



**Sheffield &
Rotherham**

**Management Plan for
Salmon Pastures
Local Nature Reserve**

April 2011 – March 2018

Acknowledgements

Sheffield Wildlife Trust would like to thank the many individuals who have contributed to the formulation of this management plan. In particular, thanks go to Sheffield City Council (Jean Glasscock and Ted Talbot); Sorby Natural History Society; Sheffield Bird Study Group; and members of the Reserve Advisory Group. Additionally, thanks go to the many staff and trainees who have contributed: Rob Miller, Myles Flanagan, Hannah Wittram, Sarah Sidgwick, Matt Duffy, Christopher Tremblett, Ben Postance & Be Wiggs.

Report by: Myles Flanagan (Nature Reserves Assistant)

Edited by: Robert Miller (Living Don Manager)

Sheffield Wildlife Trust

37 Stafford Road

Sheffield S2 2SF

0114 263 4335

www.wildsheffield.com

Contents

1	INTRODUCTION	1
1.1	Purpose and Formulation of Plan	1
1.2	Vision Statement	2
2	MANAGEMENT AIMS AND OBJECTIVES.....	3
3	SITE DETAILS.....	7
3.1	Location and extent (Figure 1).....	7
3.2	Landscape value and context.....	7
3.3	Site tenure and occupancy	7
3.4	Statutory designations and policy context.....	7
3.5	Adjacent land ownership.....	8
3.6	Site history and past management	8
3.7	Archaeological Features	9
3.8	Services.....	9
3.9	Infrastructure	9
3.9.1	Footpaths and bridleways (Figure 2).....	9
3.9.2	Boundaries (Figure 4)	9
3.9.3	Other Structures.....	9
3.10	Current Funding Schemes and Grants	10
4	ENVIRONMENTAL INFORMATION.....	11
4.1	Topography	11
4.2	Geology	11
4.3	Pedology.....	11
4.4	Climate	11
4.5	Hydrology	11
4.6	Biodiversity and Biodiversity Action Plan overview.....	11
4.7	List of surveys, monitoring schemes and reports.....	13
5	BIODIVERSITY.....	14
5.1	Woodland and Scrub	14
5.1.1	Semi natural birch dominated woodland and scrub	14
5.1.2	Bramble Scrub	14
5.1.3	Dead wood.....	15
4.2	Grassland.....	16
4.2.1	Semi- improved acid grassland.....	16

4.2.2	Heather	17
4.2.3	Bracken.....	18
4.3	Fungi	18
4.4	Zoological.....	19
4.4.1	Invertebrates.....	19
4.4.2	Mammals	19
4.4.3	Birds.....	20
6	INFRASTRUCTURE.....	21
6.1	Footpaths, bridleways and byways (Figure 2)	21
6.2	Boundaries (Figure 4).....	21
6.3	Other Structures	21
7	CULTURAL CONTEXT.....	22
7.1	Archaeological interest and existing features	22
7.2	Recreational use.....	22
7.3	Information and Interpretation.....	23
7.4	Local community.....	23
7.5	Education.....	23
8	REFERENCES	25
9	WORK PROGRAMME.....	25

List of Figures

Figure 1: Site location and boundary

Figure 2: Paths

Figure 3: Phase 1 Habitat survey 2005

Figure 4: Infrastructure

Figure 5: Management compartments

Figure 6: Monitoring

Figure 7: Aerial photos

1 INTRODUCTION

Sheffield Wildlife Trust 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. Sheffield Wildlife Trust aims to promote conservation, advance education in environmental matters and improve the quality of life in Sheffield and Rotherham, through the development and promotion of sustainable land management practices, linked directly to both rural and urban regeneration.

The Nature Reserves Program aims to establish a suite of high quality, well managed and accessible wildlife reserves, that will reverse past unsustainable trends in land use on some of Sheffield's finest wildlife sites. The project will also assist in the environmental regeneration of Sheffield by linking the management of land for wildlife, with the creation of jobs and green enterprise initiatives across the city. Ranging in scope from small urban commons, to large moorland areas, these sites will act as the core to Sheffield's Local Biodiversity Action Plan, and will be managed in partnership with the City Council, statutory bodies, voluntary organisations and members of the public, for the benefit of the people, wildlife and the wider environment of Sheffield.

The objectives of the Nature Reserves Program are as follows:

- ❖ To bring nine of Sheffield's best wildlife sites into long-term conservation management, as a contribution to delivering the Wildlife Trust's National Conservation Plan in Sheffield.
- ❖ To establish a well-managed and sustainable network of wildlife reserves, strategically located across Sheffield, and covering all of the city's Biodiversity Action Plan priority habitats which are not adequately represented in the city's few existing reserves.
- ❖ To place the protection, enhancement and understanding of the natural heritage at the heart of urban and rural regeneration in and around Sheffield, in part by capacity building at a local level.
- ❖ To promote and enable appropriate public access to, and enjoyment of, wildlife reserves throughout Sheffield.
- ❖ To increase public understanding of Sheffield's local natural heritage, and the participation of local people in the care and enjoyment of their local environment.

1.1 Purpose and Formulation of Plan

Salmon Pastures is a small site on the north bank of the River Don, between Washford Bridge and Norfolk Bridge. The site's boundaries consist of the River Don and the Five Weirs Walk on the south and a cement works to the north. Despite its small size, the reserve has a rich variety of plant and animal species. There are three main habitat types on the reserve: acid grassland, woodland scrub and heath, which while small in area, provide a valuable resource for wildlife. The site has the potential to be a point of interest for local workers, residents and users of the Five Weirs Walk.

Salmon Pastures is owned by the Sheffield City Council Highways Department. From April 2002, the site was leased to the Sheffield Wildlife Trust for a period of 30 years. The management Plan of 2001 – 06 was for the period covered by the Heritage Lottery Fund grant. This report will cover 2011-2018, and, as with the 2007-11 plan, it will provide an up to date, comprehensive management plan, which can be used for the long-term conservation management of the reserve. It sets out a detailed and costed work programme for this period and that sets out the maintenance and improvement works for both wildlife habitats and infrastructure. The plan will be revised in 2018 to cover the next 5-year period.

This management plan, which follows on from the 2007 to 2011 management plan, has been formulated for the following reasons:

- ❖ To provide comprehensive and cohesive information about the nature reserve in one document, with reference to other documents where necessary.
- ❖ To outline the key long-term aims and the associated objectives that form the framework of management.
- ❖ To outline the rationale for management so as to give a clear and comprehensive explanation and justification of management prescriptions and the management methods to be used.
- ❖ To provide a key document from which projects are developed and associated funding sought.
- ❖ The plan allows 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. Therefore the full annual work programmes are kept and updated electronically at the Sheffield Wildlife Trust offices.

1.2 Vision Statement

Salmon Pastures provides a small but important green haven amongst industry and provides a link with other green spaces along the Five Weirs Walk. Its conservation as a nutrient-poor urban common reflects the river's past industrial use and will benefit and enhance the wildlife of the River Don.

2 MANAGEMENT AIMS AND OBJECTIVES

	Aims	Objectives	Prescriptions
2.1 BIODIVERSITY			
Aim 1	To maintain the quality of the acid grassland and heather to optimise the value of the site for wildlife.	<ul style="list-style-type: none"> a) To implement small-scale disturbance of the grassland by scraping, on a five-yearly rotation, in order to allow germination of the seed bank. b) To prevent the more robust grassland species and tall ruderals from encroaching into the central grassland area and the heathland. c) To cut the heather stands on a rotational basis, once every 20-30 years, in order to encourage heather seeding and regeneration, whilst monitoring the area of heather cover. d) To reduce the shading of heather stands by encroaching scrub. e) To monitor the effect of management activities on the biodiversity of the site. 	<p>5m² shallow scraping to remove soil adjacent to heather patches. Repeated in different locations every three years.</p> <p>A bi-annual cut of the grassland area to remove the more robust species, including the removal of cuttings to prevent nutrient build up.</p> <p>Cut approximately 33% of existing heather during the period of this management plan, and 33% during every five-year period. Heather should be cut when in seed and the resulting brash to be spread on bare ground. The brash will provide a microenvironment for the shed seed to germinate.</p> <p>Large sycamore and birch along riverside path to be felled.</p> <p>Ecological and photo monitoring to take place along established transects.</p>
Aim 2	To manage the birch in order to enhance the biodiversity of Salmon Pastures.	<ul style="list-style-type: none"> a) To remove scrub, bramble and bracken to maintain the open character of the acid grassland and heathland through the prevention of encroachment. b) To improve structural diversity of woodland edge to encourage nesting birds, e.g. warblers, by coppicing on rotation. c) To increase the dead wood resource on site, providing habitat for fungi, invertebrates and other wildlife whilst maintaining a low fire risk. 	<p>The edge of the birch woodland to be scalloped, cut back and coppiced to prevent encroachment into the grassland and heathland.</p> <p>Coppicing and cutting back along woodland edge to be done in sections on a rotational basis to create a diverse woodland structure.</p> <p>Stump treatment with herbicide to be used on felled trees where coppiced re-growth is not desirable.</p> <p>Birch seedlings in the grassland and heathland should be pulled or dug up to prevent re-growth as</p>

			<p>coppice.</p> <p>Bramble should be removed from within the heathland and grassland areas.</p> <p>Bramble encroachment to be kept a minimum of 1m distance from heather areas.</p> <p>Bracken to be pulled on a regular basis.</p> <p>Woodland thinning, approx. 10% of woodland to be coppiced during the period of this plan.</p> <p>Ring barking of trees should be carried out to create standing dead wood.</p> <p>Brash arising from woodland work should be made into dead wood habitat piles in denser areas of scrub to provide habitat and minimise fire risk.</p>
Aim 3	To assess the impact of shading on the heathland by large trees beyond the site boundary.	a) To consider some management of trees along the Five Weirs Walk to reduce shading across the heathland.	Monitor shading affect of trees on heather stands and act accordingly.
Aim 4	To record and monitor the ecological features of the reserve.	<p>a) To maintain an up-to-date database of biological records through a series of annual surveys.</p> <p>b) To monitor Local Biodiversity Action plan species and habitats in accordance with nationally and locally agreed plans and processes.</p>	<p>Annual photo monitoring.</p> <p>Annual transect monitoring programme of grassland/heathland.</p> <p>NVC survey of grassland in 2015/16.</p> <p>Bat survey 2014/15.</p> <p>Small mammal survey 2014/15.</p> <p>Invertebrate survey in 2015/16.</p> <p>Birds survey in 2016/17.</p> <p>Fungi survey in 2017/18.</p>
Aim 5	To monitor and record how the reserve is perceived, used and valued by the public.	<p>a) To conduct surveys of site visitors and users in order to assess changes in recreational trends and activities on a five year cycle.</p> <p>b) To continually invite informal feedback from partner organisations, site users, local residents, and interest groups by providing effective contact information.</p>	<p>SWT to undertake visitor survey in 2009/10</p> <p>SWT contact information available on site signage.</p> <p>Project updates sent annually to Reserve Advisory Group.</p> <p>Patrols of the site to be systematically carried out preferably every 5 -8 weeks.</p>

		c) To undertake a regular patrol of the site to assess condition of infrastructure and habitats, degree of vandalism, health and safety issues.	Remove litter from site on a repeated and regular basis
2.2 INFRASTRUCTURE			
Aim 6	To improve physical access to the reserve for all sections of the community including people with impaired mobility.	<p>a) Through regular patrols, continually assess and report the condition of paths, steps and benches.</p> <p>b) To maintain the path and access points, to ensure they are free from overhanging vegetation and other hazards.</p> <p>c) To manage bramble & scrub along riverside path to prevent inconvenience to path users.</p> <p>d) To improve the reserve experience for wheelchair users, prams, and the ambulant disabled.</p>	<p>Repair paths where necessary.</p> <p>Ensure step area is weed free and free from overhanging vegetation.</p> <p>Initial removal of 1m deep strip of bramble scrub along riverside path, followed by repeat annual removal of 10% of reserve length.</p>
Aim 7	To provide and maintain appropriate on-site furniture in order to allow for comfortable and safe enjoyment of the reserve.	a) To maintain existing seating to a safe and serviceable standard.	<p>Maintain seat and regular removal of graffiti</p> <p>Replace existing bench on-site during period of this plan, and the addition of one extra bench.</p>
Aim 8	To clearly define and maintain all reserve boundaries.	<p>a) To provide appropriate signage and information to inform the public of the site boundary and management responsibilities, i.e. SWT contact information.</p> <p>b) Transplant birch whips from heath and grassland areas in order to reinforce existing boundary woodland.</p> <p>c) To monitor extent of rubble being tipped on north side of reserve.</p>	During birch removal work, suitable species should be transplanted to site's northern corner to re-enforce existing damaged mesh fence.
2.3 CULTURAL			
Aim 9	To improve access to the reserve for all sections of the local community, physically, intellectually and spiritually.	<p>a) To maintain the main path network by cutting back vegetation.</p> <p>b) To maintain seating facilities to a safe and serviceable standard.</p>	Work with existing Five Weirs interpretation format to produce a site-specific information feature.

		<ul style="list-style-type: none"> c) To keep the stakeholders informed of project progress through the use of publicity and regular reports. d) To increase the voluntary contribution to on site work by holding one community workday per year. e) To make links with special needs / excluded groups to help on practical workdays. 	
Aim 10	To attract people to the reserve from the Five Weirs Walk.	a) To make links with Five Weirs Walk and Waterways Project for this reserve to be included in their publicity literature.	Work with existing Five Weirs interpretation format to produce a site-specific information feature.
Aim 11	To promote and encourage community involvement in the reserve	<ul style="list-style-type: none"> a) To run at least 1 community workday on the reserve per annum, providing skills, knowledge and understanding of the local environment for local residents / users. b) To provide work experience opportunities for young people age 14-25. c) To build on links with the Five Weirs Walk. 	SWT to dedicate time to liaising with local stakeholders regarding management of the reserve including Reserve Advisory Group, River Stewards Company, Sheffield City Council and other local interest groups.
Aim 12	To promote understanding and awareness of the local environment of the site and its unusual ecology.	<ul style="list-style-type: none"> a) To explore the possibility of building on the Five Weirs Walk Trust's links with a local youth association or school. b) To provide an appropriate form of interpretation board, regarding the reserve by 2017. 	Investigate ways in which schools and youth groups can be encouraged to get engaged with Salmon Pastures.
2.4 ECONOMIC			
Aim 13	To source short-term and long term grant funding to secure a sustainable future for the reserve.	<ul style="list-style-type: none"> a) Research and apply for suitable funding grants to pay for capital works and staff costs. b) Link Salmon Pastures with other projects (e.g. SWT Waterways Project, Living Landscapes, River Stewardship Company) that can provide resources for management. 	<p>Funding secured for capital and maintenance work for the period of this management plan.</p> <p>Opportunities for linking projects explored and taken.</p>

3 SITE DETAILS

3.1 Location and extent (Figure 1)

Salmon Pastures is situated to the east of Sheffield city centre (grid reference SK 371 881). It is located in the Sheffield district of Attercliffe, and covers an area of approximately 0.5 hectares.

3.2 Landscape value and context

Despite the small size of the reserve it is important site, due to its close proximity to the town centre and being located amongst industrial units. It also lies within a 'green corridor' as identified in the Sheffield City Unitary Development Plan. The adjacent Five Weirs Walk provides good access links to the surrounding area of the River Don and Attercliffe and the wider city.

3.3 Site tenure and occupancy

The site is freehold and owned by Sheffield City Council Highways Department. In April 2002, it was leased to Sheffield Wildlife Trust for 30 years.

3.4 Statutory designations and policy context

Salmon Pastures was originally designated as a Site of Natural History Interest in Sheffield's Nature Conservation Strategy and has now been upgraded to an Area of Natural History Interest (equivalent to a Site of Scientific Interest) in Sheffield's Unitary Development Plan 1998. It also lies within a General Industry Area with special industries.

Sheffield City Council's policies, which affect Salmon Pastures under the **Sheffield Unitary Development Plan** (1998), are as follows:

IB5 Development in General Industrial Areas

There is a preference in these designated areas for industrial development and warehouses. Accepted forms of development include small food outlets, lorry parks, hotels, offices, open space, community facilities, leisure and recreation facilities. Developments such as housing, and supermarket facilities are considered unacceptable.

GE 13 Areas of Natural History Interest and Local Nature Sites

Development which would damage Areas of Natural History Interest will normally not be permitted. Development affecting local Nature Sites should, wherever possible, be sited and designed so as to protect and enhance the most important features of natural history.

Where development would decrease the nature conservation value of an Area of Natural History Interest or Local Nature Site, it must be kept to a minimum and be compensated for by creation or enhancement of wildlife habitats elsewhere within the site or local area.

LR4 Open Space

Open space will be protected from built development where it is needed for outdoor recreation, or where it makes a valuable contribution to the natural environment, urban heritage or quality of life.

As opportunities arise, open space will be;

- Improved where it is of poor quality; and
- Created, where there is a shortage.

Sheffield City Council's policies, which affect Salmon Pastures under the **Sheffield Nature Conservation Strategy** (1990), are as follows:

NCS 5 (P): Development which may damage Sites of Scientific Interest or Community Wildlife Areas will normally not be allowed.

NCS 13 (P): The Network of Green corridors and Green Links (shown on the Proposals Map) will generally be:-

- a) Protected from development which would detract from their predominantly green and open character;
- b) Enhanced by encouraging development and land management changes which increase their wildlife value.

NCS 16 (E/P): Priority will be given to the creation and improvement of wildlife habitats where this will:

- a) Enhance Green Corridors and Desired Green Links;
- b) Enhance existing S.S.S.I.s , S.S.I.s and C.W.A.s.

NCS 18 (E): Where appropriate the City Council will establish working practices which enhance the wildlife interest of open space and other areas of open land in its ownership. Other managers of land will be encouraged to adopt similar practices.

Sheffield's **Green and Open Space Strategy** (2010 – 2030) sets out the councils approach to managing for nature and biodiversity and making green connections for people and wildlife. Under this document the council sets out the following policy:

ENV W1 Protect and enhance priority wildlife species and habitats within designated Local Nature Sites and Sites of Special Scientific Interest (SSSI).

ENV W2 Manage all public spaces, where appropriate, to protect and enhance their potential value for wildlife and habitats.

ENV W3 Develop the wildlife potential of other non-public spaces, where appropriate, to support the sustainability of the wider green space network.

ENV W4 Promote awareness and understanding of the nature conservation value of green spaces as a core part of managing those sites for wildlife and biodiversity.

ENV G1 Manage a network of links between local green spaces and the regional green infrastructure network, for the benefit of both people and wildlife.

ENV G2 Seek opportunities for enhancing the quality, functionality and continuity of the green network both for public use and for biodiversity.

3.5 Adjacent land ownership

The site is located on the north bank of the River Don, along which the Five Weirs Walk runs. The walk/bank is owned by Sheffield City Council's Highways Department. To the north of the reserve is a commercially run cement works. A small area of land to the north east, is being developed into a Sikh Temple.

3.6 Site history and past management

The Lower Don Valley has a long history of industrial use, which can still be seen at several points along the Five Weirs Walk, near to the reserve. The industrial past is also a key in the development of the reserve. The site was once part of the coke industry, owned by the Duke of Norfolk and was used as a slagheap for industrial waste products. In 1969 the banks of the River Don were reclaimed and landscaped with tree planting. Since this reclamation, the site was left unmanaged until 1996 when a management plan (Julie Westfold, 1996) was drawn up to improve its wildlife potential.

In April 1998, some tree removal work was carried out on site to maintain the open grassland. A bulldozer was used to scrape off a thin layer of the existing substrate to promote regeneration of the seed bank. SWT took over the management of the site in 2001 with the advent of the five-year management plan 2001-6, funded by the Heritage Lottery Fund.

During this period, SWT have worked to maintain the openness of the site for the benefit of the grassland and heathland component. This has involved removal of emerging trees by hand-pulling, along with some coppicing along the woodland edge to encourage diversity of woodland structure.

3.7 Archaeological Features

There is a large carved stone with the inscription "Salmon Pastures Education Committee, Sheffield Schools, 1908" It is situated along the Five Weirs Walk path at the south eastern corner of the reserve. There are no other features of archaeological interest present at the site.

3.8 Services

There are no services present on site.

3.9 Infrastructure

3.9.1 Footpaths and bridleways (Figure 2)

In order to access the site it is necessary to use the Five Weirs Walk path coming from the east or west. This is a public footpath maintained by the Sheffield City Council Highways Department, with voluntary help from the Five Weirs Walk Trust. There are no designated Public Rights Of Way on the reserve.

A small informal path has been created by SWT to provide disabled access on to the site from the western end. This leads up to a turning circle and a log bench approximately 10 metres in to the site. From here a small desire line crosses the site towards a set of sleeper steps at the eastern end of the site. The sleeper steps were built by SWT in 2001 on the route of desire line created by people walking up the bank. There is also a desire line across the site towards the boundary with the factory site.

3.9.2 Boundaries (Figure 4)

The northern boundary with the cement works was made with upright concrete slabs that have since been replaced with a line of shipping containers (2008). A wet-stone wall with post and wire mesh on top at the west end of the site and a post and wire mesh fence at the eastern end. To the south the site is bounded by the Five Weirs Walk path. A metal container forms part of the boundary in the north east corner of the site. Most of the boundaries are in good condition, however, a 7 metre section of the post and wire mesh fence on the eastern boundary is in need of repair or replacement.

3.9.3 Other Structures

At present there is no interpretation sign focusing on the site, although there are interpretation boards along the Five Weirs Walk. Sheffield Wildlife Trust installed new reserve name signs, in 2001. These signs have since been updated and replaced in 2007. These two signs state the name of the reserve, and its management by SWT, as well as contact information. There is one bench located at the end of the wheelchair accessible path.

3.10 Current Funding Schemes and Grants

Since the completion of the Heritage Lottery Fund Wild Sheffield Nature Reserve Project, Salmon Pastures has been core funded by Sheffield Wildlife Trust. There are opportunities for funding specific aspects of site management through link with other projects such as the SWT Waterways project and through incorporating Salmon Pastures into a suite of sites for specific habitat management projects (e.g. heathland and acid grassland).

4 ENVIRONMENTAL INFORMATION

4.1 Topography

Salmon Pastures is mostly flat though it slopes slightly up to the north. There is an earth bund, which slopes steeply down to the Five Weirs Walk path, and an earth bank behind the birch woodland along the northern boundary.

4.2 Geology

At Salmon Pastures the importance of the natural underlying geology is minimal because the site is covered with a layer of coal slag. This creates acidic conditions in the surface substrate that masks influences from the underlying geology.

4.3 Pedology

The banks of the Don are composed of Pleistocene strata overlaid with more recent alluvial deposits i.e. sand, gravel and mud deposits from the river. The soils at Salmon Pastures are thin, nutrient poor, acidic soils overlying a layer of coal slag. An increase in ruderal species and a decrease in the extent and vigour of heather suggests evidence of nutrient enrichment of soils, likely to have been caused by the flooding of the River Don in 2007.

4.4 Climate

Data is available for the thirty-year average (1970 - 2010) at the following local weather station.

Location	Mean Annual Rainfall (mm)	Mean Annual Sunshine (hrs)	Average Temperature (°C)	
			Max	Min
Sheffield (131m)	831.3	1440.6	13.1	6.4

The prevailing wind is from the south-west.

4.5 Hydrology

The site is fairly well drained due to the soil structure and the slight slope downwards towards the south of the site.

4.6 Biodiversity and Biodiversity Action Plan overview

Despite the site's small size and industrial history, Salmon Pastures forms part of a network of Urban Commons across the City of Sheffield. Urban Commons have developed on post-industrial derelict urban sites and have been identified in the Sheffield Local Biodiversity Action Plan (SLBAP) as a priority habitat. In 1987 The Inner City Habitat Survey carried out by Julie Westfold and Oliver Gilbert, highlighted Salmon Pastures as being of ecological importance. Research in 1988 by the Sorby Natural History Society showed local Urban Commons supported over 57 species of hoverfly and a rich diversity of plants.

There are some SL-BAP species and Sheffield Nature Conservation Strategy species on the site, including Jacob's Ladder (*Polemonium caeruleum*), Greater Burnet Saxifrage (*Sanuisorba officinalis*), and a hoverfly (*Cheilosia mutabilis*).

The site contains three main habitat types, semi natural birch (*Betula pendula*) dominated woodland and scrub, semi improved acidic grassland, and heather (*Calluna vulgaris*) heathland (see **Figure 3**). There are also areas of bramble (*Rubus fruticosus*) scrub, and tall ruderals including lupins (*Lupinus sp.*) and willowherb (*Chamerion angustifolium* and *Epilobium sp.*).

Notable Species

The following species are Species of Conservation Concern (SoCC) listed in the UK Biodiversity Steering Group report volume 2: Action Plans. Bluebells are also listed in the Wildlife and Countryside Act 1981 (amended)

UK BAP Priorities (short and medium list only)	
Habitats	Species
Lowland heathland	Bluebell (<i>Hyacinthoides non-scriptus</i>) Jacob's ladder (<i>Polemonium caeruleum</i>) Bullfinch (<i>Pyrrhula pyrrhula</i>)
Sheffield BAP Priorities	
Habitats	Species
Lowland heathland Urban common Scrub	Bluebell (<i>Hyacinthoides non-scriptus</i>) Jacob's ladder (<i>Polemonium caeruleum</i>) Kingfisher (<i>Alcedo atthis</i>) Blackcap (<i>Sylvia atricapilla</i>) Chiffchaff (<i>Phylloscopus collybita</i>) Greenfinch (<i>Carduelis chloris</i>) Goldfinch (<i>Carduelis carduelis</i>) Bullfinch (<i>Pyrrhula pyrrhula</i>)

4.7 List of surveys, monitoring schemes and reports

Author	Date	Survey	Summary
Matty Levan	2001	Summary of existing surveys	Various site descriptions, habitat maps and species lists recorded at the site since 1987.
Susan Shorter and Thomas Simcock	2001	Breeding Bird Survey	This survey was carried out to determine the species present and estimate the number of territories/breeding pairs. The results of the survey can be taken into consideration when deciding future management of the site. 22 bird species were present on the site during the survey period with half of these species holding a territory. The species found are typical of woodland and garden habitats, the birch woodland being particularly important.
Susan Shorter and Belinda Wiggs	2001	Phase 1 Habitat Survey	A detailed Phase 1 survey was carried out at the site. Despite its small size and industrial location, the reserve has a rich variety of plant and animal species. The habitat types present are semi improved and acid grassland, young birch woodland and scrub, tall ruderals and patches of heather providing a valuable wildlife resource.
Henna Tanskanen	2001	Visitor Survey Report	The aim was to find out who uses the reserve, for what purpose, where they come from and how they would like to see the reserve managed. The site is often used by nearby factory workers and dog walkers; litter was the highest concern.
Sorby	2001	Invertebrate survey	A desk study of all the invertebrate records from Sorby since 1987. 44 species were listed, 2 of these are notable and 8 are of local status.
M. Senkans	2001	Fungi survey	Only a few varieties present but hundreds of common earthballs found.
Cheryl Gibson	2001	Butterfly survey	A good site for butterflies as a mosaic of habitats is beneficial. A large number of larval food plants, mainly grasses, but also a good variety of wild flowers. A good supply of nectar from spring to autumn in the goat willow. Bramble flowers and berries are a good food source.
SWT	2001	Monitoring	The 2001 surveys provide a baseline data set to be used when making management decisions, including objectives for heather, bracken and grassland monitoring.
Cheryl Gibson & Helen Lloyd	2005	Phase 1 Habitat Survey	Detailed site description and habitat map of the site showing the extent and location of the habitats present, including acid & neutral grassland, scrub, tall ruderals and patches of heathland.
Alistair Campbell & Mike Sims	2010	Phase 1 Habitat Survey	A detailed Phase 1 survey was carried out at the site. Detailed site description and habitat map of the site showing the extent and location of the habitats present, including acid & neutral grassland, scrub, tall ruderals and patches of heathland.

5 BIODIVERSITY

5.1 Woodland and Scrub

5.1.1 Semi natural birch dominated woodland and scrub

Description and evaluation

The semi natural birch dominated woodland areas are almost impenetrable, due to dense bramble and many spindly birch trees growing close together. Birch is the dominant canopy tree at the southern end of the site, with sycamore (*Acer pseudoplatanus*) dominant at the northern end. Most of the trees are fairly young (c.10-20 years old) and the majority are 5-6m tall. Alder (*Alnus glutinosa*), hawthorn (*Crataegus monogyna*) and rowan (*Sorbus aucuparia*) are also present. Birch, sycamore, and willow (*Salix* sp.) are all regenerating and are occasional in the shrub layer. Bramble is also present in the shrub layer, being very dense in places especially in the southern and western areas of the reserve. The ground flora is sparse containing occasional grasses such as false oat-grass (*Arrhenatherum elatius*), rough meadow grass (*Poa trivialis*), and cocksfoot (*Dactylis glomerata*). Other ground flora includes garlic mustard (*Alliaria petiolata*), cleavers (*Galium aparine*), broad-leaved willow herb (*Epilobium montanum*), dandelion (*Taraxacum officinale* agg), and bryophytes. The woodland edge has been scalloped.

Although the area of woodland is relatively small, it forms a link with the nearby River Don and the trees along its banks. The woodland provides good cover for potential nesting sites and a good feeding ground for birds and small mammals. It also provides a valuable habitat for invertebrates. Where the woodland edge has been scalloped the young birch scrub provides an important habitat providing perching posts and feeding grounds for birds.

Management

Management should be undertaken to improve the condition of the woodland. Thinning of the dense areas of birch will allow the remaining trees to achieve an improved growth structure and will allow more light to woodland floor, encouraging a greater diversity of ground flora. Rotational coppicing and the maintenance of the scalloped woodland edge will create an increased diversity of habitat. Coppice re-growth will provide a dense scrubby edge favoured by many woodland and garden birds. Scalloping the edges will provide a greater area of woodland edge, thereby increasing available feeding areas.

Management will need to be undertaken to prevent the woodland encroaching onto the grassland and heath. Encroaching trees will be pulled and dug up when seedlings and cut and stump treated with herbicide when saplings and older.

Monitoring

Fixed-point photo-monitoring will allow the level of encroachment to be the effectiveness of management prescriptions to be assessed. Subsequent ecological surveys such as Phase 1 habitat, bird and invertebrate surveys will also indicate whether management has been successful in improving conditions for wildlife.

5.1.2 Bramble Scrub

Description and evaluation

An area of dense bramble scrub (up to 1m tall) runs the length of the site above the Five Weirs Walk track, on a c.2m high bank. There are other patches of scattered bramble scrub across the reserve within the grassland and heathland areas. Other species within the scrub areas include

false oat grass, rough meadow grass, bird's foot trefoil, meadow buttercup, (*Ranunculus acris*) dandelion, rosebay willow herb, ribwort plantain, and common vetch.

The bramble scrub provides a valuable food source and a safe shelter belt for a variety of invertebrates and birds and should be maintained. However bramble scrub can encroach onto grassland and heather areas and also onto paths, which should be prevented.

Management

Although a bramble scrub component should be included on the site, scrub should not be allowed to encroach to the detriment of the grassland and heathland areas. Some scrub management will therefore be required, including regular removal from the heathland and grassland areas. The bramble strip along the bank parallel with the Fiver Weirs Walk should be cut to within 1m of the heather area. This bramble clearance should be done through community workdays wherever possible.

Monitoring

Photo monitoring at fixed points across the site, at the same time each year will monitor the encroachment of the bramble scrub.

The heathland monitoring programme will also record the presence and abundance of bramble scrub.

5.1.3 Dead wood

Description and evaluation

There is very little dead wood present on this site. This is partly due to the young age of the trees. A fungi survey carried out on the site in 2001 found only a small number of fungi species. This was thought to be as a result of the small amount of dead wood present on site.

Dead and decaying wood, whether lying on the ground or as standing dead wood adds to the biodiversity of a site. It provides a habitat and food source for invertebrates, which are in turn a valuable source of food for insectivorous birds. Dead wood also provides a valuable habitat for fungi and other saprophytic species, as well as shelter for a variety of species.

Management

An attempt should be made to retain more dead wood on site and to increase the dead wood resource when possible. Where woodland thinning is to be done, some ring barking could be carried out, which would result in standing dead wood. Where felling has been done, piles of logs should be retained on site as dead wood habitat piles. Dead wood habitat piles should be kept small (1mx 1m x 0.5m) and placed in denser areas of woodland/scrub to minimise fire risks.

Retaining piles of leaves and other decaying matter on site will extend the range of habitats and therefore species. However, this should be balanced with the need to keep the site looking 'tidy' in the eyes of the public and care should be taken not to encourage the tipping of garden waste.

Monitoring

A repeated fungi survey in 2011 will identify whether there has been an increase in fungi diversity due to increased dead wood habitat.

4.2 Grassland

4.2.1 Semi- improved acid grassland

Description and evaluation

Past surveys refer to the central area as acid grassland. The adjacent areas of heather indicate that the soils are acidic. The species recorded in the Sheffield Wildlife Trust survey (2001) are indicative of well-drained, shallow, nutrient-poor soils on disturbed ground. Although no acid indicator species were identified in the grassland, as the fine-leaved grasses were not identified to species level, they could have been species such as sheep's fescue (*Festuca ovina*) and common bent (*Agrostis capillaris*) which are often indicative of an acid grassland community. Further survey is needed to identify the finer grasses and confirm the nature of the habitat.

The Phase 1 Habitat Survey carried out in 2005 recorded red fescue (*Festuca rubra*), wavy hair grass (*Deschampsia flexuosa*), and bent grasses (*Agrostis* sp.), which are all indicative of acid grassland. Other species, such as bird's-foot-trefoil, (*Lotus corniculatus*) and salad burnet (*Sanguisorba minor*) are indicative of dry soils.

The central short grassland areas are species-rich with the most frequent species being fescues (*Festuca* sp.), common centaury (*Centaureum erythrium*), common cat's ear (*Hypochaeris radicata*), common toadflax (*Linum vulgaris*), perforate St John's wort (*Hypericum perforatum*), bird's foot trefoil (*Lotus corniculatus*), lesser trefoil (*Trifolium dubium*), common sorrel (*Rumex acetosa*), mouse ear hawkweed (*Pilosella officinarum*), lady's mantle (*Alchemilla vulgaris*), salad burnet (*Sanguisorba minor*) and broad leaved willow herb (*Epilobium montanum*),

The longer grassland areas tend to be on the periphery of the site, where the soils are probably deeper, more nutrient rich and less acidic. In some parts of these areas a high diversity of species occurs, including Yorkshire fog (*Holcus lanatus*), cock's-foot grass, false oat-grass, couch (*Elytrigia repens*), crested dog's tail (*Cynosaurus cristatus*) and rough meadow grass. The herbs include meadow vetchling (*Lathyrus pratensis*), ragwort (*Senecio jacobaea*), creeping thistle (*Cirsium arvense*), red and white clover (*Trifolium pratense* and *T. repens*), ribwort plantain (*Plantago lanceolata*), common mouse ear (*Cerastium fontanum*), dandelion, nipplewort (*Lapsana communis*), hedge bindweed (*Calystegia sepium*), common knapweed (*Centaurea nigra*), common vetch (*Vicia sativa*), meadow buttercup (*Ranunculus acris*) and yarrow (*Achillea millefolium*). A number of species are less common, including red and white campion (*Silene dioca* and *S. alba*), field woodrush (*Luzula campestre*) and sneezewort (*Achillea ptarmica*). Also found in 2005 was red valerian (*Centranthus rubra*), melilot (*Melilotus* sp.) and leafy hawkweed (*Hieracium* spp). Also seen on the site towards the eastern end of the grassland area is ploughman's spikenard (*Inula conyzae*).

Management

The management of the central grassland area at Salmon Pastures should maintain the quality of the acid grassland to optimise the value of the site for wildlife. In 1998 a shallow scraping was carried out using a bulldozer to remove the topsoil from a small area of the site. The aim was to lower the nutrient levels, to clear the existing vegetation and to allow germination of the seed bank. This was repeated in 2003 in an area at the top of the bank above the large stone plaque along the Five Weirs Walk. The scrapes were done in different areas to achieve a diversity of successional zones. It is suggested that this scraping is repeated every 5 years.

The management will include a bi-annual or annual cut of the grassland, including the removal of the cuttings to prevent nutrient build up. This will prevent the more robust grasses spreading and will give the finer grasses and the more sensitive, more desirable acid grassland plant community a chance to thrive. Mowing should be done in two or three sections on rotation to prevent the loss of habitat for invertebrates and to allow late flowering species to set seed.

Encroaching tree and bramble scrub will be removed to prevent competition with the grassland species.

Monitoring

Photo monitoring at along fixed transects across the site as well as quadrat surveys recording percentage cover, will monitor the changes in the grassland area. A National Vegetation Classification NVC survey should be carried out at the reserve in 2006. Once the NVC sub-communities have been established it will management will be reviewed to incorporate any new prescriptions necessary to maintain the assemblages.

4.2.2 Heather

Description and evaluation

There are several small areas dominated by heather (*Calluna vulgaris*), interspersed with some Michelmas daisy (*Aster noui-belgii*) and lupin (*Lupinus angustifolia*). These areas grade into other areas dominated by tall ruderals, including rose bay willow herb (*Chamerion angustifolium*), great willow herb (*Epilobium hirsutum*), ragwort, common knapweed, thistles and tall grasses. The heather is in the mature to degenerate phase of its growth cycle and shows poor signs of regeneration from seed, although there are some areas of heather regeneration along the footpaths and where the heath/grassland boundary occurs.

Lowland heath is a UK BAP priority habitat and as such is the most important single component on the site. Heather supports a unique community of invertebrates and associated species.

Heather is susceptible to shading by taller growing plants and requires acidic, nutrient poor soils to thrive. The heather stands will suffer from nutrient enrichment of soils through atmospheric deposition and from flooding of the River Don. Nutrient enrichment will change the optimum conditions for the heather and will encourage the growth of ruderal species.

Management

Encroachment of birch and bramble scrub is a threat to the heathland. Bramble is to be cleared within the heathland and to within 1m of the heathland area. The birch woodland edge is to be cut annually to prevent it spreading. Any tree seedlings which germinate in the heathland area should be removed by pulling. If the trees and scrub are cut, the stumps should be treated with herbicide to prevent re-growth. Also it may be necessary to remove some of the more robust grasses, tall ruderals and brambles from encroaching into the heathland.

One method of managing the heathland is to cut the heather stands on a rotational basis, once every 20-30 years, in order to encourage heather seeding and natural regeneration. Heather may also regenerate from layering; as the degenerate heather collapses the branches re-root and send up new shoots. The heather should be cut when in seed and the brash spread over bare ground. The brash provides a microenvironment for the shed seeds to germinate and establish.

Burning should not be considered on site due to small size of the reserve and the potential damage caused by an out of control fire. Burning can also severely damage invertebrate populations, especially on small heath areas where there are no adjacent areas to act as a refuge.

One problem that may increase over time is the shading of the heather by large trees on the periphery of the site. Some of the trees in danger of doing this are actually outside the site boundary on the banks of the River Don. The degree of shading of the heather areas should be assessed annually and if necessary trees will be need to felled under agreement with SCC.

The creation of shallow scrapes will create areas of soil with reduced nutrient status, providing areas for colonisation from heather by seed, either naturally or by the application of in-seed heather brash.

Monitoring

Photo monitoring at fixed points across the site, at the same time each year will monitor the changes in the heathland area.

Two transect lines (Figure 6) have been established running southwest to northeast and northwest to southeast across the grassland area. Quadrat surveys measuring percentage cover will be undertaken annually along with the photo monitoring. Other characteristics of the heather stands will also be recorded including average height, extent of layering and the presence of different stages of heather growth.

4.2.3 Bracken

Description and evaluation

Bracken can be a valuable habitat for some species, providing shelter and forage. There is a minimal amount of bracken on the reserve, located within a small clearing in the woodland. However it is a highly invasive species and can rapidly out compete and displace other species which should be prevented.

Management

A small amount of pulling should be done in conjunction with other management tasks. This should be sufficient to prevent to spread of bracken.

Monitoring

Photo monitoring at fixed points across the site, at the same time each year will monitor the encroachment of the bracken.

The heathland monitoring programme will also record the presence and abundance of bracken.

4.3 Fungi

Description and evaluation

A brief fungal survey (Senkans 2001) mentions the prominence of mycchorizal fungi such as Woolly Milk Cap (*Lactarius torminosus*) and the Common Earthball (*Scleroderma citrinum*), which are found in association with the birch present on site.

Management

In terms of allowing the fungi component of the site to develop, it is recommended that some birch be allowed to mature. The amount of dead wood should be increased through small brash habitat piles and occasional ring-barking of trees.

Monitoring

The fungi survey should be repeated in 2010.

4.4 Zoological

4.4.1 Invertebrates

Description and evaluation

The site is rich in invertebrate species and has been surveyed on several occasions; Sheffield City Council Ecology Unit (1987 & 1990), Slack and Shaw (1992), Sheffield Environmental Training (1999) and Gibson (2001). The combined results of these surveys shows that 22 species of hoverflies (5 of local status and 1 Notable) have been recorded on site including *Cheilosa mutabilis*, a local red data book species. Other invertebrates include two dragonflies, *Aesha grandis* and *Aesha cynea*, several butterflies, including gatekeeper (*Pyronia tithonus*) and orange tip (*Anthocharis cardamines*) and several moths, including cinnabar moth (*Tyria jacobaea*) and burnet moth (*Zygaena sp.*).

A butterfly and moth survey was carried out in July and August 2001 (Gibson, 2001), and the butterflies present (and likely to be present due to the food plant sources available) on the site were assessed. The method used for the survey was to walk through the site noting any butterflies seen as well as the presence of nectar or larval food plants. The survey showed good results owing to the variety of plants to be found in such a small area – both for butterflies & moths, and for their larval stages. The species seen were small skipper (*Thymelicus sylvestris*), large skipper (*Ochlodes venata*), small white (*Pieris rapae*), green-veined white (*Pieris napi*), common blue (*Polyommatus icarus*), small tortoiseshell (*Aglais urticae*), meadow brown (*Maniola jurtina*) and gatekeeper (*Pyronia tithonus*). A cinnabar moth was also seen. The caterpillar food plants of small skipper, meadow brown and common blue butterflies were all present indicating they breed on the site. There is a good supply of nectar from a variety of wildflowers from spring to autumn to sustain butterflies.

Other than a desk top review by Sorby natural History Society of existing invertebrate records in 2001, no survey work concentrating on the wider invertebrate groups has been undertaken.

Management

Maintaining and increasing the diversity of invertebrates will be achieved by maintaining and increasing the food plants for both adult and larval invertebrates. Preventing the grassland being dominated by rank grasses and encroached upon by scrub will allow the food plants to flourish. Rotational cutting of the grassland will allow a continuous provision of food plants. Scalloping of the woodland edge will provide more areas for grasses and herbaceous plants to colonise providing an increase in food resource, and also more un-shaded areas for basking.

Monitoring

A repeat of the butterfly survey should be carried out within in 2011 if funding allows. This will allow assessment of any changes in butterfly populations since 2001.

4.4.2 Mammals

Description and evaluation

There are no records of mammal surveys on Salmon Pastures. It is possible that some mammals are present despite the small size of the reserve due to links with the wider 'green corridor' of the River Don.

Management

Maintenance and improvement of habitats will improve conditions for mammal species. Maintaining an amount of scrub will provide food and shelter for mammals.

Monitoring

A small mammal survey, using Longworth humane traps should be carried out at the reserve in 2011/12.

4.4.3 Birds

Description and evaluation

A bird survey was conducted by Sheffield Wildlife Trust at Salmon Pastures during 2001, (S. Shorter 2001). Some 22 different species of birds were recorded, although not all were nesting at the site. This survey, conducted to Common Bird Census methodology, was undertaken to influence future management recommendations and found the areas of developing birch scrub offered opportunities in terms of food, nesting material, nesting sites, and protective cover.

The 22 species included long tailed tit (*Aegithalos caudatus*), great tit (*Parus major*), bullfinch (*Pyrrhula pyrrhula*), goldfinch (*Carduelis carduelis*) and mistle thrush (*Turdus viscivorus*).

Other surveys on the nearby stretch of the River Don have recorded kingfisher (*Alcedo atthis*), grey wagtail (*Motacilla cinerea*), little grebe (*tachybaptus ruficollis*), moorhen (*Gallinula chloropus*) and mallard (*Anas platyrhynchos*)

Management

Management of the woodland and particularly the woodland edge will improve conditions for bird species. Coppicing on rotation and scalloping of the woodland edge will provide an increased area of scrubby habitat, ideal for many bird species. Maintaining an increase in dead wood habitat will increase numbers of invertebrates providing an increased food source for birds.

Monitoring

A repeat of the CBC bird survey should be carried out at the reserve in 2011/12. This should be carried out as to be directly comparable to the 2001 survey results to give an indication of the success of the management and its impact on the bird populations.

6 INFRASTRUCTURE

6.1 Footpaths, bridleways and byways (Figure 2)

There are no statutory public Rights of Way on the reserve. There is a part surfaced desire line running east to west across the reserve. Vehicular access on to the site for maintenance purposes is not possible, but a vehicle can be driven along the Five Weirs Walk to the entrance to the reserve. The surfaced desire line on the site was constructed in 2001 and was designed to enable easy access for wheelchair users. This path does not extend across the site but stops at a wheel chair turning circle where there is a good view across the site. There is also a bench at this point. From here the desire line crosses the site towards a set of sleeper steps at the eastern end (installed by SWT 2001).

6.2 Boundaries (Figure 4)

There is no physical boundary on the south of the site. The border with the Five Weirs Walk is formed by a sloped embankment and is made more secure by the presence of brambles and young tree growth. The northern site boundaries consisted of concrete slabs 3 metres high until 2008. These were replaced with a row of shipping containers after frequent collapse of the concrete slabs resulting in aggregate falling into the reserve. There is a whetstone wall with post and wire mesh on top at the west end of the site and a post and wire mesh fence at the eastern end. Most of the boundaries are in good condition, however, a 7 metre section of the post and wire mesh fence on the eastern boundary is in need of repair or replacement.

6.3 Other Structures

There is a bench, put in by SWT in 2001, at the wheelchair turning circle. It has a good view across the site. There are two SWT signs on the reserve, installed in 2001 and replaced in 2007.

7 CULTURAL CONTEXT

7.1 Archaeological interest and existing features

The lower Don Valley has a long history of industrial use and several sites of interest for industrial archaeology are found near to the reserve along the Five Weirs Walk. After the site was reclaimed from heavy industry and landscaped, some trees were planted although most of the vegetation seems to have regenerated naturally. The reserve was previously known as Salmon Pastures Coal Yard and was used by a coal depot located behind it. Following landscaping the site was effectively left until 1996 when a management plan was drawn up (J. Westfold.) Although there has been a lot of human activity on site there are no significant archaeological features.

7.2 Recreational use

Salmon Pastures nature reserve is used informally by the workers from the surrounding industries occasionally for football knock-about. Occasionally Sorby Natural History Society provides guided tours on the reserve to record its flora and fauna. The reserve is used informally by cyclists, walkers, dog walkers and joggers who use the Five Weirs Walk. Anglers are known to use the nearby stretch of the River Don. The reserve has also been used occasionally for informal free nocturnal dance parties, after which the party goers cleared away all debris. This activity should be strongly discouraged to prevent damage and disturbance to wildlife.

The most recent visitors survey conducted by SWT during November 2010 and January 2011, received significantly fewer responses (15), most likely due to the time of year it was conducted. The first survey day was very cold and there was snow on the ground, the other days were also notably cold. For this reason it is important to keep in mind the limited response to the visitor survey.

The survey shows that 53% of visitors to the nature reserve were aged 55 and over, the next most common age group was 45-55 (33%). The site is predominantly used for walking, as it is part of the Five Weirs Walk, and fishing. Retaining the quiet, natural feel will add to the reserves appeal whilst also adding interest along this section of the Five Weirs Walk.

An equal proportion of people (43%) visited the reserve on their own or with others, and of these 21% also walked their dogs. The most common duration for a visit was under 30 minutes (79%), where as 21% of people stayed in the area for more than 2 hours, presumably for fishing.

Following the previous survey (Evans, 2002), reserve name signage was installed in 2007 and as a result the majority (80%) of people questioned this year were aware of the status of the nature reserve. Furthermore, all but one person questioned had been to the nature reserve before. And 43% of people visited 2-3 times a week. Despite this awareness, nobody actually went into the nature reserve, opting instead to remain on the main path.

The cleanliness of the reserve as well as the site being used for unsuitable means were identified as key issues. However, these are both ongoing issues in relation to urban nature reserves and are not unique to Salmon Pastures. The main request for improvements to the reserve were rubbish bins and litter removal (29% and 36% respectively), although nobody felt that better management for wildlife was necessary.

Of the people surveyed 53% were retired, the next most common employment group was full-time (33%) with the remaining 13% unemployed or looking for work. All of the interviewees were white, which does not reflect the social make up of the local area, and a further 13% considered themselves disabled. Salmon Pastures is in the Attercliffe area which falls into the Burngreave and Darnall electoral wards. In Burngreave the ethnic minority groups form 73.6% of the population, while it is 83.5% in Darnall. This suggests that the site is used more by visitors to the area than the residents of Darnall and Burngreave. Therefore, continuing links with user groups and individuals, especially the Five Weirs Walk Trust, will be crucial to increasing ownership amongst the site users.

7.3 Information and Interpretation

There is currently no information or interpretation feature at Salmon Pastures Nature Reserve. A nearby information board on the Five Weirs Walk gives some details of the history of the surrounding area. There are however two signs located on the site detailing the name of the site, its status and SWT's management.

7.4 Local community

Salmon Pastures Nature Reserve is a small 'urban common' located near the river Don in the industrial heartland of Sheffield on the periphery of the Burngreave and Darnall wards of Sheffield City; the following information is drawn from the 2001 National Census, and the Sheffield City Council Corporate Policy Unit document "Sheffield's New Wards A Census Profile" May 2004. Due to its location, the site is rarely visited and has no real identified residential community, although its popularity as a lunch site for local factories and as a stop off for users of the riverside path is appreciable.

The two wards combined contain a total of nearly 45,000 residents, and has two of the youngest populations in the City (24.2% and 23.4% being under 15 years old). The rate of residents aged 60 years and over is not significantly different from the citywide average of 21.3%, with Burngreave having 19.7% and Darnall 21.4%

Both wards contain a high percentage of ethnic minorities (those identifying themselves as white being 62.4% and 70% for Burngreave and Darnall respectively). By far the largest ethnic group, for each ward, identified by the 2001 census is Pakistani (18.9% of Burngreave residents; 18.8% of Darnall residents). With Black Caribbean and Bangladeshi populations being the next significant minorities respectively for each ward.

Levels of employment are lower than the City average of 55.7% of people in employment, and higher than the 4.2% actively seeking employment: Burngreave being 44.1% employed, and 7.6% seeking employment; Darnall being 48.9% and 5.6% Neither ward varies much from the Citywide average of 13.5% in terms of those who are retired: Burngreave being 12.9% and Darnall 13.8%

Academic achievements for the two wards are below most of the City averages, with Burngreave having 44.4% and Darnall 45.7% of residents holding no qualifications (City average being 31.6%). Only at Level 3 (2+ 'A' Levels, 4+ 'AS' Levels, NVQ Lvl2, Intermediate GNQ, or equivalent) does Darnall, at 6.8% achieve higher than the citywide average of 6.2%

People's health does not vary significantly from the Citywide picture of 11.1% of residents expressing their health is not good, and 20% that they have a long term illness. For Burngreave the same figures are 13.3% and 18.8%; for Darnall 13.6% and 19.1%

Of a total of 18, 235 properties, Burngreave and Darnall had 45.6% and 60.5% owner occupancy (Citywide average being 60.5%). Households in social ownership (Local Authority and Association stock) stands at 41.9% and 29.4% respectively, and private rental is 10.7% and 8.5% In Burngreave, 9.3% of households are occupied by single parent families.

Finally, both wards have high levels of non-car ownership. 35.7% of households across the City have no access to private transport, for Darnall the figure is higher at 41.3%, whilst Burngreave is significantly higher at 50.9%

7.5 Education

The following information on School achievements for Key Stage 2 are derived from the Department for Education and Skills website www.DfES.gov.uk regarding attainment targets.

There are no secondary schools in the immediate area. However, there are several primary schools, Phillimore Park Primary, Byron Wood Primary, Pye Bank Church of England, and

Whiteways Juniors in the surrounding areas. On a point basis, all these schools are below the England average and only Whiteways Junior School is above the average for Sheffield City.

For Key Stage 2, Whiteways Junior School produces good results for English, Mathematics, and Science (71%, 72% and 82% at Level 4 and above respectively for each subject). The lowest for these subjects are Pye Bank CofE for English (42%), and Byron Wood Primary School for both Mathematics (30%), and Science (52%).

Byron Wood Primary School has one of the lowest levels of achievement in Key Stage 2 across the whole of the Sheffield City LEA. However, although on average the schools score poorly it is incorrect to cast them in bad light. The new "Value Added" figures – calculated from achievements by pupils at Key Stage 1 and Key Stage 2 – which is a record of progress, recognises all of the three lower scoring schools have made significant strides in raising achievements between the Key Stages.

At the moment there are few links with educational establishments, although Sheffield Environmental Training (SET) have used the site and the Five Weirs Walk Trust have run educational activities with Dr. John Worrall Special School in Attercliffe (which permanently closed in Summer of 2005). Sheffield Wildlife Trust have worked with some schools in the surrounding area although not on Salmon Pasture Nature Reserve.

Formal education provision for the site must be carefully considered. Salmon Pastures is extremely valuable resource for wildlife, but its size and location means that delivering activities for a large group or class (± 30) is difficult. Also, there are no local primary schools within walking distance of the site. The primary schools, which are relatively close, all have very important wildlife sites much nearer to them (Crabtree Ponds and High Hazels Park) both of which have good capacity to support school groups. Encouraging primary schools to use this site is unlikely to benefit either the reserve or the pupils.

Secondary schools may be able to use the site for more detailed studies of, for example, ecology, hydrology or vegetation management. Secondary schools targeted through the reserves education programme will be encouraged to use a number of reserves (including Salmon Pastures) for comparative studies. This may be for A-Level, GCSE, ASDAN or Key Stage 3 projects and will depend on the subject, ability and age of the group / class visiting the site. The unique ecology of this site is likely to make it a useful habitat for studies by secondary school groups. These groups tend to study more specific topics; therefore it may be more appropriate to target these for education. This should be done through a citywide programme for secondary schools, which will allow them to use several reserves for comparative studies.

Due to the small nature of the reserve university studies of the area may not be feasible, these would be better accommodated on the larger reserves.

8 REFERENCES

- Blood, N.** 2001. *Boundary Survey of Salmon Pastures*. Sheffield Wildlife Trust.
- Blood, N.** 2001. *Access Survey of Salmon Pastures*. Sheffield Wildlife Trust.
- Council of Europe**, 1979. *Bonn Convention on Migratory Species of Wild Animals*. EEC
- Council of Europe**, 1979. *The Berne Convention on the Conservation of European Wildlife and Natural Habitats*. EEC
- European Birds Directive 79/490/EEC**. 1979. *The Directive of the Council of the European Communities on the conservation of wild birds*. EEC.
- European Habitats Directive 92/43/EEC**. 1992. *The Directive of the Council of the European Communities on the conservation habitats and species*. EEC
- Evans, J.** 2002 *Visitor Survey Report for Salmon Pastures Nature Reserve 2002*
- Flanagan, J.** 2001. *Salmon Pastures - Invertebrate Survey*. Emerald Ecology.
- Gibson, C.** 2001. *Butterfly Survey of Salmon Pastures*.
- Holden, C.** 2000. *Salmon Pastures Area of Natural History Interest, Draft Management Plan*. Sheffield Wildlife Trust
- Sheffield City Council**. 1991. *Sheffield Nature Conservation Strategy*.
- Sheffield City Council**. 1998. *Sheffield Unitary Development Plan*.
- Shorter, S.** 2001. *Breeding Bird Survey*. Sheffield Wildlife Trust
- Shorter, S.** 2001. *Botanical Survey of Salmon Pastures*. Sheffield Wildlife Trust
- UK Biodiversity Steering Group 1995**. *Biodiversity: the UK Steering Group Report*. Volumes 1 & 2. UKBSG, London.
- Westfold, J.** 1996. *Salmon Pastures - Site of Natural History Interest, Management Plan*. Sheffield Centre for Ecology and Environmental Management.

9 WORK PROGRAMME

The following table shows costings at the time of writing the management plan, which can be modified. The cost of the staff time is not included, though an indication of the number of days at different officer levels is indicated.

The electronic version of this table is also on the Sheffield Wildlife Trust system, so that the work can be recorded. Compliance is recorded (whether the work has been done) and explanations of the reasons why these elements of the work programme have not been undertaken. There is also a column for condition monitoring – which gives the opportunity to record the results of the work and whether any difficulties were experienced, or any useful information or observations that may help in future.