linking it to a much larger network covering the whole of the Moss Valley. The nature reserve falls under the jurisdiction of Derbyshire County Council (DCC) in relation to Public Rights of Way.

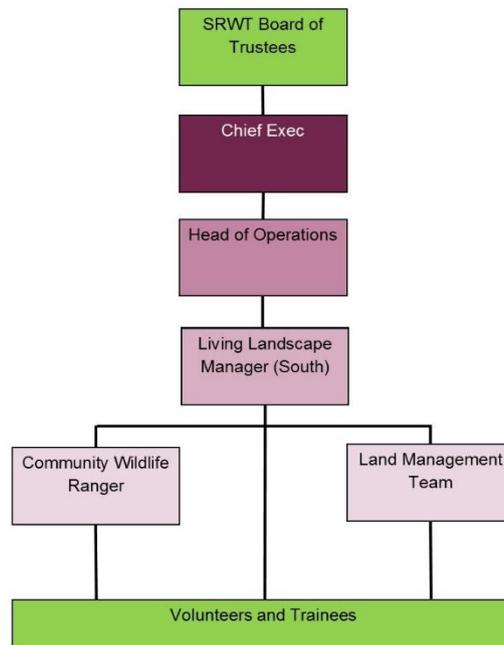
The '**Rights of Way Improvement Plan for Derbyshire (2007)**' sets out the Council's approach to PROW. Under this document, the Council recognises the health and recreational benefits provided by access to the countryside, and the benefits to tourism and local economy. It aims to "have an integrated, well managed and inclusive rights of way and access network which:

- Encourages responsible enjoyment by residents and visitors alike.
- Is a sustainable and safe network in keeping with the County's heritage, landscape and wildlife interests.
- Promotes healthier lifestyles.
- Helps support tourism and the local economy.

In the '**Statement of Action (2013-2017)**' the Council highlights the need to provide a connected, safe and accessible network, especially of bridleways, for users. The need to prevent illegal use of the network is also recognised, as is the need to improve way-marking and promote responsible use of the network.

## 2.5 SRWT staff structure for reserve management

The organogram below shows all staff who are directly involved with management of the site.



## 2.6 Site safety, security and maintenance

A site specific risk assessment has been written for the Moss Valley Woodlands and is reviewed on an annual basis. Further risk assessments are prepared for specific tasks and events at the site as necessary. The Trust also manages the reserve in line with its many detailed policies covering environmental management and health and safety. These are amended and updated at regular intervals or to reflect legislative changes.

The reserve is regularly patrolled by SRWT staff and volunteers. Any problems are logged and addressed as soon as possible. Problems and incidents reported by members of the public are also logged and are dealt with as necessary. Any known accidents or incidents that occur on the reserve are recorded on the relevant accident forms at SRWT headquarters.

Tree inspections for the entire site will be carried out every five years. Associated remedial work is undertaken as recommended.

The reserve's boundaries are largely open and marked by physical features (such as the stream) or a change of habitat type (from woodland to farmland). The boundaries of Coalpit and Long Woods are partially marked and secured by drystone walls or fencing. Major access points to the reserve are provided with gates, squeezes, and stiles as appropriate, to allow access by legitimate users of the site whilst excluding entry by cars (other than management vehicles), quad bikes and motorcycles.

No litter bins or dog waste bins are present on site, rather visitors are encouraged to take their litter/dog waste home for disposal. The installation of litter/dog waste bins has been discounted due to the cost of collections and a desire to keep the reserve as 'wild' as possible.

Littering and fire-lighting with associated littering can be a problem in both Coalpit and Bridle Road Wood. Waste is cleared regularly when reported. To combat this a programme of public education focused on the households bordering the woods will be undertaken. The use of motion-sensitive cameras in tipping hot spots will also be considered.

A dedicated patrol team visit the site once every two to four weeks to undertake regular litter picks and report issues of vandalism.

## 2.7 Adjacent land ownership

Moss Valley Woodlands nature reserve lies on Sheffield's urban fringe. Much of the land surrounding the reserve is under cultivation and is owned or managed by various local farmers (**Figure 3**). To the south and east, the reserve boundary abuts woodland. Cook Spring Wood, Owl Carr Wood and Nor Wood are owned and managed by the Woodland Trust, with Whinacre Wood and Newfield Spring Wood being privately owned (by two separate owners). The farmland to the north of Coalpit Wood and Long Wood is owned by Sheffield City Council, and farmed by a tenant farmer.

## 2.8 Past, recent and present land use

The land within and surrounding Moss Valley woodlands nature reserve has long been used and modified by human activity.

Evidence for Anglo-Saxon occupation of the Moss Valley and surrounding area can be inferred from the frequency of Anglican suffixes in local place names, for example 'ham' meaning manor, 'ton' meaning farmstead and 'ley' or 'leah' meaning a glade or clearing.

In c.1183, Beauchief Abbey was founded by Robert Fitz Ranulph, Lord of Alfreton and Norton. The Abbey was located some distance to the north-west of the reserve, on a site now on the southern edge of Sheffield, but appears to have held land in the vicinity of the survey area. A site at Hazelhurst, to the east of the survey area, was being used for iron smelting as early as the late 12th century.

The history of Moss Valley, from the medieval period onwards, has been traced through document and field evidence (EDAS, 2001). Much of the survey area was owned and managed by the occupants of Hazelbarrow Hall (which preceded the farm on the same site) during the early post medieval period, and it may be that the same arrangement was present during the medieval period. In addition to the iron smelting activities of Beauchief Abbey, there is also evidence to suggest that coal mining was undertaken in and around the reserve (Coalpit Wood) during the medieval period.

Despite the evidence for earlier medieval industry both within and around the survey area, there is little evidence for intensive or large-scale exploitation in the period after c.1500. However

some evidence indicates early post-medieval industrial activity to the north–east of Hazelbarrow Farm.

The exploitation of the reserve for coal appears to have ceased by the late medieval period but was replaced by woodland management. Documentary evidence suggests that woodland management formed an important industry in the Norton area from the mid 15th century onwards. The numerous archaeological sites relating to the woodland management and exploitation identified by the current survey suggest that this activity was most intense in Long Wood, with outliers in parts of Newfield Spring Wood. The 35 ‘ackers’ of ‘Springe Wood’, together with the ‘Tymber and Poles’ mentioned in the 1635 survey of Hazlebarrow Hall suggest that woodland management was well established within the reserve and surrounding woodland by the early 17th century. The use of the word ‘Springe’ in 1635 also indicates that this managed woodland would have been coppiced. Archaeological evidence, place name evidence, historical records and the reserve’s current ecology strongly suggest that coppicing was the traditional management for these woodlands (coppice with standards was the management regime most commonly practised in the Sheffield area). In South Yorkshire this was usually a coppice-with-standards, which replaced wood pasture as the dominant form of economic exploitation of woodland in south-west Yorkshire after the mid 15th century, although the use of wood for herbage continued until at least the 18th century.

Although the extent of any woodland within the reserve is unclear before the early 19th century, two sites associated with post-medieval woodland activity were found within a 500 m radius of the boundary. These, together with the presence of ancient woodland indicator species, suggest that the reserve’s woodlands are ancient in origin.

Following its management as coppice for white coal production, the woodland was greatly modified by the extensive planting of beech (*Fagus sylvatica*), sycamore (*Acer pseudoplatanus*) and sweet chestnut (*Castanea sativa*) during the latter parts of the nineteenth century and the early twentieth century.

Today, the Moss Valley Woodlands nature reserve lie within a largely agricultural landscape (arable and pasture). The woodland complex itself is used for the purpose of nature conservation, to provide ecosystem services for the surrounding area and for recreational activities, such as walking and horse riding, and is a popular site for local naturalists who provided many of the records summarised in this report.

## 2.9 Services and site access

An overhead mains electricity line runs in a north-south direction that bisects the two limbs of the reserve (**Figure 4**). This has some management implications; the statutory undertakers for this are Yorkshire Electricity Group plc. The areas that are affected include the northern section of Newfield Spring Wood, and the middle of the Long Wood. Trees are removed as part of the maintenance directly under the power lines.

A high-pressure mains gas line in a runs north-west to south-east through Dowey Lumb.

Water supply lines and fibre-optic telephone cables are not present on the reserve.

The original utility maps should be referred to before site works take place that may impact the services. An on the ground check should also take place with a cable detector.

## 2.10 Public Rights of Way

A comprehensive network of footpaths and bridleways runs through Moss Valley Woodlands, with numerous desire lines (non-statutory routes) that link the Public Rights of Way also present (**Figure 2**). There are approximately 1 km of definitive footpaths within the reserve, and 0.7 km of definitive or permissive bridleway.

The reserve is well linked in to the wider footpath and bridleway network in the valley.



## 3.0 Environmental Information

### 3.1 Topography

The reserve lies on the northern and western side, and along the bottom of the Moss Valley, which runs east to west between the River Rother and Batemoor. The woodlands are low lying, sloping down from a high point of 195 m above ordnance datum (AOD) at their northern tip, to 100 m AOD at the southern end of Bridle Road Wood.

### 3.2 Geology and pedology

The underlying geology of the Moss Valley is typical of the Lower Coal Measures Series, with alternating beds of sandstones, and shales and mudstones, irregularly interspersed with coal seams of varying depth.

The reserve's pedology reflects the underlying bedrock, with acidic soils over the sandstone and neutral to base-rich soils associated with the shales and mudstones.

### 3.3 Hydrology

The eastern and southern boundaries to the reserve are both formed by streams (**Figure 5**). The Moss Brook, which runs from north to south through Bridle Road Wood, is classified by the Environment Agency as a Grade 2 river, meaning it is relatively unpolluted. However, the stream that flows through Long Wood is known to suffer occasional incidents of sewage pollution from storm-water overflows on the adjacent Jordanthorpe estate.

Hillside spring-lines and seepages appear as groundwater issues at the base of the more porous sandstone layers across the woodland, resulting in seasonally wet and waterlogged soils, particularly in Long Wood.

### 3.4 Climate

The Moss Valley lies at the climatic northern limit for species with a southern distribution, and the climatic southern limit for northern species of flora and fauna. Data is available for the thirty-year average from the local Sheffield weather station, is presented below.

<b>Temperature</b>	<b>January</b>	<b>July</b>
Average (Celsius)	4.0	16.6
<b>Rainfall</b>	<b>January</b>	<b>July</b>
Average (mm)	88	51

The prevailing wind is from the west. The low-lying and sheltered position of the reserve's woodlands mean that windthrow is rarely an issue.

Local sources maintain that the average annual temperature is rising. In addition local plants are also believed to be flowering earlier on average. The rainfall in the region is approximately 800 mm per annum and is predicted to rise in future years (Sheffield Local Plan, 2015).

It should be noted that the woodland in Moss Valley, including that comprising the reserve, acts to ameliorate the effects of extreme weather on a local level. During hot weather, the woodland helps to temper the effect of the urban heat island created by the density of housing in the vicinity. Equally, the woodland helps to reduce the risk both of flooding, soil erosion from the adjacent farmland and landslide after heavy rainfall. Woodlands soak up and slowly release heavy rains, with the tree roots and other vegetation binding the topsoil and preventing erosion. Additionally, the woodland, and in particular the woodland soils, act as a carbon store, therefore helping to combat climate change.

*The following sections of the plan describe in detail the background to the management plan aims and the way in which these will be developed across the lifetime of the plan.*

## 4.0 Biodiversity

### 4.1 Biodiversity Action Plans

Moss Valley falls within the area covered by the Lowland Derbyshire Biodiversity Action Plan. Much of this is currently under consultation for the period of 2011 to 2020. The following Habitat Action Plans are relevant: lowland broadleaved mixed woodland; wood pasture, parkland and veteran trees; rivers and streams; semi-natural grassland.

**Table 1: BAP Priority habitats and species**

Lowland Derbyshire Biodiversity Action Plan (BAP) Priorities	
Habitat Action Plans	Species associated with the habitats
<b>Lowland broadleaved mixed woodland</b> <b>Wood pasture, parkland and veteran trees</b> <b>Semi-natural grassland</b> <b>Rivers and streams</b>	<b>Freshwater white-clawed crayfish</b> <i>(Austropotamobius pallipes)*</i> <b>Skylark</b> ( <i>Alaudia arvensis</i> ) <b>Song thrush</b> ( <i>Turdus philomelos</i> ) <b>Linnet</b> ( <i>Carduelis cannabina</i> ) <b>Bullfinch</b> ( <i>Pyrrhula pyrrhula</i> ) <b>Lesser spotted woodpecker</b> ( <i>Dendrocopos minor</i> ) <b>Starling</b> ( <i>Sturnus vulgaris</i> ) <b>Yellow Hammer</b> ( <i>Emberiza citronella</i> ) Pipistrelle Bat ( <i>Pipistrellus pipistrellus</i> ) <b>Brown hare</b> ( <i>Lepus europaeus</i> )

\*species recorded in the Moss Brook but not recorded on reserve

Habitats and species in bold are on the UK Priority Species and Habitats Action Plans, though may be categorised differently. Of additional conservation interest are the woodland ancient indicator species:

Bluebell (*Hyacinthoides non-scripta*), wood sorrel (*Oxalis acetosella*), wood anemone (*Anemone nemorosa*), dog's mercury (*Mercurialis perennis*), wood mellick (*Melica uniflora*), wood millet (*Millium effusum*), yellow archangel (*Lamiasium galeobdolon*), townhall clock (*Adoxa moschatellina*), ramsons (*Allium ursinum*) and wild daffodils (*Narcissus pseudonarcissus*).

### 4.2 Habitats

The Moss Valley Woodlands nature reserve forms one part of a woodland complex, set in a rural landscape which supports a wide variety of species-rich habitats (**Figure 7**). The reserve encompasses Coalpit Wood, Long Wood, and parts of Bridle Road Wood and Newfield Spring Wood. The boundaries of the nature reserve managed by Sheffield and Rotherham Wildlife Trust do not encapsulate all of the Moss Valley woodlands (**Figure 2**) but do include a remnant of

wood pasture – now semi-improved neutral grassland, bracken and scrub – known as Dowey Lumb.

### 4.2.1 Woodland

The woodlands on the reserve are all semi-natural ancient oak (*Quercus* spp.) woodlands, though greatly modified by the historic planting of sycamore (*Acer pseudoplatanus*), beech (*Fagus sylvatica*) and sweet chestnut (*Castanea sativa*). Despite the woodland canopy being greatly modified, the understorey and ground flora have remained largely intact. There are several small areas of species-rich wet woodland adjacent to streams and along flush lines.

The component woodlands on the reserve are distinct in character and are therefore described individually below, based on data gathered during the 2005 Phase I survey (Senkans, 2005):

#### Coalpit Wood

Coalpit Wood is at the western-most end of the reserve, has an even-aged canopy dominated by sycamore, with abundant mature oak hybrids (*Quercus petraea x rubra*), occasional ash (*Fraxinus excelsior*) and silver birch (*Betula pendula*), and (rarely) horse chestnut (*Aesculus hippocastanum*) and common alder (*Alnus glutinosa*). The understory is bramble-dominated (*Rubus fruticosus*), with occasional holly (*Ilex aquifolium*), hazel (*Corylus avellana*), wild cherry (*Prunus avium*), rowan (*Sorbus aucuparia*) and elder (*Sambucus nigra*). The ground flora is well developed but characteristically dominated by bluebells and creeping soft-grass, with occasional yellow archangel, wood sorrel, and locally-dominant wood anemone. The ancient woodland indicators yellow pimpernel (*Lysimachia nemorum*) and perforate St. John's wort (*Hypericum perforatum*) are also present. There is also a small wet flush within the centre of the wood, with willow (*Salix* sp.), meadowsweet (*Phillipendula ulmaria*) and rushes (*Juncus* spp.).

The combination of species suggests that this is W10 *Quercus robur*-*Pteridium aquilinum*-*Rubus fruticosus*-*Hyacinthoides non-scripta* woodland.

An old hedge bank runs adjacent to a defunct drystone wall along the northern boundary of the woodland. Fencing was erected in 2004 to prevent motorbike access to the woods, with some shrub planting, has improved the woodland edge structure, providing a variety of heights and densities, and acting as a buffer between the arable fields and the woodland. Though it is not particularly diverse (it contains hazel, hawthorn and elder), it buffers the woodland flora from effects of spray drift and fertiliser and also provides opportunities for nesting, roosting and feeding for birds and small mammals including bats. This area of dense woodland edge shrubs also prevents access by motorbikes from the adjacent farmland. A field margin exists between the woodland edge and the crop; this is retained and managed as a cross-country course and again helps to buffer the effects of arable farming on the woodland flora.

No major silvicultural management works were carried out in the woodland for approximately 30 years, prior to 2002, although tree safety works alongside Public Rights of Way and other footpaths were carried out within Coalpit Wood and Long Wood in 1998-1999. In 2002, a 10% thin of the canopy (favouring oak) took place throughout Coalpit Wood. The aim of this work was to increase the age structure within the woodland, by encouraging natural regeneration of

tree and shrub species. The thinning had a significant effect on the light levels in the woods increasing the spread and density of bramble but a minimal effect on tree regeneration other than in very localised areas. In 2013, areas of the woodland were then under planted with native shrubs to diversify the understorey. Group felling to create regeneration glades was carried out in winter 2015/2016.

By winter 2015, the understorey in Coalpit Wood was judged to be much improved in quantity and species diversity. Monitoring of the areas opened up by group felling will be required to check that a good rate of seedling recruitment results.

## Long Wood

Long Wood is characterised by densely-spaced, mature and frequently drawn oak and beech (W14 *Fagus sylvatica*-*Rubus fruticosus* community), forming a closed canopy and situated on a moderate, south-facing slope. Large, mature rowan, sweet chestnut and wych elm (*Ulmus glabra*) are occasional throughout. Individual yew (*Taxus baccata*), hornbeam (*Carpinus betulus*), wild cherry and Corsican pine (*Pinus nigra* var. *corsicana*) are present in the area adjacent to Dowey Lumb. The understorey in the majority of Long Wood is well-developed but species-poor. Holly dominates, forming extensive hagsgs across the woodland. Localised areas of beech regeneration are present. Hawthorn (*Crataegus monogyna*) is occasional, with hazel present along flush lines and in areas adjacent to the stream. The drier parts of the wood, and the mid-slope also have a few regenerating oak, sycamore and silver birch; these species are utilising the increased light levels following windblow.

Bluebell, creeping soft-grass, bramble and honeysuckle (*Lonicera periclymenum*) are characteristic of the ground flora in drier areas of the woodland with an oak, ash or sweet chestnut canopy. In areas of beech, the ground flora is characterised either by a dense layer of beech mast, which excludes ground flora, or is absent due to the density of holly hagsgs. Wavy hair-grass (*Deschampsia flexuosa*) dominates the more acidic, steeper slopes. Beech is regenerating sporadically across the woodland, in particular where the canopy has opened up due to tree safety works and possibly as a result of the thinning.

Stands of semi-mature sycamore are concentrated in the area adjacent to the stream. In the wet flushes adjacent to the stream course, the enriched soils support a variety of woodland plants, including dog's mercury (*Mercurialis perennis*), lesser celandine (*Ranunculus ficaria*), greater stichwort (*Stellaria holostea*), wood anemone, wood millet (*Millium effusum*), marsh marigold (*Caltha palustris*), lady fern (*Athyrium filix-femina*) and ramsons. There are also ancient woodland indicators present including yellow archangel, opposite-leaved golden saxifrage (*Chrysosplenium oppositifolium*), yellow pimpernel, wood speedwell (*Veronica montana*), sweet woodruff (*Galium odoratum*), wood sorrel and wood melick. This community is found in compartment 451b, under the hazel coppice (**Figure 8**).

The woodland edge along Long Wood is structurally poor and species-poor in places. There is little diversity of structure in the transition from mature trees to open field. The field margin acts as the only buffer to spray drift and fertilisers. The woodland edge therefore offers limited opportunities for feeding passerines, small mammals and invertebrates. However, the north-westerly edge does contain a dense stand of guelder rose, which is scarce in the woodland itself.

No major silvicultural management works were carried out in the Long Wood for approximately 45 years prior to 2015, although tree safety works alongside Public Rights of Way and other footpaths were carried out within Long Wood in 1998 to 1999 and again in 2002 to 2003. The

planned woodland work for the period of 2006 to 2011 was not undertaken due to funding constraints. Re-cutting of the hazel coppice in Compartment 451b and group felling to create regeneration glades at the eastern end of Compartment 451a took place in winter 2015/2016.

## Bridle Road Wood

Bridle Road Wood lies on a moderate to steep, east-facing valley side running down to the Moss Brook. The woodland is predominantly sycamore- and beech-dominated to the north, with a canopy dominated by mature, well-crowned sessile oak, mature beech, frequent semi-mature silver birch and occasional field maple (*Acer campestre*) and sycamore to the south, and an area of scrub adjacent to Dowey Lumb..

The northern part of Bridle Road Wood has a canopy characterised by densely-spaced 60-80 year old sycamore, with frequent beech, occasional oak and ash forming a generally closed canopy. Dead standing and fallen wych elm are frequent, and many of the elm stumps are coppicing naturally. Apart from this, the understorey is poorly formed, with scattered pole-stage beech and sycamore. Holly and hawthorn are present but rare. The northern section and parts of the southern section are more closely associated with the W10 community (*Quercus* spp. – *Pteridium aquilinum* – *Rubus fruticosus*).

To the south the canopy is open, with a well-developed understorey of hazel, blackthorn (*Prunus spinosa*), dog rose (*Rosa canina*), holly (*Ilex aquifolium*), hawthorn (*Crataegus monogyna*) and crab apple (*Malus sylvestris*). Wood melick (*Melica uniflora*), wood barley (*Hordelymus europaeus*), wood millet (*Milium effusum*), and barren strawberry (*Potentilla sterilis*) are present in the ground flora. The ground flora also contains pignut (*Conopodium majus*), marsh thistle (*Cirsium palustre*) and bitter vetch (*Lathyrus linifolius*). These species are usually associated with open areas, and are probably remnants of when this area had a more open character.

Elements of W7 (*Alnus glutinosa*-*Fraxinus excelsior*-*Lysimachia nemorum*) woodland community are present along the Moss Brook.

As the woodland grades into Dowey Lumb, birch and hawthorn scrub become dominant, with blackthorn (*Prunus spinosa*) forming locally dominant patches. The hawthorn here are old and often multi-stemmed from historic coppicing.

The western edge of the wood runs along an ancient hedgerow bank, where there is coppiced hazel, coppiced hawthorn and holly. The hedgerow at Bridle Road Wood contains a row of mature ash, some of which have fallen but are re-growing, and also contains wild cherry, field maple, and rose (*Rosa* sp). The hedgerow ground flora contains dog's mercury, hogweed, (*Heracleum sphondylium*), greater stitchwort (*Stellaria holosteum*), and wood sage (*Teucrium scorodonia*).

Little woodland management has taken place in Bridle Road Wood over the past 45 years, although tree safety works have been carried out as required. Coppicing of scrub in the area immediately adjacent to Dowey Lumb took place in 2003.

## Newfield Spring Wood

Newfield Spring Wood has a varied canopy characterised by beech, oak and sycamore. The canopy is generally closed, and the woodland generally has a poorly-developed understorey, although occasional thickets of holly, wych elm, bramble and birch are present. Tree regeneration is sporadic throughout, the exception to this being the northern-most part of the reserve where a good number of oak, beech and sweet chestnut saplings are growing. In steeper

areas, the understorey has frequent rowan, hazel and silver birch. The ground flora throughout the woodland is co-dominated by bluebell and creeping soft-grass, but is more diverse adjacent to the stream, as in Long Wood. The woodland is W16 *Quercus-Betula-Deschampsia flexuosa* woodland on the more acidic soils in the northern part of Newfield Spring Wood. Small patches of W7 *Alnus glutinosa-Fraxinus excelsior-Lysimachia nemorum* woodland are also present, adjacent to the River Moss. Elements of W14 *Fagus sylvatica-Rubus fruticosus* exist in the southern part of Newfield Spring Wood.

The very northern, most beech dominated, part of the woodland was thinned, and beech removed between 2002 and 2005. There has been a flush of oak regeneration as a result; indicating that this thinning has achieved the objective of opening up the canopy to allow natural regeneration of oak to occur.

The eastern section of Newfield Spring Wood is privately owned (purchased by the current owner in 2011). The owner has an active interest in conservation and is managing their half of the woodland under the Woodland Grant Scheme (EWGS).

## Woodland Evaluation

Woodland is the dominant habitat type over the vast majority of the reserve. This woodland comprises a semi-natural oak woodland, heavily modified by a number of other broadleaved species - notably beech, sycamore, hornbeam and sweet chestnut. The result of these introductions is a canopy where the dominant species varies. Beech, oak and sycamore are the species most frequently represented over much of the woodland, with other canopy species being occasional or rare.

The woodland in the Moss Valley can be most accurately be described as ‘mature’ woodland. Many well grown trees are present and the canopy is closed. The age of these mature trees is estimated to range from 100 to 200 years old, with very few veteran or ancient trees present. Dead wood habitat, especially standing dead wood, is limited.

Woodland structure, and most noticeably the presence/absence and composition of the woodland understorey, is varied across the reserve. It is least diverse and most dominant in Long Wood, where groves of dense holly bushes dominate large areas of woodland, suppressing the ground flora and the regeneration of tree seedlings. In other areas of the woodland the understorey, though sparser, is much more varied with a good variety of native species represented.

In a national context, the field layer in the woodlands is typically species-poor, as is usual of W10/W16/W14 woodlands. However, the dominance of bluebell is noteworthy, as the United Kingdom holds much of the world's bluebell resource and this species is one of the UK's Biodiversity Action Plan priorities. In a local context, the ground flora in its entirety is of high conservation value, as centuries of charcoal and/or white coal production, changes in management practises, and increases in recreational pressure have led to a severe decline, and often loss, of such communities in urban and urban fringe woodlands across the region. The preservation of these communities, is therefore a conservation priority for the reserve.

In conservation terms, native wildlife is best adapted to semi-natural ecosystems with plant species typical of semi-natural vegetation communities. In this context, the high proportion of

beech, sycamore and other non (locally or nationally) native species can be seen as undesirable. However, the increasing prevalence of tree diseases e.g. sudden oak blight, *Phytophthora* spp and ash dieback mean that all large tree species are potentially under threat in the coming years. Added to the changes in survivorship resultant from a changing climate, **it is recommended that the Moss Valley woodlands are managed to retain a varied canopy, albeit with a greater proportion of native tree species (especially oak) than currently exists. Woodland management practises will therefore favour oak, ash, birch and rowan, both as canopy species and as regenerating saplings.**

The return to woodland with native trees as dominant over non-native will be a gradual process over 100 years or more.

Beech casts a dense shade, suppressing the understory, ground flora and regeneration of other tree species beneath its canopy. For this reason it tends, in time, to dominate oak woodland causing the loss of diversity in canopy, understory and ground flora alike. This is currently a great problem within Long Wood where the shade from mature beech is allowing holly to dominate the understory, preventing tree seedling regeneration and suppressing the ground flora.

However, mature beech trees provide food for a variety of birds and mammals, particularly in good mast years, as well as supporting a good fungal community. Beech also make excellent veteran trees and, given the age of beech trees in the Moss Valley (they represent some of the oldest trees on the reserve), with large standing dead / dying trees also produce suitable habitat for some of the area's rarer fungi such as the porcelain fungus (*Oudemansiella mucida*) and the tiered tooth (*Hericium cirrhatum*). **Individual specimens will be identified and managed as future veterans during the course of this plan.**

Early research suggests that beech will fare well if the climate of the UK warms over the coming century, moving the natural distribution of this species to the north. For this reason **a beech element will be retained in the Moss Valley** but this species should not increase in dominance across the reserve. **Beech will consequently be targeted and selected against during thinning operations to prevent this.**

Sycamore is currently present in many areas of the reserve, and is particularly abundant in Coalpit Wood. This non-native species supports a high biomass of invertebrates, as well as providing large amounts of leaf litter for detritic communities. Conversely, its tendency to dominate woodlands with its heavy canopy and prolific seeding makes it a long-term threat, which can undermine native species such as oak and rowan and structural diversity by suppressing the development of an understory. Any domination of sycamore over parts of Moss Valley Woodlands nature reserve is therefore considered to be unfavourable and **sycamore will be selected against during thinning operations.**

Sweet chestnut is well established though relatively minor component of the canopy throughout the Moss Valley Woodlands. This species is native to southern Europe and North Africa but, as with sycamore, is now naturalised into the UK. The flowers provide an important source of nectar and pollen to bees and other insects. A large number of micro-moths feed on the leaves and nuts, which are also enjoyed by squirrels. However, its rapid rate of establishment and growth, which makes it ideal for coppice, means that it can outcompete slower growing species such as oak.

It is thought that sweet chestnut will fare well if the climate of the UK warms over the coming century, although its susceptibility to the fungus *Cryphonectria parasitica* (chestnut blight), which is active in the south of the UK at the present time, may limit this success in the future. Nevertheless, it **constitutes an important and attractive component of the and will be retained**, with action taken as required on a compartment by compartment basis to ensure that it does not prevent the establishment of the slower growing oak.

Hornbeam constitutes another non locally-native element to the woodlands, although it is native to the southern UK. It produces a dense, straight-growing trunk which was once highly valued for pit beams and props, probably accounting for its occurrence in these woodlands. Hornbeam (along with yew and wild cherry) are essential food sources for Hawfinch (*Coccothraustes coccothraustes*), a bird which has been lost to the Sheffield area over the last 30 year period and which is declining nationally. Although management at Moss Valley alone cannot hope to restore the species, **hornbeam, wild cherry, and yew will be retained in the woodlands** in the hope of future recovery of this species.

Holly is a native British understory shrub that is widespread throughout Moss Valley woodlands nature reserve. Historically, it would have been cut to provide winter feed, however this practise has long since stopped. Without management holly is coming to dominate quite large areas of Long Wood, to the detriment of other understory and ground flora species and, critically, to tree regeneration.

**The spread of holly will be checked in Long Wood, and the area covered by dense holly reduced.** Whilst some old hags will be retained for their historic value and conservation interest (dense hags are favoured as nesting sites for many of the reserve's songbirds and the berries are an important winter food) the spread of young growth in areas with rich ancient woodland ground flora will be halted before it becomes established, and other areas will be cleared.

The presence of Roe Deer, Muncjac and Grey Squirrel in the valley are a potential threat to tree regeneration long term, as all 3 species can cause substantial damage to the bark of young trees. Squirrel damage has already been noted in adjacent Nor Wood. **The Trust will undertake monitoring to determine the threat posed by this species to the long-term health of the reserve and work with adjacent land owners to manage it as necessary.**

In the UK up to a fifth of woodland plants and animals depend on dead or dying trees for all or part of their lifecycle and many of these species are rare or threatened. The current dead wood resource on the reserve is good in Newfield Spring and Bridle Road Wood and low (standing dead wood) in Coalpit and Long Woods. We will therefore **seek opportunities to increase the deadwood provision in Coalpit and Long Woods, in areas away from paths and Public Rights of Way.**

The structure, species composition and management regime of the woodlands which now comprise the Moss Valley Woodlands nature reserve have changed many times over the past 400 years, in response to the social and economic needs of the time. This need – to change with the times – is still relevant to the woodland today. This said, the nature of woodland, the longevity of tree species and the requirement for a stable environment for many of the species it supports, suggests that a change be a gradual one. This plan then, sets the following long-term aims for

the woodland, against which shorter term objectives and work programmes may be set and monitored:

**Aim 1:** To safeguard and enhance the woodland's biodiversity value by promoting structural and species diversity in canopy, understory and ground flora, and to increase the proportion of native broadleaf regeneration in areas where this is absent or low.

**Aim 2:** To increase the cover of woodland ground flora and enhance regeneration of tree saplings in Long Wood. Sustain these features in other woodland compartments.

**Aim 3:** To increase the volume of standing dead wood in the woodland.

### 4.2.2 Wood Pasture

Dowey Lumb is an area of grassland on a south facing slope at the south-eastern end of the site, where the two branches of woodland meet. It is believed to be an area of relict woodland pasture, though the area has not been grazed within living memory. Today, the Lumb supports a diverse flora, with a number of plant communities characteristic of different habitats present, as well as a range of fungi.

Elements of the woodland plant communities, including species such as bluebell, greater stitchwort, wood anemone, wood sorrel, creeping soft-grass and red campion, are found across the Lumb. These are growing interspersed with neutral grassland species such as Yorkshire fog (*Holcus lanatus*), meadow foxtail (*Alopecurus pratensis*), rough and smooth meadow grasses (*Poa trivialis* and *P. pratensis*), common knapweed (*Centaurea nigra*), common sorrel (*Rumex acetosa*), bitter vetch (*Lathyrus linifolius* var. *montanus*) and cowslips (*Primula veris*). Species characteristic of old pasture, such as pignut (*Conopodium majus*) is present, though dyer's-greenweed (*Genista tinctoria*) has not been recorded for some time.

Species characteristic of acid grassland are also found on the Lumb. These include tormentil (*Potentilla erecta*), heath bedstraw (*Galium saxatile*), lesser stitchwort (*Stellaria graminea*), betony (*Betonica officinalis*) and slender St. John's wort (*Hypericum pulchrum*).

In several areas across the Lumb, the soil is damp and species characteristic of wet grassland and damp woodland dominate. Tufted hair-grass (*Deschampsia cespitosa*), wild angelica (*Angelica sylvestris*), common valerian (*Valeriana officinalis*), marsh thistle (*Cirsium palustre*), meadow-sweet (*Filipendula ulmaria*), sneezewort (*Achillea ptarmica*), oval sedge (*Carex ovalis*) and creeping buttercup (*Ranunculus repens*) are all present, along with stands of compact rush (*Juncus conglomeratus*) and rosebay willowherb (*Chamerion angustifolium*).

Bracken occurs across grassland areas of Dowey Lumb, although its vigour has been greatly reduced by years of management and it no longer dominates the area.

The eastern half of the Lumb is covered with dense hawthorn and bramble scrub. Oak, hawthorn and hornbeam trees have been planted to the north and west and are now beginning to adversely affect the grassland beneath them, enriching and shading it and increasing its 'woodland' character.

Conservation work on the Lumb began prior to the acquisition of the reserve by the Trust, under the auspices of the Moss Valley Wildlife Group and supported by the 3 Valleys Project. Since 2001 this work – an annual programme of bracken control, scrub control and haycut - have continued.

## Evaluation

Given the scarcity of unimproved grassland in both the Moss Valley and the Sheffield area, the retention of this habitat at Dowey Lumb is a conservation priority. The key issues on Dowey Lumb are dominance of bracken, encroachment of scrub, grassland management, proportion of existing scrub and trees.

Despite its species-richness, the size of the grassland area on the Lumb is still small, making it vulnerable to encroachment and the effects of shading. Consequently, it is recommended that work to increase the size of the grassland area, through the removal of trees and scrub and the control of bracken, should continue over the period covered by this plan. The annual late (September) hay-cut promotes botanical diversity by lowering nutrient status, allowing seed deposition and by preventing the dominance of bracken and the establishment of scrub. It should be continued.

The scrub component on the Lumb provides a valuable habitat for a number of invertebrate and bird species, which require scrub and edge habitat rather than mature woodland, and should therefore be, at least in part (25%), retained. The coppicing this scrub on a rotational basis will help to further diversify the height and density of this habitat on the Lumb, as well as providing an ecotone between the Lumb and the surrounding woodland.

The diversity of plant communities, its sheltered nature and south-facing aspect also result in Dowey Lumb supporting a diversity of invertebrate life (see Section 4.3.3 below).

The option of grazing cattle has been considered but dismissed due to the lack of availability of stock and the low number (one cow and calf) that would be required making such a scheme uneconomic.

The hedge at the north of Dowey Lumb was planted a few years ago and will require laying, although not during the period covered by this plan. In time, this will help buffer the effect of spray drift from the adjacent arable fields.

Future survey and monitoring of the Lumb is a priority to ensure the correct balance of management is achieved:

**Aim 4:** To continue management of Dowey Lumb to optimise condition and extent of species-rich grassland.

### 4.2.3 Watercourses

The reserve has a considerable freshwater resource, in the form of two streams that join to form the River Moss, and seasonally-wet flushes. These support a varied flora, and plant communities along the streams are more diverse than in drier areas. Water quality in the Moss Valley is recorded as being moderate to good. However, in times of high rainfall, the local arrangement of surface-water drains, and foul water sewers, occasionally result in the discharge of raw sewage into the brook.

A report written in 2002 on the water quality within the Moss Valley concluded that the stream running southeast from the top of Long Wood was of medium quality, with some indication of pollution. The stream running from the northern parts of the Moss Valley (Newfield Spring Wood and Bridle Road Wood) to Dowey Lumb was found to be of good quality. The two watercourses running into Coalpit Wood from Jordanthorpe Parkway were identified as very polluted in this survey. The combination of the diversity of species present and indicator species resulted in this conclusion.

**Aim 5:** To safeguard the streamside flora from damage by management works, recreational pressures or deep shading from trees and shrubs.

## 4.3 Species

### 4.3.1 Fungi

The reserve's fungal communities have been well surveyed, once in 2001 (Senkans, 2001) and again in 2015 (Clements, 2015).

46 species were found in autumn 2001; some growing in abundance. The most prolific being the *Russula* family, especially the common yellow russula (*Russula ochroleuca*), the charcoal burner (*R. cyanoxantha*) and the blackish purple russula (*R. atropurpurea*). Long Wood was particularly rich in these colourful mycorrhizal fungi, especially under the areas where beech and oak were plentiful.

In autumn 2015, 126 species of fungi were recorded on the reserve, placing it amongst the best sites for fungi in the area. Newfield Spring, Bridle Road Wood, Long Wood were all rich in fungi, due both to the species composition and prevalence of (fallen) dead wood. Dowey Lumb supported a number of grassland fungi although the sward height is generally too long to be ideal for these species.

Coalpit Wood was found to be less rich in fungi, due to lower quantities of dead wood (volumes purposely kept low as this area suffers from petty vandalism and misuse such as fire-starting) and the prevalence of bramble. It is recommended that, when generated by tree safety works, sections of tree trunk and larger (unwieldy) limbs, be retained on site to benefit fungi and detritivorous insects.

The fungal communities present on the reserve are the result of multiple factors. Chief amongst these are the woodland species composition and structure, the amount of dead wood available on site and the relatively low levels of disturbance through management (intensive woodland management is damaging to fungi) and recreational pressure. Retaining the woodland's deadwood component (increasing that of standing dead wood), managing for veteran trees, limiting holly spread in Long Wood, continuing the management of Dowey Lumb and

minimising recreational pressure on the woodlands will all promote the preservation of their fungal community. **It is also advised that the richness of this community not be generally advertised to avoid attracting fungi pickers to the woodland.**

### 4.3.2 Fish

During the crayfish survey in 2002, a number of Bullhead (*Cottus gobio*) and Brown Trout (*Salmo trutta*) were recorded in the reserve's streams. There were greater numbers in the northern tributary (running through Bridle Road Wood) than in the southern tributary (running through Long Wood). In this southern tributary, there were greater numbers in the eastern section than in the western section, possibly due to higher levels of sewage pollution in the upper parts of this stream.

### 4.3.3 Invertebrates

A number of different invertebrate surveys have been carried out within **Newfield Spring, Bridle Road and Long Woods** over the past two decades, and a number of casual records have also been made. The most notable feature of the existing data is the presence of a high percentage of ancient woodland indicator hoverflies. The Moss Valley is considered to support a very rich hoverfly fauna, with 15 species indicative of ancient woodland recorded up to 1987. **Newfield Spring Wood** has 36 species of hoverfly with widely differing ecological niches. As larvae, most are aphid predators but there are also species, such as *Rhingia campestris*, which inhabit dung, *Merodon equestris* which feed on bulb species, species of decaying wood (*Xylota* spp.) and the *Eristalis* spp which breed in water-filled rot holes and wet muddy pools. No information for **Coalpit Wood** has been received but species present here will reflect the composition found in the other areas of the reserve.

**White-letter hairstreak (*Strymonidia w-album*)**, a Derbyshire BAP Priority species has been recorded in the woodlands of the area, and may also be present on the reserve, though recent surveys have not identified its presence. This species prefers woodland clearings, edges, and small copses where elm grows. The caterpillar feeds on elm flowers and leaves, and the adult feeds on bramble flowers in particular. Therefore the woodland and Dowey Lumb and the interface of these areas offer good conditions for the species to survive.

A butterfly survey undertaken in 2001, concluded that the mature nature of the reserve's woodlands, with their closed canopies, limited their suitability as butterfly habitat. The Lumb was considered of greater value due to the open but sheltered character, and the range of sward heights and densities.

Most records from **Dowey Lumb** focus on hoverflies and Lepidoptera (mostly moths), with some useful records of a small range of true bugs. Many of the hoverflies found had come from adjacent woodland and wet habitats, visiting the Lumb to feed on the nectar of grassland flowers. Examples include the ramsons hoverfly (*Portevinia maculata*), which is exclusively a deciduous woodland species found where ramsons occur, as well as *Criorhina ranunculi* (first recorded in 1984 and also in Long Wood), *Brachypalpoides lenta* and *Xylota sylvorum*. These species are local or very local and weakly indicative of ancient woodland. *Didea fasciata* is more strongly indicative and also nationally notable. Species characteristic of woodland margins, such as *Pipiza fenestrata* are also present.

Both moths and butterflies have been recorded on the Lumb. Moths constitute the largest group, with 85 species recorded to date, including some micro-moths. The majority are common

species, including generalists such as the swallow-tailed moth, the larvae of which feeds on a wide variety of trees and shrubs. Other woodland and hedgerow species include green oak tortrix (*Tortrix viridana*), the locally notable slender brindle (*Apamea scolopacina*) whose larvae feed on woodland grasses, the rufous minor (*Oligia versicolor*) and scarce silver-lines (*Bena prasininana*), which feeds mainly on oak. Nine species of pyralid moth, a mainly grassland species, are present on the Lumb and caterpillars of the chimney sweeper moth (*Odezia atrata*), which feed on pignut, were also recorded. An adult chimney sweeper moth was recorded on Dowey Lumb in 2001.

The butterfly fauna of Dowey Lumb comprises many species common to the Sheffield area. Orange tip (*Anthocharis cardamines*), small white (*Pieris rapae*), green-veined white (*Pieris napi*), small copper (*Lycaena phlaeas*), peacock (*Inachis io*) and red admiral (*Vanessa atalanta*) are amongst the species recorded. The **white letter hairstreak** was recorded in the Moss Valley area by Sorby Natural History Society in their Record published in 1992. The Moss Valley Wildlife Group also recorded the species in 1997/1998. Similarly, it is possible that holly blue butterflies are present due the presence of abundant holly shrubs. The white letter hairstreak butterflies are associated with elm (*Ulmus* sp.) and are a rare species, because so many elm trees have been lost to Dutch elm disease. This species is already present in the adjacent Site of Special Scientific Interest woodland, and the provision of suitable habitat on the reserve could encourage an expansion in its population size. The planting and coppicing of elm in the woodland edges will provide suitable conditions for this species.

There is a remote possibility of **freshwater white-clawed crayfish** (*Austropotamobius pallipes*) being present in the reserve's streams, although this species has not been detected by surveys of recent years. The presence of signal crayfish (*Pacifastacus leniusculus*) in the valley's watercourses also poses a long-term threat to any white-clawed crayfish populations.

#### 4.3.4 Amphibians and reptiles

Adder (*Vipera berus*), slow worm (*Anguis fragilis*) and great crested newt (*Triturus cristatus*) have been recorded in Moss Valley but not within the reserve boundary in recent years. Grass snake (*Natrix natrix*) has been recorded on the reserve, suggesting the presence of amphibians such as common frog (*Rana temporaria*) and/or Common Toad (*Bufo bufo*) in the area. More survey work would be required to determine the location and extent of reptile and amphibian populations locally.

The provision of 'compost heaps' of rotting vegetation, perhaps from the haycut, on Dowey Lumb would benefit grass snake but these should be placed away from species-rich grassland to prevent soil enrichment.

#### 4.3.5 Birds

The reserve's breeding bird fauna were surveyed in 2002 and again in 2012 using the Common Bird Census methodology. The species and populations recorded are, of course, a subsection of the avifauna of the wider woodland. However, recent survey data for Nor wood and Owler Carr Wood is not available, so the contribution of the reserve's population to the whole and the relative suitability of habitats on the reserve to those in the wider area cannot be ascertained. Nevertheless, the Moss Valley nature reserve clearly supports a rich and varied woodland bird fauna.

The reserve's bird communities reflect the opportunities for feeding and nesting within the woodland. Seedeaters, such as linnet (*Carduelis cannabina*), a national BAP priority species, greenfinch (*Carduelis chloris*) and goldfinch (*Carduelis carduelis*) form a relatively small component of the assemblage, reflecting the paucity of feeding opportunities within the reserve. However, species able to utilise beech mast, such as nuthatch (*Sitta europea*), are well catered for, and a good population of this species is present in the woodland. The woodlands' holly, elder and hawthorn shrubs also support species such as bullfinch (*Pyrrhula pyrrhula*), and song thrush (*Turdus philomelos*), both national Biodiversity Action Plan priority species, and the commoner blackbird (*Turdus merula*).

Many insectivorous birds, such as chaffinch (*Fringilla coelebs*), robin (*Erithacus rubecula*), wren (*Troglodytes troglodytes*), long-tailed tit (*Aegithalos caudatus*), blue tit (*Parus caeruleus*), and treecreeper (*Certhia familiaris*) are common throughout the woodland, whilst others such as spotted flycatcher (*Muscicapa striata*) are rare. Green woodpecker (*Picus viridis*) and great-spotted woodpecker (*Dendrocopus major*), are regularly recorded. Occasional sightings of lesser-spotted woodpecker (*Dendrocopus minor*) show that this species is present on the reserve, and it is suspected that the woods support a breeding population, although this has not been confirmed by survey. This species has suffered large population declines nationwide and in Europe over the latter part of the twentieth century and is red listed as of being of high conservation priority. Lesser Spotted Woodpecker numbers have risen in Sheffield in recent years, bucking the national trend. The creation of standing dead wood across the woodland will benefit this species by increasing its nesting and feeding habitat.

At the top of the food chain, tawny owl (*Strix aluco*), buzzard (*Buteo bueo*) and sparrowhawk (*Accipiter nisus*) have been recorded in the woodlands. Grey wagtail (*Motacilla cineria*) and kingfisher (*Alcedo atthis*) have been recorded along the streams.

Hawfinch (*Coccothraustes coccothraustes*) have been lost to the Sheffield area over the last 30 year period and are declining nationally. Although management of the Moss Valley Woodlands nature reserve alone cannot hope to restore the species, the retention of wild cherry, hornbeam and yew in the woodlands will ensure the suitability of the woodland to support this species if they begin to recolonise the area.

When data from the 2002 and 2012 breeding bird surveys were compared, it showed that many of the species identified had comparable numbers of territories across the two surveys, suggesting a stable bird community. Territory numbers were, however, significantly different for 4 species. Looking at the data, it would appear that the number of breeding robins on the reserve declined over the 10 years between surveys, whilst the breeding populations of goldcrest, tree creeper, great tit and nuthatch have increased over the same period.

#### **4.3.6 Mammals**

A number of common British mammals, including roe deer, badger, pipistrelle bat, fox, grey squirrel and brown hare have been recorded on the reserve.

Grey squirrels are ubiquitous throughout the reserve and are the most often seen mammal. The large populations of this species may, in the future, prove problematic in terms of tree regeneration on the reserve.

Several badger setts are known and badger roam widely across the area. A full badger survey for the reserve has been carried out. The results are lodged with Sheffield and Rotherham Wildlife Trust. Badgers are constantly under threat from badger baiters. Sett protection measures have been undertaken by the local badger group. Liaison, advice and protection measures will be continued with the local badger group as required.

Sheffield's roe and muncjac deer population has grown in recent years. Although both species are found in the valley, populations are not thought to be large and may be being controlled by local landowners.

Pipistrelle bats have been recorded on the reserve, feeding along the woodland edge and over Dowey Lumb. No roosts have been found in the woodlands.

#### 4.4 Survey and monitoring

The collection of accurate and informative biological data is of prime importance when assessing the condition of the reserve and its habitats, and when evaluating the success of management practises. Once collected this data forms the basis of an 'early warning system' to alert of deleterious changes, as well as a baseline against which the success of conservation practise can be measured.

Over the course of this plan **SRWT aims to collect additional biological data for Moss Valley Woodlands**, focusing on the reserve's botanical communities and its freshwater fauna, for which current accurate survey data is unavailable.

### 5.0 Infrastructure

**Aim 7.** To secure, maintain and restore the reserve's infrastructure.

**Aim 8.** To facilitate public access to the woodlands.

#### 5.1 Walls and fencing

The reserve is bordered by other woodlands, and arable fields. The boundary walls, where these exist, are in a state of disrepair. Post and rail fencing and post and wire fencing exists between the woodland and the farmland in places, particularly on the boundaries of Coalpit Wood and along the northern boundary of Long Wood. These fences are necessary to deter and prevent access to the woodland by motorcycles. A second length of fencing runs across the neck of Coalpit Wood, separating it from Long Wood, for the same reason.

Dowey Lumb is enclosed by post and rail fencing to prevent entry by horses and bicycles.

No additional boundary creation is proposed under this plan, rather the focus is upon maintenance of the existing structures.

## 5.2 Footpaths and bridleways

Moss Valley Woodlands nature reserve has a good network of footpaths, concessionary bridleways and desire lines. These are generally unsurfaced through Newfield Spring, Bridle Road and Coalpit Wood, with surfaced sections of bridleway adjacent to Dowey Lumb and in Long Wood.

The condition of the reserve's footpaths is generally very good, with localised boggy places in winter when the woodland soils can get waterlogged. However, the condition of much of the concessionary bridleway route is poor, with the exception of recently surfaced sections, due to the wet, claggy soils prevalent in Long Wood. **Improving the surfacing and way-marking of the concessionary bridleway will be a priority for the period covered by this management plan** and the Trust will work with the Woodland Trust to achieve this.

## 5.3 Access furniture (signposts, benches, gates, stiles)

Stiles and squeeze gaps have been installed at reserve entrances to prevent motorbikes from accessing the woods, and on footpaths to prevent horses and dissuade bikes from using these routes. These structures will be maintained as necessary.

Way-marking is sporadic across the reserve. Public rights of Way are well-marked but the concessionary bridleway route poorly so **and way-marking of the concessionary bridleway route will be a priority for the period covered by this management plan** and the Trust will work with the Woodland Trust to achieve this.

No benches are present on the reserve, and none are planned for the period covered by this management plan.

## 5.4 Interpretative features

No interpretative features are present on the reserve, and none are planned for the period covered by this management plan, although off-site interpretative materials may be produced.

## 6.0 Cultural Context

**Aim 8.** To facilitate public access to the woodlands.

**Aim 9.** To protect, preserve, research and communicate the reserve's archaeological and historical interest and significance.

**Aim 10.** To promote and encourage participation in the management of Moss Valley Woodlands nature reserve.

### 6.1 Site archaeology

Moss Valley Woodlands nature reserve contains a number of archaeological features. A walk-over archaeological survey of the reserve was carried out in 2001 (EDAS, 2001) and recorded a total of 32 features, with a further 12 lying within 500m of its boundaries (Figure 6).

A single medieval site was identified within the study area. This is an area of shallow sub-circular depressions at the west end of Coalpit Wood, believed to be the result of coal extraction workings. Since there are no visible remains of spoil or upcast around the depressions, it is believed that this feature, if indeed it is mining related, is probably the result of shallow surface workings.

The majority of the archaeological sites recorded in the survey area (58%) are post-medieval (AD 1540 onwards) in date. Many are associated with woodland management and exploitation, and include two substantial areas of charcoal platforms and associated features in Long Wood. Here, the platforms are well defined and a number of well-preserved white coal kilns are also evident. All are situated on or just above sloping ground overlooking watercourses.

Two communication routes of probable post-medieval date are present on the reserve. These take the form of hollow ways or terraced track ways. Their positions close to existing footpaths suggest that they may form earlier alignments of existing routes.

A small number of industrial sites are also present on the reserve. The most visible of these is the site of an old quarry in the northeast corner of Coalpit Wood, known as the 'bomb hole'. Today this is represented by an oval depression. No stone or working faces are visible and motorcycle scrambling damaged the feature during the 1980s and 1990s, although it is no longer occurring.

In addition to the above sites, the reserve contains another 12 sites of unknown period. The majority are probably poorly defined post-medieval woodland management features or natural features, like conjoined linear depressions (possible recent drainage ditches) in Coalpit Wood, two possible platforms and conjoined linear depressions in west Long Wood, disturbed grounds in Bridle Road Wood and Newfield Spring Wood, linear depressions, a curvilinear depression (possible drainage ditch) and a circular earthwork in New Springfield Wood.

The key management guideline for these archaeological feature is to minimise the amount of ground disturbance in their immediate vicinity. Consequently, the potential impact of management works such as fencing, path creation, and woodland management works and scrub removal, on the reserve’s archaeology should be considered and mitigated as necessary. The Derbyshire Archaeology Service has offered to provide advice and guidance on the preservation of the reserve’s archaeological heritage and should be consulted when planning and delivering the capital works programme.

## 6.2 Recreation

### 6.2.1 Recreational Usage

The Moss Valley, including the Moss Valley Woodlands nature reserve, contains an extensive Public Rights of Way network, comprising both bridleways and footpaths. The reserve is easily accessible on foot, and on horseback from the livery at Hazelhurst Farm, and from Owler Carr Lane.

The woods receive regular but low-level use by the public. Walking, including dog walking, wildlife watching and horse riding are the chief recreational pursuits, with mountain biking increasing in popularity.

Public consultation has shown that the woods are popular due to their natural character, the opportunities for peace and tranquillity they provide and their network of tracks and paths. Most people use the reserve in combination with adjacent areas during a walk or ride. The majority of visitors are from the local area.

A table showing the access protocol for Moss Valley Woodlands nature reserve is given below:

**Table 2**

Walkers	Are <i>generally</i> permitted to roam freely throughout the woodland but must observe signage warning of temporary closure to areas for management or wildlife reasons.
Horse riders	Are permitted to use the reserves network of bridleways (both statutory and permissive).
Cyclists	Are permitted to use the reserves network of bridleways (both statutory and permissive).
Motorcyclists, quad bike riders and off road drivers	Are <b>not</b> permitted to use <b>any</b> part of the woodland.

The recreational uses to which the reserve is put are generally compatible, both with each other and with the reserve's ecological value. Currently, the respective users of the woodland co-exist with little conflict. Previous conflicts between walkers and horse riders stemmed chiefly from the poor condition of many paths within the woodland. Horse riding worsens the condition of the paths through Long Wood, due to the characteristically wet soils in the woodland. **Ongoing surfacing work on the concessionary bridleway route will be carried out during the period covered by this plan to increase its sustainability.**

During consultation, concern was raised regarding the increased use of the footpaths in Newfield Spring and Bridle Road Wood by mountain bikers. The Trust will therefore **improve signage to deter the illegal use of these routes by cyclists.** Additionally, it was agreed that the size and nature of the reserve, and in particular fragility of the woodland ground flora and the condition of its soils, make it unsuitable for downhill mountain biking and any suggestion that trails for this activity be provided on site will be refused, although all cyclists are welcome to ride the concessionary bridleway loop

The Trust's charitable objectives include encouraging and supporting the appropriate recreational use of green space across Sheffield and Rotherham. Its Living Landscapes strategy lists, as one of its three main outcomes, 'Helping local people to visit, understand, enjoy, value and be inspired by nature.' Consequently, the promotion of the reserve as a place for nature-based recreational activities forms an important part of its work. This support and promotion must however, be carefully balanced with other priorities – such as protecting and enhancing the woodland's wildlife – and must also ensure that the peace, tranquillity and natural character for which people visit the woods is not compromised.

Little parking is available in the vicinity of the reserve. A few parking spaces are available at the end of Owler Carr Lane and on Lightwood Lane and Hazelhurst Lane. Parking is also available on the Jordanthorpe estate, although the road crossing from this to Coalpit Wood can be dangerous.

Consequently, it is not the Trust's intention to increase visitor numbers to the reserve, although a natural slow increase in visitor numbers is expected in response to the city's increasing population size. Rather, the Trust intends that the value of the reserve is better understood and appreciated locally – particularly amongst current users of the valley.

The Trust will work with the Local Access Forum to keep in touch with developments in relation to local access initiatives. Local walking groups will be encouraged to incorporate the reserve into their walks.

#### **6.2.4 Visitor information and interpretation**

There is a notable lack of simple information about the Moss Valley Woodland nature reserve and surrounding area available to local people and members of the public wishing to visit. The availability of good maps covering the whole valley and accurately recording the concessionary bridleway circuit through Long Wood are not available, restricting the ability for local people to access the woods with confidence. **The Trust will work to provide more information about the reserve on its website, including a map and downloadable leaflet.** Additionally, **the Wild Sheffield app**, which includes a self-guided walk around the reserve, **will be promoted.**

### 6.2.7 Disabled access

The accessibility of Moss Valley Woodlands nature reserve to people with mobility disabilities is unavoidably limited by the nature of the terrain and the lack of contiguous parking. Access by wheelchair or mobility scooter to any portion of the reserve is not possible.

Access for those with limited mobility is possible, depending on the extent of their mobility and stamina. DEFRA's stipulations and guidance relating to access, taking into account the Equality Act 2010, are followed when installing footpath furniture on site to support ease of access.

## 6.3 Community Engagement

Sheffield and Rotherham Wildlife Trust recognised the importance of community involvement in the Moss Valley Woodlands nature reserve in both the formulation of the management plan and in its delivery. Understanding, enjoyment and the long-term conservation and protection of such places will therefore only be guaranteed through engaging local people, and hence ensuring a continuity of generations who take an active part in the enjoyment, management and decision-making. Should people feel disengaged from their local green spaces, development threats to such areas can go unchallenged. Therefore it is vital that local people are given the opportunity to link with the reserve, so that they can make a choice whether to take part in its management, visit it, help steward it, or simply to appreciate what is there.

The community are engaged in management of the reserve in several ways:

#### Volunteer work days

Regular volunteer work days have are held on the reserve. These give community volunteers a chance to join the reserves team and participate in conservation management tasks. The number of volunteers attending the days is small and greater numbers would be an advantage, as these days make an important contribution to the delivery of the work programme. Consequently, **the Trust will continue with and increase publicity of, the work day programme and will aim to attract corporate and student groups to the reserve for larger tasks.**

#### Reserve advisory group

The Moss Valley Reserves Advisory Group was set up in 2001. The group has no constitution, but plays an active role in determining and monitoring the management of the site. Meetings are open to all and attract representatives from a number of local groups including the Moss Valley Wildlife Group, local landowners, the Moss Valley and District Riders, Eckington Riders, the Northeast Badger Group, the Dronfield Footpaths and Bridleways Association, Dronfield and District Natural History Society, and local councillors. It meets twice a year in Coal Aston. **The Trust will continue to convene the reserve advisory group over the period covered by this plan.**

#### Events and activities

The Trust also aims to offer casual opportunities to explore and learn more about the reserve and its wildlife through guided walks. These generally have an ecological theme, are small in scale,

and last a couple of hours. They attract both locals and interested individuals from across the city.

SRWT events in Moss Valley are advertised in several locations. Temporary posters are put up at reserve entrances and are also publicised in the Wildlife Trust e-newsletter (which anyone can subscribe to) and on the Trust's website, Facebook page and Twitter account. Copies of the general events programme covering all SRWT nature reserves are sent to Sheffield Central Library, who then distribute it to other libraries in Sheffield.

**The Trust will continue to run events in the Moss Valley Woodlands to increase appreciation of their wildlife and historical value over the period covered by this plan.**

## 6.4 Outdoor learning

Since 2001 SRWT has been working with primary schools, secondary schools and youth groups to bring young people from the local area to the woods. Outdoor learning is a key area of development for SRWT at the current time. The Trust provide environmental education sessions which support the national curriculum, as well as accredited/non accredited training to support young people and adults to develop life skills, and gain skills and experience in the environmental sector, as well as learning opportunities for all the family.

Currently, the Trust's focus is in attracting school and youth groups to one of our outdoor learning hub sites (Ecclesall Woods, Greno Woods and Centenary Riverside) or in delivering sessions on or near individual school premises. The size, topography and lack of facilities at Moss Valley Woodlands nature reserve make it unsuitable as an education hub. Consequently, the outdoor learning team will deliver sessions in the woodland only at the specific request of local schools.

## 7.0 Economic

**Aim 11.** To develop ongoing sources of grant aid and other funding to support the management of the nature reserve.

**Aim 12.** To increase public support for SRWT through our work in Moss Valley Woodlands nature reserve.

In order that such investment can continue to be made, the economic opportunities offered by the reserve are considered below.

### 7.1 Past, present and future grant funding

Moss Valley Woodlands nature reserve has received considerable investment over the past fifteen years. The majority of this investment has been in woodland management works, (thinning, group felling and tree safety works) and infrastructure improvements including the creation and partial surfacing of the concessionary bridleway loop, and the management of Dowey Lumb. The majority of this investment has come from The Heritage Lottery Fund and the Woodland Grants Scheme.

The entirety of Moss Valley Woodlands is certified as being of UK Woodland Assurance Standard and is in receipt of English Woodland Management Grant Scheme funding covering the period 2012 to 2018. Woodland Improvement Grant Scheme (WIGS) funding, for felling, coppicing and thinning works in Coalpit Wood and the western end of Long Wood has been received for the period 2013-2016.

**SRWT will seek to secure additional grant funding throughout the period covered by this plan, to support the delivery of its aims and objectives.**

### 7.2 Timber

Moss Valley Woodlands nature reserve has a considerable timber resource. The woods are managed under a programme of continuous cover forestry meaning that careful management of the reserve's hardwood will allow the sale of selected specimens felled during thinning or group felling works. However, vehicular access to the reserve is extremely limited to all areas other than Coalpit Wood, making the economic extraction of timber difficult.

**The Trust will investigate possible extraction routes for the timber from Long Wood realised by the halo thinning and holly control measures outlined in this plan, with a view to extracting and selling the timber if economically feasible.**

## 7.3 Membership recruitment

The Moss Valley Woodlands nature reserve is one of the Trust's smaller and less well known reserves. Nevertheless, it has the potential to raise the Trust's profile and to showcase its work in the local area and to its members.

Wildlife Trust membership across the city is steadily increasing, and a pro-active approach has been adopted by the Trust to ensure the trend continues. The work on the reserve, if perceived positively by members and the public, can support membership recruitment both locally and across the city. Conversely however, any negative publicity or public perception about the management of the reserve would hinder the same. Consequently, the work carried out in Moss Valley Woodlands nature reserve must not only be of the highest standard but must be communicated well to the general public (and in particular to the communities surrounding the woods) in order to have a positive effect on membership.

**The Trust will therefore continue to use local and city-wide media to publicise its work in Moss Valley Woodlands and to encourage engagement with its work.** This publicity will aim to reach existing and potential members.

## 7.4 Employment and training

The reserve currently provides part-employment to three people directly through the Trust and also contributes indirectly to others e.g. forestry contractors, local suppliers. The capacity to increase employment opportunities is not great, rather the challenge will be to sustain the current level of activity as the number of people employed depends directly on the revenue available to carry out work on site.

Unemployment levels in the communities surrounding the reserves vary from low to high, and a mixed picture of academic achievement is also seen. This suggests that local training and employment initiatives would be a priority for some of the communities immediately adjacent to the reserve, if funding for such became available. Today, the woods provide a variety of opportunities for skills development, in terms of practical conservation techniques, habitat management, ecological identification and forest management and the Trust's practical conservation work teams, which include trainees and volunteers, work regularly in the woods.

## 7.5 Communication and marketing

### 7.5.1 On-site presence

At the current time, welcome signage, in the form of the Trust's standard wooden 'Welcome to Moss Valley Woodlands sign, are present at three of the entrances to the woods. Despite these, many visitors to the site enter and leave without realising they are moving on and off a Trust managed nature reserve.

It is recommended that the Trust works to improve its on-site presence on the reserve. **This will be achieved by ensuring that all entrances into the reserve are marked in some way** – at the

very least by small plaques welcoming the visitor to the reserve and giving contact information for the Trust.

### **7.5.2 Printed materials and website**

A webpage about the reserve is present on the Trust's website giving general information about the reserve. [www.wildsheffield.com/nature-reserves/our-reserves/moss](http://www.wildsheffield.com/nature-reserves/our-reserves/moss) valley

No information leaflet for the reserve is available to visitors and potential visitors. **The Trust will work to provide more information about the reserve on its website, including a map and downloadable leaflet.**

### **7.5.3 Events**

Events are dealt with under the Community Engagement section of the plan.

## 8.0 Management aims and objectives

	<b>BIODIVERSITY (Aims 1 to 6)</b>			
<b>Aims</b>	<b>Objectives and prescriptions</b>		<b>Cross Ref</b>	<b>Priority</b>
<p><b>Aim 1.</b> To safeguard and enhance the woodland's biodiversity value by promoting structural and species diversity in canopy, understory and ground flora, and to increase the proportion of native broadleaf regeneration in areas where this is absent or low.</p>	<p>1.1 <b>Promote long-term species diversity in the woodland canopy.</b></p> <ul style="list-style-type: none"> <li>• Monitor seedling and sapling regeneration across the woodland, in particular in the areas of group thinning in Long Wood and Coalpit Wood.</li> <li>• Selectively thin regenerating saplings as necessary favouring oak, rowan, birch, hornbeam, wild cherry and yew.</li> </ul>	<p><i>Sec 4.2.1</i></p>	<p>HIGH</p> <p>MEDIUM</p>	
	<p>1.2 <b>Promote the long-term development of veteran trees in Long Wood.</b></p> <ul style="list-style-type: none"> <li>• Select 6-8 well grown specimens of beech and oak and halo thin the woodland around them (thereby decreasing their stress and promoting their onward growth and health)</li> <li>• Allow the natural deterioration of trees throughout the woodland when this is compatible with public safety.</li> </ul>		<p><i>Sec 4.2.1</i></p> <p>HIGH</p> <p>MEDIUM</p>	

Aims	Objectives and prescriptions	Cross Ref	Priority
<p><b>Aim 2:</b> To increase the cover of woodland ground flora and enhance regeneration of tree saplings in Long Wood. Sustain these features in other woodland compartments.</p>	<p><b>2.1 Increase the amount and diversity of natural tree regeneration in Long Wood</b></p> <ul style="list-style-type: none"> <li>• Map extent and location of holly cover in Long Wood.</li> <li>• Control encroachment of holly into areas with a diverse ground flora.</li> <li>• Remove one third of holly thickets in the woodland.</li> </ul>	<p><i>Sec 4.2.1;</i></p>	<p>HIGH HIGH HIGH</p>
	<p><b>2.2 Manage holly in Bridle Road Wood and Newfield Spring Wood to prevent increase in overall cover over period of management plan.</b></p> <ul style="list-style-type: none"> <li>• Remove young holly in Bridle Road Wood.</li> <li>• Remove young holly in Newfield Spring Wood.</li> </ul>	<p><i>Sec 4.2.1</i></p>	<p>MEDIUM MEDIUM</p>
<p><b>Aim 3:</b> To increase the volume of standing dead wood in the woodlands.</p>	<p><b>3.1 Retain and increase the reserve's stock of fallen and standing deadwood.</b></p> <ul style="list-style-type: none"> <li>• When undertaking safety/thinning works, retain felled trees on site in large pieces and where possible, retain deadwood and snags (where this does not pose a safety risk) and reduce the visibility of habitat piles.</li> <li>• Ring bark 8 selected trees across in Long Wood and Coalpit Wood to create standing dead wood.</li> </ul>	<p><i>Sec 4.2.1; 4.3.1; 4.3.3; 4.3.6</i></p>	<p>MEDIUM  HIGH HIGH</p>

Aims	Objectives and prescriptions	Cross Ref	Priority
<p><b>Aim 4:</b> To continue management of Dowey Lumb to optimise condition and extent of species-rich grassland.</p>	<p><b>4.1 Retain, restore and extend the grassland area on Dowey Lumb.</b></p> <ul style="list-style-type: none"> <li>• Clear back scrub (bramble &amp; hawthorn) on grassland margins of Dowey Lumb &amp; treat regrowth to extend grassland area to 75%.</li> <li>• Control the spread of bracken across the Lumb by annual pulling and cutting.</li> <li>• Hay cut and collect grassland areas each year at end of Sept.</li> <li>• Remove 80% trees from western and northern grassland areas of Lumb.</li> <li>• Create 2 discrete ‘compost heaps’ of rotting vegetation in sunny areas close to the stream to benefit grass snake.</li> <li>• Coppice scrub on a rotational basis to diversify the height and density of the habitat available.</li> </ul>	<p><i>Sec 4.2.2</i></p>	<p>MEDIUM HIGH HIGH HIGH LOW MEDIUM</p>
<p><b>Aim 5:</b> To safeguard ancient woodland ground flora from damage by management works, recreational pressures or deep shading from trees and shrubs.</p>	<p><b>5.1 Minimise disturbance to stream margins</b></p> <ul style="list-style-type: none"> <li>• Keep stream crossings in good repair</li> <li>• Avoid the use of machinery or tracked vehicles in streamside areas (timber haulage only along designated routes if required)</li> </ul>	<p><i>Sec 4.2.3</i></p>	<p>MEDIUM HIGH</p>
	<p><b>5.2 Prevent deep over-shading of delicate streamside areas</b></p> <ul style="list-style-type: none"> <li>• Manager areas of new coppice in Compartment 451b to prevent encroachment by fast-growing tree saplings or holly.</li> </ul>	<p><i>Sec 4.2.3</i></p>	<p>HIGH</p>
	<p><b>5.3 Minimise damage to ground flora from anti social behaviour.</b></p> <ul style="list-style-type: none"> <li>• Undertake regular patrols to remove litter and clear fire sites.</li> <li>• Monitor impact of off-track mountain biking through the woodland and consider strategic felling of trees and extra signage to deter this activity, as required.</li> </ul>	<p><i>Sec 6.2.1</i></p>	<p>HIGH MEDIUM</p>

Aims	Objectives and prescriptions	Cross Ref	Priority
<p><b>Aim 6:</b> To survey and monitor the impacts of management on Moss Valley's biodiversity.</p>	<p><b>6.1 Gather biological data to inform and refine conservation management on site</b></p> <ul style="list-style-type: none"> <li>• Carry out an extended Phase 1 vegetation survey to include entire woodland and Lumb.</li> <li>• Survey the reserve's stream invertebrate fauna (baseline survey).</li> <li>• Commission a CBC survey of the woodland's birds.</li> <li>• Work with Sorby Natural History Society, the SBSG, Moss Valley Wildlife Group and individual recorders to encourage recording on the reserve.</li> <li>• Monitor the effect of deer browsing and grey squirrel damage to sapling establishment and tree regeneration.</li> <li>• Monitor tree stock for signs of <i>Phytophthora</i>, Ash Die Back and other diseases.</li> <li>• Collate biological data for the reserve in a systematic manner and share with the Sheffield Biological Records Centre annually</li> </ul>	<p><i>Cross ref Sec 4.2.1, 4.2.2, 4.3</i></p>	<p>HIGH</p> <p>LOW</p> <p>MEDIUM</p> <p>HIGH</p> <p>HIGH</p> <p>MEDIUM</p> <p>HIGH</p>

	<b>INFRASTRUCTURE (Aim 7)</b>		
<b>Aims</b>	<b>Objectives and prescriptions</b>	<b>Cross Ref</b>	<b>Priority</b>
<b>Aim 7.</b> To secure, maintain and restore the reserve's infrastructure.	<p><b>7.1 Secure and maintain the reserve's boundaries.</b></p> <ul style="list-style-type: none"> <li>• Maintain reserve's existing fencing, especially that protecting Coalpit and Long Woods and Dowey Lumb.</li> <li>• Ensure good establishment of boundary hedgerow in Coalpit Wood.</li> <li>• Install motorbike barrier at Coalpit Wood entrance.</li> <li>• Install additional restrictive barriers as required to prevent inappropriate access.</li> </ul>	<i>Sec 5.1</i>	<p>HIGH</p> <p>HIGH HIGH MEDIUM</p>
	<p><b>7.2 Restore and maintain the footpath and bridleway network across the reserve.</b></p> <ul style="list-style-type: none"> <li>• Carry out a condition assessment of all footpaths and bridleways on the reserve to identify priority areas for repairs and enhancements.</li> <li>• Continue to resurface the concessionary bridleway routes in Long Wood.</li> <li>• Work with the Woodland Trust to way-mark the concessionary bridleway route through Owler Carr, Long and Nor Woods.</li> <li>• Repair and maintain access furniture as necessary.</li> <li>• Carry out tree safety surveys every 5 years, and safety works as necessary.</li> <li>• Work with the Local Access Forum and other local access groups to reduce and manage access conflicts and improve access for all.</li> </ul>	<i>Sec 5.2, 6.2</i>	<p>HIGH</p> <p>MEDIUM</p> <p>HIGH</p> <p>HIGH HIGH</p> <p>MEDIUM</p>

	<b>CULTURAL CONTEXT (Aim 8-10)</b>		
<b>Aims</b>	<b>Objectives and prescriptions</b>	<b>Cross Ref</b>	<b>Priority</b>
<b>Aim 8.</b> To facilitate public access to the woodlands.	<b>8.1 Encourage and facilitate exploration and understanding of the reserve by local people.</b> <ul style="list-style-type: none"> <li>• Increase the amount of information available for the reserve on the Trust's website.</li> <li>• Produce a downloadable leaflet for the reserve.</li> <li>• Run guided walks on the reserve.</li> </ul>	<i>Sec 6.2, 6.3</i>	MEDIUM LOW MEDIUM
<b>Aim 9.</b> To protect, preserve and communicate the reserve's archaeological and historical interest and significance.	<b>9.1 Research and communicate the reserve's history and archaeology to woodland users and the wider public.</b> <ul style="list-style-type: none"> <li>• Provide on-line information about the reserve's archaeology and history via SRWT website and <i>Wild Sheffield</i> app.</li> <li>• Communicate information regarding the reserve's archaeology to visitors during guided walks</li> </ul>	<i>Sec 6.1</i>	MEDIUM LOW
	<b>9.2 Protect the reserve's archaeological features from damage during woodland management operations.</b> <ul style="list-style-type: none"> <li>• Ensure the location of vulnerable features in relation to planned work areas and vehicle access tracks is known, mapped and communicated to contractors as necessary.</li> <li>• Mark off sensitive areas on the ground during operations as necessary.</li> </ul>	<i>Sec 6.1</i>	HIGH HIGH
<b>Aim 10.</b> To promote and encourage participation in the management of Moss Valley Woodlands nature reserve.	<b>10.1 Involve the local people, agencies and organisations in the management of the woods.</b> <ul style="list-style-type: none"> <li>• Hold regular meetings of the Moss Valley Woodlands reserve advisory group.</li> <li>• Ensure partners are kept informed and/or involved in management decision-making by minuting meetings.</li> <li>• Provide information on meetings, events, work days and management works on site and on the Trust website.</li> </ul>	<i>Sec 6.3, 7.3, 7.5</i>	HIGH HIGH HIGH MEDIUM

	<ul style="list-style-type: none"> <li>• Support and develop local capacity to record and report incidents/damage on the reserve.</li> <li>• Encourage and provide opportunities for individuals to get involved in biological recording and survey work on the reserve.</li> <li>• Trial monthly ranger-led volunteer workdays during first year of management plan and review effectiveness.</li> <li>• Work in partnership with other environmental groups to increase local interest and involvement in the Moss Valley.</li> </ul>		<p>MEDIUM</p> <p>HIGH</p> <p>HIGH</p> <p>HIGH</p>
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	<b>ECONOMIC (Aims 11-12)</b>		
<b>Aims</b>	<b>Objectives and prescriptions</b>	<b>Cross Ref</b>	<b>Priority</b>
<b>Aim 11.</b> To develop ongoing sources of grant aid and other funding to support the management of the nature reserve.	<b>11.1 Continue to make grant applications and associated claims for revenue and capital works.</b> <ul style="list-style-type: none"> <li>• Submit claims for EWGS, as required.</li> <li>• Investigate additional funding, including Countryside Stewardship funding, to support management of the woods.</li> </ul>	<i>Sec 7.1</i>	HIGH HIGH
	<b>11.2 To support the management of the reserve through the sale of timber.</b> <ul style="list-style-type: none"> <li>• Investigate possible extraction routes for the timber from Long Wood realised by the outlined in this plan, with a view to extracting and selling the timber if economically feasible.</li> </ul>	<i>Sec 7.2,</i>	MEDIUM
	<b>11.3 Engage with wider partnerships which might bring new resources to Moss Valley woodlands</b> <ul style="list-style-type: none"> <li>• Engage with the Don Network’s Moss Brook Project.</li> <li>• Engage with any Landscape Partnership developed in the area.</li> </ul>	<i>Sec 7.1</i>	HIGH HIGH
<b>Aim 12.</b> To increase public support for SRWT through our work in Moss Valley Woodlands nature reserve.	<b>12.1 Increase public support for SRWT through our work on the reserve</b> <ul style="list-style-type: none"> <li>• Continue regular patrols by SRWT staff and volunteers.</li> <li>• Install ‘welcome’ plaques at all site entrances.</li> <li>• Publicise all activities and events run by SRWT in the woods at site entrances.</li> <li>• The Trust will use local and city-wide media to publicise its work in Moss Valley Woodlands and to encourage engagement with its work.</li> </ul>	<i>Sec 7.5</i>	HIGH MEDIUM HIGH MEDIUM



4.1	Create 2 heaps' of rotting vegetation in sunny areas close to the stream using grass/bracken cuttings	LOW	X	X	X	X	X
<b>Objective</b>	<b>Prescription</b>	<b>Priority</b>	<b>2016/17</b>	<b>2017/18</b>	<b>2018/19</b>	<b>2019/20</b>	<b>2020/21</b>
5.1	Keep stream crossings in good repair	MEDIUM	X	X	X	X	X
5.2	Prevent encroachment of new coppice in Compartment 451b by fast-growing tree saplings or holly.	HIGH					X
5.3	Undertake regular patrols to remove litter and clear fire sites across woodland	HIGH	X	X	X	X	X
5.3	Monitor impact of off-track mountain biking and deter as required	MEDIUM	X	X	X	X	X
6.1	Extended Phase 1 vegetation survey of the reserve	HIGH			X		
6.1	Baseline survey of the reserve's stream invertebrate fauna	LOW				X	
6.1	Commission a CBC survey of the reserve	MEDIUM					X
6.1	Encourage biological recording on the reserve	HIGH	X	X	X	X	X
6.1	Monitor the effect of deer browsing and grey squirrel damage to sapling establishment and tree regeneration	HIGH		X		X	
6.1	Monitor tree stock for signs of <i>Phytophthora</i> , Ash Die Back and other diseases	MEDIUM		X		X	
6.1	Collate biological data for the reserve and send to the Sheffield Biological Records Centre	HIGH	X	X	X	X	X

Objective	Prescription	Priority	2016/17	2017/18	2018/19	2019/20	2020/21
7.1	Maintain and improve reserve's boundaries, as required	HIGH	50	50	50	X	X
7.1	Ensure good establishment of boundary hedgerow in Coalpit Wood	HIGH	X	X	X	X	X
7.1	Install motorbike barrier at Coalpit Wood entrance	HIGH	968.8				
7.2	Carry out a condition assessment of all footpaths and bridleways on the reserve to identify priority areas for repairs and enhancements	HIGH	X				
7.2	Spot resurfacing of concessionary bridleway routes in Long Wood	MEDIUM			6500		
7.2	Way-mark the concessionary bridleway route through Owler Carr, Long and Nor Woods	HIGH				X	
7.2	Maintain access furniture as necessary	HIGH	50	50	50	X	X
7.2	Carry out tree safety surveys and safety works as necessary	HIGH	315		315		X
7.2	Work with the Local Access Forum and others to reduce conflicts and improve access	MEDIUM	X	X	X	X	X
8.1	Increase the amount of information available for the reserve on the Trust's website	MEDIUM	X		X		
8.1	Produce a downloadable leaflet for the reserve	LOW					X
8.1	Run guided walk on the reserve	MEDIUM	50	50	50	X	X
9.1	Promote SRWT website and <i>Wild Sheffield</i> app	MEDIUM	X	X	X	X	X
9.2	Map and communicate the reserve's vulnerable archaeological features in planned work areas	HIGH	X	X	X	X	X
9.2	Mark off sensitive areas on the ground during operations as necessary	HIGH	X	X	X	X	X

Objective	Prescription	Priority	2016/17	2017/18	2018/19	2019/20	2020/21
10.1	Hold regular, minuted meetings of the Moss Valley Woodlands reserve advisory group	HIGH	X	X	X	X	X
10.1	Provide information on meetings, events, work days and management on site and on the Trust's website	HIGH	X	X	X	X	X
10.1	Support and develop local capacity to record and report incidents/damage on the reserve	MEDIUM	X	X	X	X	X
10.1	Encourage and provide opportunities for individuals to get involved in biological recording and survey work on the reserve	MEDIUM	X	X	X	X	X
10.1	Trial monthly ranger-led volunteer workdays during first year of management plan and review effectiveness	HIGH	X				
10.1	Work in partnership with other environmental groups to increase local interest and involvement in the Moss Valley	HIGH	X	X	X	X	X
11.1	Submit claims for EWGS and CS	HIGH	X	X	X	X	X
11.1	Apply for Countryside Stewardship funding	HIGH	X				
11.2	Extract and sell the timber generated by woodland management works when profitable	MEDIUM	X				X
11.3	Engage with the Don Network's Moss Brook Project	HIGH	X	X			
11.3	Engage with any Landscape Partnership developed in the area	HIGH		X	X	X	X
12.1	Continue regular patrols by SRWT staff and volunteers	HIGH	X	X	X	X	X
12.1	Install 'welcome' plaques at all site entrances	MEDIUM					X
12.1	The Trust will use local and city-wide media to publicise its work in Moss Valley Woodlands	MEDIUM	X	X	X	X	X

## **APPENDIX I: GLOSSARY**

<b>ASNW</b>	Ancient Semi Natural Woodland
<b>DCC</b>	Derbyshire County Council
<b>EWGS</b>	English Woodland Grants Scheme
<b>PAWS</b>	Plantation on Ancient Woodland Sites
<b>PROW</b>	Public Rights of Way
<b>SCC</b>	Sheffield City Council
<b>SRWT</b>	Sheffield and Rotherham Wildlife Trust