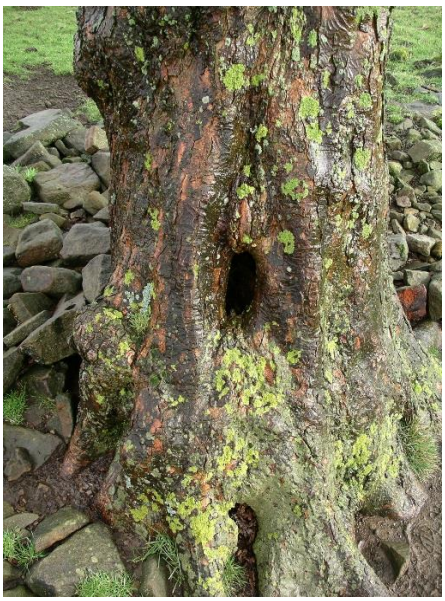

Sheffield & Rotherham Wildlife Trust

Management Plan for

Blacka Moor Nature Reserve

April 2015 – March 2023 (Extension to March 2026)

Acknowledgements

Sheffield and Rotherham 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 (Richard Harris and Michael Senkans); Sorby Natural History Society; Sheffield Bird Study Group (and especially Jim Clarke); Natural England; the Peak District National Park Authority (Rebekah Newman and Sarah Whiteley); Campaign to Protect Rural England South Yorkshire/Friends of the Peak District (Andy Tickle); Ride Sheffield; the British Horse Society (Rhiannon Owen); and all members of the Blacka Moor Reserve Advisory Group and the wider public who contributed to the community consultation. Additionally, thanks go to the many SRWT staff and trainees who have contributed.

Report by: Chris Doar

Extension by: Marta Alfaro Tirado

Amendments and new information included as part of the extension are highlighted in blue

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Summary

Blacka Moor encompasses 181 hectares of moorland, grassland and woodland and lies on the fringes of the Peak District, within the area known as the Sheffield Moors. Gifted to Sheffield City Council for the purposes of public recreation by the Graves Trust in 1933, Blacka Moor has been managed by Sheffield and Rotherham Wildlife Trust (SRWT) since 2000 under a long lease.

Blacka Moor is designated as Site of Special Scientific Interest and forms part of the Dark Peak Special Areas of Conservation (SAC) and Special Protection Areas (SPA). Its features of interest are its habitats, grassland fungi and bird fauna. A Scheduled Monument is also present on site, as are many other archaeological features of note.

A comprehensive network of Public Rights of Way, including both footpaths and bridleways, provides access across the site, much of which is also access land under the Countryside and Rights of Way Act, 2000. Blacka Moor has long been used as a place for recreation, and has been enjoyed by generations of Sheffielders for walking, picnicking, orienteering, bilberry-picking and horse-riding. In recent years, newer sports, such as mountain-biking have become established on site.

As part of the Sheffield Moors area, Blacka Moor falls under the area covered by the Sheffield Moors Masterplan. As a result, Blacka Moor will be managed in accordance with the landscape-scale vision for the area set out in the plan, with care taken to ensure that the unique characteristics of the site, so appreciated by its users, are retained.

This management plan covers the period April 2015-March 2023. Physical works contained in the plan are aimed at retaining a balance of habitats on the site and restoring its 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 Blacka Moor through the formation of a Conservation Group and a Blacka Moor Forum. Information provision to the public will be improved on site and on the Trust's website. An annual programme of events will be held to attract visitors to the site and to promote public understanding of its wildlife and history. The opportunity for volunteers to participate in practical work days will also be offered.

Through the implementation of this plan, the Trust intends to ensure Blacka Moor remains true to the vision for the site:

A wild landscape, which is rewarding to visit, with a wealth of habitats supporting a richness of wildlife, where the archaeology and history are conserved and celebrated.

Extension of the management plan: The new government initiatives 'Environment Land Management Scheme' (ELMS) and their full details are expected to launch in 2024. It is decided that the new management plan will benefit from being extended until the details of the new schemes can be incorporated in the plan.

1.0 Introduction

Sitting on Sheffield's south-western edge, Blacka Moor Site of Special Scientific Interest encompasses 181 hectares of moorland, grassland and woodland. A comprehensive network of Public Rights of Way, including footpaths and bridleways, provides access across the site, much of which is also access land under the Countryside and Rights of Way Act, 2000. Blacka Moor is owned by Sheffield City Council (SCC) but managed by Sheffield and Rotherham Wildlife Trust (SRWT) under a long lease.

Viewed in its wider context, Blacka Moor sits at the south-westernmost end of the South Sheffield Greenway living landscape area - a swathe of green space running from the moors in the west across the south of Sheffield and into Rotherham. It also forms part of the South Sheffield Moors area, and so falls under the Sheffield Moors Masterplan, which provides a landscape scale vision how the uplands should be managed into the future for both people and wildlife **(Figure 1).**

Sheffield and Rotherham 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.

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 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;
- 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 SRWT offices.

1.2 How to use this plan

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

Section 1.3 contains the **vision statement** for Blacka Moor 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 8.0 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 work when resources are limited. It is, however, our intention to deliver all objectives contained within this plan.

Section 9.0 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 3 years of the plan are given here.

Section 10.0 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 Blacka Moor was formulated in 2006 and revisited by staff from SRWT and Sheffield City Council (SCC) in 2014 at which time minor amendments were made and consulted on:

A wild landscape, which is rewarding to visit, with a wealth of habitats supporting a richness of wildlife, where the archaeology and history are conserved and celebrated.

The vision originated from a number of statements that were pulled together and summarised:

A wild landscape:

- A feeling of wildness, with minimal interference; there will be as little management as possible, but as much as required to realise the vision
- A mixed, semi-natural landscape, different from most other moors in the Peak District
- Allowing for change, where desirable
- A permanent green buffer to the city
- Offers beautiful views to and from Blacka Moor
- A peaceful place
- A natural site (managed in a way that minimises chemical inputs and the use of noise-generating machinery and vehicles)

Worth going to:

- For people of all ages and backgrounds
- For a variety of informal recreational opportunities, in the spirit of the original Graves Covenant (see Sec 2.4).
- Access for quiet enjoyment, exploration, freedom to go where you want and a sense of isolation, in safety and free from concern or worry

- With low key but adequate signage

With a wealth of habitats supporting a richness of wildlife:

- At least maintained, but preferably improved from what is there now
- Habitats and wildlife which are appropriate to the area

Where the archaeology and history is conserved:

- Where our heritage/historic features are conserved
- And interpreted appropriately to enhance understanding
- With signage at points of entry with web address and reference to the Graves' legacy

To deliver this vision, SRWT has adopted the following management aims for Blacka Moor:

Aim 1. Return woodland areas of the reserve (excepting wet woodland) to upland oak/birch woodland by 2100.

Aim 2. Encourage greater structural diversity amongst the reserve's woodlands and improve them for wildlife.

Aim 3. Protect and conserve areas of wet woodlands.

Aim 4. Retain a rich but dynamic heathland mosaic on the reserve and diversify habitats at the microhabitat level.

Aim 5. Conserve and protect the reserve's wetland habitats.

Aim 6. Conserve, protect and enhance the reserve's grassland habitats for wildlife.

Aim 7. Minimise disturbance to wildlife from recreational activity, and safeguard the more remote parts of t the reserve for quiet enjoyment by walkers and other pedestrians.

Aim 8. Survey and monitor the biodiversity of Blacka Moor in sufficient detail to evaluate progress towards aims 1-7.

Aim 9. Ensure that Blacka Moor's management links to local, regional and national plans for habitat and species recovery, recreation and landscape scale conservation.

Aim 10. Maintain and restore the reserve's boundaries and access infrastructure.

Aim 11. Protect and conserve the open views across the nature reserve.

Aim 12. Protect, preserve, research and communicate the reserve's archaeological and historical interest and significance.

Aim 13. Promote recreational access to the reserve to people of all ages and backgrounds, and promote public participation in its management.

Aim. 14. Continue to develop ongoing sources of grant aid and other income to support the management of the nature reserve.

For more information concerning the rationale behind these aims, please see the relevant sections of the plan. Please note that aims do not necessarily occur in numerical order in the text.

2.0 Site Details

2.1 Location and extent

Blacka Moor is located on Sheffield's south-western fringe, lying immediately south of the A625. It covers an area of 181 hectares (445 acres) and is centred on OS Grid Reference SK 287 806 **(Figure 2)**. Approximately 92 hectares is within the heathland grazing compartment, 32 hectares of in-bye land (Strawberry Lee Pastures) and the remaining (mainly woodland) is approximately 57 hectares.

2.2 Landscape value and context

Blacka Moor's heathland, woodlands, steep-sided valleys, and drystone walls are typical of the fringes of the Dark Peak, and make an important contribution to the character of the surrounding landscape. The reserve is visible from the centre of Sheffield, and forms an integral part of the city's skyline. From the moorland edge of the reserve, wooded valleys wind their way eastward towards the city, and add to the general impression of a rural landscape in close juxtaposition to the urban city centre. Perhaps the most significant quality of Blacka Moor in a landscape context lies in its transitional nature, as it forms a 'bridge' between the wooded lowland river valleys of Sheffield district, and the upland open moors of the Peak District.

Blacka Moor falls within Natural England's Natural Character Assessment (NCA) Profile 51: Dark Peak. Its topography is typified by a blend of steep-sided stream gulleys, wooded hillsides, and more gentle slopes covered with heather and grasses. This gives rise to a 'hidden' landscape that provides added interest and a sense of exploration to visitors to the reserve, and is an important component of the overall character of the site.

The landscape of Blacka Moor is characterised by a mosaic of woodland, copses, scattered trees, heathland, bracken, streams, wetlands and grasslands. The woodlands comprise a mixture of broadleaved woods, and mixed broadleaved and coniferous plantations, in varying stages of maturity. The open heathland typically consists of a patchwork of over-mature, leggy heather, bilberry and grassland, and the overall scene is complemented by a framework of drystone walls, in differing states of repair, that undulate across the moors, dipping in and out of view. The great variety of vegetation within a relatively small area also provides dynamic colour changes throughout the year, from the flush of bluebells and the fresh green of young birch leaves in spring, to the purple mantle of heather in summer, and the russet red of bracken in autumn. The open vistas provided by the heathland and wetland areas provide a pleasing contrast with the adjacent wooded areas, and patches of scrub colonising the heathland margins help to soften the gradation between the vegetation types.

2.3 Site tenure and occupancy

Blacka Moor is owned by Sheffield City Council. Since April 2001 SRWT has managed Blacka Moor under licence for SCC. From 2002, the site was leased to SRWT until March 2031.

The Peak District National Park Authority owns a small part of Strawberry Lee Pastures.

Two areas of the site – the 'in-bye' fields (also known as Strawberry Lee Pastures) and the heathland compartment – are currently let for grazing. The grazing rights to these areas have been issued to a Mr Andrew Gray under Farm Business Tenancy, to run for 10 years from 2014.

2.4 Designations and policy context

Blacka Moor forms part of the **South Pennine Moors Special Protection Area (SPA)** (EU Birds Directive, EEC 1979), a designation made in recognition of the area's European ornithological importance. The SPA is an extensive tract of moorland, including most of the unenclosed moorland areas of the northern, eastern and south-western Peak District and also extends into enclosed farmland of wet rushy pasture, hay meadow and small valley-bottom wetlands. The designation has been made under article 4.1 of the Directive (79/409/EEC) as this area is used regularly by 1% or more of Great Britain's population of merlin (*Falco columbarius*), golden plover (*Pluvialis apricaria*) and short-eared owl (*Asio flammeus*). Additionally, the SPA supports a rich upland breeding bird assemblage which includes important numbers of the following species: peregrine (*Falco peregrinus*), lapwing (*Vanellus vanellus*), dunlin (*Calidris alpina schinzii*), snipe (*Gallinago gallinago*), curlew (*Numenius arquata*), redshank (*Tringa totanus*), common sandpiper (*Actitis hypoleucos*), whinchat (*Saxicola rubetra*), wheatear (*Oenanthe oenanthe*), ring ouzel (*Turdus torquatus*) and twite (*Carduellis flavirostris*). However, it should be noted that not all the species above are found on Blacka Moor.

Blacka Moor also forms part of the **South Pennine Moors Special Area of Conservation (SAC)** because it contains habitat types that are rare and/or threatened within a European context EEC, 1992**.** The habitats of European priority interest within the South Pennines SAC are: blanket bogs, European dry heaths, North Atlantic wet heaths, old sessile oak woods, transition mires and quaking bogs. Of these habitats, dry heath, wet heath, blanket bog and oak woodland are found within Blacka Moor.

The reserve is designated as part of the **Eastern Peak District Moors Site of Special Scientific Interest (SSSI)**, notified in 1986 under section 28 of the Wildlife and Countryside Act, 1981 (amended), and last revised in 1999. This designation was made in recognition of the Moor's special interest for breeding birds, upland vegetation, lower plants, invertebrates and geological features. The Eastern Moors upland breeding bird assemblage is of great regional importance and contributes significantly to the national and international importance of the South Pennines (see above for species of particular importance). The condition of the site's heathland is currently assessed 'unfavourable, recovering' due to the introduction of conservation grazing and birch and bracken control.

As part of the 1999 re-notification, a list of operations likely to damage the site's features of special interest was produced. The following operations are relevant to management activities proposed in this plan: the introduction of grazing and stock feeding; removal or cutting of any plant; woodland management; water course modification; construction or re-grading of tracks, walls and fences; and recreational activities likely to damage biological and geological features of interest.

Whilst consent from Natural England is required to carry out any activities on the reserve that fit these categories, all such activities proposed in this management plan are intended to improve the nature conservation interest of Blacka Moor. Formal approval of the final management plan by Natural England will incorporate consent for all management activities prescribed by this plan.

The provisions of the **Wildlife & Countryside Act 1981** with regard to Special Protection Areas, state that "any person who… intentionally [or "recklessly", as amended by the Countryside and Rights of Way Act 2000] …disturbs [any wild bird species listed in Schedule 1] while it is building a nest or is in, on or near a nest containing eggs or young… shall be guilty of an offence." This has direct relevance to the need for the control of certain recreational activities, for example orienteering, dog walking off leads, hang gliding and model aircraft flying, during the bird breeding season at Blacka Moor.

A **Scheduled Monument** (SM 24985) is present on Bole Hill **(Figure 3)**. Any works on Bole Hill require the consent of the Secretary of State, and planning works should be in consultation with English Heritage and the Archaeology Department at the Peak District National Park Authority. 'Works' are defined by the Ancient Monuments and Archaeological Areas Act 1979 are: demolishing, destroying, damaging, removing, repairing, altering, adding to, flooding or tipping material onto the monument.

Blacka Moor falls within the **Peak District National Park**; National Park status means that the priority to be placed on landscape conservation should be greater than for most other areas of England. The Environment Act (1995) defined the purposes of National Parks as being to:

- conserve and enhance natural beauty, wildlife and cultural heritage;
- promote opportunities for the understanding and enjoyment of the special qualities (of the Parks) by the public.

The Act also placed a duty on National Park Authorities, in pursuing these twin purposes, to "seek to foster the economic and social well-being of local communities by working closely with the agencies and local authorities responsible for these matters, but without incurring significant costs."

The Act further places a duty on all 'relevant bodies' to have regard to National Park purposes in considering and carrying out their duties.

Blacka Moor forms part of the area known as the Sheffield Moors and, as such, falls under the **Sheffield Moors Masterplan 2013-2028**. This masterplan aims to help safeguard the public status of the Moors and integrate the full range of activities they host with their management, their conservation and their place in the wider landscape. SCC approved the masterplan at cabinet level in 2013.

All of Blacka Moor with the exception of the plantation woodlands is within the 'Natural Zone' as defined in the **Peak District Core Strategy.** Within this zone there is a presumption against development other than in exceptional circumstances and the emphasis is on conservation and enhancement of the natural features. For those areas of the reserve outside the Natural Zone,

reference to the NCA profile should be made. This indicates that informal, low-impact, active recreation uses (e.g. walking, cycling and riding) is encouraged in the area.

The southern half of the reserve (excluding the in-bye land) is designated as open access land under the **Countryside and Rights of Way Act, 2000**. Northern areas, including the heathland south of Piper House, the in-bye land and much of the woodlands have not been designated under the Act. However, it is the policy of both SCC and SRWT that the entirety of Blacka Moor be treated as de facto open access land for walkers.

The **Graves Trust** gifted Blacka Moor to the City Council in 1933. Under the terms of the conveyance, the Council has a legal duty to ensure that "*..the property…shall be used for the perpetual enjoyment thereof by the Public for exercise and recreation and for purposes conducive to or in connection with such enjoyment…".* In a letter written by Alderman Graves to the Sheffield Daily Telegraph (28th February 1933) at the time of the conveyance, it is further stated that "*the object of the purchase is to preserve the moors in its current natural state and to prevent any alteration to its present character by building operations or any other form of interference. It is proposed to allow public access to the moor, subject to such regulations for the good order and protection of the estate as may be considered reasonable and necessary. On behalf of myself and my co-trustees, I have now the pleasure of offering Blacka Moor as a gift from the Graves Trust to the City of Sheffield, with the condition that the moor will be allowed to remain in its present natural state, with such pathways to be provided in accord with the character of the estate, as will make the moor accessible to all who desire to visit it for health-giving exercise and pleasure*".

Blacka Moor is also covered by Sheffield's **local plan** and associated policies. It was a designated Site of Scientific Interest (SSI) under the Sheffield Nature Conservation Strategy (Bownes *et al*. 1991), however, this designation has now been superseded by the moor's SSSI status.

'Sheffield's Great Oudoors' sets out the Council's approach to green and open spaces. Under this document, the Council recognises the benefits provided by access to high quality green space to the city's population (for health and recreation), to the environment and wildlife and to the local economy. The importance of engaging local people in the design and development of green spaces is also highlighted.

The **Public Rights of Way Improvement Plan** (2007) seeks to facilitate and develop inclusive access to woodlands, riverbanks, waters edge and urban and rural open space and ensure that all public rights of way will be safe and easy to use. It includes the following policies that are particularly relevant to Blacka Moor:

Policy 5. To identify areas of primary bridleway need. To resolve route fragmentation and establish bridleway (multi use) routes where possible.

Policy 9. To improve cycling facilities and links between existing routes/trails and further develop the cycling network as part of a sustainable transport policy and within the context of the Cycling Action Plan.

Policy 14. In areas designated for nature conservation the impact of access provision will be treated with sensitivity and with due regard to the likely effects on the fauna, flora and any important geology.

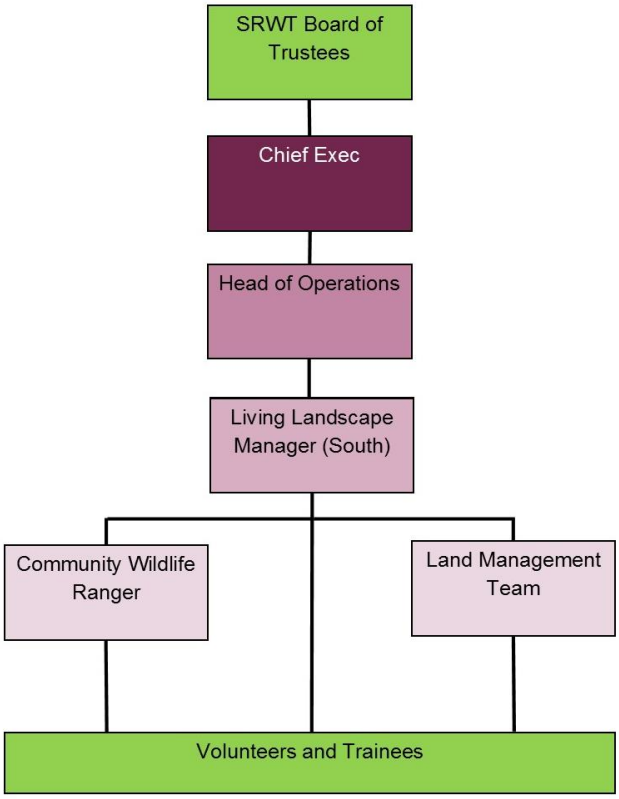
Policy 17. To provide confidence building measures and opportunities for wider path use through public education, community liaison and physical improvements.

Policy 24. To extend the network of easy-going trails.

Policy 26. To work with path user groups, landowners and occupiers, parish councils, the National Park Authority, adjacent local authorities and community groups to better focus path provision and reduce conflict.

2.5 SRWT staff structure for reserve management

The organigram below shows all staff who are directly involved with management of the site. Please note that this structure is correct at the time of writing but may change over the period covered by this plan.



2.6 Site safety, security and maintenance

2.6.1 Site safety

A site specific risk assessment has been written for Blacka Moor 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 & Safety. These are amended and updated at regular intervals or to reflect legislative changes.

Blacka Moor is regularly patrolled by SRWT staff and volunteers. Any problems, such as broken fencing or trees that have fallen across footpaths etc, are logged on a spreadsheet and addressed as soon as possible. Problems and incidents reported by members of the public are also logged on the spreadsheet and are dealt with as necessary. Any known accidents or incidents that occur on Blacka Moor are recorded on the relevant accident forms. An accident book is kept at SRWT headquarters.

Tree inspections for the entire site are carried out every six years, with trees adjacent to the A625 assessed every two years. Associated remedial work is undertaken as recommended by the surveyor.

2.6.2 Site Security

Blacka Moor's boundaries are marked and secured by drystone walls and fencing. Access points to the reserve are provided with gates, squeezes and/or horse hops (as appropriate) to allow access by legitimate users of the site whilst excluding entry by cars (other than management vehicles), quad bikes and motorcycles.

2.6.3 Litter, cleanliness and vandalism

No litter bins or dog waste bins are present on site, instead 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.

Fly tipping occurs occasionally at Blacka Moor (generally in the car parks) and is dealt with promptly.

A dedicated patrol team visit the site to undertake regular litter picks and report issues of vandalism. We have a dedicated Land Management Team who visit the site 2-3 times per month on average.

Several users of the site visit daily and are quick to report any vandalism, fly tipping, graffiti to SRWT when it occurs.

2.7 Past, recent and current land use

The history of Blacka Moor, from the medieval period onward, has been traced through documentary and field evidence (Archaeological Desk Top Survey of Blacka Moor,

Archaeological Field Survey of Blacka Moor. Ed Dennison 2001). This shows that the land in and surrounding the reserve has long been used and modified by human activity.

Records suggest that the reserve lay within the land thought to have been granted to Beauchief Abbey in 1263 by Matthew de Hathersage, and that by 1285, the abbey had established a grange at Strawberry Lee. The monastic holding is likely to have included woodland, wood pasture, pasture and arable farming and the boundary of the currently enclosed pasture at Strawberry Lee may represent the original assart from the moorland. Well-preserved evidence of medieval and early post-medieval lead-smelting activity exists on Bole Hill. Ridge and furrow remains in the fields surrounding the site of Strawberry Lee Farm, along with a medieval boundary bank, indicate very early cultivation in this area.

During the post-medieval period (AD1540 onwards), Strawberry Lee formed part of the estates of Beauchief Abbey, which were purchased by Sir Richard Strelley following the Dissolution. An inventory taken in 1691 indicates that sheep farming was the main business carried out at the farm during the latter part of the 17th century, and late 18th century maps show the reserve as a featureless expanse of unenclosed moorland, with only the boundaries of the Strawberry Lee holding shown. Woodland is only periodically shown as being present on Blacka during this time.

The woodlands of Blacka Moor contain a number of features associated with post-medieval woodland management and exploitation. Woodland management features on Blacka Moor divide into two broad categories: the first category is that of boundaries, both within and around the area of woodland; the second category includes features associated with the exploitation of the woodland for industrial purposes, such as charcoal platforms and white coal kilns.

Areas of semi-natural ancient woodland on site may have been managed in the past as 'coppice-with-standards', a practice common in Sheffield's woodlands until the 19th century. During the mid to late 1800s, as the practise of coppicing declined, many woodlands and moorland fringe areas were planted with a mixture of conifers, and non-locally native broadleaved species such as beech (*Fagus sylvatica*) and sycamore (*Acer pseudoplatanus*). The walls of Strawberry Lee Plantation were rebuilt *c.*1900 and during this period rhododendron (*Rhododendron ponticum*) was first introduced to the woodland.

G.H.B. Ward (of Clarion Ramblers, 1937 handbook) refers to the moorland and pastures being used for the all-year-round production of sheep and summer grazing of cattle. There are numerous references to records about Strawberry Lee Farm and Blacka Moor.

From the late 19th century until 1930, Blacka Moor was managed as heather moorland, as part of the Duke of Rutland's estate. However, the area of woodland within the reserve has expanded throughout the 20th century. During the 1930s, the site was purchased by the Graves Trust and gifted to the City Council. During the 1940s and 1950s sheep grazed the site. After this time, it remained largely un-managed until 1983, when it was briefly fenced and grazed by sheep, in an attempt to counteract the succession of the moorland to woodland.

Following public opposition, stock was removed from the site in 1984 and a management plan developed. However, cuts in Council resources during the late 1980s meant that this was only part-implemented. Between 1984 and 1989 a trial programme of bracken spraying and monitoring was carried out, and a number of fire-breaks were cut. In 1985 the bridleways were surfaced with limestone, and some footpath improvement works were also carried out in wetter areas of the site. The cessation of grazing and other forms of moorland management at this

time led to the extension of the woodland fringe into former moorland areas, and the development of woodland along watercourses.

Since SRWT took on responsibility for the nature reserve in, a considerable amount of work has been undertaken. This work focused on community engagement, habitat management and infrastructure improvements. Much of the habitat works, including the reinstatement of cattle grazing on the heathland in 2006, were undertaken to reverse the habitat decline and loss, in line with the requirements of the Site of Special Scientific Interest designation.

2.8 Adjacent land ownership

The land surrounding Blacka Moor is owned, or tenanted by a variety of people and organisations (details held at SRWT Headquarters). The majority of land is either enclosed pasture and meadowland (sheep and cattle) or moorland (grazed and occasionally burnt). The land to the immediate south is the Eastern Moors Estate, owned by the Peak District National Park Authority and currently on a long-term lease to the Eastern Moors Partnership (a partnership between the RSPB and National Trust). The land immediately to the west is also part of the Eastern Moors Estate. The remaining land to the east is owned by a number of private individuals associated with the adjacent farms.

2.9 Services

Mains electricity lines used to run east-west through the centre of the reserve, but were recently removed thanks to a joint initiative between Friends of the Peak District and the PDNPA and Northern Powergrid to improve visual amenity in National Parks. A mains gas pipe runs down the easterly side of the reserve **(Figure 4).** The maintenance of this is the responsibility of TRANSCO. No water supply lines, telephone lines or fibre optic cables run through the reserve. Up-to-date versions of utilities maps should be referred to when planning works, as well as on-site checks.

2.10 Public Rights of Way

A comprehensive network of footpaths and bridleways runs through Blacka Moor, with numerous desire lines (non-statutory routes) which link the Public Rights of Way also present **(Figure 5).**

SRWT undertook considerable repairs and re-surfacing of some sections of bridleway during 2002 to 2006, as well as undertaking general maintenance. SCC's Public Rights of Way Unit are responsible for rights of way, with support from SRWT as resources allow.

3.0 Environmental Information

3.1 Topography

Blacka Moor lies at a relatively low altitude, ranging between 230 and 280 metres above ordnance datum. It forms the lower part of a moorland hillside that peaks at Stanage Edge to the north-west. Within the reserve, the land surface undulates to form three broad ridges with valleys in between. Much of the site has a south-easterly aspect, sloping from high points to

the north and west. The south-western most part of the reserve comprises Strawberry Lee in-bye fields. The topography is complex here, being dominated by a steep-sided valley to the south with a fairly level hilltop to the north. The hillside falls gradually northwards and eastwards from these.

3.2 Geology

Blacka Moor lies on the rocks of the Lower Coal Measures Series; the north of the reserve is underlain by gritstone deposits, which give way to shales to the south. In the west of the reserve (at Cowsick), a ridge of the locally termed 'Rough Rock' (which underlies the adjacent Totley Moor) gives way to a sequence of shales, which are disrupted by two main faults. These fault-lines run north-west along the north edge of the former Strawberry Lee holding and also north-west/south-south-east along the eastern edge of Blacka Plantation. Periglacial head deposits occur to the east and south of the site and form the predominant material underlying most of the lower slopes of Blacka Hill. Coal seams are present to the east of Bole Hill.

3.3 Pedology

The site's soils range from podzols, to peat and gleys in waterlogged areas. The soils in the higher, western part of the reserve are classified as Cambic stagnohumic gley soils of the Wilcocks 1 Association, characterised by a slowly-permeable, seasonally-waterlogged clayey and loamy upland soil. In the areas around Cowsick, peat deposits measuring in excess of a metre depth in places, are present. On lower ground, the soils comprise an ironpan stagnopodzol of the Belmont Association – a coarse, loamy, very acidic soil with a wet, peaty surface horizon and an underlying ironpan. The woodland soils range from podzols (in areas of well-drained sandstone and grits), to more base-rich substrates where head and shales are present. Modified soils with an increased base-rich status are present alongside parts of the A625 where limestone chippings have been used as ballast in road construction. Soils adjacent to the road have also been subjected to an increase in salinity, as a result of winter gritting operations.

3.4 Hydrology

Water enters the site via direct precipitation and sub-surface flow from the surrounding hillsides. Sub-surface flow is particularly important during the winter months, at which times Blacka Moor's soils are generally saturated, with excess water being shed as 'run off' by the site's streams and along its paths. During the summer months the site is generally dry, although the underlying geology and soils have resulted in the formation of permanently wet areas, both in the woodland and at Cowsick, where an area of blanket mire holds water throughout the year.

Blacka Moor contains several watercourses, most of which originate within the boundaries of the site and many of which are seasonal in nature **(Figure 6.)** The main stream line that dissects the site is Blacka Dike. It emerges immediately to the west of the site (west of Cowsick), passes through an area of extensive flushing, and runs through the centre of the site into the nearby Oldhay Brook. A number of moor grips were once cut through the Cowsick mire, presumably with the intention of 'improving' the ground for grouse or grazing stock. The majority of these have become blocked and are no longer draining although a couple of functioning grips remain

in the south-east of the mire (Eades, 2001). The other significant streams are Meg and Jin Hollow and Lee Syke.

4.0 Biodiversity

4.1 Biodiversity Action Plans

Implicit in its designations as a SSSI, SPA and SAC, Blacka Moor is a site of considerable importance for wildlife. Its position at the edge of the moorland, together with the mosaic of habitats it contains, allows the site to support a wide variety of animal and plant life, contributing to the biodiversity of the Peak District. A number of National and Local Biodiversity Action Plan habitats and species have been recorded on site (**Table 1**). Blacka Moor has a good range of habitats within a relatively small area, which is unusual in this part of the Peak District. Included is dry heath with copses and scattered trees, woodland (mixed deciduous and conifer, oak/birch and wet woodland), wooded cloughs (sometimes lacking in other parts of the Peak District), mire, streams and tributaries, bracken beds grassland (acid, neutral and calcareous).

The Natural England priority habitats – deciduous woodland, blanket bog and heathland are also present on the reserve.

Table 1: Biodiversity Action Plan Priority Habitats and Species

Refer to www.peakdistrict-nationalpark.info/place/BAP for further details.

UK BAP Priorities	
Habitats	Species (short and medium list only)
Upland oakwood Wet woodland Upland heathland Blanket Bog	Skylark (*Alaudia arvensis*) Linnet (*Carduelis cannabina*) Song thrush (*Turdus philomelos*) Reed bunting (*Emberiza schoeniculus*) Rose wax cap (*Hygrocybe calyptraeformis*)
Peak District BAP Priorities	
Habitats	Species
Heather moorland Upland oak/birchwood Wet woodland Parkland and veteran trees Rough grazing Rush pasture Blanket Bog	Curlew (*Numenius arquata*) Lapwing (*Vanellus vanellus*) Water vole (*Arvicola terrestris*)

4.2 Habitats

Blacka Moor supports a variety of different vegetation communities; chief amongst which are dwarf-shrub dominated heathland, blanket mire, acid grassland, semi-natural and plantation woodland, and scrub (**Figure 7**). Communities grade into one another, and many are undergoing succession, with intermediate communities common. Each community is described and evaluated below.

4.2.1 Woodland

Woodland dominates the extreme north, east and south-east of Blacka Moor **(Figure 7)**. These woodlands are a complex mixture of semi-natural ancient woodland, late nineteenth/early twentieth century plantations and young secondary woodland which have developed on the reserve's heathlands during periods when they were ungrazed. Transitional woodland/heathland communities are also present on the interface between these two habitat types.

Strawberry Lee Plantation comprises an area of woodland with a varied canopy of windblown, poorly-formed Corsican pine (*Pinus nigra* ssp. *laricio*) and Scots pine (*Pinus sylvestris*) intermixed with frequent mature alder, thicket to pole stage silver birch (*Betula pendula*), downy birch and rowan. An avenue of sycamore runs along the northern boundary of the plantation. Mature rhododendron (*Rhododendron ponticum*) forms a very dense and impenetrable understory along the plantation boundaries. Where work has been carried out to clear this, extensive bare ground is present.

The ground flora across Strawberry Lee Plantation has areas of creeping soft-grass (*Holcus mollis*) and bramble (*Rubus fruitcosus* agg.), and also stands co-dominated by wavy hair-grass (*Deschampsia flexuosa*) and bilberry (*Vaccinium myrtilus*), wood sorrel (*Oxalis acetosella*), lady fern, (*Atherium felix-femina*), male fern (*Dryopteris felix-mas*), and heath bedstraw (*Galium saxatile*).

Blacka Plantation forms the largest woodland block on the reserve. It has a varied canopy of W10 and W16 woodland and intermediaries of the two, with areas of canopy dominated by larch (*Larix* sp.) and Scots pine. The north-western section of the woodland is dominated by 30-40 year old, poorly-formed sycamore, with densely-spaced small blocks and scattered conifers. Silver birch and rowan are common as canopy trees, and in the understory at the woodland edge.

Upland oak woodland, a modified form of the National Vegetation Classification (NVC) W16 *Quercus* spp.-*Betula* spp.-*Deschampsia flexuosa* woodland is typically associated with the more acidic soil conditions found on the steeper slopes within the Plantation. The overall diversity of species is naturally more restricted than the lower-lying W10 woodland, with the canopy dominated by downy birch (*Betula pubescens*) and rowan (*Sorbus aucuparia*) with frequent sessile oak (*Quercus petraea*), a sparse shrub layer and a field layer consisting of a dense sward of wavy hair-grass, with bracken (*Pteridium aquilinum*), bilberry and broad buckler fern (*Dryopteris dilatata*).

The more neutral soils of the Plantation's gentler slopes and valley floors support woodland more characteristic of the NVC W16 *Quercus robur-Pteridium aquilinum-Rubus fruticosus* type. These are largely dominated by sycamore (*Acer pseudoplatanus*), accompanied locally by alder (*Alnus glutinosa*), oak (*Quercus* spp.), birch (*Betula* spp.) and rowan. Planted conifers feature locally. The woodland canopy is generally closed (*c*.80%), although occasional bracken and bilberry-dominated glades are present, particularly on the woodland/moorland fringe. The shrub layer is species-poor, with rowan being the strongest element and the saplings of canopy species occasional. The field layer is characterised by species such as bramble (*Rubus fruticosus* agg.), creeping soft-grass, bracken and bluebell (*Hyacinthoides non-scripta*).

Several herbs commonly regarded as indicators of ancient woodlands occur sporadically. These include yellow archangel (*Lamiastrum galeobdolon*), wood anemone (*Anemone nemorosa*), bluebell and hairy woodrush (*Luzula pilosa*).

Small areas of wet woodland, in appearance a modified form of NVC W4 *Betula pubescens-Molinia caerulea* woodland, occur within the valley bottoms of the Blacka Dike system. These support a rich flora, and are also an extremely important habitat for many invertebrate and bird species. The canopy in these areas is alder and downy birch-dominated. Wood horsetail (*Equisetum sylvaticum*), marsh thistle (*Circium palustre*) and marsh violet (*Viola palustris*) are locally present in the field layer and *Sphagnum squarrosum* is locally dominant in places.

Areas of young birch woodland are found on the fringe of Blacka Plantation and also on the slopes of Bole Hill. This is a successional woodland, forming on what was previously open moor. Birch (*Betula* spp.) dominates the open canopy and the woodland retains a ground flora characteristic of the moorland habitat that preceded it, comprising bilberry, bracken, heather and fine-leaved grasses.

Bole Hill Wood comprises an area of secondary, birch-dominated woodland, the majority of which is less than 30 years old. This woodland is currently a mosaic of W10 and W16 vegetation communities and is succeeding from the more open woodland, with heather (*Calluna vulgaris*) and bilberry glades, to a denser, more mixed woodland, with oak, occasional sycamore and goat willow.

The northern part of the woodland, close to the stream supports a canopy of 40-50 year old oak and sycamore, interspersed with younger rowan, mature hawthorn (*Crataegus monogyna*) and occasional hazel (*Corylus avellana*).

Memorial planting

Several copses of commemorative planting exist on site. The main area is a small copse of non-native oak (red oak) adjacent to Blacka Dike. This is marked with a substantial stone lectern-style construction with a brass plaque (Ramblers Association).

Veteran and notable trees

Blacka Moor supports a small population of veteran and notable trees. Only those present on the moorland fringe have been systematically recorded. The true veteran trees tend to be oak, although several notable beech, sycamore and birch trees are also recorded. The notable sycamore present on the in-bye support some of the best lichen communities present on the reserve.

Evaluation

Woodland type

The least modified and seemingly ‘ancient’ areas of woodland on Blacka Moor are the remnant areas upland of oak woodland, which lie adjacent to watercourses deep within the reserve’s valleys, or adjacent to the A625. These areas are of particular importance in supporting ancient

woodland communities, including plants such as bluebell, birds such as Pied Flycatcher (*Ficedula hypoleuca)* and Wood Warbler (*Phylloscopus sibilatrix*), and a number of nationally or regionally important invertebrates.

The United Kingdom's upland oak woods are significant in global terms. As a consequence, in regional terms upland oak/birch woodland is a Local Biodiversity Action Plan priority habitat for the Peak District.

Semi-natural oak/birch woodland (of both the W16 and W10 types) was historically one of the commonest habitats over much of the Peak District. The period 1945-2005 saw this habitat decline by up to 68%, largely as a result of increased grazing pressures, and policies encouraging the planting of conifers.

The loss of these traditional woodlands, either by clearance, through overgrazing or through under-planting with beech and sycamore (a common practice across the Peak District over the past 100 years), is in stark contrast to the increase in conifer plantations which now cover large areas of former moorland. Consequently, although the mixed composition of the reserve's woodlands is unusual in local terms, on a regional level it is the remnant oak/birch woodlands that are of highest conservation value.

Aim 1. Return woodland areas of the reserve (excepting wet woodland) to upland oak/birch woodland by 2100.

Structural and species diversity

The woodlands of Blacka Moor have only moderate structural diversity, due in part to past management practices and in part to species composition. Both structural and species diversity are crucial in maintaining the biodiversity value of woodland ecosystems, with increases in diversity resulting in a larger number of niches providing opportunities for exploitation.

Structural diversity in woodland is determined by the spread of age classes found in the tree stock, the variety and distribution of the understory and the form of the trees. Glades and rides are an important component of a structurally diverse woodland, providing sheltered open areas with a distinct flora and fauna. Glades, which are generally transitory features, are typically the starting point for woodland regeneration, whilst ride edges provide a more permanent ecotone between open ground and high forest.

Aim 2. Encourage greater structural diversity amongst the reserve's woodlands and improve them for wildlife.

At Blacka Moor, historic woodland management has limited the number of notable and veteran trees on the reserve. **SRWT aims to retain those that do exist, and retain, where possible, more mature trees that will eventually be recruited into this category** but time will be needed before this situation changes.

Structural diversity has been increased in the woodlands over the course of the last two management plans by thinning and group felling in Blacka Plantation, and by the creation of 'scallops' on the woodland edge to benefit tree pipit.

Structural diversity in Blacka's woodlands has also been negatively impacted by the introduction of a number of non-native tree and shrub species, namely conifers, sycamore, beech and rhododendron, which suppress the regeneration of other tree species.

At Blacka Moor, plantation areas of the site have quite mixed canopies with larch, pine, sycamore, and a lot of broad-leaved tree regeneration. The conifers themselves are generally poorly formed due to lack of management and high levels of exposure. Although individual conifers support less wildlife than a broadleaved tree of the same size, the presence of conifers in the reserve's woodlands enhance biodiversity by supporting the characteristic avifauna of conifer woodland including Coal Tit (*Periparus ater*), Goldcrest (*Regulus regulus*), Siskin (*Carduelis spinus*), and Crossbill (*Loxia curvirostra*). Consequently, **SRWT will retain the existing conifer on the reserve and allow them to decline naturally.** These species will, however, be removed from the heathland compartment as they seed there.

Sycamore currently forms a high proportion of the woodland canopy in Blacka Plantation. This non-native species supports a high biomass of invertebrates, as well as providing large amounts of leaf litter for detritic communities, however, the assemblage of invertebrates supported is far less biodiverse than that supported by native species such as oak.

Its tendency to dominate woodlands with its heavy canopy and prolific seeding makes sycamore a long-term threat, as it will eventually undermine native species such as oak and rowan and structural diversity by suppressing the development of an understory. The domination of sycamore over parts of Blacka Plantation is therefore considered to be unfavourable. However, the mature sycamore trees on the reserve have high ecological value and form an important element of the landscape, in particular along the Hathersage Road. The reduction in the sycamore component of the canopy will therefore be a long-term process, brought about by manipulating sapling regeneration to favour locally native species such as oak, birch, rowan, hawthorn and elder, and felling mature trees. Consequently, **a programme of sycamore removal over parts of Blacka and Strawberry Lee Plantation will be carried out over the period covered by this plan**. **This work will contribute towards the long-term aim of returning the reserve's woodlands to upland oak wood by 2100**.

Beech is a non-locally native species which also casts a dense shade, suppressing the understory, ground flora and regeneration of other tree species beneath its canopy. However, mature beech trees provide food for a variety of birds and mammals, particularly in good mast years. Beech also supports a good fungal community. This is particularly so at Blacka Moor, where the ancient beech pollards in compartment 593 are some of the few veteran trees on the site. The presence of beech in compartments 593e and 593f are associated with several pairs of Wood Warbler breeding territories.

Early research suggests that beech will fare well if the UK climate warms over the coming century, moving the natural distribution of this species to the north. Left unchecked therefore, a natural increase of the proportion of beech in the reserve's woodlands would be anticipated over time. To counter this, a **programme of beech removal over parts of Blacka Plantation will be carried out over the period covered by this plan**. **This work will contribute towards the long-term aim of returning the reserve's woodlands to upland oak wood by 2100**. This removal will however focus on young, rather than mature or veteran beech trees.

Rhododendron is locally dominant in the understory of Strawberry Lee Plantation, and occasional across Blacka Plantation. Its growth form and habits are such that it forms an invasive monoculture, which, if unchecked, will spread completely through woodland. For this reason, **SRWT will remove rhododendron when encountered in Blacka Plantation**, to avoid it gaining a foothold. In Strawberry Lee Plantation, the volume of rhododendron present makes total removal over the period covered by this plan unworkable on practical grounds, and undesirable on ecological and aesthetic ones. **In Strawberry Lee Plantation** then, **SRWT will continue with its programme of removal, concentrating on removal from the southern and eastern boundaries of the plantation during the period covered by this plan.**

At the time when the extension of the management plan is written, it is noticed that the eastern and southern boundaries of this plantation are mostly free of rhododendron. During the period of extension of this plan, the removal will concentrate on the northern and western boundaries. A new system to reduce the amount of rhododendron will be implemented to incrementally increase the amount of wind entering the inner areas of the plantation.

As dense rhododendron provides shelter for wildlife, the removal of rhododendron in these areas should go hand in hand with the establishment of a well-developed understory of native shrub species. In areas previously cleared, oak and rowan seedlings can be observed, the first appearing only one year after clearance. Other plants, including bramble, grasses and ferns have also been noted in cleared areas although overall establishment of ground cover is slow due to the dense litter layer. **If a well-developed understory of native shrubs does not establish through natural regeneration, or if such regeneration is disrupted by browsing, then action will be taken to combat this** – either through the protection of naturally establishing shrubs or by supplementary planting with thicket-forming species such as holly. **Rhododendron beds on the north and west of the plantation will be retained during the course of this plan.**

Variegated Yellow Archangel (*Lamiastrum galeobdolon subsp. argentatum*) is a flowering plant included in the Wildlife and Countryside Act 1981 as a species not allowed to grow in the wild. It has been found in three locations and the aim is to completely remove it from the nature reserve by the end of the extended plan.

Wet woodland

The reserve's wet woodlands support a rich flora, and are also an extremely important habitat for many invertebrate and bird species.

Aim 3. Protect and conserve areas of wet woodlands

The condition of footpaths and bridleways passing through these wet woodlands needs to be monitored constantly however, as their ground flora is vulnerable to damage through braiding and spreading should poor path condition cause users to seek alternative routes. Additionally, **the reserve's wet woodland and watercourses (and in particular Oldhay Brook) will be regularly monitored for the presence of Japanese Knotweed** (*Fallopia japonica*) **Himalayan Balsam** (*Impatiens glandulifera*), an invasive species that is known to be found just downstream of the reserve. **Should these species be found on site, immediate action to remove them will be taken.**

Deadwood habitat

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 in Blacka's woodlands is moderate (standing dead wood) to good (fallen dead wood). At Blacka Moor a reasonable amount of fallen dead wood is present in the woodland but the reserve lacks standing dead wood, particularly that of a significant girth. **SRWT will therefore work to increase the reserve's resource of standing dead wood during the course of this plan,** by dead-wooding the pollarded sycamores in the two glades created during the previous management plan. Other opportunities to increase the standing dead wood provision on the reserve will be taken as they present themselves, in areas away from paths and Public Rights of Way.

Timber quality

In general, the timber quality across the reserve is low and much of the woodland resource is inaccessible by vehicle. Given the sensitive nature of the site, it is therefore recommended that timber extraction is only carried out when necessary e.g. when areas of dense sycamore are thinned adjacent to the A625 or the Shorts Lane bridleway. The use of heavy horses to drag timber to vehicle access points is recommended.

4.2.2 Heathland

Areas of heathland dominate the western and central section of Blacka Moor. This landscape comprises a range of plant communities, including acid grassland, bracken beds, dwarf shrub heath, woodland, scrub, scattered trees, mire and streams. The majority of these features are described below, however the acid grassland is described under 'grassland' and the mire and streams in the 'watercourses and wetlands' section of the report.

Dwarf shrub heath

Dwarf shrub communities are widespread across the heathland at Blacka Moor. Most can be placed broadly within the H9 *Calluna vulgaris-Deschampsia flexuosa* heath, a species-poor community dominated by common heather. Here bilberry and heather form locally dominant monocultures, with heather dominating the centre of the site and bilberry more common on the fringes. Other dwarf shrubs, including cowberry (*Vaccinium vitis-idaea*), crowberry (*Empetrum nigrum* ssp. *nigrum*), bell heather (*Erica cinerea*) and a hybrid of cowberry and bilberry *Vaccinium x intermedium*, which is a rarity in the Peak District, are present in small quantities.

The steep hillside north of Bolehill Lodge supports vegetation approaching the H12 *Calluna vulgaris-Vaccinium myrtillus* heathland. These stands support luxuriant growths of bilberry, heather and crowberry, together with a range of bryophytes including *Hypnum cupressiforme, Rhytidiadelphus loreus, Dicranum scoparium, Plagiothecium undulatum, Pleurozium schreberi* and *Eurhynchium praelongum*.

Small areas of H8 *Calluna vulgaris-Ulex gallii* heathland, indicated by the localised occurrence of bell heather (*Erica cinerea*), in association with western gorse (*Ulex gallii*), are also present on the reserve's eastern boundary.

The heather stands in the central and western area of the reserve are very even-aged (due to a historic fire) and are currently in the senescent phase of their life cycle. As a consequence, the percentage of bare ground and bryophytes in the ground layer of the heath has increased during the last 10 year period. The heather on Bole Hill, by contrast, is mature and forms a dense mat.

A summer grazing regime was established on the reserve in 2006. Under this regime cattle graze the heathland compartment from April/May to end October each year. Stocking densities are low, in line with conservation grazing guidance, and hardy breeds of cattle – currently Aberdeen Angus crosses – are used. It has been observed that poaching by their hooves has created slots in grassland areas from which pioneer heather is developing.

Bracken

Bracken-dominated vegetation covers extensive areas of the heathland. In localised areas, bracken-cover is patchy and a mosaic of bracken beds, heath and grassland is formed. However, in other places, bracken forms an almost pure sward of the U20c *Pteridium aquilinum* species-poor community, with very few associate species and with a dense 'thatch' of dead bracken fronds beneath. Elsewhere, other communities persist where the bracken is not as dominant, and remnants of bilberry and heather and patches of grass can still be seen beneath (i.e. U20b *Vaccinium myrtillus-Dicranum scoparium* sub-community). Such stands may represent an advancing bracken front. Likewise, in other areas, dense bracken beds are being invaded by birch scrub representing an advancing woodland edge.

Woodland and scrub

Prior to the Trust taking on the reserve in 2001, much of the heathland area had begun the succession back to scrub and woodland due to a lack of management. Extensive scrub belts, comprising birch, rowan and hawthorn have developed along the reserve's north-western boundary, adjacent to the A625. 'Fingers' of birch/rowan scrub are present along Blacka Dike and its tributaries; these areas are rapidly developing into birch woodland. Individual birch saplings are also colonising open areas of moorland, whilst copses of mature birch are also present.

Over much of the reserve silver birch and rowan are the primary colonisers of the heathland. The young rowan are being heavily browsed by red deer, retarding their growth. On Bole Hill hawthorn rather than birch is the primary colonising species, whilst gorse scrub is present on the reserve's eastern boundary.

Bare ground

Little bare ground is present on the heathland. What there is occurs mainly on paths, and at points where cattle access the reserve's watercourses, although a deer wallow is now present south of Cowsick Bog. Very small areas of bare ground are also created when the hooves of cattle or deer break through the ground cover (poaching).

Evaluation

As is clear from the description above, the term heathland is used and understood to describe a much wider range of communities than just those dominated by dwarf shrubs. At Blacka Moor it is the mosaic of these communities that creates so much biodiversity value, as well as adding to the reserve's aesthetic and recreational appeal, as outlined in the vision for the reserve. Each community within the mosaic supports a range of specialist animals and plants, with other more generalist species requiring a particular combination of these micro-habitats to survive on the reserve. These heathland species would gradually be lost, should the condition of the heathland deteriorate, even if replaced by other valuable habitats such as oak woodland.

Aim 4: Retain a rich but dynamic heathland mosaic on the reserve and diversify habitats at the microhabitat level.

The 1999 SSSI assessment of Blacka Moor concluded that the heathland was in 'unfavourable' condition. More recently, that has been revised to 'unfavourable, recovering' as the Trust has introduced management of this resource. Through the course of this plan SRWT will continue to work towards restoring the heathland to 'favourable' condition. To achieve this, the percentage cover of bracken and trees and shrubs must be reduced (ideally each should cover less than 10% of the area), and more pioneer heather developed on site.

Species diversity and structure

Dwarf-shrub, upland heaths, such as those present on Blacka Moor, are of international conservation significance. The United Kingdom holds a substantial proportion of the world's upland heath resource and this habitat is therefore one of the UK's Biodiversity Action Plan priorities. This habitat is also typical and a habitat characteristic of the South Sheffield Moors

The dry heath at Blacka Moor is a species-poor community typical of the rather impoverished southern Pennine moors and supports a relatively limited array of bryophytes and lichens. This is the result of historical exposure to airbourne pollution, and will be reversed over time as air quality improves and if burning of the heather is prevented.

The cessation of virtually all heathland management practices during the 20 years prior to 2002 resulted in the development of large, even-aged stands of heather and bilberry over the western and central sections of Blacka Moor including Bole Hill. Monitoring data shows that today, the proportion of over-mature heather on the reserve is high, and the amount of pioneer heather is very low but increasing. These findings are unsurprising - the previously mature heather plants having naturally entered the senescent phase of their life-cycle.

Currently, these heather-dominated communities have limited diversity. For optimum diversity within a heath habitat there should be a range of age structures of heathers, which promotes a diversity of other plant species. This should include range of ages (heights given as a guide): pioneer (young plants up to 10cm tall); building (plants 10cm to 30cm), mature (taller than 30cm) and degenerate (plants reaching their senescent stage with fallen stems that are layering). At the time of writing, the latter two stages are predominant; whilst the former are rare, occurring only in a couple of firebreaks, in limited areas where layering has occurred. Pioneer heather is also beginning to appear in well grazed grassland areas.

However, if the heather's life-cycle continues on site, without retardation by burning or cutting, regeneration by layering and pioneer heather would be expected to be widespread by 2023. At this point, if scrub and bracken are controlled, the heathland will be considered to have returned to favourable condition. Long-term the layering of heather will also increase the microstructure of the dwarf shrub heath, moving it away from the even-aged cover typical of burnt or cut systems.

Given the points above, prevention of burning of the heathland at Blacka is critical over the course of this management plan – particularly as the predominance of senescent, woody heather makes the heath vulnerable to a severe burn should a fire occur. **SRWT will draw up and implement a fire management plan for the heath (to include firebreak management) as a matter of priority during the course of the new plan.**

Fungi are less common on the open moorland and boggy areas of Blacka Moor than the grasslands and woodlands, although *Hypholoma elongatum* was found amongst Sphagnum mosses, and the liberty cap (*Psilocybe semilanceolata*) was present in grassy areas. The brown roll rim and the orange birch bolete were also present, although only where birch scrub was present. Encroaching bracken is a threat to the existing fungal species.

Monitoring data shows that bryophyte biomass and areas of bare ground are both increasing within the areas of dry heath – again a consequence of the senescing heather. Bare ground is an important component of a heathland. It warms up readily in the sun, providing basking areas for invertebrates and reptiles. It provides a mineral lick for a variety of species and a suitable ovipositing or nest site for a variety of insects. In addition, it provides opportunities for colonising plants and is, for example, crucial for the regeneration of heather. An increase in bare ground on this small scale is consequently a positive thing for the reserve, albeit one that will be reversed over time as the proportion of pioneer heather on the reserve increases. It does however make the dry heath more vulnerable to invasion by pioneer scrub species such as silver birch, which will require control (see below).

In areas of heathland where dense bracken (with no ground flora beneath) has been controlled, acid grassland has formed. The reserve is consequently grassier than when management began in 2001. Cattle grazing has kept these areas as open grassland however, the oldest of these areas are now being colonised by pioneer heather. It therefore seems reasonable to conclude that they will succeed to dwarf shrub heath in the medium term.

Grazing

Heathland is a habitat of international conservation significance and the presence of heathland on Blacka Moor us key to the reserve's designation as a SSSI, and inclusion in the Dark Peak SPA and SAC. It is also man-made habitat and requires active management – through burning, cutting or grazing – to preserve it. Without such management it is rapidly colonised by scrub and, in time, reverts to woodland through a process of natural succession. On Blacka Moor this process would involve the initial rapid spread of birch and bracken into areas of dwarf shrub heath and grassland, followed by the colonisation of bramble and other shrub species into newly wooded areas, and birch succession in areas colonised by bracken.

On Blacka Moor, burning is rejected as a suitable management technique due to the ecological and environmental damage it causes, and because of the threat it offers to the reserve's archaeology. Consequently, the dual approach of conservation grazing and manual control of scrub and bracken was selected for the reserve in 2001. A combined approach is considered necessary for ecological, aesthetic and economic reasons: without manual control very high levels of grazing would be necessary, with no grazing the cost of manual control would be prohibitive, larger chemical inputs and more frequent use of machinery would be required and the result would be a less subtly varied and rich habitat mosaic. The intent to minimise the use of mechanical and chemical input in management of the reserve is also one of the principles enshrined in the reserve vision (see 1.3 above).

The effects of the grazing regime can be seen on the heathland communities. Grassy areas created through bracken control (see below) are preferentially grazed, and are being maintained free of scrub. Purple moor-grass tussocks are also targeted for grazing in wetter areas. Poaching action in these areas is now allowing heather seedlings to develop. Some trampling of bracken beds has also been recorded. However, the very low stocking density on the reserve means that the cattle are not obliged to seek out grazing opportunities across the whole area and, although they do graze in most areas at some point during the season, their activities are largely confined to a few favoured areas. Consequently, heathland areas in the far east of the compartment, and those on Bole Hill currently derive less grazing than would be beneficial.

SRWT will continue to cattle graze the heathland compartment at Blacka Moor over the course of this plan. The spring/summer grazing period will remain unchanged, with cattle being removed for the winter. An initial increase in stocking numbers will be trialled (but kept in line with Natural England (NE) and Higher Level Stewardship (HLS) guidance for low level conservation grazing) to encourage stock to push out into the far corners of the site. Annual adjustments to stocking levels (both up and down) will then be made dependent on weather conditions and the condition of the vegetation. Red deer numbers on the reserve will also be a factor in calculating cattle numbers although the two are not strictly correlated for management purposes (red deer also poach the ground but are browsers rather than grazers so affect site vegetation differently from cattle).

Control of scrub and bracken

Scrub is abundant and spreading over large areas of the heathland at Blacka Moor, and the amount of scrub and woodland present in the heathland compartment has increased over the period covered by the last management plan. Rowan scrub is heavily and preferentially browsed by the reserve's red deer population and no longer presents a management issue. Likewise hawthorn on Bole Hill is currently in the form of isolated bushes. However, birch scrub is widespread and is forming continuous dense cover in many areas, which, if left unchecked, will succeed to woodland.

Trees and shrubs can alter the soil by cycling nutrients from deeper down and increasing nutrients within the heathland soils, changing them from acid podzol to a brown earth soil with a higher pH and a greater nutrient recycling ability. This change in turn makes conditions more suitable for fast-growing species such as bramble and willowherb, that can then outcompete the dwarf shrub community.

Birch is fast growing and unpalatable to most animals (although deer and cattle will browse new growth). The rate of spread is such that it cannot be controlled solely through grazing when stocking at conservation grazing densities. For this reason, **SRWT will manually control birch throughout the course of this plan.** This will be done with the intention of preserving the open moor, and restoring the heathland to 'favourable' condition under Natural England criteria. However the benefits (both aesthetic and ecological) of scattered scrub and woodland fringe habitats are recognised. **Birch clearance will not therefore aim to eradicate all the scrub on the heath but will instead aim to preserve a mosaic of open and less open areas.**

The interface between woodland and moorland is of particular wildlife and landscape importance, and provides an essential habitat for many invertebrates and for birds such as Tree Pipit (*Anthus trivialis*) and warblers. At present the reserve's woodland edge grades gently into the adjoining moorland. This edge is a dynamic feature, which is gradually moving across the moorland as birch and rowan seed into previously open areas. **When managing scrub on the reserve, the importance of this ecotone will be recognised and efforts made to retain it, not in stasis, but through a shifting pattern of scrub management.**

Monitoring data shows that both treatment with asulam and repeated cutting have, where attempted, proved effective in controlling the spread of bracken in the heathland compartment. Pulling bracken has provided limited control – by stunting regrowth - but has not succeeded in eradicating bracken from even limited areas. Trampling by cattle has succeeded in breaking up the bracken bed in some areas of the reserve however the effect of this has been limited by low stocking densities.

Despite these successes, bracken cover on the reserve has increased in some areas, and become denser in others (although some bracken beds are now themselves succeeding to woodland). In the long term this means that either bracken control measures are increased, or it is accepted that more of the dwarf shrub heath is lost to bracken/woodland.

Given its prevalence, its limited ecological value and public opinion (which favours control), **SRWT will continue and extended its programme of bracken control – where possible by cutting, and where not by spraying with asulam – during the period covered by this plan.**

Where a dwarf shrub understory persists, areas where bracken is controlled easily revert to dwarf shrub heath. In areas where dense bracken has out-competed all other vegetation, its removal leaves behind bare ground covered by a thick litter layer. Grasses are able to colonise through this layer far more easily than heather, and areas of acid grassland are formed. These add structural variety to the heath, and will eventually be colonised by heather and other dwarf shrubs as described above.

4.2.3 Watercourses and wetlands

Blacka Moor contains a number of wetland habitats including streams, flushes and mire. These make an important contribution to the reserve's ecological diversity, providing a feeding and breeding ground for many invertebrate species, and thus insectivorous birds and mammals. The reserve's wetland habitats are generally in good condition, but are potentially vulnerable to

damage from under-grazing, over-grazing, scrub encroachment and inappropriate recreational access.

Aim 5. Conserve and protect the reserve's wetland habitats.

Mires and flushes

Blacka Moor is a seasonally wet site, draining the surrounding hills. Where the topography forms shelves or basins, the reserve is perennially wet, and several spring and flush systems have formed along geological faults and slips. Despite the seasonally wet nature of the reserve, Blacka Moor's mire and flush areas are not extensive. Peatland soils (i.e. > 40 cm deep) are generally associated with mire communities, but are occasionally found under existing acid grassland, transitional acid/mesotrophic grassland, mosaic heathland/acid grassland, and transitional mire/heathland communities. Deep peat (i.e. > 100 cm deep) however, is almost exclusively associated with the existing mire communities.

By far the most extensive and botanically-rich areas of mire are found at Cowsick, which supports a diverse community of mire species, including local rarities such as bog asphodel (*Narthecium ossifragum*). This relatively flat area, lying at the upper extremity of Blacka Dike, supports a complex array of plant communities and transitional vegetation stands (**Figure 8**). A 2001 hydrological and soil survey of the Cowsick area indicates that the area of mire vegetation surrounding the tributary streams/drains of Blacka Dike in the south-west of the study site may once have been considerably more extensive than their present coverage suggests. Several drains in this area are deeply incised, and clearly allow the rapid through-flow of water. All of these sections of drain have probably been deepened at some point in the past, possibly with the aim of improving the adjacent and upstream land for sheep grazing and grouse habitat.

The central, and wetter, part of the Cowsick mire supports a distinctive community, with bog asphodel, common cottongrass (*Eriophorum angustifolium*), crowberry, cross-leaved heath (*Erica tetralix*) and cranberry (*Vaccinium oxycoccos*), plus *Sphagnum fallax* and *S. fimbriatum*, with rarely, sedges such as common sedge and white sedge (*Carex curta*). This area has its closest affinity with the M21 *Narthecium ossifragum-Sphagnum papillosum* valley mire, despite the absence of *Sphagnum papillosum,* which is probably absent as a result of past atmospheric pollution. Surrounding the stands of bog asphodel, there are stands of vegetation with hare's tail cottongrass and purple moor-grass co-dominant, suggesting other parts of the valley mire supports vegetation transitional between M20 and M25 (see below).

In the 'lower' section of the valley mire complex (an extensive sward of purple moor-grass) is an example of the M25 *Molinia caerulea-Potentilla erecta* mire. A small amount of *Sphagnum capillifolium* is present in this area.

Peripheral parts of the mire are characterised by an abundance of hare's tail cottongrass (*Eriophorum vaginatum*), with wavy hair-grass and occasional dwarf shrubs. These areas have a close affinity with M20 *Eriophorum vaginatum* blanket mire and grade into U2 *Deschampsia flexuosa* grassland in drier areas. *Sphagnum* mosses occur at very low abundance, consistent with past high levels of atmospheric pollution affecting this part of the Southern Pennines.

A survey of bog asphodel in summer 2014 recorded over 3,000 individual flower spikes. Bog asphodel is patch forming, so the distribution of this species was extremely uneven across the mire.

A small increase in the extent of the mire communities at Cowsick resulted from the construction of a series of dams along the course of the drains in 2002. These slowed the drainage of the adjacent land, rewetting of the adjacent soils and so helping to prevent bracken

and scrub encroachment. Transect data shows the cover of sphagnum mosses has increased as a result of these works. **SRWT will construct one more dam at the eastern extent of the northern-most drain, continuing this effect during the period covered by this plan**. **This work will be undertaken in conjunction with full flagging of the adjacent desire line.**

Prior to 2006, braiding of the public footpath which traverses the mire at Cowsick was problematic, with fragile plant communities being damaged as walkers sought the driest route across. This problem was eradicated by the laying down of a stone-flagged path in 2006 (and subsequent improvements in 2014).

There is evidence from other sites in the UK and Holland to suggest that grazing helps maintain species diversity in flush and mire areas. At Blacka, seasonal grazing by cattle has helped to break up dense rush areas (through light trampling) and purple moor grass tussocks (through grazing), allowing finer-leaved species of sedges and rushes to colonise. Small pools created through cattle trampling also provide places for invertebrates to breed, and consequently provide a food source for parent birds to exploit. Recent observation has shown that the Cowsick area of the site is extremely well used by various species of insect-feeding birds (Jim Clarke, *pers.comm*).

However, although a low level of grazing may benefit the mire areas at Cowsick, care will be taken to ensure that trampling or excessive grazing does not damage the fragile plant communities in this area by careful management of stocking levels.

The situation with regard to the population of bog asphodel in Cowsick is unclear. Transect data indicates a decline in the area of the bog in which bog asphodel is present, whilst a total spike count in 2014 shows the population to be very healthy. One possible explanation is that the distribution of Bog Asphodel across the bog has changed, with the plant disappearing from some areas and seeding into others whilst total population levels remaining unchanged. A third is that this change represents a contraction in range, with the species becoming locally extinct in some spots but flourishing in others.

Observational data shows that both cattle and red deer feed in Cowsick Bog. In 2013, a year when no cattle were present on site, red deer were observed selectively feeding on the new shoots of bog asphodel in the spring and grazing damage to bog asphodel was observed during monitoring in July. It is not known whether cattle also feed on bog asphodel – this has not been observed – but the grazing habits of cattle is not generally forb-selective, so is thought unlikely.

During the 2014 Bog Asphodel survey it was noted that between 15 and 20% of flowering spikes showed some form of grazing damage. This is within tolerance but repeat surveys to monitor the situation will be necessary if deer numbers continue to increase.

SRWT will repeat the total spike count plus location mapping carried out in 2014 (in preference to gathering transect data), in 2017 and 2022, as this should give the clearest indication of population and distribution trends. In addition to this, **monitoring of the whole mire, carried out in line with the NE condition assessment criteria will be carried out in 2017 and 2022** and management practise adjusted accordingly.

Flushes

Wet flushes have formed across Blacka Moor, following the line of streams, seeps, ditches and any other area with at least seasonal water flow (**Figures 6 and 7**). In the more remote, upstream reaches of these flushes, soft rush is accompanied locally by carpets of *Sphagnum fallax* and *S. palustre*, as well as cushions of *Polytrichum commune* (M6c *Juncus effusus* sub-community of the M6 *Carex echinata-Sphagnum recurvum/auriculatum* mire). Two other

local associates of this vegetation were the moss *Calliergon stramineum* and a liverwort belonging to the genus *Lophozia*. Locally, there are small areas where soft rush is less abundant, and the *Sphagnum* carpet is accompanied by species such as hare's tail and common cotton grasses, tormentil, carnation sedge and cranberry.

The flushes on other areas of the reserve, in particular those in the in-bye land, are rush-dominated with limited botanical diversity, although still of considerable importance for wildlife. Here, soft-rush dominated flushes, with sheep's sorrel (*Rumex acetosa*) and occasionally, tufted hair-grass (*Deschampsia cespitosa*) and tormentil extend in narrow 'fingers' along the steep tributaries. Bottle sedge (*Carex rostrata*), a locally uncommon species, was found in a section of the main flush in the valley bottom. The show of bluebells in the flushes before the bracken growth takes hold may indicate that these were wooded cloughs in the past.

Flushed areas have great ecological benefits for a wide variety of wildlife, particularly invertebrates and the wading birds that feed on them. However, without management in the form of cutting and/or trampling, the rush stands can dominate completely, growing to such densities that access to the damp ground beneath is entirely prohibited. When this occurs the ecological value of the flushes, both to plants and animals, declines sharply.

Over the past couple of years rush cutting has taken place on the in-bye land (Strawberry Lee Pastures) at Blacka Moor, to open up areas where dense rush growth is spreading. **This programme of cutting will continue, as necessary, throughout the period covered by this management plan**, with care being taken to avoid disturbing the deeper and remoter flushes that act as an undisturbed sanctuary for wildlife. The introduction of cattle to the in-bye would also be beneficial to these flushed areas, since their heavier bodies allow them to lightly trample and graze the dense stands of rushes, breaking them up and allowing other vegetation to establish. **SRWT will therefore work with the grazier to introduce cattle to the in-bye, alongside the sheep, at the beginning and end of each grazing season.**

Running water

Blacka Dike (or Dyke), and its associated tributary streams and flush lines, drain the reserve. These streams are generally narrow and swiftly flowing, and within Blacka Dike itself, there are several sets of shallow waterfalls. The reserve has a number of seasonal and permanent watercourses, which together with the areas of mire and flush support an array of wetland plants and animals. Water quality on the reserve is believed to be high; however, run-off from the A625 may carry pollutants such as oil onto the reserve during periods of high rainfall.

Along the edges of these watercourses, aquatic bryophyte communities are well developed. The liverwort *Scapania undulata* and the moss *Hyocomium armoricum* are particularly abundant on rocks within and alongside the running water, with the purple-tinged form of *S. undulata* being especially conspicuous. A species of moss noted rarely on rocks within the running water was *Racomitrium aciculare*. A single 'hummock' of *Sphagnum capillifolium* was noted within the stream-valley woodland of Blacka Dike.

A variety of plant communities are present along the upper channels and tributary streams of the Blacka Dike. The species-poor M23 *Juncus effusus/acutiflorus-Galium palustre* rush pasture is very common, and is often interspersed with areas of hare's tail cottongrass. Where dense stands of soft rush occur with *Sphagnum* mosses such as *S. fallax* and *S. fimbriatum*, the community can be mapped as M6 *Carex echinata-Sphagnum recurvum/auriculatum* mire (M6c *Juncus effusus* sub-community).

In woodland areas, the streams are lined by narrow bands of young alder, and support a number of typical wet woodland species in the field layer. Along Blacka Dike, mature alder with occasional ash (*Fraxinus excelsior*), oak, goat willow (*Salix caprea*) and abundant broad bucker fern vegetate the steeper sections of the gorge, whilst the northern scarp edge (western half) supports scattered mature beech, semi-mature sycamore, pine and larch. Where flushed areas remain as open glades, a rich ground flora has developed, including opposite-leaved golden saxifrage (*Chrysosplenium oppositifolium*), soft rush (*Juncus effusus*), yellow pimpernel (*Lysimachia nemorum*), marsh thistle (*Cirsium palustre*), meadow buttercup (*Ranunculus acris*) and wild angelica (*Angelica sylvestris*).

Since grazing resumed on the hearthland, cattle trampling of stream-sides has resulted in the formation of wades (areas of soft mud). This soft, bare ground is of benefit to certain insects and birds: poaching creates small pools, which are suitable for invertebrates and consequently can provide a valuable food source for parent birds. Nevertheless, **the condition of stream-sides will be periodically assessed to ensure levels of damage remain stable**, and do not result in an excessive loss of ground cover.

The reserve's streams, along with its wet woodland, are vulnerable to invasion from Japanese Knotweed (*Fallopia japonica*) and Indian balsam (*Impatiens glandulifera*). These non-native species are present on Oldhay Brook downstream of the reserve and are moving gradually upstream, colonising damp ground and wet flushes on the way. Should they take hold on the reserve, they will outcompete much of the native streamside/wet woodland ground flora which is some of the most botanically diverse on the reserve. Indian balsam is to be particularly feared in this respect as it is capable of rapid colonization in wet areas.

In order to protect these habitats from damage, **SRWT will inspect the streamside and associated areas of wet woodland of lower portions of Blacka Dike on an annual basis, to detect any incursion of these species** should this occur. Should either be detected on the reserve they will be eradicated immediately and remains carefully disposed of and a careful survey of surrounding areas be carried out to assess the likelihood and extent of any spread. **The Trust will also engage with SCC and local land owners to carry out a full mapping exercise of Blacka Dike and Old Hay Brook downstream of the reserve.** Populations of both species, once mapped, can be assessed as the first step in a widespread plan of eradication.

4.2.4 Grassland

In broad terms, the grasslands of Blacka Moor fall into three categories – the large expanse of acid grassland in the in-bye, the mosaic of acid grassland patches making up one component of the heathland, and the small areas of neutral and calcareous grassland adjacent to the A625. Environmental conditions and historic management have resulted in a largely impoverished sward, particularly Strawberry Lee Pastures which was heavily over-grazed in the period prior to the Trust taking over management of the reserve, whilst in other areas encroaching scrub and bracken are also threatening grassland habitat. However, with proper management, the reserve's grasslands have great potential as a wildlife habitat, and critically as a feeding ground for upland birds. The Trust's aim for grassland on the reserve is:

Aim 6. Conserve, protect and enhance the reserve's grassland habitats for wildlife.

Acidic grassland dominates the southern-most part of Blacka Moor – Strawberry Lee Pastures (also known as the in-bye land) – and also occurs locally in association with the heathland habitats. These grasslands are typically species-poor and are characterised by a sward dominated by wavy hair-grass, with sweet vernal-grass (*Anthoxanthum odoratum*), common

bent (*Agrostis capillaris*) and sheep's fescue (*Festuca ovina*) are frequent. Heath bedstraw, tormentil (*Potentilla erecta*), common sedge (*Carex nigra*), common sorrel (*Rumex acetosa*) and the moss *Rhytidiadelphus squarrosus* are also present. The more diverse grasslands are characteristic of the U4 *Festuca ovina-Agrostis capillaris-Galium saxatile* community, whilst more species-poor areas can be characterised as the U2 *Deschampsia flexuosa* community and, where bilberry forms a conspicuous element of the vegetation, the U2b *Vaccinium myrtillus* sub-community.

The largest expanse of acid grassland on Blacka Moor occurs in Strawberry Lee Pastures. This part of the reserve comprises a series of formerly enclosed fields that are grazed by sheep. These areas support a sward dominated by common bent and sheep's fescue, with occasional crested dog's-tail, sweet vernal grass, white clover (*Trifolium repens*), yarrow (*Achillea millefolium*), lesser stitchwort (*Stellaria graminea*), common mouse-ear (*Cerastium fontanum*) and the moss *Rhytidiadelphus squarrosus*. Indicators of high nutrient and grazing levels, including spear thistle (*Cirsium vulgare*), creeping thistle (*C. arvense*) and common nettle (*Urtica dioica*) are also present. Fields further south and east within the enclosure display a more acidic sward dominated by mat-grass *Nardus stricta* (U5 *Nardus stricta-Galium saxatile* grassland), suggesting that the sward has been over-grazed in the past. Sedges are quite frequent within this vegetation, most notably common sedge, but also locally carnation sedge (*Carex panicea*) and very occasionally, oval sedge (*C. ovalis*). There are also numerous tussocks of tufted hairgrass (*Deschampsia caespitosa*).

The pastures support a wide variety of fungi, including at least 14 species of wax cap fungi. This genus is an indicator of unimproved grassland, and contains some of the most threatened fungal species in Britain. Species present include the rose wax cap (*Hygrocybe calyptraeformis*), which is a national BAP priority species, the scarlet hood (*H. coccinea*), the golden wax cap (*H. chlorophana*), and the vermillion wax cap (*H. miniata*). Other species present include golden spindles (*Clavulinopsis fusiformis*), *C. helvola*, and *Calocybe carnea*, which can tolerate more nutrient-rich habitats.

A number of dung-loving species are found on the lower fields near to the ruined farmhouse: field mushroom (*Agaricus campestris*), petticoat fungus (*Panaeolus sphinctrinus*), *Coprinus niveus*, and the dung roundhead (*Stropharia semiglobata*). *P. rickenii* inhabits the damper flushed areas.

The gastromycetes or stomach fungi, are represented by the mosaic puffball (*Bovista nigrescens*), and *B. nigrescens*. Interestingly, the verdigris agaric (*Stropharia aeruginosa*) and *Lyophyllum fumatofoetens* are usually woodland species, but were found here in the open pastures.

The pastures have been grazed by sheep since before the Trust took on management of the reserve. Prior to the change in stocking rates in 2002, the grassland of the in-bye (pastures) formed a closely cropped sward, as a result of high grazing pressure. This pressure was somewhat relaxed in 2002, a change that has introduced a greater range of sward structures throughout the pastures, providing a greater range of niches for invertebrates, which in turn form the food source of a number of birds. However, the extent of relaxation of grazing has resulted in a greater cover of tussock-forming grasses (predominantly tufted hair grass). Whilst this contributes to the structural variety, it can dominate the sward and may eventually undermine the value of the pastures for wax cap fungi which require a close-cropped sward. Consequently, **grazing pressure in the pastures will be managed (increased or decreased as necessary) to counteract this**. **Mechanical control**, such as flailing, **may be introduced to break up the tussocks in flatter areas** (with care taken to avoid cutting into the turf) if increased grazing fails.

The pastures currently support a range of bird species, including Skylark (*Alauda arvensis*), Reed Bunting (*Emberiza schoeniclus*) and Meadow Pipit (*Anthus pratensis*). If managed correctly they have the potential to support waders such as Curlew (*Numenius arquata*), Lapwing (*Vanellus vanellus*) and Snipe (*Gallinago gallinago*) as feeding if not breeding grounds, and possibly also to attract seed-eating species such as Linnet (*Carduelis cannabina*), Goldfinch (*Carduelis carduelis*) and (eventually) Twite (*Carduelis flavirostris*). However, further management works are required before the sward and features become attractive to these species (see Section 4.3.3; Birds).

The acid grassland mosaic within the heathland areas of Blacka Moor has increased over the period covered by the last management plan. This change is due, in part, to the increasing senescence of the heather which has allowed new growth to take hold in previously impenetrable areas of dwarf shrub heath but is largely due to the formation of new grassland areas following bracken control. These areas are favoured by grazing cattle and so are flourishing.

Neutral and calcareous grassland

Neutral and calcareous grasslands are scarce on Blacka Moor and are represented on only two areas of the reserve. The first of these is an area of calcareous grassland running along the north-western boundary to the reserve. Here, limestone chippings appear to have been used as road ballast and the subsequent base-rich run-off has led to development of a most unusual and species-rich vegetation adjacent to the A625. The coarse grasses false oat-grass (*Arrhenatherum elatius*) and cock's foot (*Dactylis glomerata*) dominate the community. Hairy oat-grass (*Avenula pubescens*), quaking oat grass (*Briza media*) and crested hair-grass (*Koeleria macrantha*) are also present, and the community is also herb-rich. Characteristic species include common twayblade (*Listera ovata*) and melancholy thistle (*Cirsium heterophyllum*). Quadrat sampling shows that the most diverse swards, where false oat-grass is lacking or at low frequency, appear transitional between the neutral grassland communities MG1 *Arrhenatherum elatius* grassland and MG5 *Cynosurus cristatus-Centaurea nigra* grassland, and the calcareous CG6 *Avenula pubescens* grassland.

This area of grassland represents a botanically interesting anomaly and is worth preserving as such, although it is not central to the ecological value of the site. The introduction of conservation grazing has helped to preserve the area, with cattle grazing off tree seedlings. However, in order to preserve it long term, **SRWT will carry out intermittent scrub removal along its fringe during the period covered by this plan**. **The removal of a patch of ground elder adjacent to Strawberry Lee Plantation is also a priority.**

The second area of neutral grassland lies adjacent to Bolehill Lodge and comprises two distinct communities. The first has a sward co-dominated by common bent, creeping soft-grass and red fescue; the second is dominated by sheep's fescue and sweet vernal-grass, with frequent Yorkshire fog (*Holcus lanatus*), mouse-eared hawkweed (*Pilosella officinarum*), bird's-foot trefoil (*Lotus corniculatus*) and ribwort plantain (*Plantago lanceolata*). Again, **cattle grazing will help to preserve these areas if adjacent scrub is controlled**.

Small areas of rank grassland are also present on the reserve, particularly around entrances where dog urine and faeces are concentrated, where heather may have been replaced with grasses due to the change in the nutrient status.

4.3 Species data

4.3.1 Invertebrates

Caution must be exercised when evaluating the variety and distribution of invertebrates across the reserve, given the long period over which recordings were made and the bias of the data set towards certain classes of invertebrates. However, the variety of species recorded, and the percentage of uncommon species, do indicate that the reserve has considerable invertebrate value. Although limited, the records clearly show that the variety of habitats and niches found on Blacka Moor positively influenced the invertebrate assemblages present. With regard to uncommon invertebrates, the most significant habitats are: rotting wood and decaying organic matter of all types; woodland edge/moorland fringe; wet and marshy areas, including bogs and wet woodland; fungi and lichens; open moorland and bracken beds. The sheltered, south-facing bramble bank and long grassland running adjacent to Hathersage Road is an important butterfly habitat and should also be preserved; scalloping of the scrub edge will create a greater edge area which is valuable to invertebrates.

Woodland management practices that promote structural and botanical diversity will benefit many woodland invertebrates. Dense bramble clumps in sunny locations are of particular value and should be retained. Further invasion of the reserve's woodlands by sycamore and rhododendron should be prevented, if possible. These species produce a dense leaf litter and affect the quality of the soil respectively. Both factors suppress other vegetation beneficial to invertebrates; although sycamore is recognised for its ability to support a high biomass of invertebrates the assemblage supported is far less biodiverse than that supported by native species such as oak.

Dead wood, and in particular standing dead wood and fallen trees, should be retained on site wherever possible, as they provide both a primary habitat for species such as the wood-boring beetles, and a secondary habitat for fungal-feeding species, whilst the development of water-filled rot holes in tree trunks will benefit hoverflies such as *Myathropa florae.* **The creation of habitat piles using brash produced by woodland management will be encouraged following woodland works**, as these piles provide a valuable habitat for many invertebrates, such as spiders. The retention of large pieces of dead wood in more open areas, such as woodland glades or moorland areas, is of particular benefit to several invertebrate groups. However, **brash piles will not be retained within heathland areas, due to the risk of fire and in woodland brash will be widely distributed and placed away from PRoW**.

Heathland is also a very important invertebrate habitat. Structural diversity in the vegetation is important if Blacka Moor's heaths are to support the fullest possible range of invertebrate species, and ideally the heath will be managed to contain all successional stages from bare ground, through heather and grasses to scrub. Stands of pure heather generally have low invertebrate interest; therefore management should aim to promote botanical diversity. Cattle grazing is the most beneficial form of heathland management for invertebrates because of the types of disturbance caused to the habitats of the moor (trampling, etc.), the impact of patterns of cattle grazing on vegetation structure, and the extra invertebrate food sources provided by dung. It is important to heathland invertebrates that there is a range of lowering plants to produce nectar. If dwarf shrubs with few other nectar-bearing plants dominate the heathland,

the value for species such as the mountain bumble bee (bilberry bumble bee) *Bombus monticola* could be undermined. As the structure diversifies through grazing and the natural regeneration of heather, niches are created for more species to colonise and hence the nectar source should increase. Conversely, burning over wide areas can be damaging for less mobile invertebrates and should be avoided. Further information on bare ground within heathland is provided in the 'Bare ground' section.

The heavy grazing by sheep on the in-bye land at Strawberry Lee prior to 2001 had produced a very short, even sward. This lack of structure provides poor habitat for the majority of invertebrates. The more relaxed grazing regime has a greater structural variety or mosaic from tall, tussocky grassland and short, close-cropped areas, which will have increased its value for a variety of invertebrates. The use of Avermectin (a livestock wormer) is detrimental to certain groups of invertebrates such as ground-dwelling nematodes, since chemicals lethal to these species will pass through the cow's/sheep's gut and be deposited in the droppings. Consequently, its use on livestock grazing at Blacka Moor is prohibited.

Both the streams and flush habitats present on the reserve support invertebrate communities. The composition of the stream communities is largely influenced by water chemistry, flow-rate and the structural complexity of the watercourse; the only management proposal that is likely to influence invertebrates in these habitats is the damming of drains in the area of the Cowsick valley mire. Trampling by cattle as they come to the streams to drink has produced areas of poached ground, which can be utilised by a variety of invertebrate species.

The majority of invertebrates recorded on the reserve are woodland species. These include species associated with wet woodland, such as the rove beetles *Syntomium aeneum*, *Gabrius trossulus* and *Atheta pallidicornis*, several hoverflies of the genus *Platycheirus* and *Eristalis* and the ground beetle *Agonum gracile*. Detritivores such as the dumbledor *Geotrupes stercorosus*, are also present. Other of the invertebrates found on the reserve are strongly associated with the moorland fringe. These include the angle-striped sallow (*Enargia paleacea*), whose larvae feed on aspen or birch, and whose adult moths frequent heather blossom; and *Platycherius tarsalis*, a hoverfly associated with lush vegetation on the woodland edge.

The moorland invertebrate fauna includes many species of lepidoptera. Green hairstreak butterfly (*Callophrys rubi*), a species strongly associated with bilberry stands, the ling pug (*Eupithecia goossensiata*), narrow-winged pug (*E.nanata angusta*) and heath rustic (*Xestia agathina*) that feed on heather, and the golden-rod brindle (*Lithomoia soliaginis*), which feeds on heather, birch or bog myrtle, have all been recorded. Bog species, including the hoverflies *Sericomyia lappona* and *Neoascia albipila*, are present in the wetter parts of the reserve.

The butterflies present (and likely to be present) on the site were assessed in August 2001 (Gibson, 2001), with a follow-up survey in 2004. The method used for the survey was to walk through the main habitats noting any butterflies seen as well as the presence of nectar or larval food plants. The butterflies seen were small skipper (*Thymelicus sylvestris*), small white (*Pieris rapae*), comma (*Polygonia c-album*), peacock (*Inachis io*), meadow brown (*Maniola jurtina*) and gatekeeper (*Pyronia tithanus*). Butterflies were found most abundantly in or along the edge of Strawberry Lee Plantation. The only other area of Blacka Moor where butterflies were

seen in any number was around Blacka Hill where butterflies were seen basking on stone walls or nectaring on creeping thistle. No butterflies were seen in the heather moorland or in other woodland areas. However, open areas within these woodlands contain healthy stands of nettle and bramble and are potentially good butterfly habitats. The scattered oak trees within the woodland potentially provide a habitat for purple hairstreaks (*Quercusia quercus*). Similarly, bilberry (abundant in places throughout the site) may well provide a habitat for a colony of green hairstreaks (*Callophrys rubi*). Green hairstreak butterflies have previously been recorded as present on the site (Bill Smyllie, *pers. comm*). Further survey work is required in spring to compile a list of larval food plants and particularly to look for evidence of green hairstreaks.

The wide variety of habitats on the reserve - woodland, wet woodland, scrub, grassland, moorland and bog - as well as its large size, makes Blacka Moor an important invertebrate resource. Two hundred and three species of invertebrate have been recorded on Blacka Moor to date. The invertebrate record includes species characteristic of a wide variety of moorland, woodland and wetland environments, as well as a number of ubiquitous species of hoverfly and moth. More systematic recording, of a wider number of phyla and classes is necessary to determine the full extent of its invertebrate fauna. However, the level of specialism required, and associated high costs, may limit what is possible. **SRWT will work with individual recorders, through the Sorby Natural History Society and other naturalist societies to encourage further and more extensive invertebrate recording on the reserve during the course of this management plan.**

4.3.2 Reptiles and amphibians

Limited data about the site's herpetofauna have been formally collected. Common frog (*Rana temporaria*) is known to be present on site, as is the common lizard (*Lacerta vivipara*).

Approximately 12 adder (*Vipera berus*) sightings have been reported on Blacka Moor over the past twenty years. An adult and three young were found killed on Totley Moss in 1999 (R. Carter *pers. comm*.) An adder survey was undertaken around the base of Bole Hill in 2007, but did not confirm the presence of this species on the reserve.

Adders are protected under national and international legislation. The status of adder in the UK is 'unfavourable', as the species has undergone a rapid decline in some areas. Adder populations in both Sheffield and the Peak District National Park have undergone a dramatic decline over the past 30 years and the Blacka Moor area is the only area of Sheffield where adder has been recorded recently. Consequently, **habitat management beneficial to the reserve's (potential) adder population is a priority**.

Both viviparous lizards and adders are strongly associated with the heather moorlands and acidic grasslands of the Dark Peak. Both require open areas in which to bask, with adjacent refuges to provide shelter from predators. The succession of the reserve's heathland into woodland would therefore be detrimental for both these species. Adders are very sensitive to disturbance; consequently, the population on Blacka Moor is likely to be small and confined to outlying and/or remoter areas. Future sightings will hopefully reveal the locations of adder territories on the reserve. **Once identified, SWRT will amend its management of these areas to protect them and keep management disturbance to a minimum**.

The management proposals contained in this plan will benefit existing or establishing populations of adders upon the reserve, by retaining the heathland mosaic. **Care will be taken when using machinery on dense bracken beds** as these are used as basking and breeding sites (Newton, *pers.com*).

4.3.3 Birds

Blacka Moor has been designated as a Site of Special Scientific Interest and is included in the South Pennines Special Protection Area (European Birds Directive). Extensive data has been collected on the site's avifauna, including a twelve-year programme of monitoring covering 13 species characteristic of the moorland fringes of the South Pennines (Smith, 1999) and a common bird census (Clarke, 2009).

The variety of habitats on the reserve, its position on the moorland fringe and its relatively large size all make Blacka Moor a high quality site, capable of supporting a varied avifauna. The habitats can be described in four broad categories, each playing an important role for specific bird species, although many species require a number of specific habitats in close proximity for feeding, breeding and nesting.

Woodland bird assemblage

The woodland avifauna contains those species typical of many woodlands across the Sheffield area, and additionally supports a number of species which, due to severely declining populations, are no longer typical elsewhere. Wren (*Troglodytes troglodytes*), Robin (*Erithacus rubecula*), Blackcap (*Sylvia atricapilla*), Willow warbler (*Phylloscopus trochilus*), Blackbird (*Turdus merula*), Wood Pigeon (*Columba palumbus*) Chaffinch (*Fringilla coelebs*) and several tit species (family *Paridae*) commonly breed across the reserve's woodlands. Great Spotted Woodpecker (*Dendrocopos major*), Jay (*Garrulus glandarius*) Nuthatch (*Sitta europea*), Tawny Owl and Treecreeper (*Certhia familiaris*) are also regularly recorded.

In addition to the species named above, a number of birds that are listed as being of conservation concern are recorded in the reserve's woodlands. Regular records of Woodcock (*Scolopax rusticola*) have been received for Blacka Plantation. Wood Warbler, a summer migrant to the site, utilizes areas of mature woodland with little or no understory. Song Thrush (*Turdus philomelos*), a national BAP priority species, is commonly found in the reserve's more mature woodland, whilst Spotted Flycatcher (*Nuscicapa striata*) utilise glades and woodland edge habitat.

In general, an evaluation of breeding data from the past 20+ years suggests the woodland avifauna is doing well. Most of the expected species were recorded and holding territories, with good population sizes of the commoner species. The presence of Song Thrush, Bullfinch and Willow Warbler are noteworthy, the latter being found in locally significant numbers on the reserve.

The variety of habitats within the woodland is important, with each species having specific requirements. Birds such as Blackcap (*Sylvia atricapilla*), Wren and Jay require woodland with an abundant understory of shrubby vegetation. Coal Tit, Willow Tit (*Poecile montanus*), Blue Tit (*Cyanistes caeruleus*), Redstart (*Phoenicurus phoenicurus*) and Great Tit (*Parus major*) need trees with cracks and rot-holes for nesting. Many species benefit from an abundance of

insect life, or fruit (such as brambles and hawthorn) for food. Consequently, the retention of a varied woodland structure and areas at different stages – from high forest to scrub –will promote the greatest diversity of woodland birds and is essential for species such as Spotted Flycatcher. The retention of conifers within the woodland will benefit Crossbill and Siskin.

Strawberry Lee Plantation and the woodland adjacent to the A625 are a particularly important habitat for woodland birds, and numerous Robin, Wren, Willow Warbler, Blue Tit, Chiffchaff, Great Tit, Garden Warbler, Song Thrush, Goldcrest, Dunnock, Blackbird and Chaffinch territories were recorded in this area during the last survey. The perpetuation of alder and succession to birch woodland in this area would benefit Lesser Redpoll (*Acanthis cabaret*), a species currently undergoing a national decline but thriving on the reserve. The partial removal of rhododendron and sycamore from the area will promote this. **When removing rhododendron cover from this area, efforts will be made to encourage the rapid development of native scrub,** to replace the shelter being lost. **If re-establishment is slow, or disrupted by deer browsing, then the planting and protection of holly and other native shrubs will be considered**.

Woodcock is largely absent from suburban woodlands in the area, but occurs regularly on Blacka Moor. This species' main requirement for feeding and cover are met by the reserve, however, recreational disturbance, particularly in areas that are currently 'quiet' would pose a threat and should be discouraged. To support this, **SRWT will work to minimise off-path disturbance to woodland areas by walkers during the bird breeding season, and by off-bridleway mountain biking activity at any time.**

Additionally**, SRWT is proposing three areas of Blacka Moor become sanctuary areas (Figure 8)**. Selected for their limited accessibility, **these areas are currently (and will remain) open only to walkers/people on foot and the use of them for other recreational activities will not be permitted,** thus allowing them to act as a refuge for wildlife. Two of these areas – at Bole Hill and Blacka Plantation – include areas of woodland.

Numbers of Redstart, a formerly regular migrant breeder on Blacka Moor, declined from the early 1990s with breeding on the reserve becoming sporadic. This situation was in line with a national contraction in range, the reasons for which were not well understood but were not thought to relate to reserve management. In recent years the national population trend has swung upwards, with the species being recorded on several sites close to the reserve and it is hoped that it will re-establish as a breeder here. **This possibility will be promoted by the removal of rhododendron at Strawberry Lee Plantation, and will also be augmented by the erection of suitable nest boxes here. An increase in upland oak woodland across the reserve will also benefit this species.**

A total of six Pied Flycatcher boxes were installed in the woods around grid reference SK 288 810, as well as a communal nest box for Tree Sparrow adjacent to the Shorts Lane entrance. The former have proved successful, the latter not so at the time of writing– possibly the very low population density locally is making recruitment difficult and additional feeding areas adjacent to the reserve may be necessary in order for a population to establish. Two owl boxes have also been installed on the moorland fringe. SRWT will work with local bird groups to monitor the use of these boxes. The practise of pre-arrival bunging (to dissuade earlier nesting species from monopolising the boxes) for the Pied Flycatcher boxes will also be continued.

A small population of Willow Tit (*Poecile montana*) is present immediately adjacent to the reserve. This sedentary species favours scrub and open woodland habitat, and opportunity

exists to encourage colonisation of the reserve by suitable habitat management, including the creation of suitable nesting sites, in the Bole Hill area. **An initial programme of works to support this species will be carried out during the early part of this management plan.**

Woodland/moorland fringe assemblage

Species such as Tree Pipit, Willow Warbler and Whitethroat (*Sylvia communis*) are present on the moorland fringe. Linnet also frequents woodland edge habitats, utilizing mixed grassland, heath, scrub, and occasional trees as song-posts.

Survey data shows that woodland fringe species are generally doing well on Blacka Moor, due to the prominence of this habitat on the reserve. Retaining a gradation of woodland to scrub to open heath, as well as scattered trees on the moorland/woodland interface is important for these species. **Reducing the density of broad-leaved trees in compartment 4a, 4b and 2b will prove beneficial** by decreasing the density of trees and increasing the number of isolated song posts **and this work will be carried out over the period covered by this plan.**

Heathland / grassland / wetland assemblage

The reserve's open areas support a range of bird species. Meadow Pipit breed in great numbers, and several breeding pairs of Whinchat and Stonechat are also present. Blacka Moor is an excellent local site for Cuckoo (*Cuculus canorus*), due to the abundance of its host species Meadow Pipit and Dunnock (*Prunella modularis*). Reed bunting, Curlew and Snipe favour the wetter areas of Cowsick and Strawberry Lee Pastures for feeding. A small population of Skylark breed on the pastures.

Many of the birds that favour the open areas are ground nesting species. Ground nesting birds are particularly vulnerable to disturbance from recreational users to the site and, in particular, their dogs. **For this reason, the law restricting public access to rights of way during the bird breeding season (where this applies) should be clearly explained to reserve users, with particular emphasis placed on dogs being kept on rights of way, or on a short leash away from these.**

Some bird species, such as Merlin (*Falco columbarius*), Swift (*Apus apus*) and Golden Plover (*Pluvialis apricaria*), feed on/over open areas of the reserve but breed elsewhere.

The management of both heathland and pasture by conservation grazing, and the control of bracken and scrub encroachment, is broadly favourable to the birds of these habitats, which rely on the mosaic of vegetation communities across the area **(Table 2).** However, although many species are maintaining good populations on the reserve, others are in decline. The reasons for this are diverse – some the result of changes in habitat as bracken and birch encroach, some due to recreational disturbance, whilst others reflect national or regional trends.

Table 2: Heathland features used by characteristic birds (adapted from the RSPB 'Lowland Heathland' management handbook)

	Purple moorgrass	Sphagnum mire (with pools)	Bare areas	Pioneer heath	Building heath	Mature heath (with scrub)	Mature heath (with gaps)	Deciduous scrub
Curlew	Fo/Br	Fo	Fo	Fo				
*Dartford warbler						Fo/Br	Fo	Fo
Lapwing		Fo/Br		Fo/Br	Fo/Br			Fo

Linnet			Fo	Fo				Fo/Br
Meadow pipit	Fo/Br				Fo/Br		Fo	
Nightjar	Fo					Fo/Br	Br	Fo
Reed bunting	Fo							Fo/Br
Skylark				Fo	Fo/Br			
Snipe	Fo/Br	Fo/Br						
Stonechat				Fo	Fo	Fo /Br		
Tree pipit			Fo	Fo	Br	Br/Te	Br	Te
Yellowhammer	Fo		Fo	Fo	Fo	Te		Br
Br – breeding Te – territory feature Fo – foraging								

*mainly southern species but has been recorded at BM though not breeding.

Red Grouse is very much on the edge of its range on the reserve and the senescent condition of the heather presents a sub-optimal habitat for this species. Although the numbers supported by the reserve will always be lower than on specifically managed moorland the numbers on Blacka should increase with the structure and age diversity of the dwarf shrub heath. However, recreational disturbance is always likely to limit breeding attempts.

Skylark have lost breeding habitat on the reserve as the density and maturity of the dwarf shrub heath and bracken have increased and currently favour the grassland of Strawberry Lee Pastures. As with red grouse, it is hoped that the more varied and open heathland structure produced by grazing, birch and bracken control and time, will allow the species to utilize Blacka Hill again in the future. **In the short term, care will be taken to ensure the grazing levels in the pastures are increased slightly, to combat the spread of dense tussock-forming grass species** and ensure no further suitable habitat for this species is lost. **The addition of grazing cattle at the beginning and end of the grazing season will also benefit this species by helping to break up denser vegetation.**

Whinchat numbers have undergone a marked decline on the reserve. This species has very specific habitat requirements, and needs a mosaic of heathland, bracken beds, *Juncus* flushes and scrub in which to flourish. The structure of the habitat is also critical, with the birds requiring differing heights of vegetation (ideally in 'bands' with distinct edges) from which to hunt their insect prey. The maintenance of the heathland mosaic on the reserve will benefit this species if care is taken to maintain structural diversity when controlling bracken and scrub. **Additional survey data to show the current location of breeding pairs will be collected at the outset of this plan, to help refine the detail of the heathland management prescriptions on an area by area basis**.

Curlew, Snipe and Lapwing are wading birds that feed on ground dwelling invertebrates by probing soft ground in wet, moderately open areas. These species cannot feed in areas of dense tussocky vegetation, so the management proposed to decrease this habitat on the in-bye pastures, will be beneficial to them. Equally beneficial will be a reduction in the density of rush pasture areas by cattle poaching and/or rush cutting, to allow access for feeding.

Breeding populations of Lapwing have been declining on Blacka Moor and across the Dark Peak in recent years. Studies have shown that where populations have fallen below six breeding pairs (as they have on the reserve) the remaining nests become highly vulnerable to predation and breeding attempts fail. Although Lapwing occasionally hold territories on the pastures, they have not successfully bred there for some time. However, improvements in feeding habitat may still help to support what local population remains, as well as benefitting other waders.

Two small wader scrapes were created during the course of the last plan. Such scrapes aim to provide bands of damp, vegetation free soils in which wading species can feed. Unfortunately, the ground conditions were such that these scrapes have not proved successful – one having dried up and the other becoming an (otherwise useful) shallow pond.

SRWT will create and maintain a large (5m x 5m) scrape with bare margins in a suitable location on the in-by (location to be determined by remoteness from disturbance, suitable ground conditions and care for on-site archaeology) **during the period covered by this plan.**

Ground nesting birds on the in-bye remain vulnerable to predation (and egg predation) from species such as foxes, stoats and badgers. This vulnerability cannot be easily countered, given the nature of the reserve (for example, anti-predator fencing would be expensive and unsightly, and predator control is not compatible with other conservation objectives). However, **SRWT will attempt to reduce predation pressure on these bird populations by using humane methods to encourage foxes to abandon earths on the in-bye (where detected).**

When considering the population trends of bird species in the Dark Peak over recent years it is clear that the decline of many once common species, such as Linnet, Twite, Yellowhammer and Grey Partridge, is linked to agricultural intensification and, in particular, the conversion of traditionally-managed hay meadows to silage. Management changes at Blacka Moor alone cannot hope to reverse this decline. However, by working in conjunction with other conservation land managers across the South Sheffield Moors, it is felt that the number of high quality hay meadows could and should be increased to benefit these species. To support such a change, **SRWT will create a conservation hay meadow on Strawberry Lee Pastures during the course of this management plan (Figure 9**). The area in question represents a previous field enclosure and has been selected due to its relative lack of fungal interest. Restoration of the drystone walls enclosing this field will preceed meadow creation. Once enclosed, this area of grassland will be lightly scarified and slot seeded with haymeadow species from a local seed source. Following this, management will be that of a traditional hay-meadow, with an annual haycut followed by aftermath grazing.

Surveying and monitoring:

The avifauna of Blacka Moor has been extensively studied over the past 40 years and the reserve is popular with local bird watchers producing a steady stream of records. Nonetheless **further systematic surveying will be carried out, where resources allow, over the course of this plan to inform the details of habitat management and to monitor population trends.** Ideally a Common Bird Census will take place in 2019, 10 years after the last with specific species recording taking place in the intervening years.

4.3.4 Mammals

Despite the paucity of mammal records, the variety and scale of habitats on the reserve suggest that it supports a good population of the commoner British mammals. A previous survey has shown the population of wood mice (*Apodemus sylvaticus*) and bank vole (*Myodes glareolus*) to be high, which in turn will attract mammalian predators, such as weasels, as well as influencing the distribution of species such as adder, Kestrel (*Falco tinnunculus*) and Tawny Owl.

Evidence of water vole (*Arvicola amphibius*) has been found within a rush-dominated area near to Cowsick Bog, although previous surveys of the reserve's watercourses were negative. Upland sites have been found to be important areas for water voles in the Peak District in recent years, with the animals colonising ditches, mires and gullies in preference to fast-flowing streams.

Bats have been recorded around the reserve, although no actual roost sites have been identified. The altitude of much of the reserve is above that which is considered to be attractive to most bat species, which prefer more sheltered, lowland areas. Nevertheless, the reserve's wetlands and heathland support abundant populations of flying insects. It is likely that the local bat population roosts in buildings and woodland at lower altitude then follows the stream courses and woodland edge from Totley onto the reserve to feed.

Grey squirrel (*Sciurus carolinensis*) and Roe Deer (*Capreolus capreolus*) are widespread across the reserve's woodlands, which also supports a small population of Stoat (*Mustela erminea*). Badgers (*Meles meles*) and fox (*Vulpes vulpes*) are also common and forage widely over the drier woodland and heathland areas.

Red deer (*Cervus elaphus*) have colonised Blacka in recent years and are now a common sight on the heathland. The herd varies in size, with animals commonly laying up in the woodland then roaming across and off the reserve to feed. Deer are browsers rather than grazers, often targeting young trees and shrubs (especially rowan). As the population grows **the reserve's woodland will be carefully monitored to ensure that adequate rates of recruitment of seedlings into the understory and saplings into the canopy are maintained**. Should levels fall to unacceptable levels, then additional measures, such as regeneration enclosures, may need to be considered.

4.4 Surveys and monitoring

Aim 8. Survey and monitor the biodiversity of Blacka Moor in sufficient detail to evaluate progress towards aims 1-7.

Aim 9. Ensure that Blacka Moor's management links to local, regional and national plans for habitat and species recovery, recreation and landscape scale conservation.

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 practiscs. However, the type and scale of data collection must be carefully considered if it is to illuminate rather than obfuscate management decision-making. The

resources required for data collection, and the skills required to ensure accuracy must also be carefully considered and coordinated.

Over the period of the last plan changes in habitat were monitored through annual transect surveys, incorporating fixed quadrat recording. The data gathered from this was supplemented with a number of stand-alone surveys and habitat condition assessments, and with the recording of specific groups e.g. lichens on an ad hoc basis by specialists, student researchers and Trust-based volunteers. The benefits of this approach were seen in the level and wide range of data collected. Drawbacks included the large amount of time involved in gathering data and variability in the reliability of data – which occurred when fixed points for quadrats were moved or lost, or when data gathered by insufficiently skilled volunteers was included in analyses.

Over the course of this plan SRWT will refine and simplify the collection of biological data. Quadrat monitoring will be discontinued and replaced by regular and accurate surveying, carried out by appropriately qualified staff or independent, appropriately qualified ecologists (working in a professional or voluntary capacity). The use of aerial photography to map changes in habitat on the reserve will be critical.

5.0 Infrastructure

Aim 10. Maintain and restore the reserve's boundaries and access infrastructure

5.1 Walls and fencing

The majority of Blacka Moor's boundaries are drystone walls, in varying condition, which add greatly to the character of the site. The outer boundary of the reserve is extensively walled; and supplemented with stock netting in some places where the walls are not stock proof.

There is also an extensive network of drystone wall dissecting the interior of the site. The in-bye fields, now one large enclosure, once comprised a number of fields whose boundaries are now marked by defunct walls. The remains of another five enclosed fields are present in the north east of the site; these are becoming more obscured over the years as the woodland encroaches.

About 700 metres of drystone wall repair has been carried out in total since 2001. Work has concentrated on securing the external boundary of the heathland compartment prior to the introduction of grazing stock. This job is now complete and a new phase of work – repairing the boundary to Strawberry Lee Pastures – has begun. As part of this work, a stretch of drystone wall between the pastures and the heathland compartment has been repaired, **with the remaining repair to be completed during the course of this plan** (**Figure 11**). Should additional monies become available then the next phase of repair will involve the repair of the pasture's boundary with Totley Moss.

The section of wetstone wall forming the boundary between Blacka Plantation and Hathersage Road is in poor condition. This wall is the responsibility of the Highways Department who should be encouraged to continue with its restoration.

A barbed wire fence separates the heathland compartment from Blacka Plantation. The fence line is largely hidden within the woodland fringe but risks being compromised by bracken and falling branches and should be cleared. Stiles are located every 100m along its length to allow free access between heath and wood but observation and field evidence show that these are rarely used, with the majority of walkers preferring to stick to the path network due to the difficult vegetation and terrain encountered by walking cross country.

All boundaries require some level of maintenance and reports from patrolling and members of the public will help to bring attention to specific areas or problems. In recent years, damage has occurred in localised areas as a result of red deer jumping over boundary walls and knocking out capstones. Additional post and rail fencing, erected to the same height as the walls in these areas, may be necessary to prevent damage to both wall and wildlife.

5.2 Footpaths, bridleways and trackways

Blacka Moor has an extensive Public Rights of Way network, including footpaths and bridleways, which vary in composition.

The reserve's bridleways are generally surfaced, or spot-surfaced, to support greater volumes of traffic and to prevent churning up in wet areas. Cambers, humps and cut-offs are used to shed water from their surface and the maintenance of these is an ongoing priority. Two of these bridleways, one running from Shorts Lane into Blacka Plantation and the other from the A625 to Strawberry Lee Lane, are also surfaced trackways and are passable to works vehicles. By comparison, footpaths are generally narrower and unsurfaced, although the footpath across Cowsick Bog has been flagged.

Extensive improvements have been made to footpaths and bridleways on Blacka Moor since 2001, with major resurfacing works on many stretches since SRWT took over management of the site.

The condition of bridleways on the reserve was raised by many respondents during the 2014 public consultation. This showed that the majority of those participating (and, in particular, mountain bikers) are keen for the condition of the reserve's bridleways to remain more or less unchanged, retaining a more unmade and more 'natural' look and feel.

At Blacka Moor, the nature of the site – its topography and rocky soils, are natural determinants of the gradient and ground condition of the majority of bridleways. It is the intention of the Trust that bridleways be accessible to both horse-riders and cyclists in line with legal requirements, although it is acknowledged that many will always be difficult (because of gradient) for horse riders. To achieve this, **the Trust will work closely with the Council's PRoW unit, who are responsible for the maintenance of surfacing, taking their advice, together with that of the Local Access Forum and local user groups as to how improvements to the network should best be made**.

During the period covered by this management plan, **the Trust will focus on maintaining the existing Rights of Way network, including spot repairs, clearing cross drains and cutting**

back encroaching vegetation. This is a substantial task requiring input both from SRWT and SCC Public Rights of Way Unit. Ride Sheffield has also been instrumental in improving the condition of the Devil's Elbow bridleway where it passes through flushed areas and wet woodland and representatives of the British Horse Association has provided advice on bridleway improvement. It is hoped that these partnerships will continue over the course of this management plan.

Several minor pieces of work are planned in addition to the general maintenance programme. These include:

Improving the surfacing of the desire line adjacent to Cowsick Bog by additional flagging (**Figure 11**) as necessary to prevent braiding – this stretch was mentioned several times in consultation as being problematically boggy in wet weather.

Retaining a section of the bridleway running from Lenny Hill to the Stepping Stones, to guard against further erosion and narrowing.

5.3 Access furniture (waymarker posts, benches, gates, stiles, leaflet dispensers)

The relatively small amount of access furniture on the reserve includes: metal finger / way-marker posts and 'horse riding prohibited' signs, wooden way-markers, wooden benches and a stone bench set in a boundary wall. 'Welcome' signage is also present at the reserve entrances at Stony Ridge car park, Strawberry Lee Lane car park and the Shorts Lane entrance. Leaflet dispensers are present at two site entrances but are little used thanks to the preference of local blue tits to use them as nest boxes.

Bridleway gates are present at all points at which bridleways enter the reserve's grazing enclosures. Mounting blocks are also present in several of these locations, with **more to be added in response to requests from the horse-riding community (Figure 11**). A preference has been expressed by local riders for the 'closed-loop' style latches on bridleway gates as these are less likely to trap tack or clothing and **the change to this style of fastening will be made as latches need replacement.**

The few remaining metal way-marker posts in the interior of the reserve have deteriorated and **will be replaced with wooden finger marker posts of the design previously agreed by the Public Rights of Way Unit. The 'horses prohibited' signs** are ugly and unnecessary and **will also be removed**.

5.4 Bridges and crossings

Pinfold or Sheepwash Bridge is a single span masonry bridge, with masonry abutments, wing walls and head walls. It is located approximately 300 metres north of Bolehill Lodge, where a bridleway track crosses an un-named tributary of Blacka Dike (NGR SK 2922 8032). An inspection of the bridge was made in 2001 (Sheffield City Council 2001). Improvements and repairs on the aprons and arch barrel were made in 2005.

Sleeper bridges and stepping-stones are also present on stream crossings. Maintenance and possible replacement may be required during the period of this management plan. The sleeper

bridge at SK 289 810 will be enlarged as part of the upgrade of this section of path to bridleway status.

6.0 Cultural Context

6.1 Site archaeology

Desktop and field research has confirmed that Blacka Moor contains extensive archaeological remains. Interest in the reserve's history amongst visitors to the reserve is high.

Aim 12. Protect, preserve, research and communicate the reserve's archaeological and historical interest and significance

Although the discovery of a flint end scraper (see below) and other field-walking finds indicate the likelihood of early prehistoric activity on and around Blacka Moor, evidence for the first long-term and relatively large-scale exploitation of what is now Blacka Moor dates from the late Neolithic period onwards. Ten sites of probable prehistoric date were recorded within the reserve, mainly concentrated on the moorland areas of Blacka Hill, Wimble Holme Hill and Bole Hill, generally at elevations of above c.300m. The sites vary in scale from stray finds of flints, to a stone circle and the remains of a possible hill fort, and probably date from the late Neolithic to the Iron Age. The number of recorded sites on the higher moorland and valley slopes indicate that the reserve formed part of a larger, settled landscape, which was populated throughout the Bronze and Iron Ages.

Documentary evidence suggests that the reserve area was contained within land granted to Beauchief Abbey in 1263, and that by 1285 the Abbey had established a grange at Strawberry Lee. On the basis of the information currently available, it is suggested that the monastic grange and the later Strawberry Lee Farm share the same general location. Historic records and field remains show that human activities, including arable and livestock (sheep and cattle) farming, lead smelting, quarrying and woodland management, took place across the reserve from the medieval period onwards.

The remains of extensive lead-smelting activity dating from the late medieval period are present on Bole Hill and the area has been designated as a scheduled monument (**Figure 3**).

Of the surviving sites identified in the 2001 survey, most were in a good or fair condition, reflecting the absence of later disturbance in the survey area. Several features within the woodland, such as charcoal platforms and white coal kilns, have been damaged by tree growth and are classified as being in poor condition. A number of sites were also found to have been destroyed over the last 50 years.

The majority of archaeological sites on Blacka Moor are considered to have low vulnerability. Most were not threatened by, or actually being damaged at the time of survey (2001), although a few sites were significantly over-grown, others were being encroached upon by trees, and a few were suffering from hill-wash or water erosion. Further scrub and bracken encroachment does threaten the survival of some features.

A visit to the Bole Hill Scheduled Monument by English Heritage in October 2014 highlighted the vulnerability of features to birch encroachment, as the roots of trees can cause damage to the earthworks present. **Work to prevent the spread of scrub onto the monument will be**

carried out during the course of this plan. Of more immediate concern are areas of erosion on some of the desire lines leading on and off the monument, which are being exacerbated by illicit mountain biking activity. Unchecked, this erosion is likely to cause a proliferation of paths across the area as walkers search for a new route. Consequently, heather bales will be used to try and guide people onto the main footpath across the site, and discourage straying from this. Heather bales will also be used to try and stabilise worst eroded areas, allowing plants to recolonise. **The condition of the monument will be monitored during the period covered by this plan and further consultation with the PDNPA archaeology service and English Heritage sought if the condition of paths deteriorates**.

The key management guideline for any archaeological feature is to minimise the amount of disturbance. Consequently, the potential impact upon the reserve's archaeology of management works such as fencing, path creation, bracken control and woodland management works, and particularly the use of heavy machinery, such as tractors, should be carefully considered, and revised where necessary. **The Peak District National Park Cultural Heritage Team has offered to provide advice and guidance on the preservation of Blacka Moor's archaeological heritage, and will be consulted when planning and delivering the capital works programme.**

One specific part of the reserve is recommended for further, more detailed, archaeological survey. This is the location where a flint 'end scraper' was discovered by archaeologist Clive Waddington in autumn 2006. The scraper, thought to date from the Later Mesolithic or Early Neolithic period, was found following heavy rains and is believed to have been washed out of the surrounding soil on the course of the bridleway shortly before discovery. The unabraded and fine condition of the tool indicates that it had been sealed in a previously stable context prior to its eroding out of the bridleway. Processing tools such as scrapers are usually associated with settlement sites and the location - not far from a freshwater stream in a sheltered headwater area in the upper part of a small valley - is in keeping with this. The find therefore suggests the possible existence of a past Neolithic settlement at SK 2865 7990. If this is the case, then the bridleway could be eroding this site as a result of both human and natural processes.

In consequence, it is proposed that **SRWT co-ordinate an archaeological excavation in the area of the find**. It is felt that such a project, which could involve volunteers and students working alongside professional archaeologists, would be a good opportunity for raising awareness and interest in the area's archaeology as well as (possibly) adding to our knowledge of the reserve's history.

6.2 Recreation

The management of Blacka Moor as a place for public recreation is of crucial importance given the conditions under which the site was gifted to the city (see section 2.4 above) and the Trust's charitable objectives. Blacka Moor has a long history of informal and semi-formal public usage, and has been enjoyed by generations of local people for typical countryside pursuits such as walking, picnicking, hashing, bilberry-picking and horse-riding. Over time, as recreational activities have diversified other recreational groups, including mountain-bikers and orienteers, have become frequent visitors to the reserve along with the other groups and casual users.

Aim 13. Promote recreational access to the reserve, and public participation in its management

Encouraging and supporting recreational use of Blacka Moor is one of SRWT's key aims for the reserve and will be carried out through the promotion of the reserve to new audiences, by the provision of interpretation to existing ones and by management of recreational infrastructure such as footpaths and bridleways. The provision of new or extended facilities will be considered where a demand for such has been shown. Nevertheless, it should be understood that any such recreational developments must be compatible with the vision for the reserve, and with the law. Consequently, certain activities, for example, motorcycle scrambling, quad biking or off-road motoring, are considered incompatible with both the vision and the reserve's SSSI status, and will not be permitted. Equally the pursuit of legitimate recreational pursuits must be carried out within the law – for example mountain-bikers are not freed from their obligation to remain on bridleways by the terms of the Graves covenant, nor should events held by the Trust or other third parties disturb breeding birds.

Where management works are necessary, SRWT will endeavour to ensure that these are carried out in such a way as to minimise disturbance to recreational users, either through restrictions to access, disruption by noisy machinery or by the production of unsightly arisings.

6.2.1 Recreational facilities

Blacka Moor contains an extensive PRoW network, comprising both bridleways and footpaths, as well as a number of well-used desire lines. Parts of the reserve are designated as open access under the CRoW Act, with others being de facto open access for those on foot, outside of the bird breeding season, in line with SCC and SRWT policy.

A number of benches are available on the reserve but it is felt that the scarcity of these unduly limits access to those with restricted mobility and should be increased (see Topography and Disabled Access below).

Limited amounts of parking are available at car parks at Stony Ridge Road (SK 277806) and Strawberry Lee Lane (SK 296 803). As the numbers of people using both the reserve and the surrounding countryside increases the dearth and condition of parking provision at Stony Ridge is becoming problematic. Consequently, as the car park lies outside the land managed by SRWT, a partnership approach involving both DCC and PDNPA will be adopted to improve this facility.

6.2.2 Recreational usage

Most visitors to Blacka Moor come from the local community and the wider Sheffield area; with on-site surveys showing that the reserve is not a key destination for national or international visitors to the Peak District such as the adjacent Longshaw Estate or Stanage Edge.

The reserve is used by the public for a variety of recreational pursuits, including walking, dog walking, family days out, running, horse riding, mountain-biking, bird-watching and bilberry picking. Some visitors come specifically for recreational purposes, whilst others such as runners, riders and cyclists use it in combination with adjacent sites, passing through as part of a wider circuit.

Recreational users are attracted to Blacka Moor for a variety of reasons: its proximity to the city, and extensive path network make it one of the most easily accessible sites for those aware of its existence and confident in self-navigation. In contrast to other nearby sites, such as the Longshaw Estate, the reserve is peaceful and uncrowded even on busy summer days. Parking

(when available) is free. Equally, Blacka Moor's topography and the nature and diversity of habitats provide scope for a variety of wildlife rich and beautiful walking / riding routes with views across the city.

Recreational usage of Blacka Moor has increased over recent years, in line with national and local trends. This increase is largely due to the growing popularity of mountain-biking, both in the city and countrywide. The Dark Peak and Sheffield are both focal points for this sport, and several of Blacka Moor's bridleways are known as high quality technical trails. Usage by other recreational groups has remained largely the same since 2006, with the exception of paragliders and model aircraft enthusiasts whose usage has declined as their activities have been prohibited.

Current levels of usage of the reserve are considered to be appropriate to a site of its size and type. Visitor numbers are low during the working week and higher at weekends. The reserve is used year round, though visitor numbers (unsurprisingly) rise when daylight hours increase and fall during periods of inclement weather. Recreational and population trends suggest that visitor numbers will continue to increase in the period covered by this plan.

In carrying out recreational management of the reserve, **SRWT will therefore aim to maintain existing on-site recreational provision,** rather than developing new attractions or facilities that would encourage a significant increase in visitor numbers, and thereby compromising the tranquil, wild nature of the site so central to the visitor experience.

Recreational pastimes that damage the reserve and its wildlife, that contravene the law, or that conflict with its quiet usage by others, will not be permitted. Prohibited activities include (but are not limited to) wild camping, paragliding, model aircraft flying, quad biking, off road motoring, paint balling and hunting.

A table showing the access protocol for Blacka Moor is given below:

Table 3. Access protocol for Blacka Moor

Pedestrians (including walkers, runners and orienteers)	Are *generally* permitted to roam freely throughout the reserve (on or off rights of way) but must observe sign warning of temporary closure to areas for management or wildlife reasons, and should use the gates, stiles and squeezes provided rather than climb over walls or fencing. Exceptions to this free access apply to the woodland and in-bye pasture during the bird breeding season (1st March-31st July), when all users should remain on Public Rights of Way to avoid disturbance to ground nesting birds. The Trust urge all walkers and runners to remain on Rights of Way across the reserve during this period.
Dogs	Dogs are welcome on Blacka Moor but should be under their owner's control at all times, and particularly in the presence of livestock. Owners should be aware that even friendly dogs wanting to 'play' can be highly distressing to livestock (including horses) and may inadvertently cause injury or death.

	During the bird breeding season (1st March-31st July) dogs must either be kept on Rights of Way or, if away from these on access land, on a short leash, to avoid disturbance to ground nesting birds.
Horse riders	Are permitted to use the reserve's network of bridleways (both statutory and permissive).
Cyclists	Are permitted to use the reserve's network of bridleways (both statutory and permissive).
Motorcyclists, quad bike riders and off road drivers	Are **not** permitted to use **any** part of the reserve.

6.2.3 Promoting public access

The Trust's charitable objectives include promoting appropriate public access to 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." Taken in conjunction with the Graves Covenant – under which Blacka was given to the city for 'the health and exercise of the people of Sheffield', these place a powerful duty on the Trust to manage Blacka Moor as a place for recreation. In doing so, the Trust will carefully balance recreational provision with other priorities – such as ensuring that the peace, tranquillity and natural character for which people visit the Moor is not unduly compromised, balancing the needs and wants of different user groups, protecting wildlife, habitats and archaeology. Fortunately, there is a high degree of compatibility between these priorities.

Although it is not SRWT's intention to seek a dramatic rise in visitor numbers to Blacka Moor, action that encourages groups of people who are currently under-represented in countryside recreation to visit the reserve is felt to be in keeping with the spirit of the original Graves bequest and will be undertaken. This action is generally envisaged to take the form of engagement projects rather than physical modification of the reserve, however the installation of additional seating is an exception to this principle (see section 6.2.6 Topography and disabled access below)

Under the CROW Act, 2000, approximately half of Blacka Moor is designated as open access land. It has been suggested that SCC dedicate the entire reserve as open access under the Act. SRWT would welcome such a dedication, to bring clarity and a consistent framework to rights of access across the reserve.

6.2.4 Habitats, vistas and views

The impression of wilderness, freedom and adventure provided by the mixture of open space, dense woodland, deep hidden valleys and unmarked paths, is a significant part of the attraction that Blacka Moor has for its visitors (see the Vision at the beginning of the management plan). During the most recent public consultation (autumn 2014) reserve users again affirmed their support for the site to be kept 'as it is now', listing the mosaic of habitats, rough paths and

tracks and views over, and out from, the site over the city, as features integral to their enjoyment.

The increase in woodland over parts of the reserve has caused concern amongst some users whilst being welcomed by others. Many reserve users value the open areas of the reserve, and preferentially select routes which offer good visibility and views across the surrounding countryside.

Although the risk of assault in country areas is significantly less than in urban ones, many surveys have shown that fear of attack inhibits some women from exploring rural areas generally, and woodlands in particular. Several current female users have stated that they plan their routes to incorporate as much of the open areas as possible, and actively avoid more enclosed areas, particularly when visiting alone or in female-only groups.

Management of the reserve will therefore:

Aim 11. Protect and conserve the open views across the nature reserve.

This will involve the active control of birch and bracken on the heathland as these have been identified as elements that detract from people's enjoyment of the reserve – birch because it blocks open views and vistas and gives a feeling of enclosure, and bracken because it displaces more attractive and wildlife-rich habitat, blocks paths and is unpleasant to walk through. It is however acknowledged that the amount of woodland on the reserve will increase over the period covered by this plan.

6.2.5 Damage and disturbance

Low visitor numbers and the considerate behaviour of the majority of visitors to the reserve mean that levels of damage and disturbance, both to wildlife and to the recreational enjoyment of others is, in general, low. That said, the high coverage of the reserve by footpaths and bridleways mean that most areas receive some footfall and undisturbed areas are becoming limited as visitor numbers increase. The designation of additional bridleways (designated along the route of pre-existing footpaths or desire lines) over the past few years has meant that the number of areas accessible only on foot has decreased. These areas are greatly valued by pedestrians, many of whom dislike shared routes and are increasingly feeling threatened by illicit mountain biking (and occasional horse riding) along footpaths.

Aim 7. Minimise disturbance to wildlife from recreational activity, and safeguard the more remote parts of the reserve for quiet enjoyment by walkers and other pedestrians.

To counteract this increasing pressure, **the three quietest areas of the reserve are to be designated 'sanctuary areas,' to be kept accessible only to pedestrians (i.e. people on foot, including walkers, dog walkers and runners) and in which other forms of recreation, such as mountain biking and horse-riding, will not be considered** (**Figure 9**). This approach is in line with public consultation, where the desire for quieter, pedestrian only areas, was repeatedly raised.

Additionally, SRWT will work to encourage compliance with correct Rights of Way usage across the reserve, and will employ physical barriers to restrict access, if possible, when clear

way-marking and awareness-raising measures have failed. Downhill mountain bike trails will be dismantled when found.

An additional cause of disturbance on Blacka Moor, is to breeding birds or livestock by dogs. Many of the bird species typical of the reserve are ground nesting and therefore particularly vulnerable to disturbance during the breeding season. Equally, regular instances of dogs roaming across Strawberry Lee Pastures, worrying the sheep (and undoubtedly disturbing ground-nesting birds) have been recorded. In 2014, three lambs were killed by dogs on the pastures.

Dog walkers constitute a large and important section of site users, and the freedom to walk dogs off the lead is recognised as an important feature of Blacka Moor and will be accommodated wherever and whenever the law allows.

By law, dogs must be under their owner's control (physically or by command) in public places and must not disturb livestock (including horses). To prevent unintentional disturbance to ground-nesting species during the bird breeding season (1st March – 31st July) they must be kept on Public Rights of Way, or, if accompanying their owners across access land away from Rights of Way, be kept on a short leash.

It is the Trust's intention to minimise the restrictive impacts of breeding bird legislation, whilst still operating within the law. It will therefore take steps to advise and inform dog walkers of their legal obligations and good practice. **SRWT will use clearer on-site signage to indicate where and when walkers/dogs are restricted to footpaths and communicate the reason for this better through on-site interpretation** (which should stress the positive messages in terms of bird breeding), meetings and other media, as necessary. Explanatory signage will be displayed at main entrances, with smaller 'reminder' signs placed at entrances to the heathland enclosure and Strawberry Lee Pastures. **Increased patrolling at the beginning of the bird breeding/lambing season will also be used to inform the public of the need for such measures.**

A small but persistent number of horse-riders have also been observed leaving the bridleway and riding up the sides of Strawberry Lee Pastures, again disturbing ground-nesting birds. The Trust will liaise with local riders, and increase patrols of the area, with a view to stopping this.

6.2.6 Barriers to recreation

A number of barriers to positive recreational use of the reserve were identified through the 2014 public consultation. These are discussed below:

Lack of parking

Car parking in the vicinity of the reserve is restricted, with spaces for only 5-7 vehicles in each car park. The condition of the Stony Ridge car park is also a concern, with a steep descent into the car park from the A625 preventing access in icy weather and cars forced to manoeuvre on the grass verges of the car park at busy times (and occasionally getting stuck). As viewed from the A625, the entrance to Stony Ridge car park is easy to miss. A simple sign indicating the site name and presence of the car park would resolve this problem and also improve road safety by promoting timely indicating and speed adjustments.

SRWT will work with DCC, the Highways Authority and the PDNPA to improve the parking provision at Stony Ridge during the period covered by this plan. It is envisaged that this will involve better roadside signage, regarding of the car park entrance, improved surfacing and a slight increase in size, providing 2-3 more parking spaces plus a little more room for manoeuvring.

Dog waste and litter

Levels of littering on the reserve are generally low, and are dealt with during SRWT patrols of the area. Equally, dog waste is an occasional problem on the paths immediately adjacent to site entrances. However, the majority of dog walkers using the reserve are considerate and clear up after their pets.

It is not Trust policy to install litter or dog waste bins on its rural sites, due to associated management problems and on-going costs. Rather, **visitors to Blacka Moor will be encouraged to act responsibly and take their waste home for disposal**.

Topography and disabled access

The accessibility of Blacka Moor to people with mobility disabilities is limited by the nature of the terrain and, in particular, by the gradients present on site.

Access by wheelchair or mobility scooter along the bridleway leading between Stony Ridge car park and Strawberry Lee Pastures is possible for the more adventurous wheelchair user, as is access between the car park and Piper House. However, gradients and surfacing mean neither route can be properly be considered as wheelchair accessible. The only path on the reserve that can be truly be classed as wheelchair accessible at the present time is the section of bridleway leading from Shorts Lane to the stepping stones. Even this however, is of limited utility, as there is no official parking provision at Short's Lane and the route on offer is short and linear.

Little scope for the development of wheelchair accessible trails exists at Blacka Moor. Where gradients would allow a trail to be developed, it would inevitably be constrained by the provision of parking to run parallel to the reserve's boundary with the A625. The result would be a linear route blighted by traffic noise and providing limited access to the reserve 'proper.' Consequently, it is felt that such a trail would be better developed elsewhere, where scope for a longer and more fulfilling recreational visit to the South Sheffield Moors would be possible.

Despite its natural limitations, SRWT feels that more could be done at Blacka Moor to increase accessibility of the reserve to those with limited mobility, and a desire for some moderate provision was expressed during public consultation. Such improvements would be in keeping with the Graves Covenant, and would be timely given increasing interest in countryside recreation and the city's aging population. Consequently, **the Trust will install two additional benches (including a memorial bench) to provide resting points where uphill climbs coincide with good view**s **(Figure 11).** In addition, **the Trust will work with relevant groups to design and install a new seating area/viewing platform in place of the defunct compost bins at SK279 803** (**Figure 11)**. This will incorporate seating at a height that allows views over Cowsick Bog and the wider reserve and will be accessible to wheelchair users. Information about the reserve, and particularly the wildlife that may be observed from this point, will also be incorporated. The Trust will also work with the SMP to look at the provision of routes for disability chariots on the moors.

Conflict between user groups

Conflicts between the three main user groups (walkers, horse riders and mountain bikers) exist at Blacka Moor and have the potential to worsen as visitor numbers to the area increases. A summary of the main areas of conflict, determined as such by responses given through public consultation, are given below:

- **Conflicts between legitimate and illegitimate users of Rights of Way** occur when members of one user group mistakenly or intentionally use Rights of Way or desire lines where they are not permitted i.e. horse riders and mountain bikes on footpaths disturbing permitted users.
- **Conflicts between legitimate users of bridleways** occur when individuals of one user group behave in such a way that endangers or decreases the enjoyment of other users. At Blacka Moor, the commonest conflict in this category occurs when mountain bikers cycle down bridleways – in particular the Devil's Elbow or the bridleway leading from Lenny Hill to the stepping stones – at excessive speed, startling other users and risking a collision.
- **Conflicts regarding the condition of bridleways** occur because the needs of the three user groups differ. On the whole, mountain bikers prefer (and indeed, seek out) more challenging routes, incorporating twists, turns, humps, challenging gradients and rougher surfacing, as these provide a level of challenge and interest to their rides. Horse riders (and many walkers) prefer wider bridleways free of obstructions and potential trip hazards and bare, slippery or jagged bedrock can prove problematic to horses and may even constitute an impassable barrier in some circumstances.

The Trust considers that the size and nature of Blacka Moor is sufficient to allow all the legitimate pastimes listed above to be carried out concurrently and in harmony, provided that visitors to the reserve show respect and consideration to other users and the site itself. **Information will be available at site entrances to clarify the rights and responsibilities of the different user groups**, and throughout the reserve **Rights of Way will be clearly way-marked to distinguish footpaths from bridleways.** As not everybody who enters the reserve is aware of the typical Rights of Way symbols (blue and yellow arrows) these will be explained, or, alternatively, pictograms used to clarify the correct user groups for each route. **Maps showing the Rights of Way network will be available at Strawberry Lee and Stony Ridge car parks, as will copies of the Peak Bike Code**. **Information about the reserve and its Rights of Way network will also be disseminated via local user groups** such as the Ramblers, Ride Sheffield, the British Horse Society and local stables.

At points where individuals from one user group persistently disregard the rules governing site usage, the Trust will, where possible, look for engineering solutions, such as gates or barriers, to control access. Illicit jumps or tracks on the reserve will also be removed**. It will be made clear to all reserve users that only pedestrians are permitted to leave the bridleway network.**

Where conflicts arise, the Trust will work to resolve these, working with individual users, representative groups, and others (as necessary). Best practice solutions – both to design out conflict and to resolve it – will also be sought from other land managing organisations and specialist recreational groups.

Conservation grazing and recreation

Public consultation in 2014 has shown that the majority of visitors to Blacka Moor support conservation grazing on the reserve. However, it has also confirmed that, for a minority of visitors, the presence of cattle and the infrastructure (gates and fences) that supports the grazing

scheme represent a barrier to recreational enjoyment. This barrier often results from fear of the cattle themselves, or fear on behalf of dogs. Additionally, the dunging and poaching of paths by cattle, or the fencing required to contain them, are considered by some to be unsightly.

The reasons for selecting cattle grazing as an appropriate, and essential, management tool for Blacka Moor have been discussed at length in previous management plans and are recapped in this one. This management system is considered best practice for preserving conservation-grade heathland across the Peak District and is endorsed by the Sheffield Moors Masterplan and is now being widely adopted. Nevertheless, the Trust recognises its responsibility to work with users of the site to mitigate and minimise the negative effects where possible.

The practice on Blacka Moor has always been to select docile, hardy breeds of cattle for grazing. Cows with calves are not used, minimising the likelihood of defensive behaviour that could result in anxiety and/or injury to site users. Rather, young cattle 'finishing' are used. This practise will be continued, given the number of dog walkers and others using the reserve. **The Trust will also work with the grazier to habituate and manage each group of cattle to the reserve, following a comprehensive risk assessment to minimise the risk of negative encounters.**

The period that cattle are grazed on the heath will be restricted to six months of the year (April/May – October) to avoid poaching of paths during the wettest times of the year. When cattle are on site, this will be clearly indicated at all entrances to the grazing enclosure. Maps showing grazed and ungrazed areas of the reserve will be provided at Stony Ridge Road and Strawberry Lee Lane car parks and be updated seasonally.

6.2.7 Extension to access provision

As the footpath network at Blacka Moore is extensive, and walkers are permitted to walk 'off piste', there are no current plans to increase the number of footpaths on site. Instead **efforts will concentrate on ensuring that *only* walkers use footpaths and desire lines**. This will be achieved by clear rights of way information (including a map) being made available at main entrances and from the Trust website, clear way-marking of RoW at junctions (using the newer style wooden signage), and the erection of appropriate barriers on problematic paths (**Figure 11**). The Trust will also liaise with horse-riding and cycling groups to ask them to circulate information to their members when problems occur.

An extension to the bridleway network has been agreed by the Rights of Way Unit, in conjunction with the disposal of land to the east of the current reserve boundary. This extension will extend the bridleway network east from the top of the Devil's Elbow bridleway, east along a desire line and then through adjacent fields to Whitelow Lane (the exact route of this extension is not yet known, see **Figure 11**). This addition has the support of local horse-riders and the Local Access Forum as it allows riders to avoid a busy section of the A625 but has had a mixed response from walkers and naturalists, many of whom fear it will bring disturbance to a previously quiet and undisturbed part of the site, as well as resulting in the partial loss of a 'walkers only' route. The change is also opposed by Ride Sheffield, who consider it inappropriate for that part of the reserve. **Following this extension**, **the Trust will ensure that the reserve's easternmost hillside** (now proposed as a sanctuary area, see section 6.2.5)

receives careful monitoring to ensure that the incursion by mountain bikers (which has already been noted) **does not worsen.**

Cyclists currently have access to the bridleway network throughout the reserve. Requests have been made for additional downhill routes, either through the re-designation of existing footpaths as bridleways or by the creation of exclusive downhill biking trails. Given the sensitivity of Blacka Moor in ecological and archaeological terms and given the need to accommodate all user groups, the Trust does not feel this would be an appropriate development and consequently, **there are no plans to increase the number of bike routes or bridleways available on the reserve during the period covered by this management plan.**

The Trust will work with adjacent land owners and others to improve the provision, connectivity and promotion of a sustainable access network across the area for walking, horse-riding and cycling.

6.3 Community

6.3.1 Community profile

The community surrounding Blacka Moor resides in the two electoral wards of Hallam and Dore. The population contains a higher than average proportion of people between the ages of 40 to 69, and a significantly lower proportion of 20 to 29 year olds. The majority of people in the Dore and Hallam wards are ethnically Caucasian (97%/98% respectively). However, a few ethnic groups are represented in the population, the majority of whom are of Indian, Bangladeshi or Black Caribbean background. As a whole, the communities surrounding Blacka Moor enjoy higher levels of employment and car ownership, and better health, than the Sheffield average. The population is generally well-educated: 17.8% of the population of Dore, and 26.7% of the population of Hallam hold a Diploma (Sheffield average 9.7%).

Housing in the area is generally owner-occupied, with less than 30% of the population in rented accommodation. The average cost of housing is also considerably greater than the Sheffield average. Dore has a higher than average economic inactivity due in part to a large retired population. More than one quarter of the unemployed population in Hallam are classified as long-term unemployed.

Data from the last census shows that the wards of Dore and Hallam have a higher level of prosperity than the Sheffield average. As a result, the communities experience less socio-economic deprivation than the city as a whole (however, some individuals within the community may suffer high levels of deprivation). Conversely, the general affluence of the area can act as a barrier to these communities accessing external funding to support, for example, youth initiatives and greenspace regeneration projects. The high levels of affluence enjoyed by the community may not necessarily be reflected in better than average access to local services and/or facilities, as higher levels of affluence are often accompanied by higher car ownership and an increased reliance on remote facilities and services. The elderly and young in such communities therefore often become very reliant on car owners and drivers for access to facilities and services and can become less independent and more isolated as a result.

Between these communities, and the 'communities of interest' described below, there are many individuals with considerable knowledge of the reserve, its history and, in particular, the wildlife. This resource is of particular value to the on-going management of the reserve.

6.3.2 Communities of interest

Due to its location, and high environmental and ecological interest, the wider population of Sheffield and Derbyshire also uses Blacka Moor. Several distinct 'communities of interest' can be identified for the site, and are described below:

The **walking community**, as represented by organisations such as the Ramblers and other local walking groups. The majority of walkers are local, but people also travel from across the city to walk on the reserve.

The **horse-riding community is** represented by organisations such as the British Horse Society. Due in part to lack of parking for vehicles towing horse boxes, most riders are local or ride the woods in conjunction with one of the riding stables. Research into patterns of usage show the majority of horse-riders on the reserve seek out circular routes, beginning and ending at one of the local farms.

The **mountain biking community is** represented by organisations such as the Ride Sheffield. Local mountain bikers use Blacka Moor but many bikers travel from across the city/region to access the trails in the Dark Peak. This is a well-known area for mountain biking and this community is experiencing rapid growth in both the Sheffield area and nationally. Mountain bikers tend to pass through the reserve, using its bridleways as part of a longer route.

The **fell running community**. Both the **Totley Athletics Club** and the **South Yorkshire Orienteers** use Blacka Moor for training and events. Members of these organisations are amongst the most frequent users of the reserve. Such use is compatible with other recreational activities, and the reserve's ecological heritage. Large events may need to avoid sensitive areas, particularly during the bird-breeding season (March to July). Both groups keep SRWT informed of events.

The **ornithological community**, represented by the Sorby Natural History Society, the Sheffield Bird Study Group and the Peak Park Raptor Study Group, are active on Blacka and the surrounding moors, and provide a valuable source of data for reserve management.

Model glider flying has historically taken place on the pastures at Strawberry Lee; the orientation of the fields makes this an excellent site for flying under certain wind conditions. The Sheffield Society for Aeromodellers has a long association with Blacka Moor. The infrequency of use, plus the silent nature of their planes, makes their use largely compatible both with more mainstream recreational pastimes, and with the preservation of the reserve's natural heritage and a bylaw specifically allowing the flying of such planes is in force. However, to prevent disturbance to ground-nesting birds, such activity will not be permitted during the bird breeding season.

During the period covered by the this plan, SRWT will gather data about reserve users, including the areas of the city they travel from to reach Blacka Moor, to better inform community engagement work.

6.3.3 Community engagement

SRWT actively encourages people to become involved with, and take action to protect, their local green spaces. Consequently, and in line with its charitable objectives and the principles laid down in the Sheffield Moors Masterplan, the Trust has set the following aim for community engagement on the reserve:

Aim 13. Promote recreational access to the reserve to people of all ages and backgrounds, and promote public participation in its management.

Practical work days

Regular practical work days have been held at Blacka Moor since April 2001. These give volunteers – from the local community and the Trust's Land Management Team – a chance to get involved in conservation management of the reserve. These days make an important contribution to the implementation of the reserve management plan.

The number of volunteers attending the days is relatively small but regular attendance is high. These work days are advertised on site and through other Trust media.

Reserve management

A Reserve Advisory Group for Blacka Moor was formed in 2001, and met regularly until 2012. Meetings were open to the public and provided an opportunity for Trust staff, representatives of interest groups and individual site users to come together and discuss reserve management and the implementation of the current management plan.

Events and activities

A large variety of walks and events have been held at Blacka Moor over the period covered by the last plan. The majority of these have been small in scale and aimed at interested individuals from across the city, although a couple of larger family events have also been successful.

Two types of event are generally run on the reserve:

Guided walks – generally with an ecological theme, these walks last a couple of hours and are aimed at adults and older children.

Family activities – these concentrate on encouraging wild play and discovery and are suitable for families with young children (under 8).

In addition to Trust-run events, a number of external organisations run, or have run, events on Blacka Moor in consultation with the Trust.

Events at Blacka Moor are advertised in several locations: temporary posters are put up at reserve entrances; events 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. Care will be taken that events are organised and run to avoid damage to wet or otherwise sensitive locations, or disturbance to breeding birds.

Evaluation

The events and community work day programme at Blacka Moor have both proved successful, attracting people from neighbouring communities and the city as a whole to the site. This success can, in part, be attributed to the beauty and biodiversity value of the reserve, which offers much scope for an attractive and varied programme. In particular, the community workday programme allows a wide range of people to become involved in the management of the reserve, particularly those who prefer a 'hands-on' approach rather than formal meetings.

The benefits of continuing this programme are numerous. They bring a new audience to the reserve and lead to increased appreciation of its wildlife and historical value amongst an existing one. Additionally, it showcases the work of the Trust and offers interested individuals the opportunity to learn more about its work – either through membership or by signing up for the reserve mailing list or the Trust's e-newsletter. In the case of community work days, the programme has also contributed substantially to the delivery of works on site.

More effort should be made to increase participation in the reserve's community work day programme, perhaps through improved communication with, and provision of publicity to, local interest groups. However, it should be borne in mind that the amount of practical work that can realistically be carried out by volunteers is limited, and that heavy, repetitive, specialist or potentially hazardous works should not be delivered in this way. Community workdays should therefore not be viewed as a replacement for professional contractors nor as a delivery mechanism for large projects.

Although large in size and varied in nature, the ecological sensitivity, topography and restricted parking availability of the reserve limit its suitability as a location for bigger events. In particular, the Trust should avoid attracting large numbers of cars to the car park at Stony Ridge, as this can lead to unsafe 'overflow' parking on the A625. Smaller walks and bushcraft type events are therefore preferable to the larger family-type events run on reserves such as Greno Woods.

The one aspect of community engagement which did not function as well as envisaged during the period to 2014 is that of public engagement in reserve management through the Reserve Advisory Group. Originally set up as a consultation and advice mechanism and not a decision making body, the group at times became deadlocked with participants unable to reach a common viewpoint, making participation both frustrating and unproductive. An atmosphere of disagreement can feel unwelcoming to newcomers and was even intimidating to some regular participants. Additionally, the format of regular evening meetings probably contributed to them not being representative of the full range of reserves users and different interest groups. For example, participation from younger users was low or often absent.

Feedback from the consultation carried out in 2014 further confirmed that the Reserve Advisory Group approach was not fit for purpose. However, there exists, of course, a clear need for some mechanism through which members of the public and representatives of interest groups can constructively engage with the Trust, learn about planned management operations, contribute their knowledge of the reserve and influence reserve management. However, given the issues highlighted above, the feedback from the consultation and the breadth of potential user groups and interested bodies potentially involved, no single mechanism could successfully achieve all of this. Consequently, for this Management Plan the following engagement mechanisms are proposed:

- **The Blacka Moor section of the SRWT website will be redesigned and extended** to provide more easily accessible, comprehensive and up to date information about the reserve. Documents of interest, such as the archaeological and ecological survey reports and the Reserve Management Plan will be made available to download. A link to the Wild Sheffield App will also be actively promoted, along with contact details for the Reserve Manager. In short, the website will become a first port of call for anyone wanting information about Blacka Moor and current operations, events, or contact details for the Reserve Manager, thus providing members of the public and organisations easier and fuller access to more detailed information than has been available to date. This will be actively promoted to the public.
- **A quarterly e-newsletter, comprising a summary (with maps) of up and coming management works, dates for related meetings, upcoming events and other reserve news is produced for the first year of the plan** (April 2015 to March 2016), and circulated to all interested parties. After this initial period regular updates on Blacka Moor will be included in the Trust's monthly e-newsletter, which is circulated to anyone who provides the Trust with an email address, regardless of whether or not they are a member of the Trust.
- **A Blacka Moor Conservation Group.** Meeting 3-4 times a year, this group will be formed and constituted specifically to oversee, monitor and actively assist with the delivery of *all* aspects of this management plan. Membership of the group will be by invitation or application and meetings will be chaired by an independent third party (not SRWT).
- **A Blacka Moor Users' Forum.** Held twice a year, either on site or at a suitable indoor venue, this Forum will provide opportunities for all those with an interest in Blacka Moor to meet, learn more about what is happening on the reserve, ask questions and input their ideas, as well as providing the Trust with the opportunity to listen to a wide range of reserve users' views and update people on the delivery of the management plan. The Forum will be open to all, with guest speakers, local experts and group representatives invited to contribute to specific topics as appropriate.

6.4 Interpretation and signage

A desire for greater on-site information on, and interpretation of, Blacka Moors ecological and historical wealth was clearly shown during public consultations in 2014. However, consultation responses also showed a concern that the reserve should not become cluttered with interpretive panels or signage, thereby detracting from a feeling of 'wilderness'.

The reserve does not have a main entrance as such, but those at Strawberry Lee Lane and, in particular, Stony Ridge Road car parks are the most frequently used. The Dore Village Society has sponsored the creation and siting of two stone plaques giving the name of the reserve and information about JG Graves' historical bequest at two entrances to the reserve.

Information about the management of the reserve, and advertisements for up and coming events, is currently displayed at both car parks, at the entrances to Strawberry Lee Pastures and also at Piper House. This information takes the form of laminated A4 posters either stapled to gates and posts, or, more recently, held in aluminium clip frames. This gives these entrances a rather untidy appearance, limits the amount of information available to visitors and has the additional disadvantage that the information displayed is easy to tamper with.

In response to this **SRWT will install notice boards in both car parks,** allowing the amount of information presented to be increased, but also aggregated, thus making it clear to visitors where to look for information pertaining to the site. Information pertaining to events and management of the site will be restricted to these boards (but will also be available from the Trust website).

In addition to this, **reminder plaques, giving information about access control during the bird breeding season will be displayed at each entrance to the heathland enclosure, and at the entrances to Strawberry Lee Pastures. Information on whether grazing animals are present will also be included here.**

Additionally, **SRWT will develop and install up to three interpretation panels during the period covered by this plan**. All will be placed at the periphery of the site: two at Stony Ridge and Strawberry Lee Lane car park (in line with Sheffield Moors Masterplan policy). The third is contingent on the design for the seating area proposed for **SK279 803** (see section 6.2.5) and will be installed in line with this.

This approach is consistent with that outlined in the Sheffield Moors Masterplan, which supports the provision of visitor information and interpretative material at site entrances, rather than within the sites themselves.

6.5 Outdoor learning

Since 2013 SRWT has been working to develop and deliver outdoor learning sessions, working with primary schools, secondary schools and youth groups. Ecclesall and Greno Woods are the focal sites for these sessions and uptake by schools and youth groups has been good, although transport costs can be prohibitive.

In previous years SRWT has facilitated a number of educational visits to the reserve. Blacka Moor has the potential to be used by all Key Stages (1-4), as well as early years groups and higher education (including A-Level), for a wide-range of cross-curricular activities. The reserve is particularly well-placed to provide opportunities for the study of habitats and other geography-related topics. However, the sensitive nature of the site, its elevation and exposure and a lack of coach parking limit its overall suitability. Notwithstanding, Blacka Moor has many positive educational features. The large open areas make it easy to talk to a whole class of children and will enable the group to spread out for activities while still being in sight of the leader. If activities are planned well and there is appropriate supervision, there is no reason why children should not gain an excellent learning experience, although more accessible sites may be preferred for generic sessions.

Care will be taken that educational activities are organised and run to avoid damage to wet or otherwise sensitive locations, or disturbance to breeding birds. Future opportunities to allow coach parking adjacent to the reserve will be explored if and when they become available.

7.0 Economic Context

Blacka Moor has received considerable investment over the past 13 year period. The majority of this investment has been in infrastructure (drystone walls repair, fencing, bridleway

resurfacing) and heathland management works, including scrub and bracken control. Expenditure on ecological surveys and monitoring has also been considerable.

In order that such investment can continue, SRWT has adopted the following aim:

Aim. 14. Continue to develop ongoing sources of grant aid and other income to support the management of the nature reserve.

The economic opportunities offered by the reserve are considered below.

7.1 Past and present grant funding

A grant from the Heritage Lottery Fund in April 2001 funded the development of the reserves project, under which Blacka Moor was one of nine SCC sites across Sheffield transferred to the Trust on a 30 year lease. A further four years funding from the Lottery then provided the chief source of funding for the implementation of the first Blacka management plan.

As a Site of Special Scientific Interest, Blacka Moor received funding from English Nature's Reserve Enhancement Scheme. This covered some costs for the installation of fencing between the heathland and the moorland.

Natural England's Biodiversity Action Fund also funded capital works; mainly bracken control between 2006 and 2008.

SITA funded habitat works and some access works on the reserve between 2006 and 2008.

The Veolia Environmental Trust funded a two-year project to involve and engage 16 to 25 year olds in Blacka Moor, running from October 2007 to October 2009.

Dark Peak Nature Improvement Area funding has been received in recent years to fund rhododendron clearance, scrub control works and bracken control works on the reserve during the period 2012 to 2014.

Viridor Credits funding was received in 2014 and will contribute towards the repair of drystone walls on the reserve.

The heathland compartment and Strawberry Lee Pastures were put under Countryside Stewardship Scheme in 2002, transferring into Higher Level Stewardship in 2012. This grant includes an area payment and also contributes to individual pieces of capital work such as bracken spraying and drystone walling. The work that has been funded through these schemes has contributed significantly to the restoration of these habitats, and will be used to continue progress towards 'favourable' status, in relation to the site's designation as a Site of Special Scientific Interest.

7.2 Farming and forestry

Blacka Moor holds little potential for productive land use other than that associated with grazing livestock, which are viewed primarily as a management tool rather than a source of income. Strawberry Lee Pastures are let for sheep grazing, producing an annual income of £2,000, with a rent of £1,000 pa payable to SCC. The moorland is leased for cattle grazing,

though the income generated is low, reflecting the very low grazing levels. The grazier holds the Single Farm Payment entitlements for the reserve.

The site's woodland is certified as being of UK Woodland Assurance Standard and is in receipt of Woodland Grants Scheme funding covering the period 2011/12 to 2015/16 which contributes to the woodland management programme. Blacka's woodlands hold little forestry-grade timber and what little is present is not commercially viable as a crop due to the difficulties and costs associated with extraction. Commercial forestry operations are neither suited to the ecological sensitivity of the reserve, nor to its vision statement, and will not be attempted. Woodland management works will therefore only be carried out where necessary for safety or for reasons of habitat improvement.

7.3 Membership recruitment

Blacka Moor is the Trust's largest and best known reserve. As such, it has the potential to raise the Trust's profile and to showcase its work. Positive management of the reserve has contributed to rising Trust membership. This membership is vital to the Trust, demonstrating public support for its work, as well as providing a city-wide campaigning resource and a source of funding.

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 at Blacka, if perceived positively by members and the public, can support membership recruitment locally and across the city. Conversely however, any negative publicity or public perception about management of the reserve could work to hinder the same. Consequently, the work carried out at Blacka Moor must not only be of the highest standard, but must be communicated well to the general public in order to have a positive effect on membership.

SRWT will continue to publicise its work on Blacka Moor, and the rationale behind it, using both local and city-wide media. Equally, **the Trust will continue to promote and support public engagement with the work on the reserve.**

When recruitment campaigns have been targeted at communities neighbouring the Trust's reserves, these have met with a large degree of success. There is great potential to recruit members in Whirlow, Millhouses, Dore and Totley, and through events held on site.

7.4 Employment and training

Blacka Moor currently provides employment or part-employment to two people directly (through the Trust), and also contributes indirectly to many others e.g. forestry contractors and 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 reserve are relatively low, whilst academic achievement is generally above the city's average. This suggests that local training and employment initiatives are not as much a priority for the communities immediately adjacent to Blacka Moor as for other reserves. However, as a site for Sheffield, and in a regional

context, the reserve provides a variety of opportunities for skills development, in terms of practical conservation techniques, habitat management and ecological identification. To date, the Trust's practical conservation work teams, which include trainees and volunteers, work regularly on site. A number of guided walks have also provided opportunities for people across the city to acquire new knowledge.

The communities of interest surrounding the reserve have a tradition of voluntary work and participation in local affairs. Several groups, in particular the Ramblers Association, have a long history of working on Blacka Moor and other sites in the area. Ride Sheffield carry out regular work days on the reserve, and are particularly concerned with the maintenance of the Devil's Elbow bridleway. A regular volunteer base has been established, and provides regular opportunities for people to contribute practically to the management of the reserve. Skill levels within this volunteer force are high, with many people having a wide experience and knowledge of environmental management.

7.5 Marketing

As an organisation, SRWT's vision is the creation of "a Living Landscape – an amazing, green landscape for the wildlife and people of Sheffield and Rotherham – which is understood, enjoyed and cared for by local people and organisations".

As a result of its work, the Trust wants more local people to understand, enjoy, value and be inspired by local nature and wildlife. To this end, it is critical that SRWT communicated its aims and objectives, and planned management activities on the nature reserves they manage.

The aim of SRWT marketing activities is to encourage more people to visit wildlife sites and green spaces regularly, for leisure, interest, exercise, health and wellbeing. Consequently, at Blacka Moor the Trust works to:

Aim 15. Raise public awareness of the reserve's fauna, flora and archaeology, and increase understanding of and support for management works.

7.5.1 On-site presence

At the current time, welcome signage, in the form of the Trust's standard wooden 'Welcome to Blacka Moor' sign, is present at three of the entrances to the reserve. Apart from this signage, the boundaries of the reserve are not clearly defined and many visitors to the area enter and leave Blacka Moor without knowing the name of the site or realising they are moving on and off a Trust nature reserve.

SRWT will work to raise its on-site presence across Blacka Moor during the period covered by this plan. As well as the measures outlined in section 6.4 above, this will be achieved by the installation of appropriately styled plaques at all site entrances, giving the reserve's name, its SSSI status and contact information for the Trust.

Finally, the Trust will ensure that it utilises the opportunities offered by events and guided walks to raise its profile and bring Blacka Moor to a new audience.

7.5.2 Printed materials

An information leaflet about Blacka Moor is available in paper form. It includes a map of the site, details about access and wildlife information. The leaflet is available from SRWT headquarters, and is distributed through Trust-run events. Blacka Moor is also included in the SRWT Nature Reserves booklet, which gives details on where the site is located and how it can be reached. The reserve is also featured in the Trust's Living Landscape brochure and several national Royal Society of Wildlife Trust publications.

News and articles about the reserve are printed in the Trust's 'Kingfisher' magazine, which is sent out to members three times a year. **News releases will be sent to the Sheffield Star and the Sheffield Telegraph to mark key events during the period covered by this plan.**

SRWT will update the reserve leaflet, and release it in downloadable format, during the period covered by this plan.

7.5.3 Website

Blacka Moor has a page on the SRWT website. This gives general information about the reserve and access to electronic documents. http://www.wildsheffield.com/nature-reserves/local-reserves/blacka-moor

The events programme for Blacka Moor is also advertised on the Trust website.

The Blacka pages of the website will be updated at the beginning of the new management planning period and the new plan, updated leaflet and reserve map will be provided in downloadable format. **Social media will also be used to communicate news of the reserve**, as appropriate.

Links between the Trust website and that of key local and community organisation, such as the Totley Athletics Club and Ride Sheffield should be forged with the permission of these organisations.

Two self-guided walks around Blacka Moor will be available as part of the 'Wild Sheffield' smart phone app, downloadable via the Trust's website in spring 2015.

7.5.4 Events

Events are dealt with under the 6.3.3 Community Engagement.

8.0 Management Aims and Objectives

Tabulated below are the management aims contained within this plan, together with the objectives intended to deliver them. These will provide the basis for the work programme which SRWT will carry out over the period 2015-2023.

The Trust considers all these objectives to be important, and anticipates their completion during the period covered by this plan. Nevertheless, the work contained here is aspirational, and funding sufficient to resource all the listed works has not yet been secured. Consequently, objectives are classified as being of HIGH, MEDIUM or LOW priority, to aid prioritisation of resources.

High priority objectives are those whose delivery in the period covered by this plan is fundamental to the realisation of their associated aim, and/or those where failure to achieve them would result in active damage to the reserve's biodiversity, archaeology, recreational or community interest. Conversely, objectives given a LOW priority rating are those which, although they provide additional value, are not critical to the successful management of the reserve. Objectives classified as being of MEDIUM priority fall, as would be expected, somewhere between the two.

Cross references to the sections of the plan which support these aims and objectives are given in the fourth column of the table, whilst the fifth column cross references them against the Sheffield Moors Masterplan, under which this plan sits.

Please note that the timing and costing of works is not contained here, but will be contained in Section 9.0 of the finished plan.

*Sheffield Moors Masterplan

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
BIODIVERSITY (Aims 1-9)				

WOODLAND **1. Return woodland areas of the reserve (excepting wet woodland) to upland oak/birch woodland by 2100.**	**1.1 Gradually reduce the proportion of non-native broadleaf trees on the reserve, whilst creating opportunities for natural regeneration of native species.** • Remove sapling and seedling sycamore from central area of in compartment 592 (Strawberry Lee Plantation). • Prioritise the total removal of sycamore and other non-native tree species from woodland in compartments 595, 596a (within our existing boundary only), 596b and 597 (south of Blacka Dike only) returning them to upland oak woodland. • Undertake thinning of roadside sycamore in compartment 592 (Strawberry Lee Plantation) filling gaps with oak saplings .	HIGH HIGH MEDIUM	***Sec 4.2.1*** **Figure 13**	**Theme 3** *Sustainable land management* **Outcome 3.3** *Management to achieve outstanding biodiversity and protect geo-diversity*
	1.2 Control further encroachment of rhododendron and other non-native species into native woodland. • Remove rhododendron from southern and eastern boundaries of Strawberry Lee Plantation and commence removal operations to the north and west but retaining enough wind cover. • Remove rhododendron elsewhere on the reserve as encountered. • Remove variegated yellow archangel as encountered.	HIGH HIGH HIGH	***Sec 4.2.1*** **Figure 13**	**Theme 3** **Outcome 3.3**

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
	1.3 Encourage and maintain the natural regeneration of birch and oak woodland. • Promote the regeneration of native species in Strawberry Lee Plantation through planting or protection as necessary	HIGH	***Sec 4.2.1; 4.3.1; 4.3.3*** **Figure 13**	**Theme 3 Outcome 3.3**
	1.4 Retain a component of conifer woodland in both plantations, to enhance the biodiversity and to support characteristic avifauna of conifers including Coal Tit, Goldcrest, , Siskin, and Crossbill. • There are no specific works associated, other than this objective is taken into consideration when planning for thinning and felling works.		***Sec 4.2.1; 4.3.1; 4.3.3*** **Figure 13**	**Theme 3 Outcome 3.3**
2.0 Encourage greater structural diversity amongst the reserve's woodlands and improve them for wildlife.	**2.1 Retain and increase the reserve's stock deadwood and veteran trees.** • When undertaking safety works, retain timber in large pieces & where safe, retain deadwood and snags	HIGH	***Sec 4.2.1; 4.3.1; 4.3.3*** **Figure 13**	**Theme 3 Outcome 3.3**

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
2.0 Cont	• Ring bark 6 selected trees when removing sycamore and other non-native species in in compartments 595, 596 or 597. • Allow the natural deterioration of conifers and other tree species through the woodland. • Retain mature beech pollards in Blacka Plantation and veteran trees across the reserve • Retain the best mature trees from which the next generation of veteran trees will be recruited • Undertake tree safety surveys in line with Trust policy, to identify, assess and make safe dangerous trees.	HIGH HIGH HIGH HIGH HIGH		
	2.2 Enhance structural diversity through the creation of sheltered sunny glades. • Pull bracken and remove encroaching scrub from glade at the interface of compartments 593c and 593d at SK 284 809.	LOW	***Sec 4.2.1; 4.3.1; 4.3.3*** **Figure 13**	**Theme 3 Outcome 3.3**
	2.3 Support reestablishment of breeding territories for selected species of conservation concern. • Carry out woodland thinning works and create nesting stumps for willow tit on Allen Sike. • Install suitable bird boxes for Redstarts in and adjacent to Strawberry Lee Plantation	HIGH MEDIUM	***Sec 4.3.3***	**Theme 3 Outcome 3.3**

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
3.0 Protect and conserve areas of wet woodlands	**3.1 Protect wet woodland areas from invasion by non-native species.** • Selectively fell sycamore and other non-native tree species from wet woodland and stream-sides in compartments 597 and extract using heavy horses. • Monitor wet woodland for colonisation by Japanese Knotweed and Indian Balsam, and remove as required.	HIGH HIGH	***Sec 4.2.1;*** **Figure 13**	**Theme 3 Outcome 3.3**
HEATHLAND **4.0 Retain a rich but dynamic heathland mosaic on the reserve and diversify habitats at the microhabitat level.**	**4.1 Control the spread of bracken, prioritising areas that threaten heathland flora, using appropriate methods for each area.** • Continue to cut bracken in compartment 1a III and compartment 8a. • Extend area of bracken cutting beneath Strawberry Lee Pastures south from compartment 8b to the environs of the stone circle at SK 2870 07991 • Apply selective herbicide to bracken in compartments 4b • Control bracken in compartment 3a (Lenny Hill) by pulling or spraying (& remove arisings as necessary). • Control development of bracken following treatment through by conservation grazing.	HIGH HIGH HIGH MEDIUM HIGH	***Sec 4.2.2; 4.3.1, 4.3.2; 4.2.3; 4.3.4 6.2.4*** **Figure 14**	**Theme 3 Outcome 3.3**

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
	4.1 CONT. • Encourage cattle to break up bracken litter (and consequently encourage establishment of heather/bilberry/grassland) e.g. through strategic placing of mineral licks.	HIGH		
	4.2 Control the increase of regenerating woodland and scrub on the heathland. • Reduce tree and scrub cover to <25%, whilst retaining scattered scrub and a woodland edge ecotone, in cpt 1a. • Reduce scrub by 50% in cpt 4a, 4b and 2b whilst retaining scattered trees / scrub of mixed ages for song posts (for tree pipit) and preserving the woodland ecotone. • Remove birch from northwestern slope of Bole Hill to prevent encroachment onto the Scheduled Monument and heathland habitat in compartment 5b.	HIGH HIGH HIGH	***Sec 4.2.2; 4.3.1, 4.3.2; 4.2.3; 4.3.4 6.2.4*** **Figure 14**	**Theme 3 Outcome 3.3**

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
	4.2 CONT. • Increase size and maintain open woodland and glades through the removal of birch and rowan scrub and trees to the lower slopes of Bole Hill (northern slope) in compartment 5a • Control further encroachment and development of scrub across the heathland compartment by conservation grazing • Scallop woodland edge adjacent to the bridleway in Compartment 7b. • Remove rhododendron from throughout the heathland compartments as required. • Reduce scrub cover on northern part of Lenny Hill	MEDIUM HIGH MEDIUM HIGH HIGH		
	4.3 Conserve and enhance the heathland mosaic. • Graze the heathland compartment for around 26 weeks per year from May to October, using cattle of a suitably docile and hardy breed at a rate of between 0.1LSU/ha and 0.25LSU/ha (stocking densities to be adjusted annually to ensure a varied sward height and structure in line with conservation objectives) .	HIGH	***Sec 4.2.2; 4.3.1, 4.3.2; 4.2.3; 4.3.4 6.2.4*** **Figure 14**	**Theme 3 Outcome 3.3 and 3.4** *Appropriate grazing to achieve conservation objectives*

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
	4.3 CONT. • Draw up and implement a Fire Management Plan • Liaise with Peak District National Park Authority over fire prevention and high-risk periods (providing on-site information when required).	HIGH MEDIUM		
WETLAND **5.0 Conserve and protect the reserve's wetland habitats.**	**5.1 Retain and conserve the floral diversity of Cowsick Bog** • Maintain dams to ensure sphagnum and other wetland/mire species are conserved and their cover increased. • Manage cattle grazing to promote the opening up of dense rush and litter and graze *Molinia*, thereby facilitating the colonisation of smaller sedges & other mire species. • Install additional dam to slow water flow through the mire at SK 2815 8040	HIGH HIGH LOW	***Sec 4.2.3; 4.3.1; 4.3.3***	**Theme 3 Outcome 3.3 and 3.4**

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
	5.2 Protect the reserve's streamsides from invasion by non-native species. • Selectively fell sycamore and other non-native species from streamsides and areas of wet woodland in cpt 597. • Monitor wet woodland and streamside areas for colonisation by Japanese Knotweed and Indian Balsam • Advocate for a full Balsam/Knotweed survey of Old Hay Brook (downstream of the reserve) and a subsequent control programme.	HIGH HIGH LOW	***Sec 4.2.3; 4.3.1; 4.3.3***	**Theme 3 Outcome 3.3**
	5.3 Manage wetland areas of the in-bye to benefit waders. • Increase opportunities for feeding waders through rush cutting. • Increase opportunities for feeding waders through the creation of a large scrape. • (Humanely) deter foxes from breeding/creating earths on the in-bye.	HIGH MEDIUM MEDIUM	***Sec 4.2.3; 4.3.1; 4.3.3***	**Theme 3 Outcome 3.3 and 3.4**

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
GRASSLAND **6.0 Conserve, protect and enhance the reserve's grassland habitats for wildlife.**	**6.1 Conserve and enhance the grassland habitats on Strawberry Lee Pastures in-bye land.** • Increase stocking rates to achieve desired sward length and composition to enhance breeding upland bird assemblages and favour fungal communities, in line with guidance from Natural England and SSSI condition assessment data. • Introduce an element of cattle grazing as part of stock management on the in-bye land, to reduce the number of grass tussocks to promote a greater diversity of vegetation structure. • Enclose a field in the pastures by restoring historic boundaries (drystone walls) and convert to hay meadow habitat to favour seed-eating birds	HIGH MEDIUM LOW	***Sec 4.2.4; 4.3.1; 4.3.3*** **FIGURE 10**	**Theme 3 Outcome 3.3 and 3.4**
	6.2 Protect the areas of calcareous grassland found within the nature reserve (within the heathland compartment). • Conserve and enhance areas of calcareous grassland through the periodic removal of scrub and some bramble, creating scalloped edges at the woodland/grassland interface along the footpath parallel to Hathersage Road. • Remove ground elder where it occurs to prevent spread	MEDIUM MEDIUM	***Sec 4.2.4;***	**Theme 3 Outcome 3.3 and 3.4**

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
WILDLIFE **7.0 Minimise disturbance to wildlife from recreational activity, and safeguard the more remote parts of the reserve for quiet enjoyment by walkers and other pedestrians.**	**7.1 Ensure recreational users of the reserve are aware of and comply with the laws governing access to the reserve in the bird breeding season.** • Provide clear information regarding the bird breeding season, the negative effects of disturbance and legal restrictions to access with dogs, to site users, to encourage compliance with the law.	HIGH	***Sec 4.3.3; 6.2.5***	**Theme 3** **Outcome 3.3** **Theme 2** *An accessible landscape* **Outcome 2.3b** *Joint working between the land managers… linked closely to site management plan*
	7.2 Restrict recreational pressure on the remoter areas of the reserve. • Retain the quietest areas of the reserve as sanctuary areas, with access permitted for pedestrians only. • Monitor the use of these areas to ensure disturbance is kept to a minimum.	MEDIUM MEDIUM	***Sec 6.2.5*** **Figure 9**	**Theme 3** **Outcome 3.3** **Theme 2** **Outcome 2.3b**

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
8.0 Survey and monitor the biodiversity of Blacka Moor in sufficient detail to evaluate progress towards aims 1-7	**8.1 Detect changes in the extent and species composition of the reserve's habitats.** • Carry out an extended Phase 1 habitat survey of the reserve in 2015 and 2020.	HIGH	***Sec 4.2.1; 4.2.2; 4.2.3; 4.2.4; 4.4***	**Theme 3 Outcome 3.3**
	• Carry out condition assessments on the reserve's heathland, mire and grassland communities in line with national guidance.	HIGH		
	• Monitor regeneration rates of native tree species across Blacka and Strawberry Lee Plantations using deer exclosures and control plots.	HIGH		
	• Monitor rates of browsing damage across Blacka and Strawberry Lee Plantations	HIGH		
	• Collect and collate species data to support an analysis of habitat quality.	HIGH		
	• Calculate and map percentage bracken and scrub cover in the heathland compartment (using aerial photographs supplemented by ground trothing as necessary) in 2015, 2018 and 2022.	HIGH		

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
	8.1 CONT. • To set up a visual monitoring programme using fixed point photography. .	MEDIUM		
	8.2 To collect species data to support an analysis of habitat quality. • To collect data on breeding winchat and stonechat territories in 2015 to inform bracken and scrub control works. • Repeat bog asphodel total spike count in 2017 and 2022 • To carry out a fungal survey of Strawberry Lee Pastures in 2016 and 2021. • Carry out a Common Bird Census on Blacka Moor in 2019 • Assist the Sheffield Moors Partnership in monitoring the red deer population across Blacka Moor and the South Sheffield Moors. • To engage with naturalists and recorders of specialist groups to increase knowledge of the reserve's wildlife.	HIGH HIGH HIGH HIGH MEDIUM HIGH	***Sec 4.2.1; 4.2.3; 4.2.4; 4.3.3; 4.4***	**Theme 3 Outcome 3.3**

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
	8.3 Use the data gathered to respond to changes in habitat extent or quality to ensure habitat and species aims are met. • Periodically collate and assess habitat, species and management data on a triannual basis and amend the reserve's work programme accordingly. • To work with other conservation and land management bodies to analyse and, where appropriate, respond to local, regional and national changes in the population and distribution of species. • Seek guidance and advice from experts in specialist areas, as required to ensure best management practice.	HIGH MEDIUM HIGH	***Sec 4.4***	**Theme 3** **Outcome 3.3**
9.0 Ensure that Blacka Moor's management links to local, regional and national plans for habitat and species recovery, recreation and landscape scale conservation.	**9.1 Share information and data about the reserve amongst local and national conservation organisations and with local experts.** • Ensure biological records received by the Trust are shared with SCC Ecology Unit Biological Records Centre, the Sheffield Bird Study Group and with members of the Sheffield Moors Partnership as appropriate. • Ensure (anonymised) visitor survey data is shared with the Sheffield Moors Partnership, the PDNPA and other user groups for input into local and regional recreational strategies and facilities development.	HIGH HIGH	***Sec 4.4***	**Theme 3** **Outcome 3.3** **Theme 5** *Delivering the masterplan* **Outcome 5.3** *Management is informed by and demonstrates best practice.*

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
	9.1 CONT. • Liaise and engage with the Sheffield Moors Partnership to ensure implementation of the Masterplan • Work with SMP to consider routes for disability chariots across the South Sheffield Moors	HIGH MEDIUM		
INFRASTRUCTURE (Aim 10)				
10.0. Maintain and restore the reserve's boundaries and access infrastructure.	**10.1 Maintain and rebuild boundaries.** • Maintain stock-proof drystone walls and fencing on all grazing enclosure boundaries as required. • Liaise with SCC Highways Department to advocate for the repair of the wetstone wall bounding Blacka Plantation • Maintain fence line between heathland and woodland compartments, removing bracken overgrowth and fallen branches. • Protect boundary walls from damage by deer (and vice versa), as required. • Complete the restoration of the drystone wall between the heathland compartment and Strawberry Lee Pastures	HIGH LOW HIGH MEDIUM MEDIUM	***Sec 5.1*** **Figure 11**	**Theme 3 Outcome 3.3**

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
	10.2 Ensure that improvements to reserve infrastructure are in keeping with the character of the reserve and complement the landscape and surroundings. • Retain the woodland/moorland fringe to obscure the line of the new fence line between the woodlands and heathland • Remove the defunct compost bins adjacent to Strawberry Lee Plantation. • Remove metal waymarker and advisory signs from interior of the reserve and replace with wooden finger posts. • Remove the 'horses prohibited' signs from the reserve. • Improve the consistency and appearance of signage by the installation of notice boards in Stony Ridge and Strawberry Lee Lane car parks.	HIGH LOW MEDIUM MEDIUM HIGH	***Sec 5.0; 6.2.6; 6.4*** **Figure 11**	**Theme 5** **Outcome 5.1** *Wild and open nature of landscape is protected.*
	10.3 Work with the Highway Authority, and other partners to maintain the reserve's Rights of Way network (and major desire lines) • Improve flagging of desire line running adjacent to Cowsick Bog • Replace sleeper bridge in Strawberry Lee Plantation	MEDIUM MEDIUM	***Sec 5.2; 5.3*** **Figure 5** **Figure 11**	**Theme 2** **Outcome 2.3b**

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
	10.3 CONT.			
	• Install revetment to retain bridleway width (Lenny Hill to Stepping Stones section).	MEDIUM		
	• Install additional waymarker posts at junctions between footpaths and bridleways.	HIGH		
	• Install mounting blocks at interface between the heathland and woodland compartments at Piper House	MEDIUM		
	• Replace all stiles on RoW footpaths with gates to improve accessibility.	MEDIUM		
	• Replace bridleway latches with favoured 'trombone' style, as old latches fail.	MEDIUM		
	• Install suitable access controls on the footpath across Lenny Hill to prevent egress by mountain bikes.	MEDIUM		
	• Work with SCC Public Rights of Way Unit, and Ride Sheffield, to ensure maintenance of all cross drains on bridleways to prevent erosion.	HIGH		
	• Carry out an annual programme of work to clear back encroaching vegetation from bridleways and footpaths.	HIGH		
	• Monitor the condition of the reserve's access network and make spot repairs as necessary.	HIGH		

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
	10.4 Increase the accessibility of the reserve to the public. • Provide clear information about the public rights network, including the location of the different types of rights of way and information about who may use these at main entrances and on the Trust's website • Install 2 new benches on uphill sections of main walking routes • Work with appropriate user groups and individuals to create a wheelchair accessible seating area with views over Cowsick Bog. • Work with DCC and the PDNPA to (slightly) enlarge and repair the Stony Ridge car park	HIGH MEDIUM LOW MEDIUM	***Sec 6.2.3; 6.2.5; 6.2.6*** **Figure 11**	**Theme 2 Outcome 2.3b**

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
LANDSCAPE AND ARCHAEOLOGY (Aims 11-12)				
LANDSCAPE **11.0** Protect and conserve the open views across the nature reserve.	**11.1 Retain the mix of habitats - open heathland, copses, wooded cloughs, scrub, mire, scattered trees, woodland, wetland, and grassland on the reserve.** See Biodiversity Aims above • Remove birch/scrub to preserve key vistas (in consultation with reserve users).	MEDIUM	***Sec 4.2; 6.2.4***	**Theme 5** **Outcome 5.1**
ARCHAEOLOGY **12.0 Protect, preserve, research and communicate the reserve's archaeological and historical interest.**	**12.1 Conserve and protect archaeological features and repair if appropriate.** • Liaise with Peak Park Cultural Heritage Team when planning & delivering works requiring the use of heavy machinery, or ground disturbance. • Monitor condition of footpath and desire lines across Bole Hill SAM, and take action to prevent further widening & erosion, or scrub invasion, as necessary.	HIGH HIGH	***Sec 6.1***	**Theme 3** **Outcome 3.2** *Protecting and celebrating the rich historic environment*

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
	12.2 Increase both public and professional understanding of the reserve's archaeological resource through the appropriate provision of information, research, volunteering opportunities and interpretation. • Communicate the interest and significance of the archaeological features through on-site interpretation • Design and carry out a small excavation on Strawberry Lee bridleway at SK 2865 7990 with guidance from the PDNPA archaeology service.	MEDIUM LOW	***Sec 6.1; 6.3.3; 6.4***	**Theme 3** **Outcome 3.2**
COMMUNITY ENGAGEMENT (Aim 13)				
COMMUNITY ENGAGEMENT **13.0 Promote recreational access to the reserve to people of all ages and backgrounds, and promote public participation in its management.**	**13.1 Provide a variety of avenues for those with an interest in the reserve to learn more about, and participate in, its management.** • Run regular practical workdays involving volunteers on the reserve.	HIGH	***Sec 6.3.3; 7.4***	**Theme 1** *Being Involved* **Outcome 1.1** *People and community involvement is at the heart of all activities* **Outcome 1.3** *Inspiring activities and engagement*

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
	13.1 CONT. • Redesign and extend the Blacka Moor section of the SRWT website to provide more easily accessible, comprehensive and up to date information about the reserve. • Produce a quarterly e-newsletter, comprising a summary (with maps) of up and coming management works, dates for related meetings, upcoming events and other reserve news during the first year of the plan • Form a Blacka Moor Users' Forum, meeting twice a year, to provide the general public with an opportunity to raise and discuss any issue relating to the use and management of the reserve and also to provide the Trust with the opportunity to listen to a wide range of reserve users' views and update people on the delivery of the management plan. • Form a Blacka Moor Conservation Group, meeting 3-4 times a year, and comprising representatives of special interest groups, individuals and Wildlife Trust supporters working collaboratively with the Trust to deliver the Blacka Moor Management Plan (once finalised and adopted).	HIGH HIGH HIGH HIGH		

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
	13.2 Encourage and support people of all ages and backgrounds to use and enjoy the reserve.		***Sec 6.3.3; 6.2.6; 6.5***	**Theme 1 Outcome 1.3**
	• Run a varied programme of public events on the reserve, aimed at those with an interest in natural history, or local history, and families.	HIGH		
	• Liaise with local organisations and those representing communities of interest to promote the reserve to their members	MEDIUM		
	• Promote walking on the reserve through the Wild Sheffield app	MEDIUM		
	• Secure funding to increase participation in, and enjoyment of the reserve by under-represented sections of the community.	LOW		
	• Support school visits to the reserve through the Trust's outdoor learning service.	MEDIUM		
	13.3 Monitor, record and respond where possible to the opinions, behaviour, use and perceptions of reserve users.		***Sec 6.3.3; 6.2.2; 6.2.5; 6.2.6***	**Theme 1 Outcome 1.1** **Theme 2 Outcome 2.3b**
	• Log incidents in relation to inappropriate use of the reserve as observed or reported.	HIGH		
	• Encourage positive and appropriate use of the reserve through communication through meetings & publicity materials.	HIGH		

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
	13.3 CONT. • Work collaboratively and cooperatively with different user groups, individuals and statutory agencies to overcome conflicts (perceived, projected or actual) over recreational use of the reserve.	MEDIUM		
ECONOMIC, COMMUNICATION AND MARKETING (Aims 14-15)				
	14.1 Continue to make grant applications and associated claims for revenue and capital works. • Submit claims for HLS and WGS Payments as required. • Manage payments in relation to grazing licenses annually. • Investigate additional funding for projects and capital works.	HIGH HIGH HIGH	***Sec 7.1; 7.2;***	**Theme 5 Outcome 5.2** *Working collectively and in partnership to resource and deliver the vision*

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
MARKETING AND COMMUNICATIONS **15.0 Raise public awareness of the reserve's fauna, flora and archaeology, and increase understanding of and support for management works.**	**15.1 Increase the on-site presence of the SRWT on the reserve.** • Continue regular patrols by SRWT staff and volunteers	HIGH	***Sec 7.3; 7.5***	**Theme 1 Outcome 1.2** *High quality visitor experience.*
	• Install small 'welcome' plaques displaying the reserve name, status and SRWT contact details at all site entrances	HIGH		
	• Publicise all volunteers activities and events run by SRWT on the reserve at Stony Ridge and Strawberry Lee Lane car parks	HIGH		
	15.2 Develop interpretative materials to highlight the biological and historical value of Blacka Moor. • Develop and install interpretive panels for Stony Ridge and Strawberry Lee Lane car parks.	LOW		**Theme 1 Outcome 1.2 and 1.3**
	• Include an interpretive panel as part of the new seating area adjacent to Strawberry Lee Plantation.	LOW		
	• Up-date the reserve leaflet and distribute via events and the SRWT website.	MEDIUM		

Aim	Objectives	Priority	Cross ref this plan	Cross ref SMM*
	15.3 Clearly communicate the aims, objectives and results of management work at Blacka Moor to Trust members, reserve users and the wider public • Publish articles on reserve management in local and Trust publications. • Produce news releases when key management milestones are reached, or new initiatives are begun and distribute to local media. • Update the Blacka Moor pages of the Trust website regularly, making sure details of up and coming events are clearly listed and ensuring documents of interest are available to download • Produce and distribute a Summary Management Plan for the reserve. • Provide talks to local groups about the reserve (as resources allow	MEDIUM LOW HIGH MEDIUM LOW		**Theme 1 Outcome 1.2 and 1.3**

9. Work Programme - Blacka Moor Management Plan 2015-2026* with the 2023-2026 extension highlighted in blue

Please note, costings are only given for first 3 years of plan

	Objective	Prescription	Priority	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
WOODLAND	1.1	Remove sapling and seedling sycamore from central area of in compartment 592 (Strawberry Lee Plantation).	HIGH	315					X					
	1.1	Eradicate sycamore and other non-native tree species from woodland compartment 595.	HIGH							X				
	1.1	Eradicate sycamore and other non-native tree species from woodland compartment 596a (within our existing boundary only)	HIGH							X				
	1.1	Eradicate sycamore and other non-native tree species from woodland compartment 596b	HIGH							X				
	1.1	Eradicate sycamore and other non-native tree species from woodland compartment 597 (south of Blacka Dike only)	HIGH					X						
	1.1	Thin roadside sycamore in compartment 592 (Strawberry Lee Plantation) and fill gaps with oak saplings .	MEDIUM					X						
	1.2	Remove rhododendron from southern boundary of Strawberry Lee Plantation.	HIGH	1,331										
	1.2	Remove rhododendron from eastern boundary of Strawberry Lee Plantation.	HIGH				X	X						
	1.2	Remove rhododendron from northern and western boundary of Strawberry Lee Plantation trialling a random pattern to allow wind passage	HIGH									X	X	X
	1.2, 4.2	Remove rhododendron elsewhere on the reserve as encountered.	HIGH	157.5	157.5	157.5	X	X	X	X	X	X	X	X
	1.2	Eradicate x3 identified locations of invasive non-native species Variegated Yellow Archangel using glyphosate and monitor & remove as required	HIGH									X	X	X
	1.3	Review regeneration of native species in Strawberry Lee Plantation and intervene, as necessary	HIGH					X					X	
	2.1	When undertaking safety works, retain timber in large pieces & where safe, retain deadwood and snags	HIGH	X	X	X	X	X	X	X	X	X	X	X
	2.1	Ring bark 6 selected trees during woodland works	HIGH							X				
	2.1	Undertake tree safety surveys in line with Trust policy, to identify, assess and make safe dangerous trees.	HIGH		750		X		X		X		X	
	2.2	Pull bracken and remove encroaching scrub from glade at the interface of compartments 593c and 593d at SK 284 809	LOW	X	X	X	X	X	X	X	X	X	X	X
	2.3	Carry out woodland thinning works and create nesting stumps for willow tit on Allen Sike.	HIGH		315									
	2.3	Install Redstart boxes in Strawberry Lee Plantation	MEDIUM				X							
	3.1, 5.2	Selectively fell sycamore and other non-native tree species from wet woodland and stream-sides in compartments 597. Extract using heavy horses if necessary.	HIGH					X						
	3.1, 5.2	Monitor wet woodland and lower stretches of Blacka Dike for colonisation by Japanese Knotweed and Indian Balsam, and remove as required	HIGH		X	X	X	X		X	X	X	X	X

	Objective	Prescription	Priority	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
HEATHLAND	4.1	Cut bracken in compartment 1a III and compartment 8a.	HIGH	270	270	270	X	X	X	X	X	X	X	X
	4.1	Extend area of bracken cutting beneath Strawberry Lee Pastures south from compartment 8b to the environs of the stone circle at SK 2870 07991	HIGH	270	270	270	X	X	X	X	X	X		X
	4.1	Apply selective herbicide to bracken in compartments 4b	HIGH	840										
	4.1	Control bracken in compartment 3a (Lenny Hill) by pulling or spraying (& remove arisings as necessary).	HIGH	X	X							X	X	X
	4.1	Control bracken following treatment through conservation grazing	HIGH	X	X	X	X	X	X	X	X	X	X	X
	4.1	Use mineral licks to encourage bracken control by cattle	HIGH	30	30	30	X	X	X	X	X	X	X	X
	4.2	Reduce tree and scrub cover to <25% of 2014 levels, whilst retaining scattered scrub and a woodland edge ecotone, in cpt 1a.	HIGH	1996	450									
	4.2	Reduce scrub by 50% of 2014 levels in cpt 4a, 4b and 2b whilst retaining scattered trees / scrub of mixed ages for song posts	HIGH			2650	X						X	
	4.2	Remove birch from heathland habitat in compartment 5b	HIGH									X		X
	4.2	Maintain open woodland and glades through the removal of birch and rowan scrub and trees to the lower slopes of Bole Hill (northern slope) in compartment 5a	HIGH					X				X		
	4.2	Scallop woodland edge adjacent to the bridleway in Compartment 7b	MEDIUM							X				
	4.2	Reduce scrub cover on northern part of Lenny Hill	HIGH		X				X					X
	4.1, 4.2, 4.3, 5.1	Graze heathland compartment from in line with guidance from Natural England and SSSI condition assessment data, amending stocking density as necessary	HIGH	X	X	X	X	X	X	X	X	X	X	X
	4.3	Draw up a Fire Management Plan for Blacka Moor	HIGH	X										
	4.3	Implement the Fire Management Plan	HIGH	1000	1000									
	4.3	Liaise with PDNPA over fire prevention and high-risk periods (providing on-site information when required).	MEDIUM	X	X	X	X	X	X	X	X	X	X	X

	Objective	Prescription	Priority	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
WATERCOURSES AND WETLANDS	5.1	Maintain dams to ensure sphagnum and other wetland/mire species are conserved and their cover increased.	HIGH				X				X		X	
	5.1	Install additional dam to slow water flow through the mire at SK 2815 8040	LOW							X			X	
	5.2	Advocate for a full Balsam/Knotweed survey of Old Hay Brook (downstream of the reserve) and a subsequent control programme	LOW				X							
	5.3	Rush cutting on Strawberry Lee Pastures, as required	HIGH	360		360		X		X		X		X
	5.3	Create 5m x 5m scrape on Strawberry Lee Pastures	LOW			400								
GRASSLAND	5.3	Deter foxes from breeding/creating earths on Strawberry Lee Pastures	MEDIUM	X	X	X	X	X	X	X	X	X	X	X
	6.1	Increase stocking rates on Strawberry Lee Pastures to achieve desired sward length and composition, in line with guidance from Natural England and SSSI condition assessment data, then amend stocking density as necessary through course of the plan.	HIGH	X	X	X	X	X	X	X	X	X	X	X
	6.1	Introduce an element of cattle grazing to stocking of Strawberry Lee Pastures	MEDIUM	X	X	X	X	X	X	X	X	X	X	X
	6.1	Restore field boundaries of selected field and convert into a hay meadow	LOW				X							
	6.2	Conserve and enhance area of calcareous grassland adjacent to A625 through the periodic removal of scrub and ground elder.	MEDIUM		315									
	7.1	Provide clear on-site and website-based information regarding restrictions to access (with dogs) on the heathland and in-by grassland in the bird breeding season.	HIGH	X	X	X	X	X	X	X	X	X	X	X
	7.1	Increase patrols on heathland and in-bye early in bird breeding season to encourage compliance with access restrictions	HIGH	X	X	X	X	X	X	X	X	X	X	X
	7.2	Monitor the recreational use of sanctuary areas to ensure disturbance is kept to a minimum	MEDIUM	X	X	X	X	X	X	X	X	X	X	X

	Objective	Prescription	Priority	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
SURVEY AND MONITORING	8.1	Carry out an extended Phase 1 habitat survey of the reserve	HIGH	X					X					X
	8.1	Carry out condition assessments on the reserve's heathland, mire and grassland communities in line with national guidance.	HIGH				X					X		
	8.1	Monitor regeneration rates of native tree species across Blacka and Strawberry Lee Plantations using deer exclosures and control plots	HIGH	X	X	X	X	X	X	X	X	X	X	X
	8.1	Monitor rates of browsing damage and tree regeneration across Blacka and Strawberry Lee Plantations	HIGH	X		X		X		X		X		X
	8.1	Collect and collate species data to support an analysis of habitat quality.	HIGH	X	X	X	X	X	X	X	X	X	X	X
	8.1	Calculate and map percentage bracken and scrub cover in the heathland compartment (using aerial photographs supplemented by ground trothing as necessary) in 2015, 2018 and 2022.	HIGH	X				X			X			X
	8.1	To set up and use a visual monitoring programme using fixed point photography.	MEDIUM		X					X				
	8.2	To collect data on breeding whinchat and stonechat territories in 2015 to inform bracken and scrub control works.	HIGH	X										
	8.2	Repeat bog asphodel total spike count in 2017 and 2022	HIGH			X					X			X
	8.2	To carry out a fungal survey of Strawberry Lee Pastures	HIGH		600					X				
	8.2	Carry out a Common Bird Census on Blacka Moor in 2022	HIGH								X			
	8.2	Assist the Sheffield Moors Partnership in monitoring the red deer population across Blacka Moor and the South Sheffield Moors.	MEDIUM	X	X	X	X	X	X	X	X	X	X	X
	8.2	To engage with naturalists and recorders of specialist groups to increase knowledge of the reserve's wildlife.	HIGH	X	X	X	X	X	X	X	X	X	X	X
	8.3	Periodically collate and assess habitat, species and management data on a triannual basis and amend the reserve's work programme accordingly.	MEDIUM			X			X			X		
	8.3	Seek guidance and advice from experts in specialist areas, as required to ensure best management practice	HIGH	X	X	X	X	X	X	X	X	X	X	X
	9.1	Ensure biological records received by the Trust are shared with Sheffield City Council Ecology Unit Biological Records Centre and with members of the Sheffield Moors Partnership as appropriate.	HIGH	X	X	X	X	X	X	X	X	X	X	X
	9.1	Liaise and engage with the Sheffield Moors Partnership to ensure implementation of the Masterplan	HIGH	X	X	X	X	X	X	X	X	X	X	X

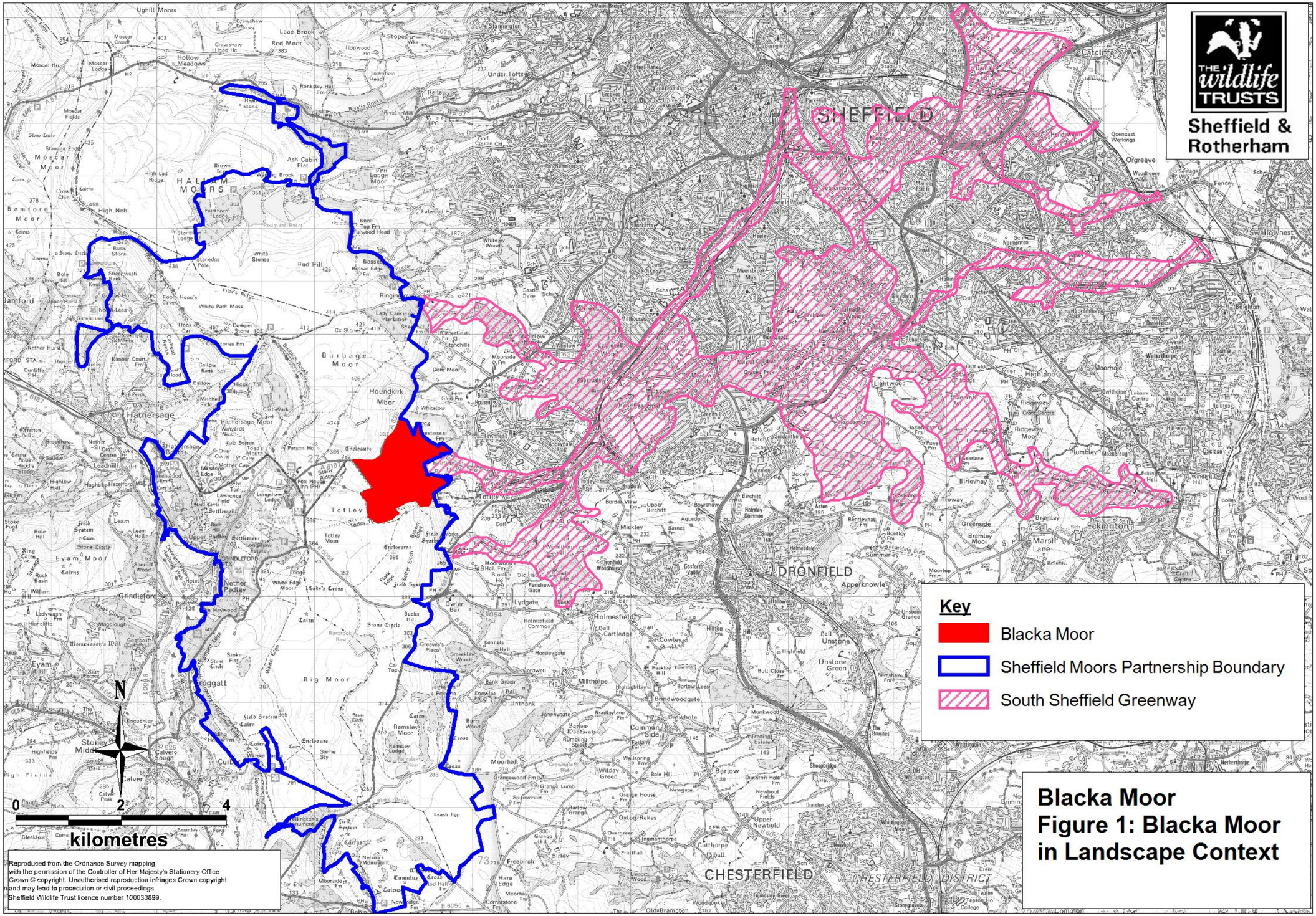
	Objective	Prescription	Priority	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
INFRASTRUCTURE	9.1	Work with SMP to consider routes for disability chariots across the South Sheffield Moors	MEDIUM						X					
	10.1	Maintain stock-proof drystone walls and fencing on all grazing enclosure boundaries as required.	HIGH	X	X	X	X	X	X	X	X	X	X	X
	10.1	Liaise with Sheffield City Council Highways Department to advocate for the repair of the wetstone wall bounding Blacka Plantation	LOW					X				X		
	10.1	Maintain fence line between heathland and woodland compartments, removing bracken overgrowth and fallen branches.	HIGH	315			X			X			X	
	10.1	Protect boundary walls from damage by deer (and vice versa), as required.	MEDIUM	X	X	X	X	X	X	X	X	X	X	X
	10.1	Complete the restoration of the drystone wall between the heathland compartment and Strawberry Lee Pastures	HIGH	12600										
	10.2	Retain the woodland/moorland fringe to obscure the line of the fence between the woodlands and heathland	HIGH	X	X	X	X	X	X	X	X	X	X	X
	10.2	Remove the defunct compost bins adjacent to Strawberry Lee Plantation.	LOW					X						
	10.2	Remove metal waymarker and advisory signs from interior of the reserve and replace with wooden finger posts.	MEDIUM		X									
	10.2	Remove the 'horses prohibited' signs from the reserve.	MEDIUM		315									
	10.2	Improve the consistency and appearance of signage by the installation of notice boards in Stony Ridge and Strawberry Lee Lane car parks.	HIGH		2500									
	10.3	Improve flagging of desire line running adjacent to Cowsick Bog	MEDIUM				X							
	10.3	Install revetment to retain bridleway width (Lenny Hill to Stepping Stones section).	MEDIUM					X						
	10.3	Install additional waymarker posts at junctions between footpaths and bridleways.	HIGH						X					
	10.3	Install mounting blocks at interface between the heathland and woodland compartments at Piper House	MEDIUM	X										
	10.3	Replace all stiles on RoW footpaths with gates to improve accessibility.	MEDIUM							X				
	10.3	Replace bridleway latches with favoured 'trombone' style, as old latches fail.	LOW	50	50	50	X	X	X	X	X	X	X	X
	10.3	Install suitable access controls on the footpath across Lenny Hill to prevent egress by mountain bikes.	MEDIUM			315								
	10.3	Work with SCC Public Rights of Way Unit to ensure maintenance of all cross drains on bridleways to prevent erosion.	HIGH	X	X	X	X	X	X	X	X	X	X	X
	10.3	Carry out an annual programme of work to clear back encroaching vegetation from bridleways and footpaths.	HIGH	630	630	630	X	X	X	X	X	X	X	X
	10.3	Monitor the condition of the reserve's access network and make spot repairs as necessary.	HIGH	X	X	X	X	X	X	X	X	X	X	X
	10.3	Replace sleeper bridge	MEDIUM	1405										

	Objective	Prescription	Priority	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
	10.4	Provide clear information about the public rights network, including the location of the different types of rights of way and information about who may use these at main entrances and on the Trust's website	HIGH	X	X	X	X	X	X	X	X	X	X	X
	10.4	Install 2 new benches on uphill sections of main walking routes	MEDIUM	1000					X					
	10.4	Work with appropriate user groups and individuals to create a wheelchair accessible seating area with views over Cowsick Bog	LOW					X						
	10.4	Work with DCC and the PDNPA to (slightly) enlarge and repair the Stony Ridge car park	MEDIUM					X						
CULTURE AND RECREATION	11.1	Remove birch/scrub to preserve key vistas (in consultation with reserve users).	MEDIUM							X				
	12.1	Liaise with Peak Park Cultural Heritage Team when planning & delivering works requiring the use of heavy machinery, or ground disturbance	HIGH	X	X	X	X	X	X	X	X	X	X	X
	12.1	Use heather bales to minimise erosion and path braiding on Bole Hill	HIGH	X										
	12.1	Keep a watching brief on footpath and desire lines across Bole Hill SAM, and take action to prevent further widening & erosion, or scrub invasion, as necessary.	HIGH		X	X	X	X	X	X	X	X	X	X
	12.2	Communicate the interest and significance of the archaeological features through on-site interpretation	MEDIUM						X					
	12.2	Design and carry out a small excavation on Strawberry Lee bridleway at SK 2865 7990 with guidance from the PDNPA archaeology service.	LOW						X					
	13.1	Run regular practical workdays involving volunteers on the reserve.	HIGH	X	X	X	X	X	X	X	X	X	X	X
	13.1	Redesign and extend the Blacka Moor section of the SRWT website to provide more easily accessible, comprehensive and up to date information about the reserve.	HIGH	X										

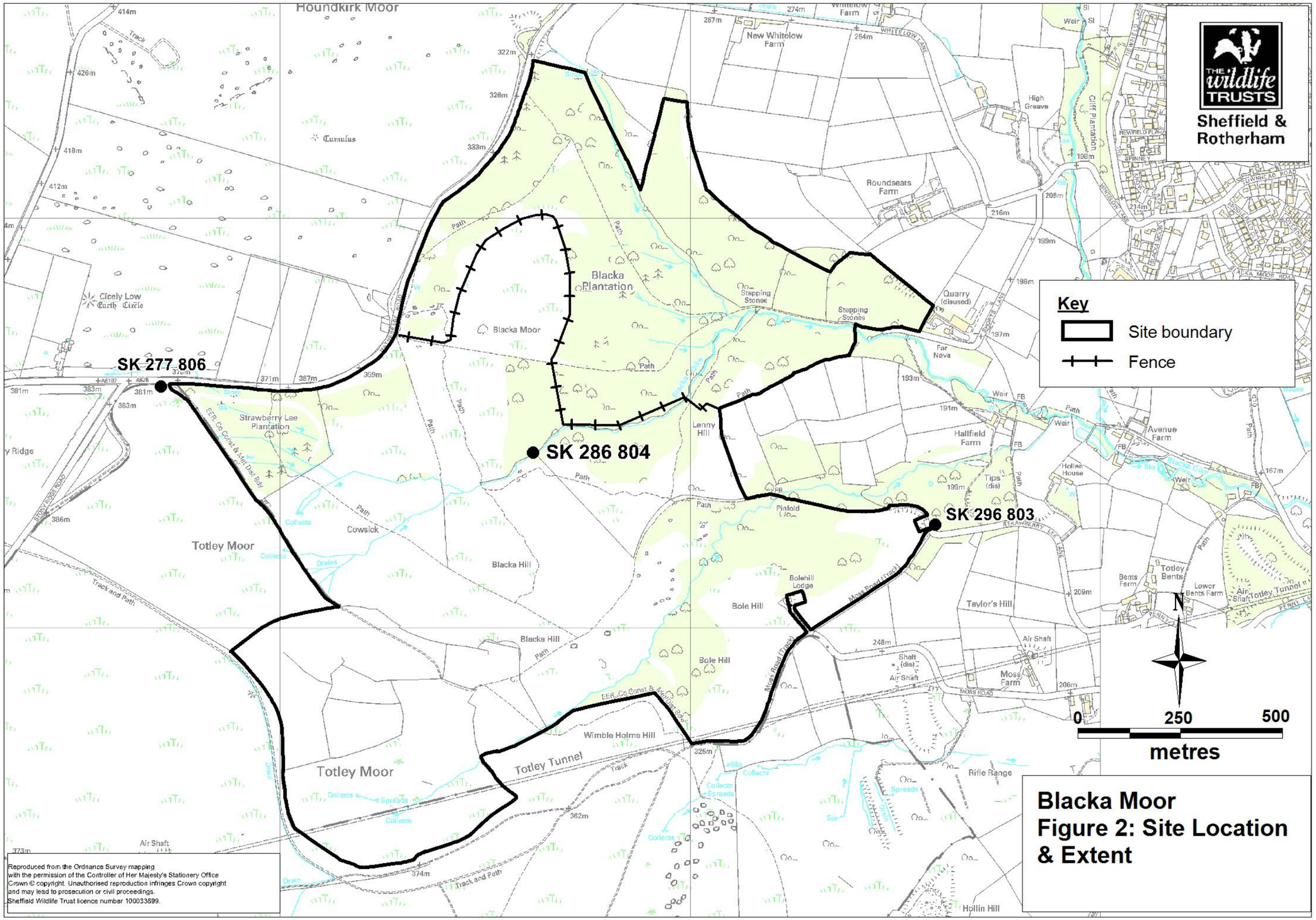
	Objective	Prescription	Priority	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
COMMUNITY ENGAGEMENT	13.1	Produce a quarterly e-newsletter, comprising a summary (with maps) of up and coming management works, dates for related meetings, upcoming events and other reserve news during the first year of the plan	HIGH	X										
	13.1	Form a Blacka Moor Users' Forum, meeting twice a year, to provide the general public with an opportunity to raise and discuss any issue relating to the use and management of the reserve and also to provide the Trust with the opportunity to listen to a wide range of reserve users' views and update people on the delivery of the management plan.	HIGH	X	X	X	X	X	X	X	X	X	X	X
	13.1	Form a Blacka Moor Conservation Group, meeting 3-4 times a year, and comprising representatives of special interest groups, individuals and Wildlife Trust supporters working collaboratively with the Trust to deliver the Blacka Moor Management Plan (once finalised and adopted).	HIGH	X	X	X	X	X	X	X	X			
	13.2	Run a varied programme of public events on the reserve, aimed at those with an interest in natural history, or local history, and families.	HIGH	X	X	X	X	X	X	X	X	X	X	X
	13.2	Liaise with local organisations and those representing communities of interest to promote the reserve to their members	MEDIUM	X	X	X	X	X	X	X	X	X	X	X
	13.2	Promote walking on the reserve through the Wild Sheffield app	MEDIUM	X	X	X								
	13.2	Secure funding to increase participation in, and enjoyment of the reserve by under-represented sections of the community.	LOW					X		X				
	13.2	Support school visits to the reserve through the Trust's outdoor learning service.	MEDIUM	X	X	X	X	X	X	X	X	X	X	X
	13.3	Log incidents in relation to inappropriate use of the reserve as observed or reported.	HIGH	X	X	X	X	X	X	X	X	X	X	X
	13.3	Encourage positive and appropriate use of the reserve through communication through meetings & publicity materials.	HIGH	X	X	X	X	X	X	X	X	X	X	X
	13.3	Work collaboratively and cooperatively with different user groups, individuals and statutory agencies to overcome conflicts (perceived, projected or actual) over recreational use of the reserve.	MEDIUM	X	X	X	X	X	X	X	X	X	X	X

	Objective	Prescription	Priority	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
FUNDING	14.1	Submit claims for HLS and CS Payments as required	HIGH	X	X	X	X	X	X	X	X	X	X	X
	14.1	Manage payments in relation to grazing licenses annually	HIGH	X	X	X	X	X	X	X	X	X	X	X
	14.1	Investigate additional funding for projects and capital works.	HIGH	X	X	X	X	X	X	X	X	X	X	X
	15.1	Continue regular patrols by SRWT staff and volunteers	HIGH	X	X	X	X	X	X	X	X	X	X	X
PROMOTION AND INTERPRETATION	15.1	Install small 'welcome' plaques displaying the reserve name, status and SRWT contact details at all site entrances	HIGH		X									X
	15.1	Publicise all volunteers activities and events run by SRWT on the reserve at Stony Ridge and Strawberry Lee Lane car parks	HIGH	X	X	X	X	X	X	X	X	X	X	X
	15.2	Develop and install interpretive panels for Stony Ridge and Strawberry Lee Lane car parks.	LOW				X							
	15.2	Include an interpretive panel as part of the new seating area adjacent to Strawberry Lee Plantation	LOW						X					
	15.2	Up-date the reserve leaflet and distribute via events and the SRWT website.	MEDIUM			X								
	15.3	Publish articles on reserve management in local and Trust publications.	MEDIUM	X	X	X	X	X	X	X	X	X	X	X
	15.3	Produce news releases when key management milestones are reached, or new initiatives are begun and distribute to local media.	LOW	X	X	X	X	X	X	X	X	X	X	X
	15.3	Update the Blacka Moor pages of the Trust website regularly, making sure details of up and coming events are clearly listed and ensuring documents of interest are available to download	HIGH	X	X	X	X	X	X	X	X	X	X	X
	15.3	Produce and distribute a Summary Management Plan for the reserve.	MEDIUM	X										
	15.3	Provide talks to local groups about the reserve (as resources allow)	LOW	X	X	X	X	X	X	X	X	X	X	X

10.0 Figures



Blacka Moor
Figure 1: Blacka Moor in Landscape Context


Houndkirk Moor
Cumulus
Cicely Low Earth Circle
Blacka Plantation
Blacka Moor
SK 277 806
SK 286 804
SK 296 803
Strawberry Lee Plantation
Totley Moor
Cowsick
Blacka Hill
Bole Hill
Wimble Holme Hill
Totley Tunnel
Lenny Hill
Pinfold
Bolehill Lodge
Moss Road (Track)
New Whitelow Farm
Roundseats Farm
High Greave
Cliff Plantation
Quarry (disused)
Stepping Stones
Far Nova
Hallfield Farm
Avenue Farm
Hollin House
Tips (dis)
Taylor's Hill
Moss Farm
Totley Bents
Lower Bents Farm
Air Shaft
Rifle Range
Hollin Hill
Key
Site boundary
Fence
N
0
250
500
metres
Blacka Moor
Figure 2: Site Location & Extent
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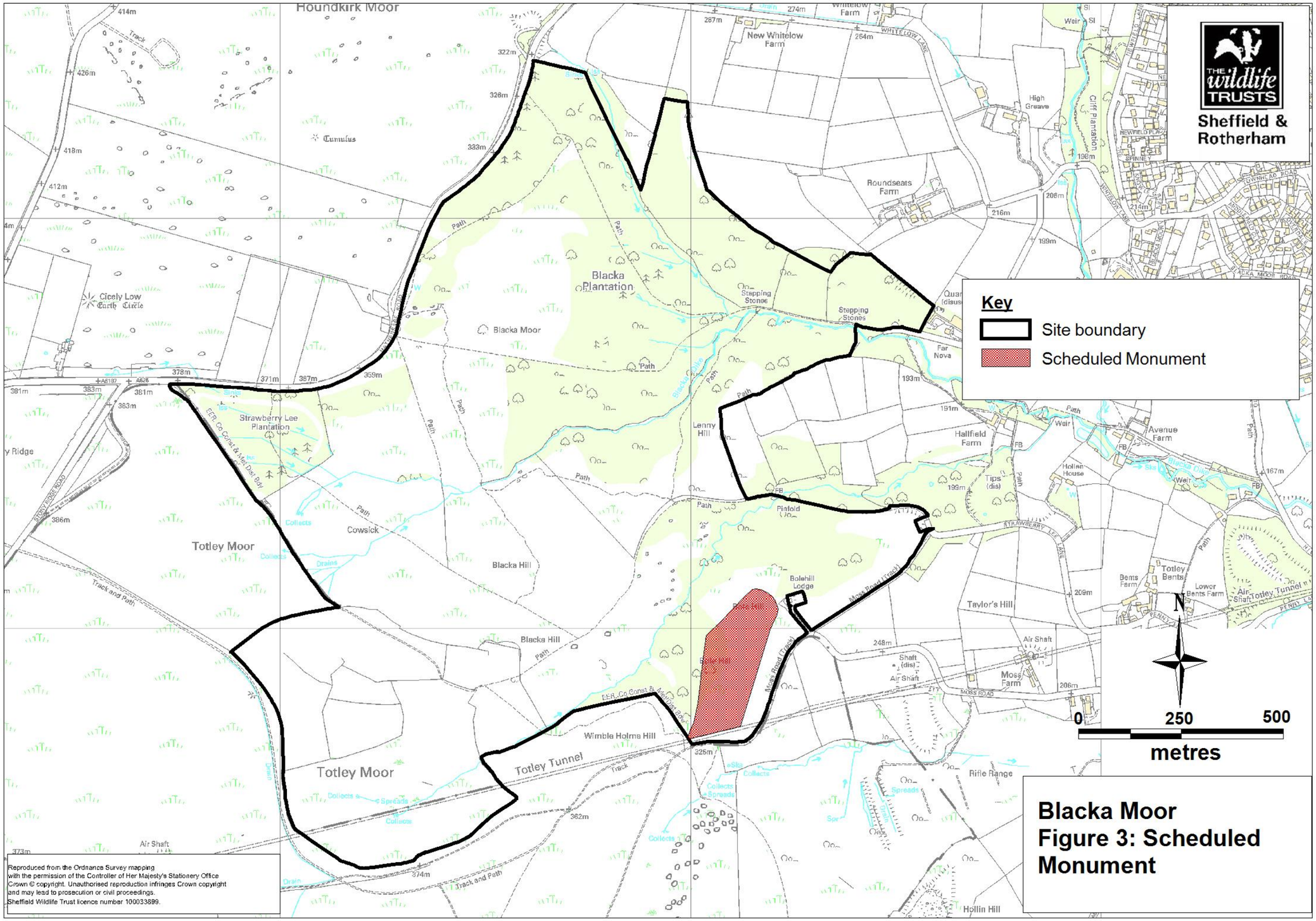
Houndkirk Moor
Cicely Low Earth Circle
Blacka Plantation
Blacka Moor
Strawberry Lee Plantation
Totley Moor
Cowsick
Blacka Hill
Totley Moor
Wimble Holme Hill
Totley Tunnel
New Whitelow Farm
Roundseats Farm
High Greave
Cliff Plantation
Lenny Hill
Hallfield Farm
Avenue Farm
Pinfold
Bolehill Lodge
Taylor's Hill
Moss Farm
Totley Bents
Lower Bents Farm
Rifle Range
Hollin Hill
Key
Site boundary
Scheduled Monument
0
250
500
metres
Blacka Moor
Figure 3: Scheduled Monument
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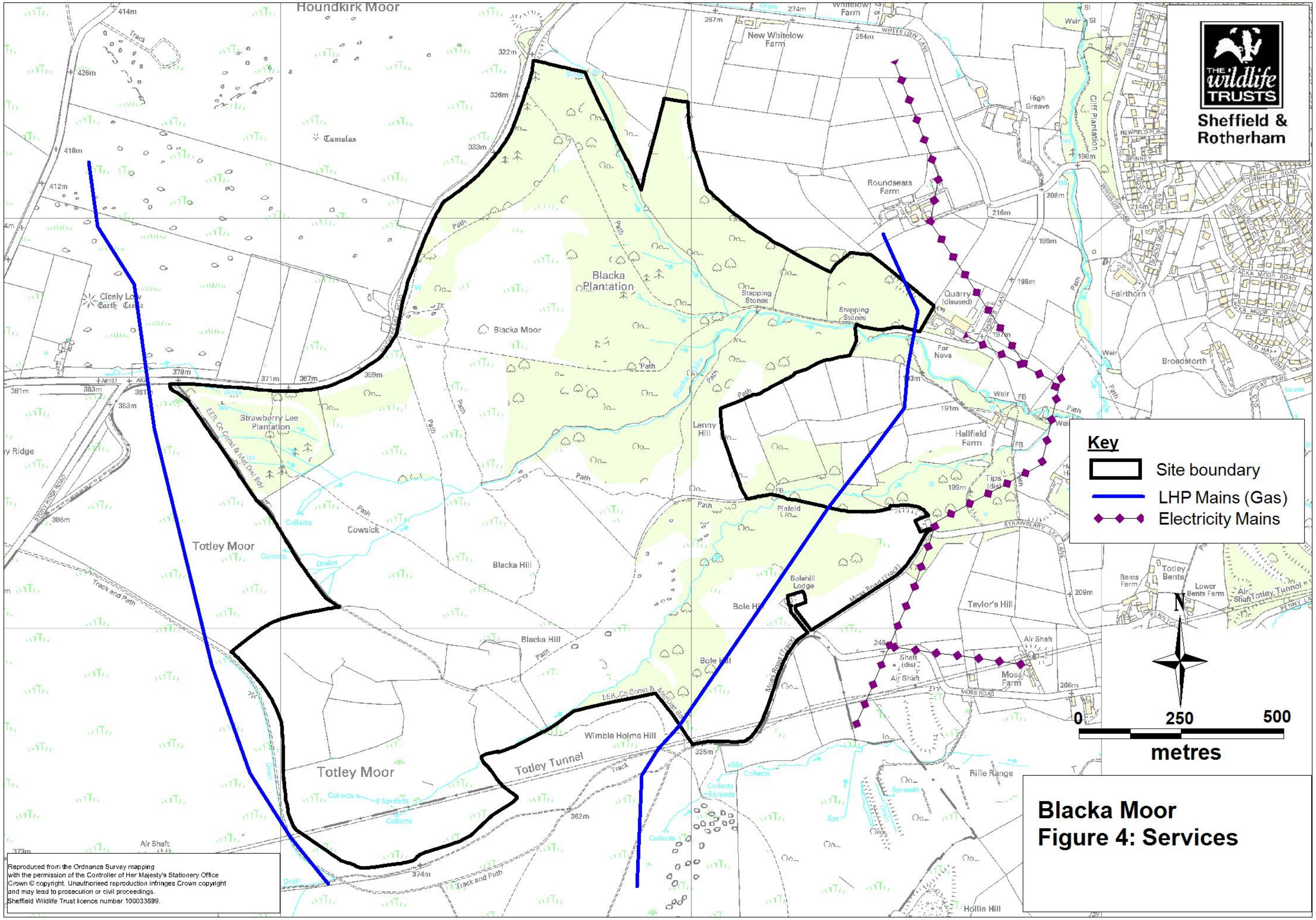

Sheffield & Rotherham
Key
Site boundary
LHP Mains (Gas)
Electricity Mains
0
250
500
metres
Blacka Moor
Figure 4: Services
Houndkirk Moor
Blacka Plantation
Blacka Moor
Strawberry Lee Plantation
Totley Moor
Cowsick
Blacka Hill
Lenny Hill
Bolehill Lodge
Totley Tunnel
Wimble Holme Hill
Roundseats Farm
New Whitelow Farm
Hallfield Farm
Far Nova
Broadstorth
Fairthorn
Taylor's Hill
Moss Farm
Rifle Range
Hollin Hill
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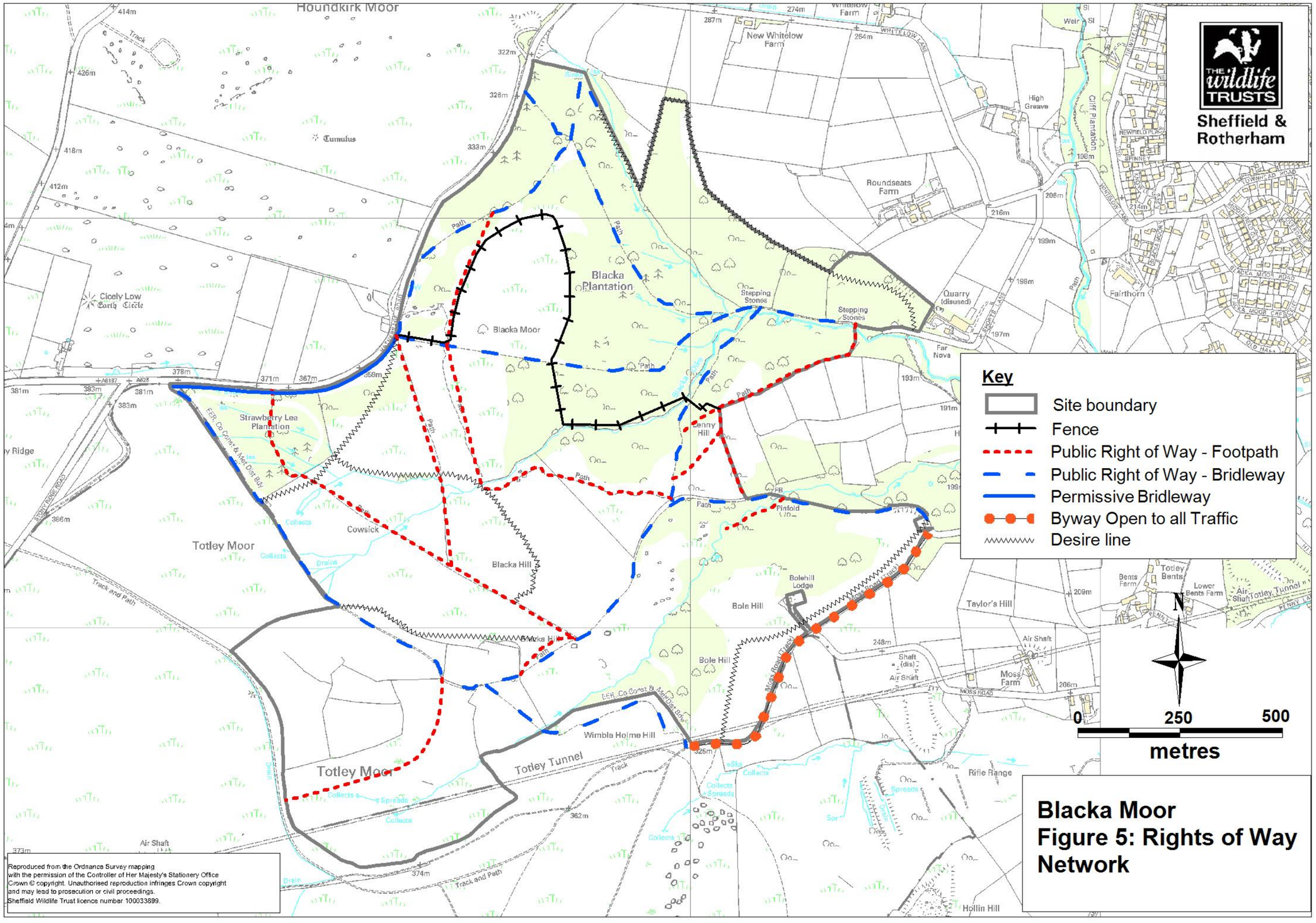
Houndkirk Moor
Tumulus
Cicely Low Earth Circle
Blacka Plantation
Blacka Moor
Strawberry Lee Plantation
Cowsick
Totley Moor
Blacka Hill
Wimbla Holme Hill
Totley Tunnel
Bole Hill
Bolehill Lodge
Pinfold
New Whitelow Farm
Roundseats Farm
High Greave
Cliff Plantation
Fairthorn
Quarry (disused)
Stepping Stones
Penny Hill
Taylor's Hill
Moss Farm
Totley Bents
Lower Bents Farm
Rifle Range
Hollin Hill
Air Shaft
Key
Site boundary
Fence
Public Right of Way - Footpath
Public Right of Way - Bridleway
Permissive Bridleway
Byway Open to all Traffic
Desire line
0
250
500
metres
Sheffield & Rotherham
Blacka Moor
Figure 5: Rights of Way Network
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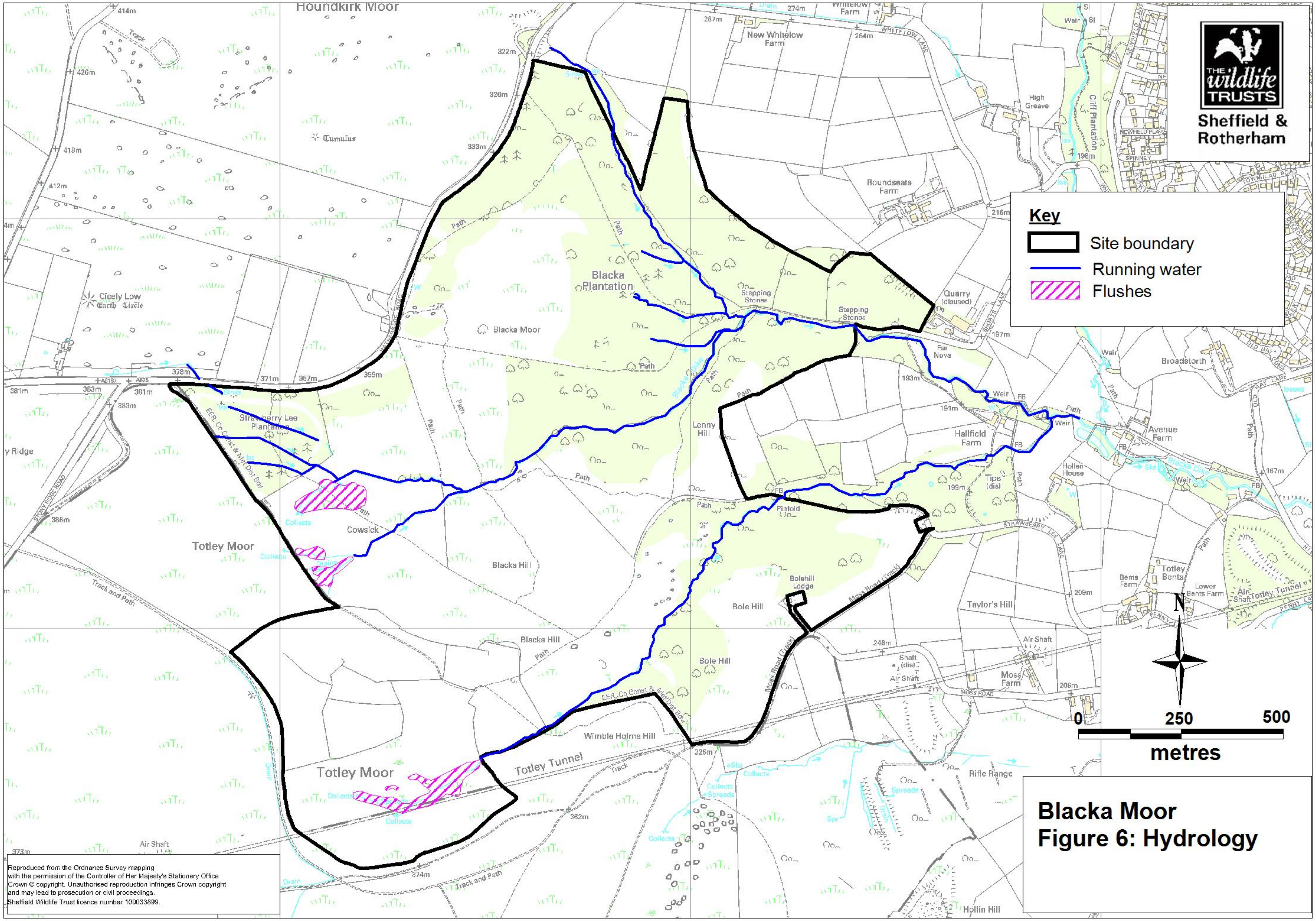
Sheffield & Rotherham
Key
Site boundary
Running water
Flushes
Blacka Moor
Figure 6: Hydrology
0
250
500
metres
N
Houndkirk Moor
Blacka Plantation
Blacka Moor
Totley Moor
Cowsick
Blacka Hill
Lenny Hill
Hallfield Farm
Bole Hill
Wimble Holme Hill
Totley Tunnel
Strawberry Lee Plantation
Cicely Low Earth Circle
Roundseats Farm
New Whitelow Farm
Avenue Farm
Broadstorth
Taylor's Hill
Moss Farm
Rifle Range
Hollin Hill
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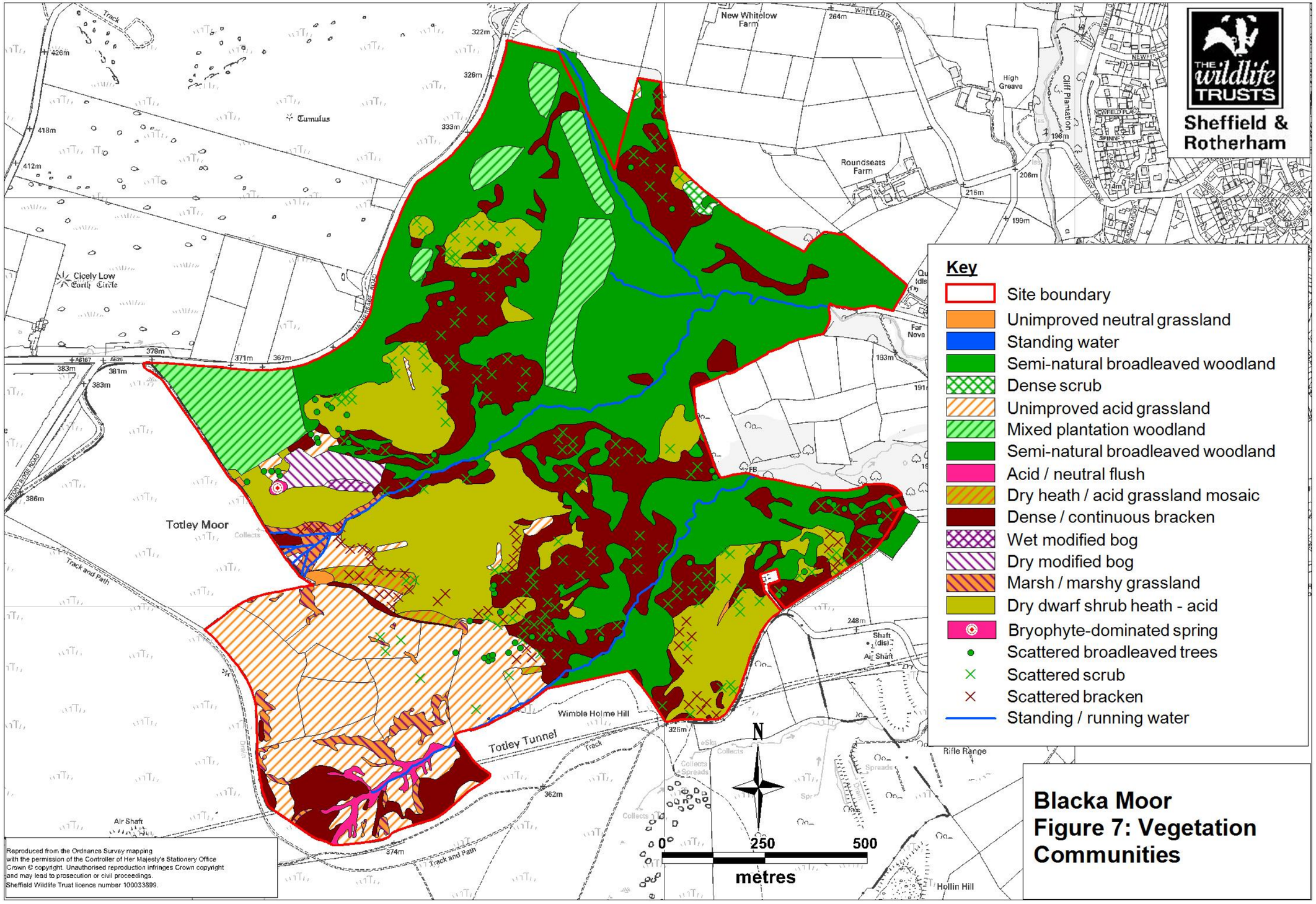
THE wildlife TRUSTS
Sheffield & Rotherham
Key
Site boundary
Unimproved neutral grassland
Standing water
Semi-natural broadleaved woodland
Dense scrub
Unimproved acid grassland
Mixed plantation woodland
Semi-natural broadleaved woodland
Acid / neutral flush
Dry heath / acid grassland mosaic
Dense / continuous bracken
Wet modified bog
Dry modified bog
Marsh / marshy grassland
Dry dwarf shrub heath - acid
Bryophyte-dominated spring
Scattered broadleaved trees
Scattered scrub
Scattered bracken
Standing / running water
Totley Moor
Wimble Holme Hill
Totley Tunnel
Cicely Low Earth Circle
Tumulus
New Whitelow Farm
Roundseats Farm
High Greave
Cliff Plantation
Rifle Range
Hollin Hill
Air Shaft
N
0 250 500
metres
Blacka Moor
Figure 7: Vegetation Communities
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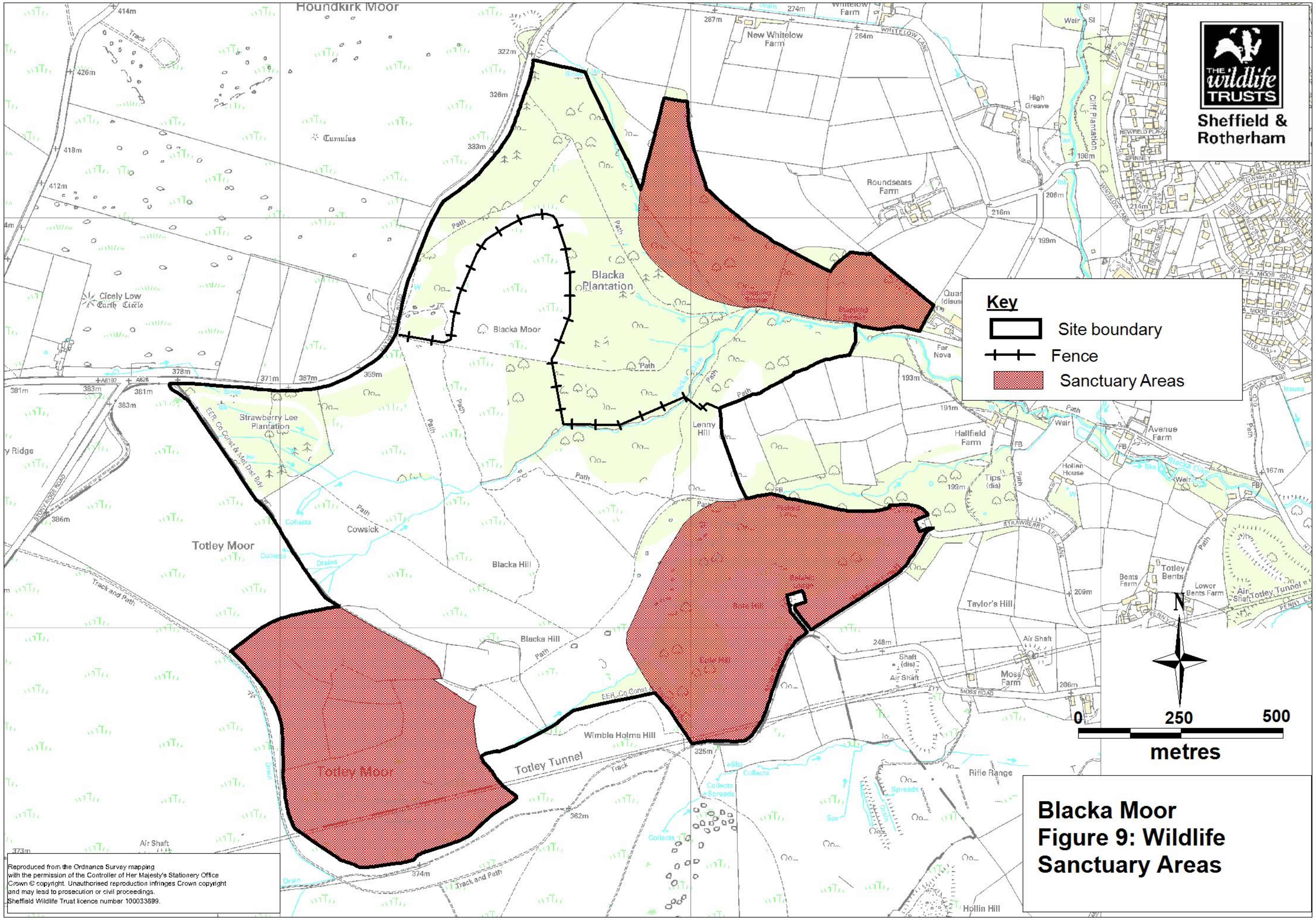
Sheffield & Rotherham

Key

- Site boundary
- Unimproved neutral grassland
- Standing water
- Semi-natural broadleaved woodland
- Dense scrub
- Unimproved acid grassland
- Mixed plantation woodland
- Semi-natural broadleaved woodland
- Acid / neutral flush
- Dry heath / acid grassland mosaic
- Dense / continuous bracken
- Wet modified bog
- Dry modified bog
- Marsh / marshy grassland
- Dry dwarf shrub heath - acid
- Bryophyte-dominated spring
- Scattered broadleaved trees
- Scattered scrub
- Scattered bracken
- Standing / running water

Collects

Blacka Moor
Figure 8: Vegetation Communities at Cowsick Bog


Blacka Moor
Figure 9: Wildlife Sanctuary Areas
Key
Site boundary
Fence
Sanctuary Areas
0
250
500
metres
N
The wildlife TRUSTS
Sheffield & Rotherham
Houndkirk Moor
Blacka Plantation
Blacka Moor
Totley Moor
Strawberry Lee Plantation
Cowsick
Blacka Hill
Lenny Hill
Totley Tunnel
Wimble Holme Hill
Cicely Low Earth Circle
Cumulus
New Whitelow Farm
Roundseats Farm
High Greave
Cliff Plantation
Hallfield Farm
Avenue Farm
Hollen House
Taylor's Hill
Bents Farm
Totley Bents
Lower Bents Farm
Moss Farm
Rifle Range
Hollin Hill
Far Nova
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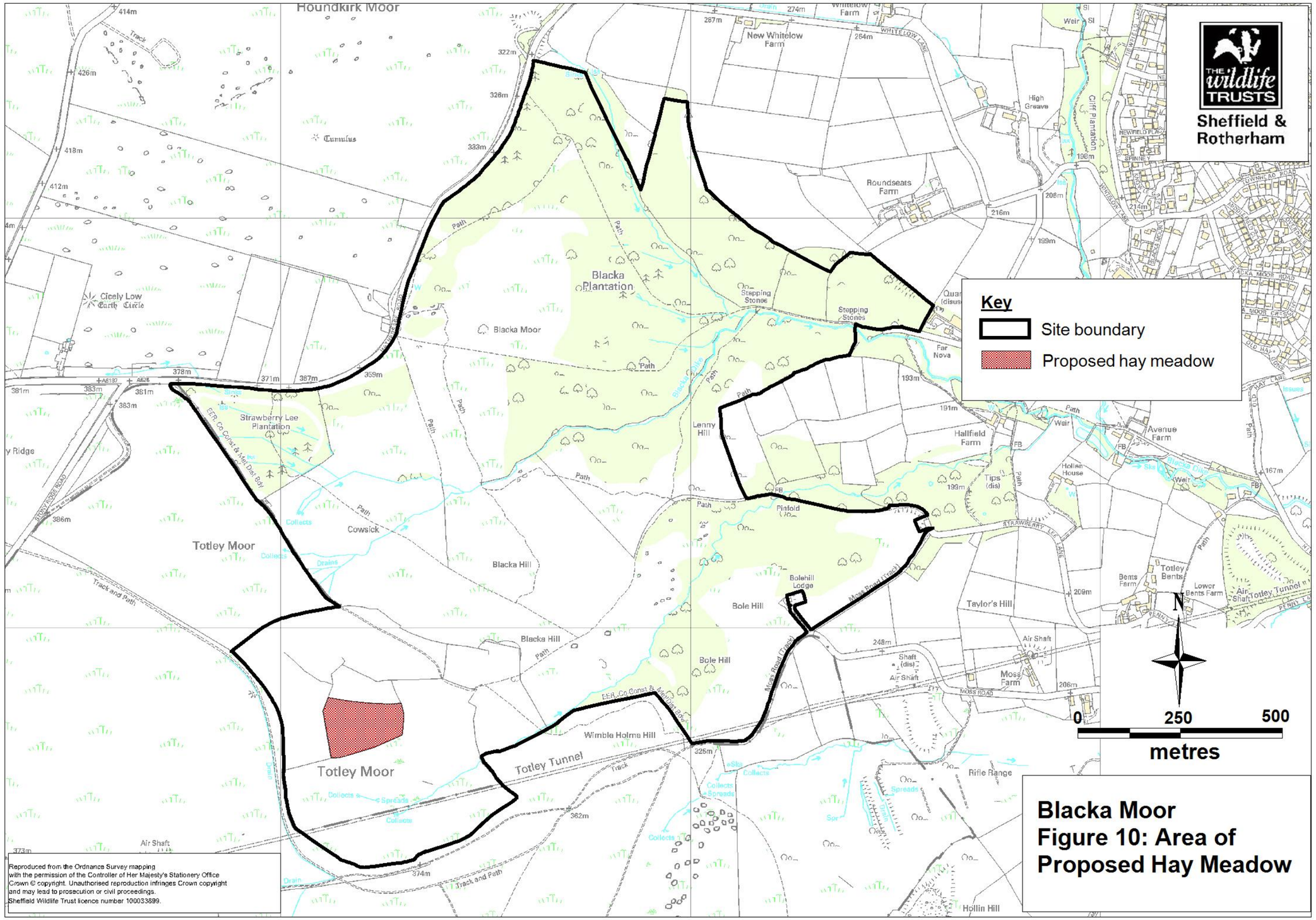
Houndkirk Moor
Tumulus
Cicely Low Earth Circle
Blacka Plantation
Blacka Moor
Strawberry Lee Plantation
Totley Moor
Cowsick
Blacka Hill
Totley Moor
Wimble Holme Hill
Totley Tunnel
Lenny Hill
Bole Hill
Bolehill Lodge
Pinfold
New Whitelow Farm
Roundseats Farm
High Greave
Cliff Plantation
Stepping Stones
Hallfield Farm
Avenue Farm
Tips (dis)
Hollin House
Taylor's Hill
Moss Farm
Totley Bents
Lower Bents Farm
Air Shaft
Rifle Range
Hollin Hill
Key
Site boundary
Proposed hay meadow
THE wildlife TRUSTS
Sheffield & Rotherham
N
0
250
500
metres
Blacka Moor
Figure 10: Area of Proposed Hay Meadow
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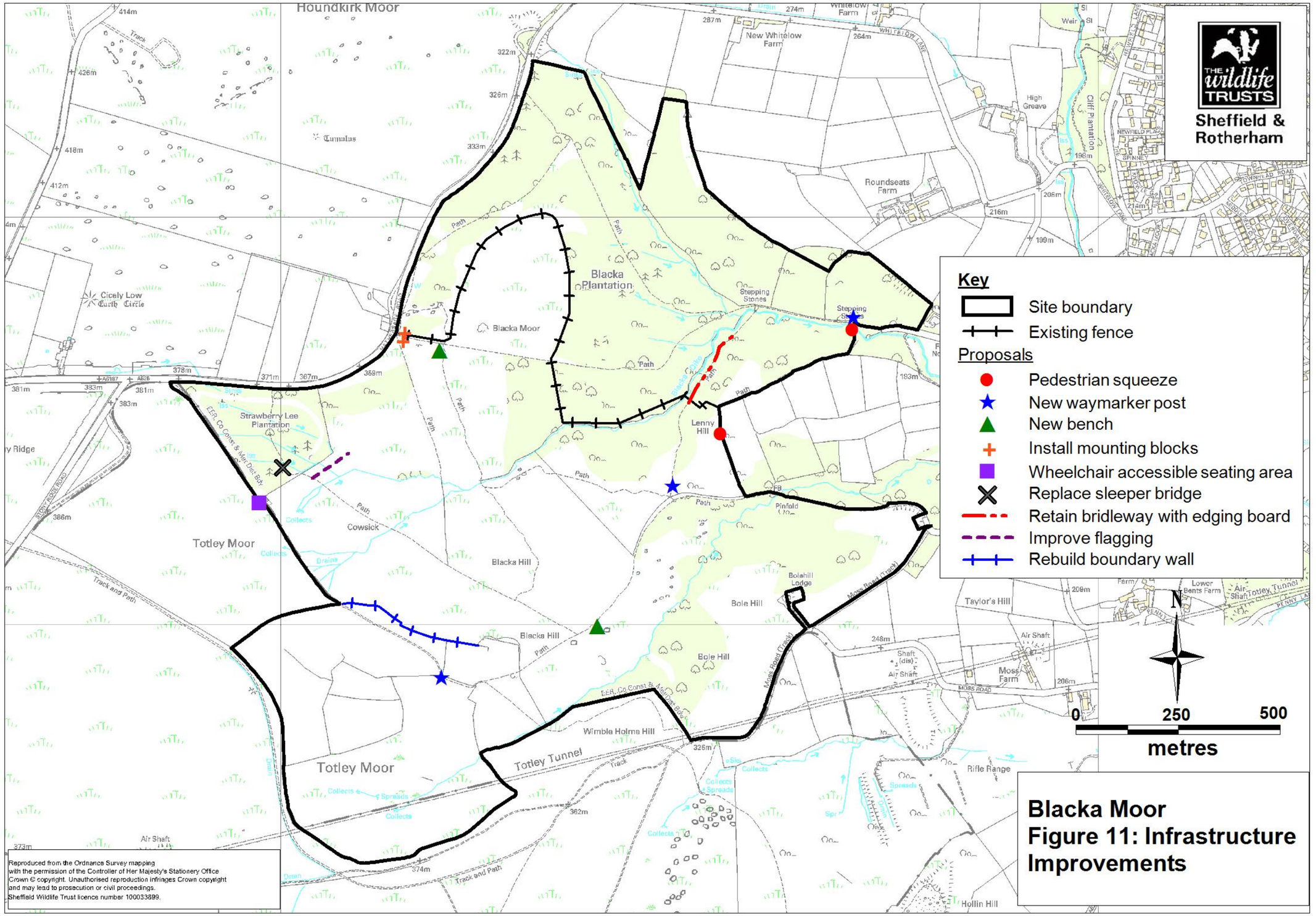

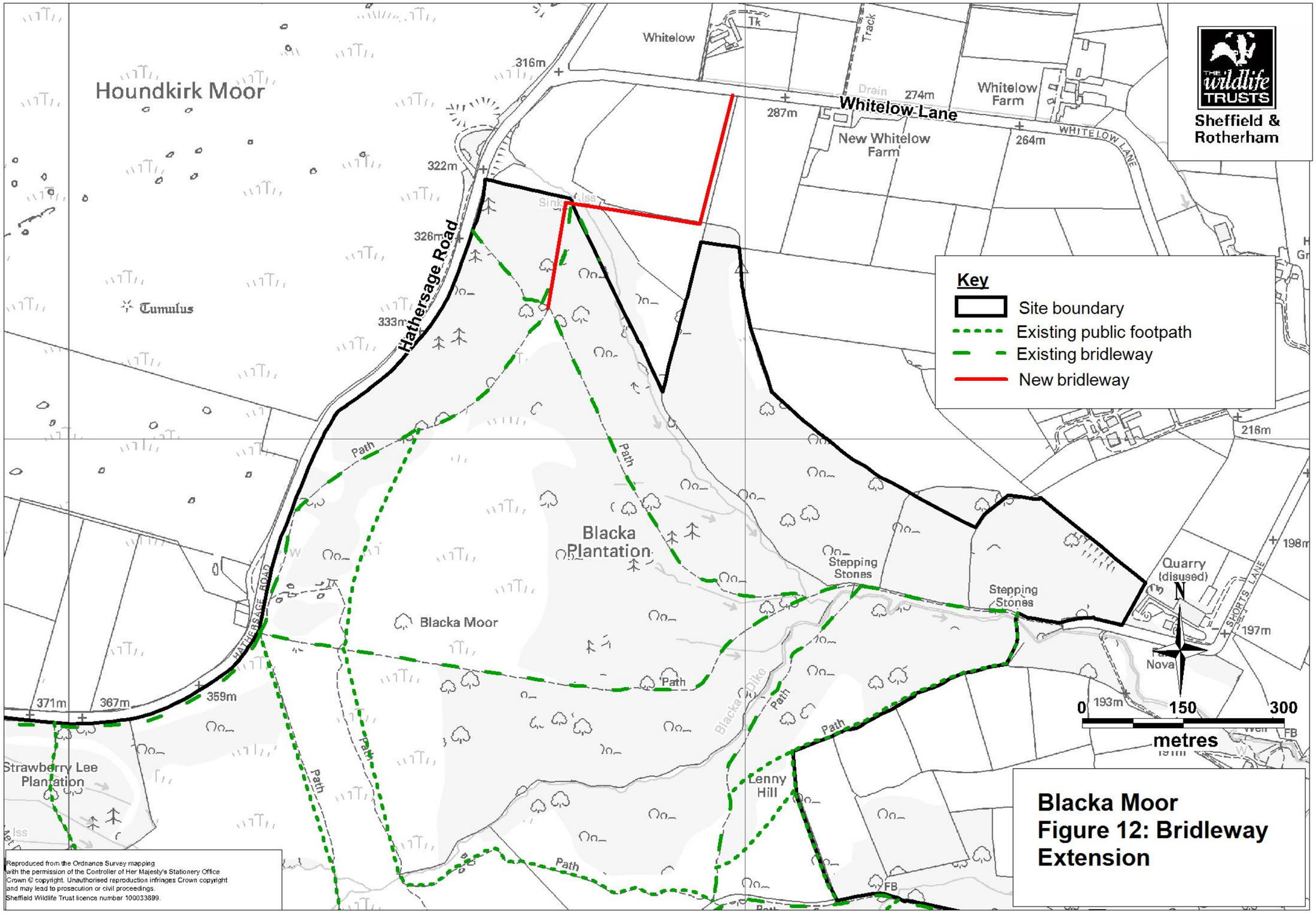
Houndkirk Moor
Tumulus
Whitelow
Tk
Track
316m
Drain
274m
Whitelow Farm
287m
Whitelow Lane
New Whitelow Farm
264m
WHITELOW LANE
322m
326m
Hathersage Road
333m
Sheffield &
Rotherham
Key
Site boundary
Existing public footpath
Existing bridleway
New bridleway
216m
Path
Blacka Plantation
Stepping Stones
Stepping Stones
Quarry (disused)
N
198m
SHORTS LANE
197m
Nova
Blacka Moor
Path
Blacka Dike
Path
Path
371m
367m
359m
0
193m
150
300
metres
Strawberry Lee Plantation
Path
Path
Lenny Hill
FB
FB
Blacka Moor
Figure 12: Bridleway Extension
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Compartment	Area (ha)
592	6.27
593a	1.34
593b	0.33
593c	0.72
593d	2.90
593e	3.67
593f	1.92
595	4.43
596a	1.95
596b	7.18
597	26.79
598	2.48
559	8.50

Key

☐	Site boundary
▨	Woodland compartment
+-+-+	Fence
······	Public footpath
— —	Bridleway

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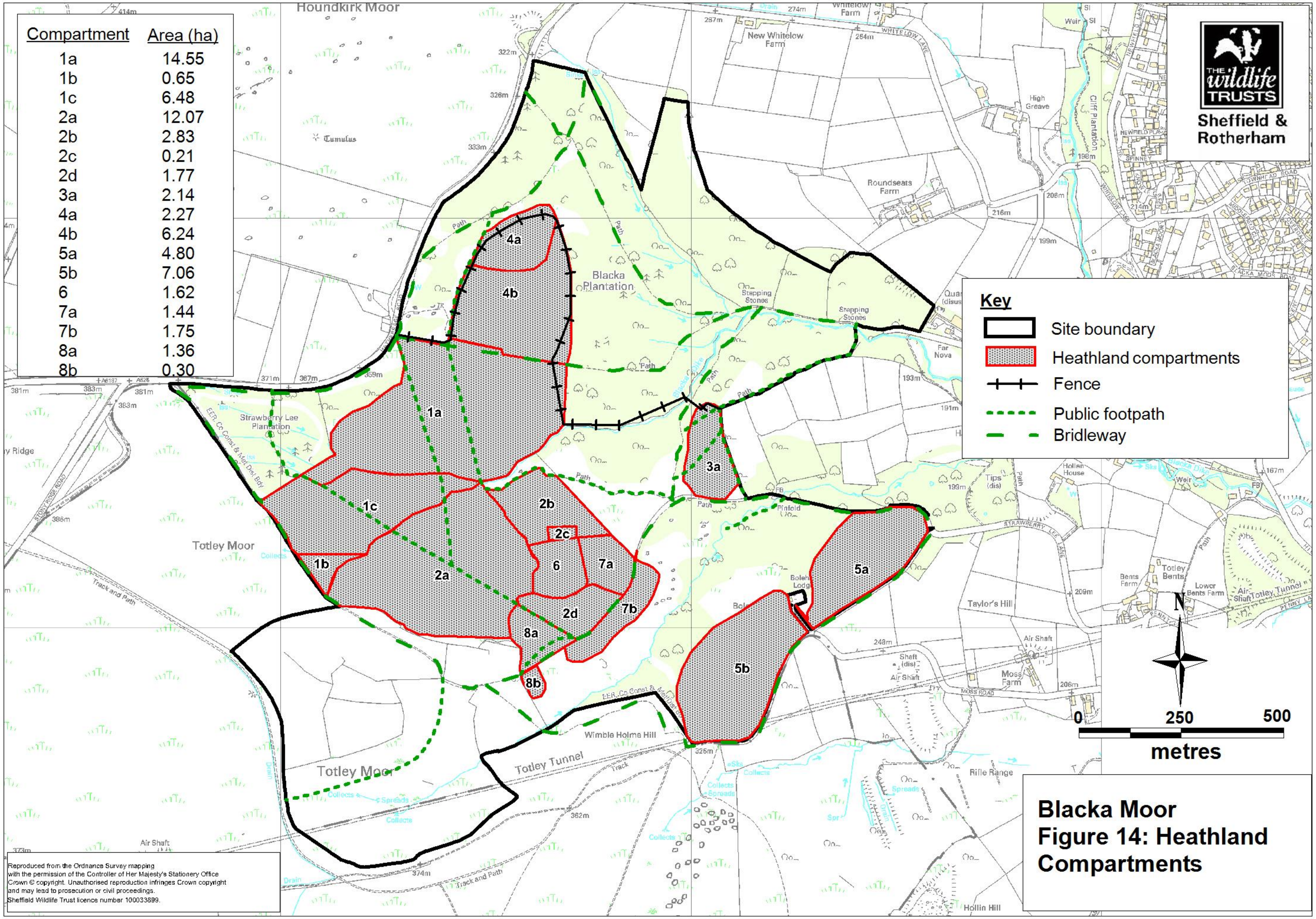
Sheffield & Rotherham

Blacka Moor
Figure 13: Woodland Compartments

Blacka Moor
Figure 14: Heathland Compartments



Key
Site boundary
Heathland compartments
Fence
Public footpath
Bridleway
Sheffield & Rotherham
THE wildlife TRUSTS
0
250
500
metres
N
Houndkirk Moor
Blacka Plantation
Strawberry Lee Plantation
Totley Moor
Totley Tunnel
Wimble Holms Hill
Taylor's Hill
Roundseats Farm
New Whitelow Farm
Totley Bents
Rifle Range
Hollin Hill
1a
1b
1c
2a
2b
2c
2d
3a
4a
4b
5a
5b
6
7a
7b
8a
8b

Compartment	Area (ha)
1a	14.55
1b	0.65
1c	6.48
2a	12.07
2b	2.83
2c	0.21
2d	1.77
3a	2.14
4a	2.27
4b	6.24
5a	4.80
5b	7.06
6	1.62
7a	1.44
7b	1.75
8a	1.36
8b	0.30

APPENDIX I Glossary of Acronyms and Terms

Assart	A piece of land converted from forest to arable use
BAP	Biodiversity action plan
Ecotone	A transitional area where two or more plant communities meet and integrate.
EH	English Heritage
Head	Head describes deposits at the very top of the geological succession, which cannot not be classified more accurately.
HLS	Higher Level Stewardship
NCA	Natural Character Assessment
NE	Natural England
Oviposit	(Especially of an insect) to lay an egg or eggs
PDNPA	Peak District National Park Authority
Poaching	1. Illegal hunting, capture or killing of an animal; 2. To break through the turf, esp with hooves
PRoW	Public Rights of Way
SAC	Special Area of Conservation
SCC	Sheffield City Council
SPA	Special Protection Area
SMM	Sheffield Moors Masterplan
SMP	Sheffield Moors Partnership
SRWT	Sheffield and Rotherham Wildlife Trust
SSSI	Site of Special Scientific Interest
WGS	Woodland Grant Scheme (now English Woodland Grant Scheme)