

The Hook

Proposed Local Nature Reserve

Draft Management Plan

2008 - 2013

Image to be added to adopted plan

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INTRODUCTION

Local Nature Reserves are protected open green spaces for local people, which are designated by Local Authorities with guidance from Natural England.

Rushcliffe Nature Conservation Strategy has a headline target of creating or enhancing 66 Local Nature Reserves across the borough by 2066 which equates to 1 per parish and West Bridgford ward with a milestone target of 10 LNRs by 2010. Rushcliffe Borough Council is proposing to help meet this target by designating and managing a number of its own wildlife rich sites as Local Nature Reserves.

Many of the Local Nature Reserves and proposed Local Nature Reserves within Rushcliffe have a town centre or urban fringe location and therefore have a potential for attracting large numbers of visitors. The sites already have high wildlife content but most can be improved with specific habitat management and creation targeted at enhancing biodiversity. Many of the sites also have a significant archaeological interest which are an important part of the area's rich history and this is certainly true of The Hook.

Local Nature Reserves (LNR) provide excellent opportunities for recreational and educational uses for local communities, some of which have limited access to open green spaces. Part of the LNR designation process involves the preparation and implementation of a conservation management plans for each site. Each management plan initially explains the roles and responsibilities of the Local Authority and its partner organisations in managing a Local Nature Reserve. All partners have agreed to work to five key Management Objectives, which are to:-

- Maintain and enhance the habitat types and species present
- Combine habitat enhancement and management with education, recreation and access provision
- Encourage public understanding and awareness of issues relating to the site
- Conserve and interpret the archaeological and historical elements on the site
- Monitor effects of management on the wildlife on each site

The purpose of a management plan is to describe each site and to decide what prescriptions or actions are required, by whom and by what date, so that the site can be improved in line with the management objectives.

Public consultation and support for the designation of Local Nature Reserves is an important element of the designation process. We have tried to keep this management plan short and simple, so that it is easy to understand by everyone.

We recognise that the establishment and involvement of Friends Groups for each LNR offers a valuable resource in terms of future management. Where local volunteering, enthusiasm and ideas for improving our local environment are developed, we will adjust our management plan in response.

1 ROLES AND RESPONSIBILITIES OF PARTNER ORGANISATIONS

1.1 Rushcliffe Borough Council

Section 21 of the National Parks and Access to the Countryside Act 1949, gives principal local authorities the power to acquire, declare and manage nature reserves. When using these powers to declare Local Nature Reserves, local authorities must consult with English Nature

The designation of a Local Nature Reserve means that the local authority accepts a commitment to manage the land as a nature reserve and to protect it from inappropriate uses or development.

Rushcliffe Borough Council will oversee management of the sites and will undertake a strategic role in bringing all interested partners together through a local steering group, which will lead on a review of current operational practices and make changes to support habitats, where this is practical and within the budget available.

As landowner of Local Nature Reserves, Rushcliffe Borough Council has a duty of reasonable care to ensure people's safety.

Rushcliffe Borough Council is keen to support partners who can commission and/or undertake site work to enhance and create wildlife and habitats, as detailed in each management plan.

Where Friends Groups, community, voluntary or business organisations wish to carry out independent events or work on Local Nature Reserves, the Council requires a signed indemnity form which provides proof of :-

- Public Liability Insurance to a value of at least £2 million
- A Risk Assessment for each activity held on the site

For more information on Rushcliffe Borough Council and their open green spaces go to www.rushcliffe.gov.uk.

1.2 Natural England

Natural England is a governmental body whose overall objective is to maintain and enrich the characteristic wildlife and natural features that comprise England's natural heritage. Local Nature Reserves are important to help meet this objective.

Natural England believes that:

- everyday contact with nature is important for people's well-being and quality of life
- everyone should be able to enjoy this contact, in safety, without having to make any special effort or journey to do so
- natural greenspace in towns and cities can play an important part in helping safeguard our national treasure of wildlife and geological features
- accessible natural greenspaces can give everyone an excellent chance to learn about nature and to help protect it in practical ways

With this in mind Natural England have set recommended targets for accessible natural greenspace provision for people living in towns and cities of:

- accessible natural greenspace less than 300m (in a straight line) from home
- at least one accessible 20ha site within 2km of home

- one accessible 100ha site within 5km of home and
- one accessible 500ha site within 10km of home
- statutory Local Nature Reserves provided at a minimum level of 1 ha per thousand population.

For more information on LNRs and Natural England please go to www.naturalengland.org.uk.

1.3 Environmental Organisations

Environmental organisations are taking a lead role in Rushcliffe to improve wildlife habitats. For example, Rushcliffe's Nature Conservation Strategy Implementation Group, consisting of a number of environmental organisations and representatives from a groups with an interest in Rushcliffe's natural environment, work together in partnership with the Local Authority to implement Rushcliffe's Nature Conservation Strategy. The strategy contains an overarching objective for Rushcliffe Borough Council, through the Nature Conservation Strategy Implementation Group, to designate 66 LNRs across the borough by 2066. This would mean a provision one Local Nature Reserve per parish.

The Nottinghamshire Biodiversity Action Group has the responsibility for overseeing and monitoring the Nottinghamshire target habitats and species, of which a significant proportion are located in the District.

The Nottinghamshire Wildlife Trust's Conservation and Education Officers together with their Estates Team have been commissioned by Rushcliffe Borough Council to take a lead role in co-ordinating practical work, community participation and involvement to improve and increase Rushcliffe's Local Nature Reserves provision and community engagement.

1.4 Nottinghamshire Wildlife Trust

The Nottinghamshire Wildlife Trust is the leading environmental charity dedicated to nature conservation in the County. The Trust works to promote nature conservation through the work of its officers and volunteers and works closely with other organisations and communities throughout Nottinghamshire to maintain and enhance biodiversity. The Trust is committed to supporting projects that facilitate participation of local communities in improving their local environment and quality of life including:-

- Encouraging the participation of our membership through the local group, in the community participation and management of the Local Nature Reserves.
- Promoting the Local Nature Reserves as an important resource for the improvement of the quality of life for local communities to ensure social, health and environmental well being.
- Continuing the provision of high quality ecological advice via our Conservation Policy & Planning Staff to the local authority and friends of groups at the local nature reserves.
- Sharing our experience as the manager of 68 nature reserves and over 1200ha of land for conservation, with Local Authorities and communities.
- Supporting efforts to identify funds and mechanisms to continue delivery of both environmental/conservation restoration and management works on LNRs and community engagement with LNRs

For more information on Nottinghamshire Wildlife Trust, go to: www.wildlifetrust.org.uk/nottinghamshire/

1.5 Local Friends Groups

It is vital to the sustainability of each Local Nature Reserve to encourage and support the involvement of local communities, including schools and businesses, in the development and management of each Local Nature Reserve. To facilitate this involvement a 'Friends of' group is formed to provide a vehicle for local people to voice their ideas and concerns and allow them to raise funds for facilities or events they would like to see on site that existing budgets cannot accommodate.

The role of local friends groups can include:-

- Information on what site improvements are most important for local people
- Assisting in species and habitat monitoring
- Raising awareness and public support for Local Nature Reserves
- Carrying out practical management tasks on sites
- Raising funding for site specific projects

1.6 Local Businesses

Local businesses will be invited to contribute to delivery of the Local Nature Reserve management plan, which could include supporting the Friends Group on volunteering days or providing technical or other assistance with enhancing the site for nature conservation.

2 DESCRIPTION

2.1 Location

This document refers to the area known as The Hook, a proposed Local Nature Reserve located off Holme Road in Lady Bay, West Bridgford, Nottinghamshire (see Appendix 1 for Location Map)

2.2 Map Coverage

The Hook can be found on the following Ordnance Survey Maps:

- Landranger (1:50,000) sheet 129
- Explorer (1:25,000) sheet 260

At Grid Reference SK 593 386: Please refer to Appendix 1 for location map.

2.3 Size

The site is quite extensive covering approximately 15 hectares.

2.4 Ownership

The site is under the ownership of Rushcliffe Borough Council.

2.6 Soil and Geology

The underlying geology at The Hook consists of alluvium (clay and silt underlain by sand and gravel) representing the floodplain deposits of the River Trent. The rising ground along the southern margin of the meadow is a river terrace (a former floodplain of the Trent, now abandoned following down cutting by the main channel. The terrace deposits consist of sand and gravel and are between about 30 000 and 12 000 years old. (Carney, J. 2007 pers comm)

2.7 Aspect, Topography and Altitude

The Hook lies 24 metres above sea level and is level throughout.

2.8 Access

There are a number of access points into The Hook:

1. Main and vehicular entrance off Holme Road leading to the car park
2. Pedestrian access from Holme Rd adjacent to Melbourne Road
3. Pedestrian access from Holme Rd adjacent to Mona Road
4. Pedestrian access off Holme Grove
5. Footpath along the River Trent – access point at the western and eastern boundaries of the site

The main entrance points to the park are currently well maintained, with knee rails, litter bins etc. These access points are located on relatively level ground and therefore facilitate access for all.

Once in the park, the ground is mainly level, the site is well used as a recreational resource for activities such as dog walking, horse riding and running, and there are a range of informal and formal footpaths on the site allowing disabled access.

There is a designated parking area off Holme Road.

The site has links to the surrounding landscape, with footpaths leading alongside the River Trent towards Nottingham to the NW and Holme Pierrepont to the East.

2.9 Surrounding Land Use

The land surrounding The Hook is predominantly urban, particularly along its southern boundary which adjoins the Lady Bay residential area of West Bridgford, a major urban residential area within the conurbation of Nottingham City. To the west is a formal play and recreation area which is owned and managed by Rushcliffe Borough Council leading westwards Boots Recreation Ground and Nottingham Forest training ground. The land to the north consists of the River Trent with post industrial habitat and recently developed land just beyond. To the east is an area of permanent grassland leading to Adbolton Lane and this area, along with the Hook is classified as floodplain. This area would, in recent history, have been lowland wet grassland flooding on a regular basis, mainly in winter. However, due to the canalisation of the River Trent in recent years, this area rarely floods now. Along Adbolton Lane towards Holme Pierrepont lies the Nottinghamshire Wildlife Trust's reserve, 'Skylarks', which consists of a series of wetlands with scrub habitat and beyond, to the north east is Holme Pierrepont National Water Sports Centre.

2.10 Site Description

The Hook consists of a mixture of habitats including river and embankment habitats, mature hedgerow, grassland, ditches and occasional scrub.

For the purpose of this management plan the site has been split into 4 compartments, each compartment incorporating the section of the drainage ditch adjoining it to a mid point along the ditch (see Figure 1 for compartment map)

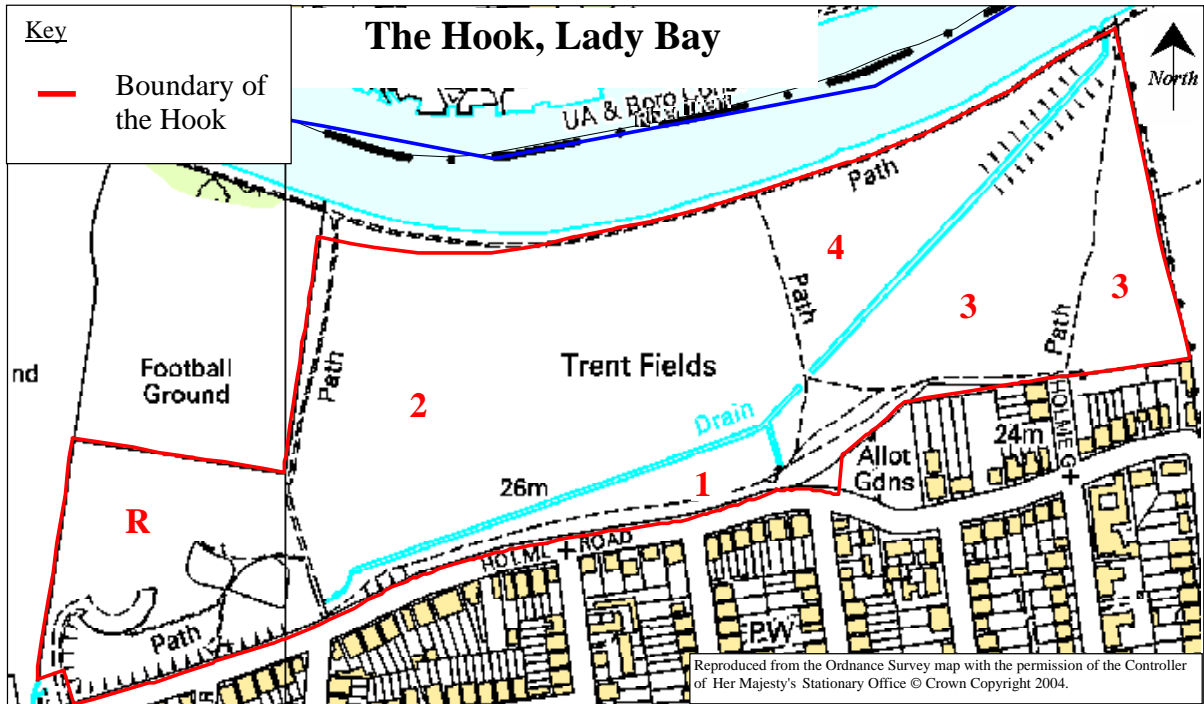


Figure 1 – Compartment Map and extent of The Hook

- R** = Recreation and children's play area
- 1** = Compartment 1
- 2** = Compartment 2
- 3** = Compartment 3
- 4** = Compartment 4

NB: All compartments incorporate the drainage ditch to mid point and the embankment on the compartment side of ditch

A summary of the compartments follows:

Compartment 1

This area lies to the south of the drainage ditch and consists of sloping ground recently disturbed by the Environment Agencies Flood Alleviation works and by drainage ditch dredging and remediation work to the west of the ditch where it emerges from the discharge point. The undisturbed areas consist of tall herb and grass vegetation with occasional scrub, which appears to be quite valuable and well used by small passerine birds for foraging and possibly nesting.

Some mitigation work for damage caused by the flood alleviation work has been undertaken along both banks of the drainage ditch to the west of this compartment. The mitigation work consisted of improvements to the habitat and floral species present to provide enhanced habitat for water voles.

The drainage ditch to the NW of the compartment is dense with Reedmace (*Typha latifolia*) and some reed sweetgrass (*Glyceria fluitans*), both of which will need controlling to maintain the flow of the ditch and favourable habitat for water voles.

Compartment 2

The River Trent forms the northern border of this compartment and acts as a corridor for migrating birds and for mammals such as water vole and potentially otter. It is also a great visual asset for local people when walking and cycling, and an amenity resource for water uses such as anglers and canoeists.

The banks of the Trent have been canalised, and are therefore steeper and straighter than would naturally occur. Bankside vegetation is currently left un-cut and there are occasional willows with some hawthorn scrub immediately adjacent to the banks.

The compartment, apart from the river bank habitat, is predominantly amenity mown grassland, although managed on a slightly more relaxed mowing regime than more formal sites. Consolidated footpaths traverse the grassland to the north and west of the compartment.

An area of undulating grassland exists to the west of the compartment and if possible it would be beneficial to enhance this undulating landform to create areas of seasonally wet grassland with shallow ponds to encourage invertebrates and amphibians to breed, this can be achieved by the removal of up to 40 cms of top soil allowing the area to collect surface water run off and precipitation.

A regime of differential mowing is currently employed on the site, which is producing a good mix of meadow habitats, with swathes of shorter grass serving as wide informal paths. There are areas of longer, unmanaged grassland by the river and many of these areas fade into the small scrub areas. This system of management is enhancing the wildlife potential of the site and should be encouraged. These management regimes are also creating an interesting and varied landscape, which is aesthetically pleasing.

Compartment 3

Compartment 3 consists of areas of rough or tussocky grassland interspersed with some significant areas of mature hawthorn and willow scrub. A number of formal and informal paths intersect the compartment but the area remains well populated with birds. Off the paths the land is undulating and therefore difficult to access or use conventional grass cutting equipment. This does however mean that the area provides good habitat for small mammals and invertebrates and is a seed source for small birds throughout the year, but most significantly throughout the winter.

An unmanaged mature hedgerow forms the eastern boundary of this compartment and the reserve. It would be beneficial to resume management of this hedgerow as a boundary, this can be achieved by coppicing the taller bushes, laying. Gapping up of this hedgerow has recently been carried out by the Environment Agency as part of the mitigation for disturbance to habitats during the construction of the flood alleviation wall.

The ditch embankment in this compartment has also recently undergone some scrub removal works to reducing shading to the ditch to improve the habitat for water voles. This work was also carried out by the Environment Agency as mitigation for disturbance. The percentage coverage of scrub overshadowing the ditch in this area will require monitoring, as it is the most important and therefore densely populated area for water voles.

Compartment 4

Compartment 4 is an area of grassland bordered by the River Trent in the north and the drainage to the south east. A formal footpath runs alongside the river and because of its close proximity to the drainage ditch and its population of water voles, it is proposed to maintain some scrub cover along the ditch embankment to reduce the level of disturbance to the water voles. The scrub will be reduced in height to reduce the amount of shading experienced by the ditch, whilst preventing clear site to the ditch from the path, which is often used by cyclists and runners.

2.11 Statutory Designations

There are no statutory designations associated with The Hook.

2.12 Non -Statutory Designations

There are no non-statutory designations associated with The Hook.

3 EVALUATION OF RESOURCE

3.1 Size

The Hook extends to 15 hectares and follows the course of the River Trent as it meanders out of the city of Nottingham in a north easterly direction towards more rural areas. The site provides a significant area and will make a substantial gain to biodiversity when managed for its nature conservation value. The site also forms part of a network of sites discussed in 3.2 - Context.

3.2 Context

The Hook is located close to the centre of Nottingham, in the Lady Bay area of West Bridgford and is situated alongside the River Trent, providing an extension to what is already a significant ecological resource and wildlife corridor.

To the east, the wildlife corridor continues into a rural environment, linking via Simpkins Farm to Holme Pierrepont Water Sports Centre and to the Nottinghamshire Wildlife Trust reserve of 'Skylarks'. Beyond this The Trent meanders north east to exit the borough at East Bridgford continuing in a northerly direction.

The combination of The Hook and sites to the east, along with the River Trent creates significant wildlife corridor enhanced by a mosaic habitats and open green space. It is important not to view The Hook in isolation, but as part of a system of sites, which will be enhanced by bringing The Hook into positive management for conservation.

3.3 Diversity

The diversity of habitats currently found at The Hook include, amenity grassland, ditch, hedgerow and scrub. As the majority of the site is informal amenity grassland the diversity is limited but when combined with the adjoining river and farmland habitats the habitat diversity is increased and therefore the wildlife resource increases. There is great potential to improve the biodiversity of the site, and therefore the wildlife corridor, through conservation management and the creation of some additional habitats. However, the presence of important underlying archaeology limits the habitat creation potential.

There has been a range of bird species recorded on this site including Mallard, Moorhen, Magpie, Blackbird, Wood Pigeon, Chaffinch, Robin, Chiffchaff, Reed Bunting, Grey Wagtail and Bullfinch. Water Voles are also present within the drainage ditch on site. The Water Vole is a Nottinghamshire Biodiversity Action Plan priority species and their habitat is protected by The Wildlife & Countryside Act 1981, this means that the management and expansion of their habitat will be a priority on this site. A vegetative species list is appended (Appendix ?).

Further ecological surveys are required to determine the presence and breeding status of amphibians, reptiles, invertebrates and birds. Further botanical and water vole surveys will also be required.

3.4 Naturalness

The grassland areas are improved and semi-improved habitats. Originally The Hook would have been an area of lowland wet grassland or water meadow at the side of a meandering river Trent which would have flooded during high rainfall, mainly during the winter. Since the straightening and canalisation of the River Trent, The Hook floods much less frequently allowing the area to be more easily managed for recreation which has consequently lead to a decline in the diversity of the

sward and other habitats. In addition to the amenity grassland areas there is some scattered tree planting which gives the area a 'park' feel, however the mowing regimes implemented on the site allow other areas to have a more natural appearance.

3.5 Rarity

The habitats present at The Hook could not be considered to be rare as they have been altered over time by human intervention and now longer function as their natural habitat would have originally done. For example, the river Trent would have had a much wider and more meandering riverbed profile which would have regularly flooded the grassland on The Hook which would have been classified as the habitat type 'Lowland Wet Grassland' which is a diminishing resource nationally and regionally because of canalisation, development and agricultural improvement.

However, the presence on site of a healthy population of water voles is a rarity. Once common and widespread, this species has suffered a dramatic decline in both numbers and distribution. Numbers have fallen by an estimated 89% since 1939. This decline continues and is the most significant for any British mammal, with a projected possible extinction early this century (Strachen 2001). The water vole is both a Nottinghamshire and UK Biodiversity Action Plan priority species and its habitat receives protection under Schedule 5 of the Wildlife and Countryside Act 1981 which makes it an offence to:

- damage, destroy or obstruct access to any structure or place which water voles use for shelter of protection,
- disturb water voles while they are using such a place

The provision of a significant natural open greenspace such as this in close proximity to an urban area is rare and as such should be protected.

3.6 Fragility

The majority of the site could not be considered to be fragile as some of the most damaging operations that could occur already have, in the form of the canalisation of The Trent, removing opportunities for seasonal inundation and the improvement of the grassland sward with the introduction of non-indigenous seed mixes containing ryegrass (*Lolium perennis*) and white clover (*Trifolium repens*).

The ditch habitat containing water voles however is very fragile and susceptible to pollution incidents, mis-management when dredging, scrubbing over causing dense shading, which discourages water voles and colonisation by invasive non-native species, mainly Himalayan Balsam (*Impatiens glandulifera*). One of the main objectives of this management plan therefore must be to stabilise the water vole habitat and to enhance and expand it to allow the population to increase.

3.7 Typicalness

The site is typical of floodplain in that it is flat and predominantly grassland but as it traditionally would have been in agricultural usage, for hay and / or grazing, then the typicalness ends at the appearance alone. The present use, as provision for informal recreation and natural open greenspace is not typical.

3.8 Recorded History

Recent recorded history shows that The Hook would have been part of an agricultural holding (see Appendix 2). It would have been floodplain grassland which would have been regularly wet throughout the winter but used for a hay crop and during summer and grazed in the autumn until it became too wet for the livestock.

Archaeological surveys of this area have been carried out in recent years but unfortunately the results have not yet become available. However, we are hoping to interpret the results of these surveys on site in the future when funding becomes available.

3.9 Ecological Position

The Hook pLNR is an important link in a chain of other natural sites, which together provide an overall strategic wildlife network.

Much of the land adjoining the river Trent within Nottinghamshire is rapidly being encroached upon and diminished through development. This has meant that much of what would once have been a continuous habitat resource has not become fragmented. The provision of a large area of natural greenspace that is to be managed for the benefit of wildlife in future, is significant in that it will be protected from such encroachment and its ability to act as a sink for a greater variety of species, which may stay or move along the corridor, will be enhanced.

3.10 Potential

The Hook has the potential to become an important ephemeral wetland site used by passage migrant birds during the spring and autumn, through the creation of wetland scrapes on site. It also has the potential to become a stronghold for water voles as it already holds a healthy population in sub-optimal conditions.

In addition, The Hook is very close to Ladybay and West Bridgford and therefore has the potential to attract large numbers of recreational users from the local communities. Several schools are also located close to the site, which will allow an increase in the site's use as an educational resource. At present the site has little value as an educational resource but the introduction of additional habitats and interpretation, together with engaging the expertise of Nottinghamshire Wildlife Trust's Education Officers in providing curriculum educational activities, will greatly increase the educational potential of the site.

There is the potential for Rushcliffe Borough Council to work with local residents to introduce new management to the site to enhance the area for nature conservation. It is hoped that education initiatives will gradually increase public awareness, and that anti-social behaviour (which is not high) will therefore decline.

3.11 Intrinsic Appeal

The Hook's appeal lies in its open natural feel, which is unusual in this urban environment. It provides the ability to be able to walk alongside the river Trent or through grass and scrub areas along a network of formal and informal paths. This facility is almost on the local community's doorstep. It would be desirable away from the river embankment to undertake some additional tree and shrub planting and habitat creation to allow site users to experience a sense of seclusion in some areas. Given the size of the site this should be possible by creating different zones and habitat types which will make exploring the site more interesting whilst allowing some quiet tranquil areas.

4 MANAGEMENT OBJECTIVES AND PRESCRIPTIONS

4.1 Management Objectives

- Maintain and enhance the habitat types and species present;
- Combine habitat enhancement and management with education, recreation and access provision;
- Encourage public understanding and awareness of issues relating to the site;
- Monitor effects of management on the wildlife on the site;

4.2 Objective 1 Maintain and enhance the habitat types and species present.

The overall impression of the site is of river flowing through grassland, which is aesthetically pleasing. The park is level grassland with scattered clumps of trees leading down to the River Trent. Management should therefore aim to maintain this overall balance while adding diversity to the grass sward and habitat types.

Hedgerows

The boundary hedgerow to the east of the site is in need of laying to rejuvenate it and to maintain it as a hedgerow rather than allowing it to develop into a row of trees.

Scrub

Areas of scrub in compartments 1 and 3 should be managed by coppicing and enhanced by allowing them to further encroach onto grassland areas or by planting additional shrub species of local provenance and characteristic of the area. Access through the area should be formalised to encourage use of footpaths and discouraged from wandering into scrub areas, which will be used by birds for foraging, roosting and particularly nesting. The provision of additional scrub in compartments 1 and 3 will also serve to screen the flood defence wall from the reserve.

Scrub along the drainage ditch will be controlled to prevent undue shading onto the ditch, which water voles dislike.

It will be necessary to establish a screen of shrubs on the eastern and northern boundary of compartment 2. The screen will be formed by planting groups of flowering and fruiting native shrubs in an undulating meander down the length of the paths, with occasional gaps between groups of shrubs to allow viewing of wildlife using the compartment. The compartment will contain seasonally wetlands as detailed below. These screens will inhibit the view of the river from some parts of the site but will provide much needed windbreak, which will benefit all users. This windbreak effect will create micro climates which are particularly important for invertebrates such as butterflies and dragonflies which will use the waterbodies.

The willow scrub should be allowed to develop, and then managed in a traditional way, through coppicing on a 12 year rotation. This will introduce traditional management techniques and will benefit wildlife.

Wetlands

It is proposed to create or recreate a series of small shallow wetland scrapes within the grassland areas of compartment 2 and 3. The scrapes will follow the lines of the existing depressions in the

ground, which archaeologists think were once fish traps and meanders in the old riverbed. By removing only 45 cm of topsoil we can create seasonally wet waterbodies without affecting the underlying archaeology or the cutting and removal of the grass as a hay crop. It is hoped that the scrapes will attract and support passage migrants such as wading birds and ducks in winter. However, waders are particularly susceptible to disturbance and it is for this reason that it may be necessary to divert footpaths away from this area.

To increase the amount of bankside habitat available for water voles it may be possible, due to the large area of The Hook, to introduce new ditches and backwaters leading from the river or small stream. Such ditches could end in wetland scrapes providing a new habitat of standing water on the site. Public access could still be facilitated by diverting current desire lines around these newly created sites, or by providing low key bridges across the ditches. A boardwalk area could be introduced through the marsh/scrape area. This could be developed to include interpretation and an area for educational activities such as pond dipping.

Drainage Ditch

The drainage ditch, which virtually bisects the site SW to NE, takes surface water run-off from areas of housing in West Bridgford. The quality of the water within the ditch is not always therefore desirable. As previously mentioned this ditch supports a colony of water voles that require clean unpolluted water to be able to continue using the ditch. It is therefore proposed, when funding becomes available, to establish an online settling pond and reedbed to allow the ditch to continue to function without requiring de-silting work, which is potentially damaging to water vole habitat.

The drainage ditch will also need regular de-vegetation of the ditch bed of invasive species such as reedmace and sweet grass. This should be carried out by hand to cause the minimum of disturbance and should be carried out during the winter.

The ditch banks should be managed to benefit Water Voles. Vegetation should be left mainly uncut to provide food, shelter and nesting sites. Short sections of bank should be cut each year on a rotational basis, as this encourages young vigorous shoots. Any bank work that is necessary should be undertaken during November to February when Water Voles are not in their breeding season.

Grassland

The grassland areas are currently managed in two ways on The Hook, the more uneven areas are left uncut and the flatter areas are regularly mown and the arisings left on site. This has resulted in the undulating areas become 'rank' whilst the regularly mown areas have declined in diversity as only a few species can survive being regularly cut and regular nutrient inputs from the decaying cut grass.

It is proposed to retain some amenity mown areas to be used for recreational purposes. The remaining flat areas will be managed on a hay cut regime. These areas will be cut on an annual basis with the arisings or hay removed. This would have been how lowland wet grassland would traditionally have been managed and will, over time, allow the grassland to become more diverse again.

The uneven areas that are currently uncut will be areas that are earmarked for scrub enhancement and tree planting. However, those areas that do not fall into those categories will be managed by strimming and removal or stacking of the arising to promote fresh growth. Areas dominated by nettle occur on land that has had ditch silt deposition or other forms of disturbance. This soil tends to be very rich in nutrients which makes it difficult to use for the establishment of other native species however, the nettle beds will over time be destroyed and replaced with a native wildflower mix that can cope with rich conditions.

Trees

The hybrid poplars along the river embankment should be felled with a proportion left and pollarded to ultimately provide standing deadwood. The pollarded trees should be finished with coronet cuts and slits for bat roosting.

In between the remaining stems of poplar and occasionally along the length of the riverbank, particularly in the region of the large development on the opposite bank of the Trent, native Black Poplar will be planted which would once have been characteristic of this area. The native poplar should quickly establish and partially screen the development on the opposite bank.

Some non-native trees in compartment 3 may need to be removed as they can be highly invasive and some are uncharacteristic in this landscape. Where it is considered that they can make a nectar or fruit contribution to the reserve, they will be retained. However, planting of native species of tree characteristic to the area is proposed for wedge of land to the east of compartment tree to provide a small copse. The copse will consist of trees and shrubs and log piles to encourage fungi and beetles. Occasional trees will also be planted throughout the scrub in the western side of compartment 3.

Due to the nature of the park and the unlimited public access any potentially dangerous trees should be made safe.

River Embankment

Himalayan Balsam growing along the banks of the river Trent and the small brook should be removed as it is a non-native species and is particularly invasive.

The grass along the river embankment should be managed by remaining uncut but with encroaching scrub and tall vegetation being controlled by brushcutting. The uncut tussocky surface not only supplies habitat for small mammals and insects but also acts as a buffer and trap to trap litter and silts preventing them from entering the river.

Where possible faces should be cut in to the riverbank to provide nesting sites for bird such as Kingfisher and Sand Martin. These cuts will also provide areas for invertebrates such as solitary bees and wasps to dig their nest chambers. This work requires the permission of the Environment Agency who will be contacted before any final plans are made.

Artificial Habitats

It is proposed, in consultation with the Environment Agency to install an artificial otter holt along an inaccessible section of the river embankment. The holt will be constructed from concrete blocks and slabs with two entrances, but will be buried within the embankment. The top of the embankment will be planted with willow and scrub to prevent dogs from accessing the area.

Bat boxes could be installed on the pollarded poplars along the river embankment to encourage bat roosting. Bird nesting boxes will be installed on trees mature enough to support them to provide additional nesting sites.

Outline Prescriptions:

- Lay / coppice hedgerow along eastern boundary of reserve
- Manage the area of willow scrub in compartment 3 with a coppice rotation system
- Enhance scrub habitat in compartment 3
- Plant groups of shrubs along the east and north boundary of compartment 2
- Create wetland scrapes in compartments 2 and 3.
- Investigate the potential to create new backwaters from the River Trent
- Create online settling pond and reedbed at beginning of drainage ditch
- De-vegetate the ditch bed by hand on a rotational basis
- Strim ditch banks on a rotation basis to improve foraging for water voles
- Alter management on some flat areas of grassland to hay meadow regime
- Strim rank grassland on rotation to rejuvenate
- Remove nettle beds gradually and replace with more beneficial species
- Fell some and pollard occasional hybrid poplars along the river embankment
- Plant Black Poplar and some willow along river embankment
- Remove non-native trees from compartment 3 and replace with native species
- Plant copse to the east of compartment 3
- Eradicate Himalayan Balsam from river embankment
- Control tall herb and scrub vegetation along river embankment
- Investigate opportunities to create sheer faces in riverbank with EA
- Install an artificial otter holt along river embankment
- Install bird nesting and bat roosting boxes

4.3 Objective 2 Combine habitat enhancement and management with education, recreation and access provision.

The Hook is a well-used recreational resource. Alterations in habitat management and restrictions to access will therefore need to be clearly defined and interpreted on site to avoid misunderstandings.

Access around the site currently consists of a Public Right of Way along the embankment of the River Trent and a system of formal and informal pathways throughout the site leading from the nearby housing to the designated footpath. It would be advisable to identify and formalise footpaths and their uses, along with interpretation of those paths, to allow the creation of 'quiet' areas for wildlife for those species that are sensitive to disturbance. Ideally quiet areas should be allowed in a number of habitats including seasonal wetland and scrub. This will hopefully allow the site to be used by species currently not found there. To facilitate this it is proposed to establish scrub screens through the middle of the site, which may be a controversial proposal if users of the site value its current openness. Unfortunately the open aspect of the site means that the whole site can be used for recreation such as ball games and unlimited access for dogs, which results in the whole site being subject to disturbance, limiting the wildlife that can use the site. Defined routes for horse riding should be determined and users of the site made aware.

Ensure that defined paths are in good order and useable at all times to ensure that visitors have not need to stray off paths.

Interpretation materials detailing footpaths, habitats, species and archeological interest should be installed as appropriate and when funding becomes available. If new ditches and scrapes are created leading off the River Trent or the existing ditch, information and interpretation should be developed. This could be achieved along a boardwalk, allowing people to view the new habitats safely.

Carry out regular health & safety checks around the reserve to ensure public safety.

Litter and fly tipping removal should be undertaken regularly to maintain the habitats and the visual appearance of the site.

Encourage the development of Friends Group to provide a vehicle for the local community to provide input into the future management and uses on the site. A Friends Group will also allow the local community to get involved with the site at a practical level from the strategic decision making to habitat management and running events and walks.

Outline Prescriptions:

- Define footpaths, bridleways and habitat areas on the reserve to inform users of the site
- Maintain paths and access points
- Create and install interpretation materials when appropriate and when funding becomes available
- Carry out regular health & safety checks around the reserve to ensure public safety.
- Remove rubbish/litter and fly tipping at least once per month, or as soon as possible after significant dumping;
- Develop and support a Friends group

4.4 Objective 3 Encourage public understanding and awareness of issues relating to the site.

The urban fringe location of The Hook pLNR encourages it to be heavily used for informal recreation such as dog walking. Introducing new forms of management, especially wetland management work and limiting access into some areas has the potential to alienate local residents or users.

During both the formal neighbourhood meetings and informal site meetings with the local people together with the subsequent e-mail correspondence it has become obvious that the local community care about the site passionately and enjoy it for a number of reasons. Some wish to see it improved for wildlife, others would like to see it 'tidied up' and others value the wide-open expanse in a primarily built up area. The decision to designate this area as a Local Nature Reserve means that current management regimes will change and the area will be enhanced for the benefit of biodiversity. These changes will be embraced by much of the local community but for others it will mean restrictions in access management techniques that may initially appear untidy or patchy. It will therefore be important to encourage public understanding of the management of the site and its long-term objectives through consultation on this plan and on site interpretation and engagement with the Friends of Group. It is hoped that through public understanding, support for the implementation of management to achieve long-term objectives will be forthcoming. The development of a Friends group will provide a vehicle for the discussion about such issues on site and will hopefully encourage engagement in practical management and / or monitoring.

To raise the profile of The Hook as a Local Nature Reserve, once established, a programme of events should be encouraged which should be run in partnership with the Friends of Group. Events could include guided walks on topics such as wildflowers, birds, fungi etc, volunteer work days focusing specific tasks such as coppicing. This would enable the opportunity to explain key theories relating to the management and allow the public to learn about the differing management activities. School groups should be encouraged to use the site as an outdoor classroom to raise awareness about environmental issues and promote a feeling of ownership amongst young people.

Outline Prescriptions:

- Develop interpretation (boards / leaflet / fact sheet / web page) to explain management and impacts on ecology
- Develop a programme of interesting, varied public events to provide information relating to the issues and wildlife on The Hook pLNR;
- Encourage school parties to visit the site;
- Use interesting management work as an opportunity to invite local residents/schools and visitors to the site to participate in and learn about site management;
- Encourage the Friends group to undertake small-scale management work or projects to benefit wildlife;
- Develop links with business community
- Work with local partners to encourage responsible use of the site

4.5 Objective 4 Monitor effects of management on the wildlife of the site.

In order to evaluate the effects that the altered management regimes are having on the habitats and species currently on site, it is important to monitor the effects of that management work over a period of time, through carrying out ecological surveys consisting of casual observations and formal surveys. For this to be effective we must first gather baseline data i.e. data that demonstrates the ecological situation prior to implementing new management regimes.

A preliminary vegetation survey was carried out in 2007 (see appendix ??). Water vole surveys were carried out by Black & Veitch Ecological Consultancy in summer 2008 and the results are appended (Appendix 3). Bird surveys will be carried out in 2008. Bat surveys will be carried out prior to felling and pollarding of poplars along riverbank. Future surveys will be required for invertebrates, amphibians and fungi. Records from local recorders will be collected and added to data records. All of this survey information will be used, along with ongoing survey results, to monitor the effects of management on site. Local naturalists, volunteer, school parties, students and the local community, supported by NWT, will be encouraged and in some instances trained to carry out ecological surveys on site.

Subject to monitoring results, this and future management plans will be reviewed and evolve accordingly.

Outline Prescriptions:

- Undertake or commission ecological surveys to obtain baseline data on invertebrates, amphibians, fungi and birds;
- Encourage and in some instances train local people to carry out ecological surveys to information management and provide records to the Notts Biological & Geological Records Centre (NBGRC);
- Review, evaluate and update management strategies and prescriptions on a 5 yearly cycle (or more frequently if required).

4.6 Factors Influencing Management

- Safety - the entire site is accessible at all times, therefore in the interest of public safety, all possible measures should be taken to ensure public safety whilst work is being carried out, including closing paths
- Community involvement - local community and interest groups should be involved in and consulted upon the practical and strategic management of the woodland at every possible opportunity.
- Funding - for the management identified cannot be guaranteed for the full term of the plan. It may therefore be necessary for some tasks to be rolled over into subsequent years, to be completed when funding becomes available or for grant funding to be raised for specific projects.
- Legal obligations - work likely to cause disturbance to breeding birds i.e. felling and scrub clearance cannot be undertaken during the bird breeding season (March to September). Therefore all felling and scrub clearance must be undertaken during the autumn and winter as it is an offence to disturb any wild bird (with the exception of pest species) while it is tending a nest containing eggs or chicks, until the chicks have *successfully* fledged. To do so would be a criminal offence under The Wildlife & Countryside Act 1981.
- Protected species - mature trees identified for felling, likely to provide roosting opportunities for bats should be surveyed by a licensed bat worker prior to felling. All species of British bat plus their roosting sites are protected by The Wildlife & Countryside Act 1981, the CROW Act 2000 and the Conservation (Natural Habitats, &c.) Regulations 1994.
- Management - annual or bi-annual meetings regarding the implementation of the management plan for the site are required to identify work programme and schedule of works. Meetings should involve Rushcliffe Borough Council, Notts Wildlife Trust, contractors and anyone else likely to carry out work on site.
- Only native species characteristic of the area should be introduced to the reserve.

5. MANAGEMENT PROPOSALS:

Objective 1 Maintain and enhance the habitat types and species present		
	Outline Prescription	Who by? – Suitable Operatives
1	Lay / coppice hedgerow along eastern boundary of reserve	BTCV / volunteer work party
2	Manage the area of willow scrub in compartment 3 on a 10 to 12 year rotation to allow for full structural diversity	Volunteer work party / Probation Service
3	Enhance scrub habitat in compartment 3 by coppicing on 10 year rotation and allowing natural encroachment to increase area. Some supplementary planting may be necessary to increase diversity.	Volunteer work party / Probation Service
4	Plant groups of shrubs along the east and north boundary of compartment 2	BTCV / volunteer work party
5	Create wetland scrapes in compartments 2 and 3.	Contractor / NWT
6	Investigate the potential to create new backwaters from the River Trent	NWT / EA / contractor
7	Create online settling pond and reedbed at beginning of drainage ditch	Contractor / NWT / RBC?
8	De-vegetate the ditch bed by hand on a rotational basis starting in compartment 1	Volunteer Work Party
9	Strim ditch banks on a rotation basis to improve foraging for water voles	Volunteers / Probation Service
10	Alter management on some flat areas of grassland to hay meadow regime	RBC / Contractor
11	Strim rank grassland in compartments 1 and 3 on rotation to promote strong fresh growth	Volunteers / Probation Service
12	Remove nettle beds in compartments 1 and 3 gradually and replace with more beneficial species	RBC / NWT
13	Fell some and pollard occasional hybrid poplars along the river embankment	Contractor
14	Plant Black Poplar and some willow along river embankment to partially screen new development on opposite bank	Volunteer Work Party
15	Remove non-native trees from compartment 3 and replace with native species where appropriate	Volunteer Work Party / BTCV
16	Plant copse to the east of compartment 3 using native species characteristic to the landscape character area	RBC / Volunteer Work Party
17	Eradicate Himalayan Balsam from river embankment by spraying with glyphosate with permission from EA	Contractor
18	Control tall herb and scrub vegetation along river embankment by strimming on rotation as necessary	Probation Service
19	Investigate opportunities to create sheer faces in riverbank with EA	NWT / EA
20	Install an artificial otter holt along river embankment	NWT / EA / Volunteer Work Party or Probation Service
21	Install bird nesting and bat roosting boxes	NWT / Volunteer Work Party

Objective 2 Combine habitat enhancement and management with education, recreation and access provision.		
	Outline Prescription	Who by? – Suitable Operatives
22	Define footpaths, bridleways and habitat areas on the reserve to inform users of the site	RBC / NWT / Friends of Group
23	Maintain paths and access points	RBC
24	Create and install interpretation materials when appropriate and when funding becomes available	RBC / NWT / NCC
25	Carry out regular health & safety checks around the reserve to ensure public safety.	RBC
26	Remove rubbish/litter and fly tipping at least once per month, or as soon as possible after significant dumping;	RBC
27	Develop and support a Friends group	NWT / RBC

Objective 3 Encourage public understanding and awareness of issues relating to the site		
	Outline Prescription	Who by? – Suitable Operatives
28	Develop interpretation (boards / leaflet / fact sheet / web page) to explain management and impacts on ecology	NWT / RBC
29	Develop a programme of interesting, varied public events to promote and inform about wildlife, education, habitat management and archeology	NWT / Friends of Group
30	Encourage school parties to visit the site	NWT / Friends of Group
31	Use interesting management work as an opportunity to invite local residents/schools and visitors to the site to participate in and learn about site management;	NWT / Friends of Group
32	Encourage the Friends group to undertake small-scale management work or projects to benefit wildlife	NWT
33	Develop links with business community	NWT / RBC / Friends of Group
34	Work with local partners to encourage responsible use of the site	NWT / RBC / Friends of Group

Objective 4 Monitor effects of management on the wildlife of the site		
	Outline Prescription	Who by? – Suitable Operatives
35	Undertake or commission ecological surveys to obtain baseline data on invertebrates, amphibians, fungi and birds	NWT / volunteers / students / specialist groups
36	Encourage and in some instances train local people to carry out ecological surveys to information management and provide records to the Notts Biological & Geological Records Centre (NBGRC);	NWT / local naturalists / volunteers
37	Review, evaluate and update management strategies and prescriptions on a 5 yearly cycle or more frequently if required	NWT / RBC

6. FIVE YEAR WORK PROGRAMME 2008 – 2013

		Years				
Project		1	2	3	4	5
1	Lay / coppice hedgerow along eastern boundary of reserve					
2	Manage the area of willow scrub in compartment 3 on a 10 to 12 year rotation to allow for full structural diversity					
3	Enhance scrub habitat in compartment 3 by coppicing on 10 year rotation and allowing natural encroachment to increase area. Some supplementary planting may be necessary to increase diversity.					
4	Plant groups of shrubs along the east and north boundary of compartment 2					
5	Create wetland scrapes in compartments 2 and 3.					
6	Investigate the potential to create new backwaters from the River Trent					
7	Create online settling pond and reedbed at beginning of drainage ditch					
8	De-vegetate the ditch bed by hand on a rotational basis starting in compartment 1					
9	Strim ditch banks on a rotation basis to improve foraging for water voles					
10	Alter management on some flat areas of grassland to hay meadow regime					
11	Strim rank grassland in compartments 1 and 3 on rotation to promote strong fresh growth					
12	Remove nettle beds in compartments 1 and 3 gradually and replace with more beneficial species					
13	Fell some and pollard occasional hybrid poplars along the river embankment					
14	Plant Black Poplar and some willow along river embankment to partially screen new development on opposite bank					
15	Remove non-native trees from compartment 3 and replace with native species where appropriate					
16	Plant copse to the east of compartment 3 using native species characteristic of the landscape character area					
17	Eradicate Himalayan Balsam from river embankment by spraying with glyphosate with permission from EA					If necessary
18	Control tall herb and scrub vegetation along river embankment by strimming on rotation as necessary					
19	Investigate opportunities to create sheer faces in riverbank with EA					
20	Install an artificial otter holt along river embankment					
21	Install bird nesting and bat roosting boxes					
22	Define footpaths, bridleways and habitat areas on the reserve to inform users of the site					
23	Maintain paths and access points					
24	Create and install interpretation materials when appropriate and when funding becomes available					

25	Carry out regular health & safety checks around the reserve to ensure public safety.					
26	Remove rubbish/litter and fly tipping at least once per month, or as soon as possible after significant dumping;					
27	Develop and support a Friends group					
28	Develop interpretation (boards / leaflet / fact sheet / web page) to explain management and impacts on ecology					
29	Develop a programme of interesting, varied public events to provide information relating to the issues and wildlife on The Hook pLNR					
30	Encourage school parties to visit the site					
31	Use interesting management work as an opportunity to invite local residents/schools and visitors to the site to participate in and learn about site management					
32	Encourage the Friends group to undertake small-scale management work or projects to benefit wildlife					
33	Develop links with business community					
34	Work with local partners to encourage responsible use of the site					
35	Undertake or commission ecological surveys to obtain baseline data on invertebrates, amphibians, fungi and birds;					
36	Encourage and in some instances train local people to carry out ecological surveys to inform management and provide records to the Notts Biological & Geological Records Centre (NBGRC);					
37	Review, evaluate and update management strategies and prescriptions on a 5 yearly cycle (or more frequently if required).					

7. TIMING OF ANNUAL WORK PROGRAMME

YEAR 1 - 5		MONTH											
PROJECT		APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
1	Lay / coppice hedgerow along eastern boundary of reserve												
2	Manage the area of willow scrub in compartment 3 on a 10 to 12 year rotation to allow for full structural diversity												
3	Enhance scrub habitat in compartment 3 by coppicing on 10 year rotation and allowing natural encroachment to increase area. Some supplementary planting may be necessary to increase diversity.												
4	Plant groups of shrubs along the east and north boundary of compartment 2												
5	Create wetland scrapes in compartments 2 and 3.												
6	Investigate the potential to create new backwaters from the River Trent												
7	Create online settling pond and reedbed at beginning of drainage ditch												
8	De-vegetate the ditch bed by hand on a rotational basis starting in compartment 1												
9	Strim ditch banks on a rotational basis to improve foraging for water voles												
10	Alter management on some flat areas of grassland to hay meadow regime												
11	Strim rank grassland in compartments 1 and 3 on rotation to promote strong fresh growth												
12	Remove nettle beds in compartments 1 and 3 gradually and replace with more beneficial species												
13	Fell some and pollard occasional hybrid poplars along the river embankment												
14	Plant Black Poplar and some willow along river embankment to partially screen new development on opposite bank												
15	Remove non-native trees from compartment 3 and replace with native species where appropriate												
16	Plant copse to the east of compartment 3 using native species characteristic of the landscape character area												

YEAR 1 - 5		MONTH											
		APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
PROJECT													
17	Eradicate Himalayan Balsam from river embankment by spraying with glyphosate with permission from EA												
18	Control tall herb and scrub vegetation along river embankment by strimming on rotation as necessary												
19	Investigate opportunities to create sheer faces in riverbank with EA												
20	Install an artificial otter holt along river embankment												
21	Install bird nesting and bat roosting boxes												
22	Define footpaths, bridleways and habitat areas on the reserve to inform users of the site												
23	Maintain paths and access points												
24	Create and install interpretation materials when appropriate and when funding becomes available												
25	Carry out regular health & safety checks around the reserve to ensure public safety.												
26	Remove rubbish/litter and fly tipping at least once per month, or as soon as possible after significant dumping;												
27	Develop and support a Friends group												
28	Develop interpretation (boards / leaflet / fact sheet / web page) to explain management and impacts on ecology												
29	Develop a programme of interesting, varied public events to provide information relating to the issues and wildlife on The Hook pLNR												
30	Encourage school parties to visit the site												
31	Use interesting management work as an opportunity to invite local residents/schools and visitors to the site to participate in and learn about site management												
32	Encourage the Friends group to undertake small-scale management work or projects to benefit wildlife												
33	Develop links with business community												
34	Work with local partners to encourage responsible use of the site												

YEAR 1 - 5		MONTH											
		APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
PROJECT													
35	Undertake or commission ecological surveys to obtain baseline data on invertebrates, amphibians, fungi and birds;												
36	Encourage and in some instances train local people to carry out ecological surveys to information management and provide records to the Notts Biological & Geological Records Centre (NBGRC);												
37	Review, evaluate and update management strategies and prescriptions on a 5 yearly cycle (or more frequently if required).												

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Appendices

FUNDING IMPLICATIONS OF MANAGEMENT PROPOSALS

MANAGEMENT PRESCRIPTION		WHO BY?	POTENTIAL FUNDING	TIME IN MAN DAYS
1	Lay / coppice hedgerow along eastern boundary of reserve	BTCV / volunteer work party	RBC funding if BTCV (£200 pd)	3
2	Manage the area of willow scrub in compartment 3 on a 10 to 12 year rotation to allow for full structural diversity	Volunteer work party / Probation Service	NWT SLA supervision implication	0.5
3	Enhance scrub habitat in compartment 3 by coppicing on 10 year rotation and allowing natural encroachment to increase area. Some supplementary planting may be necessary to increase diversity.	Volunteer work party / Probation Service	NWT SLA supervision implication	0.5
4	Plant groups of shrubs along the east and north boundary of compartment 2	BTCV / volunteer work party	RBC for whips + NWT SLA support	2
5	Create wetland scrapes in compartments 2 and 3.	Contractor / NWT	Grant funding	
6	Investigate the potential to create new backwaters from the River Trent	NWT / EA / contractor	NWT SLA	1
7	Create online settling pond and reedbed at beginning of drainage ditch	Contractor / NWT / RBC?	NWT SLA + RBC budget or grant funding (EA ?)	4
8	De-vegetate the ditch bed by hand on a rotational basis starting in compartment 1	Volunteer Work Party	NWT SLA supervision	0.5
9	Strim ditch banks on a rotation basis to improve foraging for water voles	Volunteers / Probation Service	NWT SLA supervision	0.5
10	Alter management on some flat areas of grassland to hay meadow regime	RBC / Contractor	RBC budget	2
11	Strim rank grassland in compartments 1 and 3 on rotation to promote strong fresh growth	Volunteers / Probation Service		0
12	Remove nettle beds in compartments 1 and 3 gradually and replace with more beneficial species	RBC / NWT	RBC budget or NWT SLA	2
13	Fell some and pollard occasional hybrid poplars along the river embankment	Contractor	RBC	5?
14	Plant Black Poplar and some willow along river embankment to partially screen new development on opposite bank	Volunteer Work Party	NWT SLA	1
15	Remove non-native trees from compartment 3 and replace with native species where appropriate	Volunteer Work Party / BTCV	RBC budget	2
16	Plant copse to the east of compartment 3 using native species characteristic to the landscape character area	RBC / Volunteer Work Party	RBC budget for trees and Streetwise + NWT supervision	2
17	Eradicate Himalayan Balsam from river embankment by spraying with glyphosate with permission from EA	Contractor	RBC budget	1
18	Control tall herb and scrub vegetation along river embankment by strimming on rotation as	Probation Service		0

	necessary			
19	Investigate opportunities to create sheer faces in riverbank with EA	NWT / EA	NWT SLA	0.5
20	Install an artificial otter holt along river embankment	NWT / EA / Volunteer Work Party or Probation Service	NWT SLA + materials	2
21	Install bird nesting and bat roosting boxes	NWT / Volunteer Work Party	NWT SLA support + materials	1
22	Define footpaths, bridleways and habitat areas on the reserve to inform users of the site	RBC / NWT / Friends of Group	RBC Officer time + NWT SLA	0.5
23	Maintain paths and access points	RBC	RBC budget	?
24	Create and install interpretation materials when appropriate and when funding becomes available	RBC / NWT / NCC	RBC budget / grant funding	?
25	Carry out regular health & safety checks around the reserve to ensure public safety.	RBC	RBC budget	5
26	Remove rubbish/litter and fly tipping at least once per month, or as soon as possible after significant dumping;	RBC	RBC budget	?
27	Develop and support a Friends group	NWT / RBC	NWT SLA	10
28	Develop interpretation (boards / leaflet / fact sheet / web page) to explain management and impacts on ecology	NWT / RBC	NWT SLA	?
29	Develop a programme of interesting, varied public events to promote and inform about wildlife, education, habitat management and archaeology	NWT / Friends of Group	NWT SLA	3
30	Encourage school parties to visit the site	NWT / Friends of Group	NWT SLA	?
31	Use interesting management work as an opportunity to invite local residents/schools and visitors to the site to participate in and learn about site management;	NWT / Friends of Group	NWT SLA	
32	Encourage the Friends group to undertake small-scale management work or projects to benefit wildlife	NWT	NWT SLA	
33	Develop links with business community	NWT / RBC / Friends of Group	NWT SLA	
34	Work with local partners to encourage responsible use of the site	NWT / RBC / Friends of Group	NWT SLA + RBC Streetwise	
35	Undertake or commission ecological surveys to obtain baseline data on invertebrates, amphibians, fungi and birds	NWT / volunteers / students / specialist groups	NWT SLA	
36	Encourage and in some instances train local people to carry out ecological surveys to inform management and provide records to the Notts Biological & Geological Records Centre (NBGRC);	NWT / local naturalists / volunteers	NWT SLA	
37	Review, evaluate and update management strategies and prescriptions on a 5 yearly cycle or more frequently if required	NWT / RBC	NWT SLA + RBC Officer Time	