# Crookes Valley Park
# Maintenance Plan
November 2013

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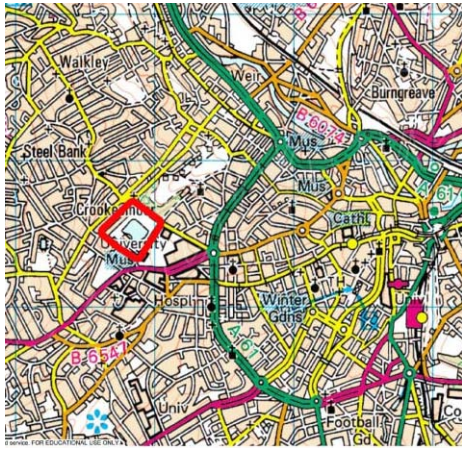
# 1.0 Introduction

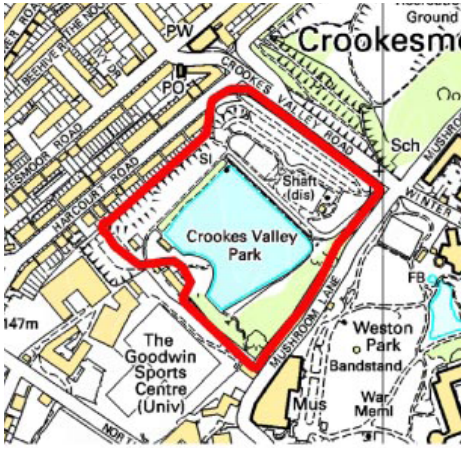
1.1 This report will consider and present possible maintenance and management opportunities in order to enhance the current experience of the Crookes Valley Park for both people and for wildlife.

## 1.1 Site Location

The site is situated approximately 1.6km from the city centre and is located between two other major Sheffield parks; Weston Park and Ponderosa Park. To the north-west of the site is the densely populated residential area of 'Crookesmoor'. The eastern boundary is met by Weston Park, the south-western boundary is met by the Goodwin sports centre and north-eastern boundary is met by Crookes Valley Road and the Ponderosa Park beyond. It has a strong location within the city and has great potential to be part of a unique and active wildlife corridor in Sheffield.

Local Context:




Site boundary

## 1.2 History

The park is the previous site of 'The Old Great Dam' which was built in 1785 as part of the dam network which provided water to the city. The Sheffield Water Company (who owned all the dams) then leased the Great Dam and its surroundings in 1881 to the Sheffield Corporation to open it for public recreational purposes.

In 1889, alongside plans for the Crookes Valley Road Viaduct, the Crookes Valley Recreation Ground was built. Formal terraced areas either side of the viaduct mirrored each other and the two public areas were established. In 1951 the land around the Great Dam was added to the recreation grounds and Crookes Valley Park was formed.

The reservoir was then available for boating and angling, providing a much more social purpose to the site. Bowling took place from the beginning of public opening and is still popular today. However rowing ceased in 1991 and the boat house remains closed and unused.


Postcard dated 1905- View of Bowling Greens

## 1.3 Microclimate and Topography

The Crookes Valley Park is very unique in its topographical form. The site is greatly varied in height and in its gradients of different slopes.

In general the land towards the boundaries of the park is higher and this allows for valuable views across the site and of the design over the space.

Subsequently the site feels quite sheltered particularly near retaining structures and at the base of sloping ground. The trees on higher ground give a great sense of enclosure to the park and little of the urban environment beyond is visually accessible to users.

The drainage of the park supports the water level of the lake in the centre (the lowest point of the park) and there appears to be few problems resulting from issues with the localised drainage.

In terms of light, the orientation of the park allows for maximum sunlight to central areas (those not shaded by the woodland or boundary trees) and beds located to the north-eastern part of the park will receive most sunlight during warmer seasons.

## 1.4 Site Users

The park is currently used by local residents (which consists of a high level of students) and of people travelling through the area from the Goodwin Sports centre or from the Weston Park Hospital. Some patients and visitors to the hospital also use the park.

The playground area is very popular with young families and during summer months the University kayaking society uses the lake for training.

The park is primarily used for walking around due to the steep gradients and therefore some people may be reluctant to leave the level paths. Grassy banks however are popular in summer for seating and in winter for sledging.

## 1.5 Current Site Conditions and Issues

The site is currently quite varied in the level of maintenance and intervention of the different landscape areas within the park.
At the main entrance, adjacent to Mushroom Lane, the planting is visually exciting and has few weeds within the beds. This create an inviting, colourful entrance, However, in contrast to this within the park, other areas seem devoid of maintenance and lack any visual, social or conservation purpose:

This gives a very mixed message to visitors to the park and there seems to be a lack of coherent style or standard of planting tying together the different areas.

The original engineered structure of the dam is evident, with the harsh lines of the bank edge and the defensive iron railings. There is little consideration for the human experience of the water or the natural gradient that is needed at the bank edge to support aquatic wildlife.

The formal bedding layout nearest the Bowling Green reflects the cultural taste of the time of establishment in the late 19th century. Yet this provides a great contrast to the creeping woodland and rough grass found around the perimeter of the park.

Neglect to certain path edges and entrances reduces the experience to those entering the park and vacant beds and gaps in vegetation contributes to the 'dull' appearance of the remaining engineered layout.

## 1.6 Key Issues

- 'Left alone' areas of naturalising vegetation appear neglected and aesthetically do not contribute positively to the park.

- Some grass edges are heavily worn from footfall and from removal of edges to allow neat grass cutting. Bare soil is exposed and looks messy.

- The pond has little vegetation other than in the south-east corner which has established naturally. The pond has a very 'sterile' design and the relationship between the path and the water is poor. There is no physical or visual gradient and the impression is very 'artificial'. Some weeds have grown in gaps in the hardscape but appear strained and out of place. The visual experience of the water's edge is very bland and uninspiring. Rubbish also floats amongst edge debris and there is little evidence of any aquatic wildlife.

- Formal ornamental beds vary in planting density and vigour. This gives an inconsistent pattern to the planting design and the visual experience moving along the path is weak. The traditional style of singular plant species per bed leaves the ground layer very open and with a lack of healthy flowering specimens at certain times of the year, the area lacks colour and layers of interest.

- The woodland adjacent to Mushroom Lane, is clearly popular with visitors as an informal path and desire line has been formed from the park entrance nearest Weston Park museum which then runs diagonally to the north-eastern corner of the pond. The woodland is lacking in ground cover in some areas and is dense with Hedera and leaf litter in others. Self-seeded young trees are struggling amongst the taller, mature trees and views within the woodland are quite restricted. There are few views down to the lake and the 'footpath' requires a suitable surface to allow safe and clear movement through the woodland. A poor woodland- grass gradient currently exists with large amounts of bramble and weeds present.

- The entrance nearest Mushroom Lane has colourful herbaceous plants whereas the entrance nearest Harcourt Road is wooded with weeded undergrowth and messy path edges. Different design styles are evident across the park; however their visual and physical condition varies greatly and therefore provides a very contrasting and 'confused' experience to visitors. It is very obvious which areas are maintained and which are not.

- The linear bed which runs below the retaining wall and along the path on the north-eastern boundary of the pond has many gaps in the vegetation. The bed is mulched with minimal weeds but lacks consistency through uneven planting. As it is such a narrow space, it would make a greater visual impact to be densely planted and with a wider variety of plants.

- Wildlife is supported in the woodland and the park edges, however a wiser selection of plants amongst these areas and within the shrub beds would provide a greater choice of habitats for a greater range of species. This would also increase the visual experience to visitors to the park. There is the potential to have higher community interaction as local people and schools could get involved in creating a more a welcoming environment for wildlife through creature habitat creation, planting certain species, bird/bat box installation and monitoring the aquatic wildlife of the lake.

- The City Council currently employs four people to maintain Crookes Valley Park, alongside Weston Park and Ponderosa Park. Therefore time and funding is limited. Vegetation needs to maintained in a way which provides a rich experience to visitors yet is efficient and affordable to manage.

# 2.0 Vision Statement

'Crookes Valley Park is to be a vibrant and dynamic landscape that acts as an urban oasis for people and wildlife. It will provide a contrast to the modern built environment in this part of the city and will present a rich visual experience to users. It will become a low cost, low maintenance park which will increase biodiversity and actively involve the community to encourage and monitor wildlife in the site'.

# 3.0 Key Maintenance and Management Aims and Objectives

| AIM | OBJECTIVE |
|---|---|
| • Improve appearance of long grass areas so low maintenance can still be achieved but with a greater visual experience for people. Make these areas more supportive to invertebrates and birds. | • Increase the variety of species found in these areas. Establish a suitable cutting time for when the grass is less attractive. |
| • Correct exposed soil within grassed areas. | • Re-seed and fill large gaps at grass boundaries. |
| • Establish a positive interaction for users with the water. Create a richer environment for aquatic and water's edge wildlife. Produce a more 'natural' quality to the lake. | • Make a suitable gradient for aquatic plants to grow in and for wildlife to enter/exit the lake. Use a mix of species which provides food and shelter for different invertebrates/amphibians and are of a varying visual nature to improve the overall appearance of the lake. |
| • Enhance the existing ornamental beds to visually contribute all year round and have a more consistent display over the park space. Provide more possibilities for birds or invertebrates to shelter in these areas. | • Add new levels of planting and a ground layer to reduce weed emergence and give a bolder impact to the beds to users passing by. Supply more interest for wildlife through flowers for food and leaf foliage for shelter. |
| • Reduce gaps in planting beds. Increase the visual impact of shrub beds. | • Use species with low maintenance and of interest throughout the seasons. A mixture of layers will support reduced weed emergence and an increased density will give a more 'maintained' and 'lively' impression to the beds. |
| • Lessen the sense of 'enclosure' within the main woodland areas. Allow for a greater diversity of plants in the lower canopy and field layer to vary the visual interaction for people and improve the choice of habitats for wildlife. | • Thin in some areas to increase light for other low-lying woodland layers. Plant suitable shrubs or shade tolerant herbaceous species to develop an interesting route through the woodland and a vibrant woodland edge. Choose species which will also appeal to a diverse range of wildlife. |
| • Enrich the overall experience to visitors and improve the appearance of beds which are not heavily maintained to give a sense of continuity and coherence to the style of the park. | • Consider palette of shrubs and ornamental species which will visually carry weeds and reduce maintenance without changing public perception of the park. Recognize species which will also support wildlife. |

# 4.0 Inventory and Analysis of Landscape Elements

## 4.1 Area Zone Map of Existing Landscape Elements


- South Eastern Woodland
- Gang Mown Grass
- Rough Grass
- 3 Small Pockets of Trees/Shrubs
- Harcourt Road Woodland Edge
- Ornamental Bedding Areas
- Recreational Play Park and Bowling Greens
- Hedges
- Ornamental Trees
- Water's Edge Vegetation

## 4.2 Inventory and Analysis

### South Eastern Woodland

| AREA | SPECIES | QUANTITY | QUALITY/CONDITION | SIGNIFICANCE/ CONTRIBUTION TO PEOPLE AND WILDLIFE |
|---|---|---|---|---|
| Woodland- Upper canopy | Mix includes;<br><br>*Fraxinus excelsior, Acer pseudoplantanus, Malus sylvestris, Crataegus monogyna, Ilex aquifolium, Prunus avium, Ulmus glabra, Taxus baccata,Alnus glutinosa, Tilia x europaea, Quercus robur, Betula pendula, Sorbus aria.*<br><br>Predominantly; *Fraxinus excelsior, Acer pseudoplantanus.* | Four stems per m2 approx<br><br>7780 m2 in total | Well established woodland. Some very large, mature trees.<br><br>Evidence of previous maintenance on some trees. Calloused wounds and epicormic growth is visible.<br><br>Some trees are completely covered in *Hedera*.<br><br>Many are in poor condition with dead stems and have contorted growth or rotting within their stems. Therefore little or no maintenance has occurred in recent years.<br><br>The woodland is very dense and feels crowded in some areas. No suggestion of intervention to thin/ coppice as many saplings are grouped together.<br><br>A lack of appropriate path surface reduces the ease of movement. | Presence of birds was heard through song. Leaf litter and in-situ fallen wood provides creature habitats.<br>The density of the woodland allows for an immersive experience when walking through but this could also be seen as quite intimidating and due to the quality of the trees. No variety in the field and ground layer means this experience is not particularly visually interesting. |
| Woodland Understory | Self-*seeded Crataegus monogyna, Aesculus hippocastanum, Ulmus glabra, Ilex aquifolium, Hedera helix, Prunus avium, Tilia x europaea*. | Four stems per m2 approx<br><br>7780 m2 in total | The understory is dominated by young seedlings of trees that have self-seeded. No suggestion of intervention to thinning/ coppicing as many saplings are grouped together. No current maintenance evident. | If they were more established (if more light was accessible at this level) they would be of greater wildlife value. However their growth is stunted and few are of a structure to shelter birds or have enough foliage to support insects.<br><br>Little to offer for visual variety. |
| Field Layer | *Rubus fruiticosus* and young species of the woodland understory. | | The higher ground nearest Mushroom Lane is densely covered in *Hedera* and has a definitive edge at the informal path running through the woodland.<br><br>It is vigorous in nature but due to the gradient of the slope towards Mushroom Lane, people would struggle to move freely at this level, therefore dominance is not affecting the | The lack of low level ground cover means the understory seems weak and dominated by saplings and therefore there are few areas for wildlife habitat.<br><br>The overall visual impression is of leaf litter and of some *Hedera* creeping down from the higher ground.<br><br>Needs areas to allow insect habitation and shelter for birds. Species |

| AREA | SPECIES | QUANTITY | QUALITY/CONDITION | SIGNIFICANCE/ CONTRIBUTION TO PEOPLE AND WILDLIFE |
|---|---|---|---|---|
| Woodland Edge | *Rubus fruiticosus, Crataegus monogyna, Prunus avium, Hedera helix, Ilex aquifolium,Ribes sanguineum*, rough grass. | 226 m2 | Dominated by *Rubus fruiticosus*. In poor condition.<br><br>Litter amongst the ground layers.<br><br>Some fallen tree remains.<br><br>Mowing occurs near the edges but little evidence of pruning or coppicing of the shrub species. | Appears very messy and dominated by creeping species. Very little variety of height or colour. Offers little to human users.<br><br>Completely blocks views into the woodland.<br><br>Will support insects and birds through the foliage and fruits; however wildlife value could be achieved through different species which offer more to the visual composition of this edge. |

## Gang Mown Grass

| QUANTITY | QUALITY/ CONDITION | SIGNIFICANCE/ CONTRIBUTION FOR HUMAN EXPERIENCE AND WILDLIFE |
|---|---|---|
| 8013m2 | Generally in good condition. Some wear at key path and node points but in larger areas it appears very even and uniform, mowed regularly. | Large expanses of grass highlight the size and scale of the park.<br>It also softens some of the harsh level changes that occur over the site.<br>It visually gives an instant impact of 'green' but will have little contribution to the wildlife in the park. |

## Rough Grass

| QUANTITY | QUALITY/ CONDITION | SIGNIFICANCE/ CONTRIBUTION FOR HUMAN EXPERIENCE AND WILDLIFE |
|---|---|---|
| 2173m2 | The area nearest the south-west corner of the site is most successful as it is has few weeds and adds to the woodland edge gradient.<br><br>However the strip parallel to Crookes Valley Road has many weeds establishing, most densely at the western end close to the woodland. This includes; Senecio jacobaea, Rumex obtusifolius, Urtica dioica.<br>Weeds are now encroaching onto the path in cracks in the tarmac surfacing, no weed control present.<br>Cut back once a year. Low maintenance. | Where weeds are emerging it portrays a negative message to users.<br>There is little visual benefit to the rough grass and due to the gradient of the slope the weeds are very visible to people passing by.<br>Nearest the woodland, wildlife may be supported amongst the rough grass, but due to the exposed nature of the majority of this strip near Crookes Valley Road, and the gradient of the slope, it is unlikely to be a preferred location for wildlife. Areas closer to the woodland or the lake may be more suitable for different invertebrate or amphibian needs. |

## Small Pockets of Tree/Shrubs

| AREA | SPECIES | QUANTITY | QUALITY/CONDITION | SIGNIFICANCE/ CONTRIBUTION TO PEOPLE AND WILDLIFE |
|---|---|---|---|---|
| 1 | *Rhododendron ponticum, Betula pendula, Urtica dioica, Rubus fruiticosus*. One dead *Cratageus monogyna.* | 265m2 | Planting is most dense nearest the woodland but thins towards the Dam House building.<br><br>Weeds emerging between the larger shrubs and amongst ground layer. No regular maintenance visible.<br><br>Dead tree covered in *Hedera*. | Gives the impression of a more garden-esque style but due to the lack of weeding and gaps in the vegetation it is not visually successful. However the varied planting palette introduces different heights and foliage which is more interesting to users.<br><br>The low lying shrubs and plant diversity will support insect habitats and shelter for birds.<br><br>Dead tree supports a 'neglected' view of this area. |
| 2 | *Mahonia x media, Prunus laurocerasus, Prunus avium, Hedera helix, Cotoneaster cornubia.* | 317m2 | Signs of vigorous and sprawling growth, spreading form.<br><br>Densely planted with a few weeds at the grass edge.<br><br>Generally in good health. | Screens the car park behind and contributes to a sense of enclosure in this corner of the lake.<br><br>Very dense in structure and is likely to be home to many birds due to the dense undergrowth and merging canopies. |
| 3 | *Skimmia japonica, Eleagnus x ebbingeii, Berberis stenophyla, Stachys byzantia.* | 144m2 | Fair condition. Very shaded area with no ground cover. Odd weeds present.<br><br>Shrubs show evidence of some pruning in the past but generally sprawling in form. | Provides a visual division between the two bowling greens. Adds height in a very flat area of the park.<br><br>Bare ground weakens the visual impact between the bowling greens, this will also shelter few invertebrates however the flowering species found here will feed flying species such as butterflies and bees in the spring/summer. |
| 4 | *Berberis stenophyla, Cotoneaster horizontalis, Hedera helix, Prunus avium, Prunus laurocerasus, Ribes sanguineum, Eleagnus x ebbingeii.* | 252m2 | Fair condition but quite crowded canopies.<br><br>Maintenance is seen by the clipped hedge, however the canopy density shows there has been no maintenance input for the trees. | Breaks view down to the lake. Adds a sense of height and emphasizes the level change of the pathway.<br><br>Hedge does not contribute greatly behind the larger shrub and trees.<br><br>May be most beneficial to birds but as there is little other planting adjacent to provide for feeding mammals, amphibians or invertebrates, it is not very significant to wildlife. |

| AREA | SPECIES | QUANTITY | QUALITY/CONDITION | SIGNIFICANCE/ CONTRIBUTION TO PEOPLE AND WILDLIFE |
|---|---|---|---|---|
| 5 | *Acer pseudoplatanus, Fraxinus excelsior.* | 59m2<br>One *Acer pseudoplatanus*<br>Four *Fraxinus excelsior* | Large, mature trees in good condition. Straight stems and raised canopies allow views beyond. Even canopies.<br>Very little maintenance required apart from any dead branches which may need removal so as not to fall on people walking nearby. | Pruning work is visible with successful calloused wounds.<br>Creates a sense of a boundary for users moving up or down the adjacent steps and along the path on the bank.<br>A strong contribution to the landscape visually.<br>Due to the maturity of the trees they will have high bat roost potential and be of interest to nesting birds as they have very sheltered canopies. |
| 6 | *Acer pseudoplatanus, Fraxinus excelsior, Tilia x europaea, Sorbus aria, Ulmus glabra.* | 1342m2<br>Four *Acer pseudoplatanus*<br>Eleven *Fraxinus excelsior*<br>Two *Ulmus glabra*<br>One *Sorbus aria* | Large, mature trees of healthy condition.<br>Spreading canopies and good form.<br>No regular maintenance needed, well established. | Due to their large size they create a strong enclosure and dense canopy 'roof'. Views are restricted and due to the gradient of the slope the trees appear even larger. As with the woodland, the experience is very enclosing/ immersive but more light is accessed here due to the bowling green adjacent.<br>As with the other side of the steps, they are mature trees so will provide attractive habitats for bats and birds. |
| 7 | *Ilex aquifolium, Prunus laurocerasus, Hedera helix, Cotoneaster x horizontalis.* | 253m2<br>Eleven *Ilex aquifolium* trees<br>Approximately four clusters of *Cotoneaster x horizontalis.*<br>Approximately four clusters of *Prunus laurocerasus.* | No ground cover.<br>Dead stumps remaining in the ground.<br>*Cotoneaster* is very overgrown and woody.<br>The *Prunus laurocerasus* is also mature apart from a few self-seeded young specimens. No maintenance is seen in this area, self-seeded species and dead stumps would be removed.<br>Do not have a healthy form.<br>The *Ilex aquifolium* provides a very dense canopy so due to the high level of shade there are few weeds amongst the shrubs and bare ground. Is a strong screen for the Bowling Green. | The merging canopies of the *Ilex aquifolium* trees are very dominating, which would be a safe environment for bird's nests. Berries will provide food for birds and insects.<br>The shrub layer is poor and has large gaps therefore of little value for wildlife.<br>The remaining *Prunus laurocerasus* and *Cotoneaster* are pruned to uneven shapes and this highlights the woody stems which suggests ageing and dying vegetation.<br>The lack of ground cover gives a poor visual experience and provides no benefit to wildlife as there is little area or cover. |

| AREA | SPECIES | QUANTITY | QUALITY/CONDITION | SIGNIFICANCE/ CONTRIBUTION TO PEOPLE AND WILDLIFE |
|---|---|---|---|---|
| 8 | *Ilex aquifolium, Prunus laurocerasus, Hedera helix.* | 176m2<br>Nine *Ilex aquifolium*<br>Approximately seven *Prunus laurocerasus.* | Lack of ground cover, bare soil exposed over most of the bed apart from a small creeping of *Hedera* nearest the Bowling Pavillion.<br>A few self seeded *Ilex aquifolium.*<br>*Prunus laurocerasus* is cut to uneven shapes, appears very 'messy'.<br>Also heavily shaded, therefore few weeds, so little maintenance required here currently, other than annual pruning of the *Prunus laurocerasus.* | The exposed soil and large gaps nearest the path have no visual interest for users. There is nothing at human level to interact with as the *Ilex aquifolium* canopy dominates above.<br>Few areas of shelter for birds or invertebrates at ground and shrub level. Yet the density of the canopy will be protective for birds. |
| 9 | *Ilex aquifolium, Acer pseudoplatanus, Cotoneaster x horizontalis, Pyracantha, Prunus laurocerasus, Nepeta x faassenii.* | 87m2<br>Three *Ilex aquifolium* Trees<br>One *Acer pseudoplatanus*<br>One *Prunus laurocerasus*<br>One *Pyracantha*<br>Spreading *Nepeta x faassenii* | All appear healthy and of good form and shape apart from the Nepeta. It does not fill the bed to the edge of path, and gives the impression of dying back.<br>Weeds are present in the space and bare soil is visible.<br>This area suggests that current maintenance is annual pruning of shrubs as they do not hang over the path. | The shrubs screen the wall of the sub-station and are neatly trimmed so give a sense of 'care' and 'order'.<br>The subsequent berries and flowers will greatly support birds and flying insects from spring-autumn through the berries and flowers.<br>The bare soil and low density of the *Nepeta* to the edge of the area gives a weak experience and looks messy. |
| 10 | *Prunus avium, Tilia x europaea.* | 171m2<br>Thirty seven *Prunus avium*, One *Tilia* | Large mature trees and of even form.<br>The trees nearest the Weston Park entrance are healthiest and of most even shape, the trees then decrease in vigour and spacing is less uniform towards Harcourt Road. Many are self-seeded behind the original line of trees and therefore crowding and competition has occurred.<br>No intervention to stop saplings establishing.<br>Currently no maintenance seen. | The trees punctuate the boundary of the park edge and give users a sense of direction along the path. However the lack of pattern towards the western end of the line of trees gives a disorderly appearance.<br>Therefore there is a contrast along the line of trees.<br>They also act as a shelter belt and screen views out of the park.<br>Will appeal mostly to birds throughout the year, but will be of interest to insects during blossoming periods.<br>Also popular in spring with local users. Brings a strong impact of colour to this boundary of the park. |

## Harcourt Road Woodland Edge

| AREA | SPECIES | QUANTITY | QUALITY/CONDITION | SIGNIFICANCE/ CONTRIBUTION TO PEOPLE AND WILDLIFE |
|---|---|---|---|---|
| Trees and understory that runs parallel to Harcourt Road. | *Tilia x europaea, Ribes sanguineum, Hedera helix, Prunus laurocerasus, Acer pseudoplatanus, Leylandii, Fagus sylvatica, Rubus fruticosus, Urtica dioica.* | 2904m2<br><br>Dominated by *Tilia x europaea*, minimal number of other species. | Large trees with good form and straight stems. The spacing of those running along garden edges allows for views to the housing beyond and of the boundary wall.<br><br>Self seeding *Tilia x europaea* and *Ribes sanguineum* largely influence the ground layer. Towards the steps and entrance near Harcourt Road the woodland is interspersed with other species such as *Fagus sylvatica* and the understory spills onto the path. Very dense canopies, making this area very dark.<br><br>Rough grass, *Urtica dioica* and *Ribes sanguineum* are visible amongst the undergrowth.<br><br>It appears that little or no maintenance currently occurs. | The weeds nearest the entrance give a negative impression of the park.<br><br>The woodland is also very dense and could be seen as very intimidating to those entering or walking along Crookes Valley Road. The ground layer nearest the paths has little visual value and rough grass with weeds does not create a welcoming appearance to this area.<br><br>The *Tilia x europaea* which line the western boundary garden edges are often viewed from the path below, nearest the lake, therefore the condition and composition of the understory is less important as it is unlikely to be viewed closely.<br><br>The dense ground cover along the majority of the edge is very supportive of birds, insects and small mammals providing food and sheltered areas for nesting. |

## Ornamental Bedding Areas

| AREA | SPECIES | QUANTITY | QUALITY/CONDITION | SIGNIFICANCE/ CONTRIBUTION TO PEOPLE AND WILDLIFE |
|---|---|---|---|---|
| Beds in the centre of the bowling greens | Rose | Approximately 40 plants per bed. | Generally of good quality, however some in poor condition.<br><br>Bare ground level.<br><br>Previous pruning evident from colouring of new growth. | Very popular in the summer months and they provide a strong burst of colour and will attract some insects. But limited to the few flowering months.<br><br>Bare ground and bare stems have no winter interest or wildlife value. |
| Alternating 3x5m rectangular beds (10) and 2x3m oval beds (4). | Rose | Varying between 14-30 plants per bed. | As a general pattern, beds closest to the bowling pavilion had roses of high quality, whereas those towards the play park were of lower quality. Other beds were empty whilst some had greatly varying density of plants.<br><br>Like those in between the bowling green, there is no ground cover.<br><br>Previous pruning evident from colouring of new growth. | The lack of planting density and consistency gives a bland experience to people walking past.<br><br>A mixture of full and empty beds appears 'messy' and is of little significance to the heritage of the park.<br><br>Inadequate leaf foliage means no wildlife value or colour during non-flowering months. |
| Narrow bed which runs along the north-eastern edge of the lake. | *Hydrangea arborescens* 'Annabelle', *Hedera helix, Cotoneaster horizontalis, Euonymus fortuneii* 'Emerald Gaiety'. | Approximately three plants per linear metre. | Overall good quality specimens but some are over mature and woody, whilst others are very young.<br><br>Large open ground amongst the bed with weed emergence. Previous mulching is visible in surface bark but is evidently not heavy enough.<br><br>Imbalance of larger/ mature shrubs looking overcrowded and young shrubs in gaps in the planting.<br><br>Minimal maintenance is carried on this bed. | The poor density of planting spoils the continuity and screening of the retaining wall behind and does not soften the 'sterile' nature of the lake.<br><br>Weak visual experience to people moving along the path.<br><br>Some species require removal as they are over-mature.<br><br>Not much vegetation for waterside wildlife habitat or shelter. |

## Ornamental Trees

| AREA | SPECIES | QUANTITY | QUALITY/CONDITION | SIGNIFICANCE/ CONTRIBUTION TO PEOPLE AND WILDLIFE |
|---|---|---|---|---|
| Predominantly based around the north edge of the lake and in beds associated with the bowling green. | *Berberis x stenophyla, Prunus avium, Betula pendula, Fraxinus excelsior.* | Approximately 25 specimen trees. | Generally in good condition, however a few dead or dying trees are present. This suggests that maintenance of establishing species was not sufficient and that they have not been monitored to mitigate any problems or for removal and replacement. | The line of *Prunus avium* on the western and northern edge of the lake punctuate the path and provide rich visual interest between spring (blossom) through to autumn (rich autumn colour of foliage).<br><br>The blossom will support bees and other insects whilst the trees could provide shelter and habitat for birds.<br><br>However could also be achieved with other flowering species. |

## Water's Edge Vegetation

| AREA | SPECIES | QUANTITY | QUALITY/CONDITION | SIGNIFICANCE/ CONTRIBUTION TO PEOPLE AND WILDLIFE |
|---|---|---|---|---|
| Water edge and surrounding path. | *Iris pseudocorus, Buddleja davidii, Nymphaea, Erigeron canadensis, Aster, Corylus avellana*, sapling of *Acer pseudoplatanus* and *Fraxinus excelsior.* | Sporadic along the lake edge amongst cracks in the retaining edge. | Poor quality, self-seeded and strained growth amongst the hard surfacing along the path. There is no weed control or maintenance of this lake edge.<br><br>In the south-eastern corner within the lake some natural succession has occurred of *Iris, Buddleja* and *Nymphaea*. This shows the potential for the wildlife and aesthetic contribution the lake could make. | Species within the water and on the small island provide creature habitat and shelter. They contribute to a much greater visual experience and lessen the harsh boundary between water and pathway.<br><br>The rest of the lake is devoid of aquatic vegetation and the weeds straining out of cracks in the edge of the lake look out of place. They have no contribution visually for people or physically for wildlife. |

# 5.0 Key Recommendations




## 5.1 Recommendations

### Gang Mown Grass

| | KEY RECOMMENDATIONS | RESOURCE |
|---|---|---|
| Gang-mown Grass | Retain existing grass and maintenance scheme | |
| | • Current gang-mown grass does have value to existing users therefore should be retained for social purposes. The banks are popular with students and residents in the summer and they also provide suitable sledging slopes in the winter.<br>• Remove iron railings as they have little safety value and contribute to the sterile engineered character of the park.<br>• Whilst it has little wildlife value, by enriching value elsewhere it will still improve the current experience in the park overall. The existing maintenance of regular cutting is of good quality and should remain as so. | • City council |
| | Repair exposed areas of soil at grass edges | |
| | • Raise low soil level to reach remaining grass edge.<br>• Re-seed and water daily for first two weeks. This will neaten the edges of the grass and have a more positive appearance to people walking past. | • City council |

## Rough Grass

| | KEY RECOMMENDATIONS | RESOURCE |
|---|---|---|
| Rough Grass | Reduce weeds and prepare soil for meadow | |
| | • In autumn clear long grass and remove topsoil.<br>• Apply glyphosate in early spring. Repeat in five weeks when any emergents may have appeared. | • City council |
| | Sow meadow | |
| | • Spread seed at 1g per m2. 'Landlife Bumblebee/ Butterfly border perennial and annual mix'. Species includes *Centaurea, Leucanthemum vulgare* and *Silene diocia*. A bright mix of colours will visually 'lift' the dull looking rough grass and give a vibrant experience for visitors. The species of the mix will greatly support flying insects and wider biodiversity of the park through pollination and habitat creation. | • Local community nature group or Friends of Crookesmoor Parks. This will encourage a 'sense of ownership' in the park and invite an interest to the seasonal change that occurs here. |
| | Maintenance | |
| | • Cut back to 50mm with flail cutter as soon as annuals decline. Remove cuttings. This will reduce the time where visitors can see dying species and therefore reducing the negative view of the park.<br>• Second cut mown or flail cut (depending on severity of the slope) to allow light to the perennial seeds. Allows for second wave of flowers and therefore extending flowering interest of the year.<br>• Cut and remove at end of August/ start of September.<br>• Spot treat weeds late winter/early spring with direct glyphosate application.<br>• Second year (when perennials will be more established) mow cut in early April, late July and then cut and remove in early September.<br>• Mowing can occur alongside existing mowing of gang-mown grass. Whilst adding to the current work load the benefits it will bring out weigh the time spent. Also reduction in maintenance cost in other areas of the park will allow for greater time to be spent here. | • City council |

## Small Pockets of Trees/ Shrubs

| KEY RECOMMENDATIONS | RESOURCE |
|---|---|
| Increase positive visual impact and wildlife value of beds | |
| • Weed all areas to create space for new species. Little or no weeding currently occurs. Apply glyphosate in late spring to existing weeds, remove dead weed the following week and repeat five weeks later on any new emergents. Remove dead or dying weeds.<br>• Remove dying or ageing stumps of *Prunus laurocerasus* and *Cotoneaster* as they have no visual or wildlife value. Chip on site and use to mulch any shrub beds.<br>• Remove and replace woody hedge blocks with *Symphoricarpos* to contribute seasonally throughout the year and to support wildlife through its leaf litter, flowers and berries. Will also act as a coherent visual link over the different areas of beds.<br>• Prune as a mass annually removing latest growth down to previous woody stems and after seven years cut back to close to ground level (50-100mm from soil) to support re-growth. This reduces negative appearance of ageing and dying stems and sustains the *Symphoricarpos* for future contribution.<br>• In areas of bare ground plant a mixture of *Luzula sylvatica* and *Dryopteris felix-mas* for greater year round interest and to provide cover for insects and ground feeding birds. Once established their canopy spread will reduce weed invasion and therefore any annual weeding time cost. As little is done currently it will contribute positively to human experience as fewer weeds will be visible. Species will add texture and colour to otherwise very dull areas.<br>• Check all areas annually for self-seeded *Fraxinus excelsior, Acer pseudoplatanus, Prunus avium* and remove to reduce crowding and competition for planted species. | • City council |
| • Plant *Hyacinthoides non-scripta* nearest path edges for early spring interest and to add colour to the limited palette currently seen in these areas. Will add a colourful connection over the park when few other species are flowering.<br>• Introduce bird and bat boxes to larger trees to support more biodiversity in this part of the park.<br>• In denser areas less visible to the public add small log piles and hedgehog shelters to encourage creature habitation and increase wildlife at ground level. | • Local community as part of a park wide 'Bulb Plant' to introduce colour and create a sense of ownership to local residents. Encourages local interest in seasonal changes.<br>• Local nature group or Friends of Crookesmoor Parks can install bat and bird boxes and create creature habitats to generate a sustained interest in the park. |

## Harcourt Road Woodland Edge

| KEY RECOMMENDATIONS | RESOURCE |
|---|---|
| Create a welcoming entrance to the park and improve woodland edge gradient | |
| • Fell any dying or over-mature specimens which are within 5m of the paths for health and safety reasons. Chip on site for mulch or use to create creature habitats through small piles of wood within this wooded area. Leave other dead species outside of the 5m boundary for nest habitat for birds and bats. | • Tree surgeon. |
| • Remove *Rubus fruticosus* and *Urtica diocea,* no weeding currently occurs. It gives an untidy appearance to the entrance and is off-putting to visitors. Apply glyphosate in late spring when first leaves emerge and remove dead weeds the following week. Return five weeks later and apply glyphosate to any emergents. Repeat the following year if required.<br><br>• Remove self-seeded young *Fraxinus excelsior, Fagus sylvatica* and *Prunus avium* which are in poor form to reduce overcrowding and allow space for new wildlife supportive species which also provide a greater visual contribution to visitors.<br><br>• Cut rough grass back at woodland edge. Repeat annually. Some is required for the woodland edge boundary but this needs to be controlled so it does not spill over to the path and grow in cracks in the hardscape, as this suggests a neglected nature to the park and offers little for wildlife in this setting.<br><br>• Remove 20% of tree canopy in early spring (before sap production occurs and the trees will be susceptible to more damage) nearest the Harcourt Road entrance; remove evenly across the space shown (see Fig 1. below). This will allow more light to this entrance, reducing the current intimidating character and will create an environment which supports more ground and field layer species. Therefore providing more for wildlife and human experience at this entrance. | • City council |

Fig.1

Area for 20% canopy removal

Fig.2

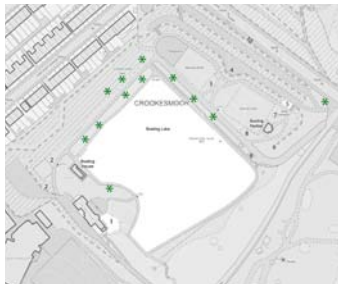
Cluster of bulbs

| KEY RECOMMENDATIONS | RESOURCE |
|---|---|
| Create a welcoming entrance to the park and improve woodland edge gradient | |
| • In space provided from removal of listed species, plant *Amelanchier* in the first five metres of edge from path. Coppice every ten years (cut back to 50-100mm above ground level). This will form a seasonally varied edge to the woodland and be of greater interest for people moving along the path. Chip on site and use to mulch any beds.<br>• Scatter planting of *Sarcoccoca hookeriana 'Digyna'* and *Philadelphus Belle 'Etoile',* focusing or areas now gaining more sunlight through the thinning of the tree canopy. Cover 50% of bare ground. These species will spread over time and produce a strong shrub canopy to reduce weed invasion. Prune heavily with pruning saw or loppers every five years in early spring. Cut back 50% of newest stem growth. This will reduce visibility of woody stems of poor visual quality and support new growth for the following season encouraging high levels of flowers and berries to attract wildlife.<br>• Plant a mixture of *Silene dioca* and *Primula vulgaris* in shrub spacing to add interest at lower levels and add a contrast of colour to the woodland. Also will be supportive of insects.<br>• Focusing on a higher concentration nearest the steps and path, plant *Hyacinthoides non-scripta* and *Digitalis purpurea* over the area to enrich the positive impact of vegetation to people entering the park or observing the park from Crookes Valley Road (See Fig 2. below). | • City council |
| • From felled material, create small wood piles within the woodland (as far from path edges as possible) for habitat creation.<br>• Add bird boxes and bat boxes to mature trees and increase biodiversity in this area of the park. | • Local nature group or Friends of Crookesmoor Parks can install bat and bird boxes and create creature habitats to generate a sustained interest in the park. |

## Ornamental Beds

| KEY RECOMMENDATIONS | RESOURCE |
|---|---|
| Reduce heavy maintenance and improve the seasonal value of the beds | |
| • Remove all remaining roses in beds lining the lake; they are an expensive and high maintenance output for very little value over the year. Limited to interest in summer months and they offer little to wildlife.<br>• Replace with *Cornus sanguinea* 'Mid-winter Fire'. Plant at 2m2. The bright red stems will provide winter interest. The flowering season in summer and subsequent berries in autumn are attractive to wildlife and therefore are important for biodiversity. Allow to establish for the first two years and then coppice to ground level annually in April to encourage bold winter colour and healthy summer growth. This allows for low maintenance over the year but supports high visual and wildlife value.<br>• Plant a ground layer of *Muscari armeniacum* to contribute to spring colour and to create a vibrant contrast to the red *Cornus* stems. Basal foliage will reduce weed invasion and subsequent time and cost spent weeding the beds.<br>• Plant *Tulipa* 'Orange Emperor' for further spring and summer interest and to complement the *Cornus* stem colour.<br>• Weeds biannually if required applying glyphosate to any emergents in spring when first foliage appears, remove dead weeds the following week. Repeat five weeks later if required on any emergents and remove dying vegetation.<br>• In the bed running along the retaining wall and northern lake boundary add a mixture of *Kerria japonica, Salvia nemorosa, Perovskia 'Blue Spire', Sedum telephium* and bulbs (*Tulipa, Crocus and Narcissus*) to improve ground cover, add colour and increase the visual impact the planting currently here. It will enhance the experience for people at the water's edge and bring seasonal variety to the bed. | • City council |

## Ornamental Trees/Hedges

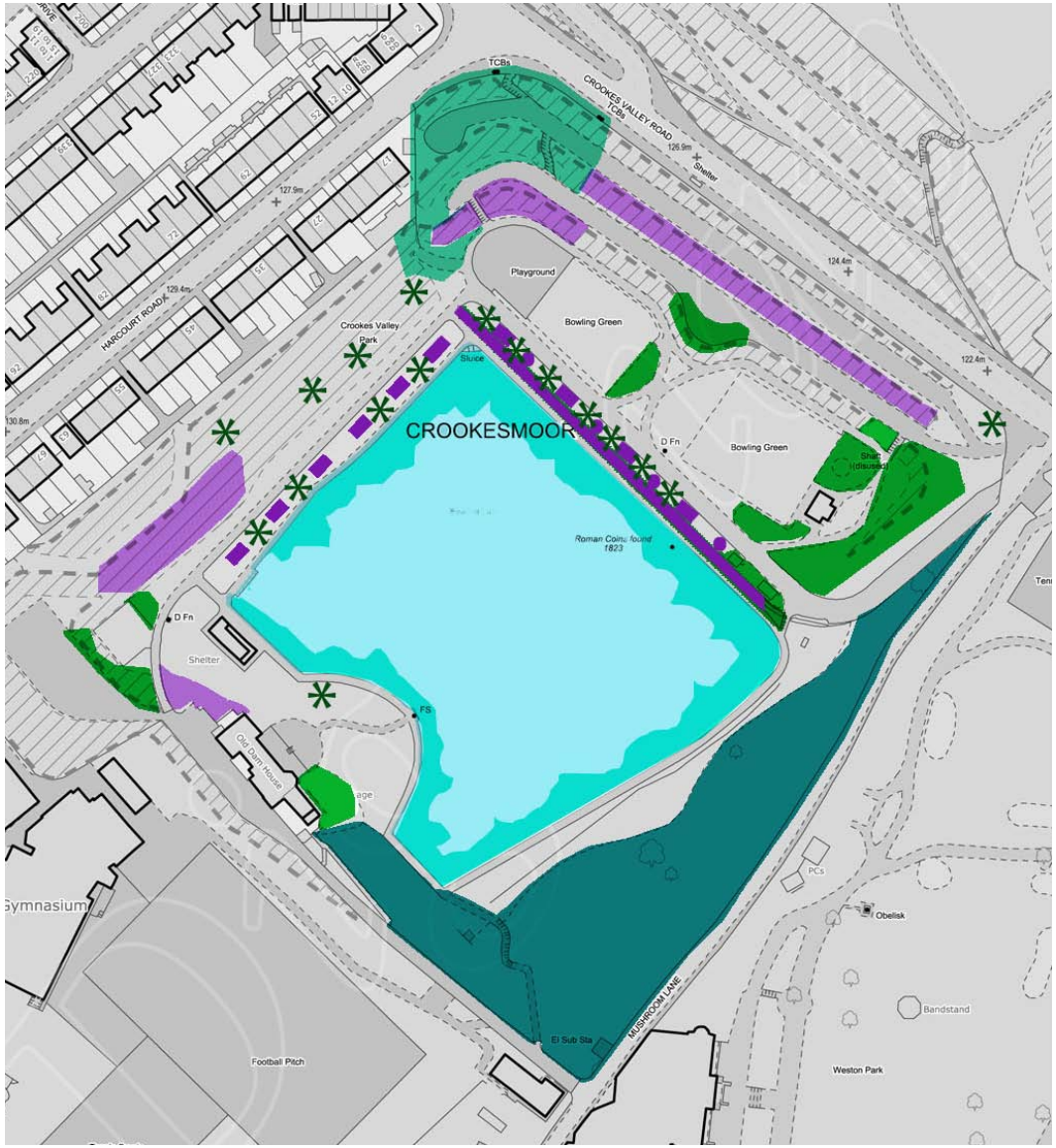


| KEY RECOMMENDATIONS | RESOURCE |
|---|---|
| • Improve the visual quality of the existing trees and introduce new species which are more supportive of biodiversity | |
| • Replant gaps in hedges. Cut all hedges as a mass, not separate specimens. The existing hedges create spacial boundaries and the cost of removal and replant may not reduce current maintenance hours. Input and replanting would be of greater value elsewhere in the park.<br>• Remove self-seeded trees close to ornamental or mature species to reduce failure through competition. | • City council |
| • Remove dying trees and remove dead branches on mature trees. They are a potential safety hazard and due to the trees being ornamental and 'stand alone', defects are far more visible than those in a group. Appears 'neglected' and is obviously due to insufficient maintenance. Chip on site and use to mulch any beds. | • Tree surgeon |
| • Replace with *Sorbus aucuparia* as the berries and leaf litter will contribute to greater biodiversity and seasonal visual variety. Ensure a 2m gap of open soil is left around trees planted in grass. Mulch to reduce weed invasion and protect trees from mower damage. For first 2-3 years water daily with 30 litres of water during spring in low levels of rain. Then water throughout summer following 5 days of no rain. Weed weekly for the first six months (glyphosate application). | • City council |

## Water's Edge

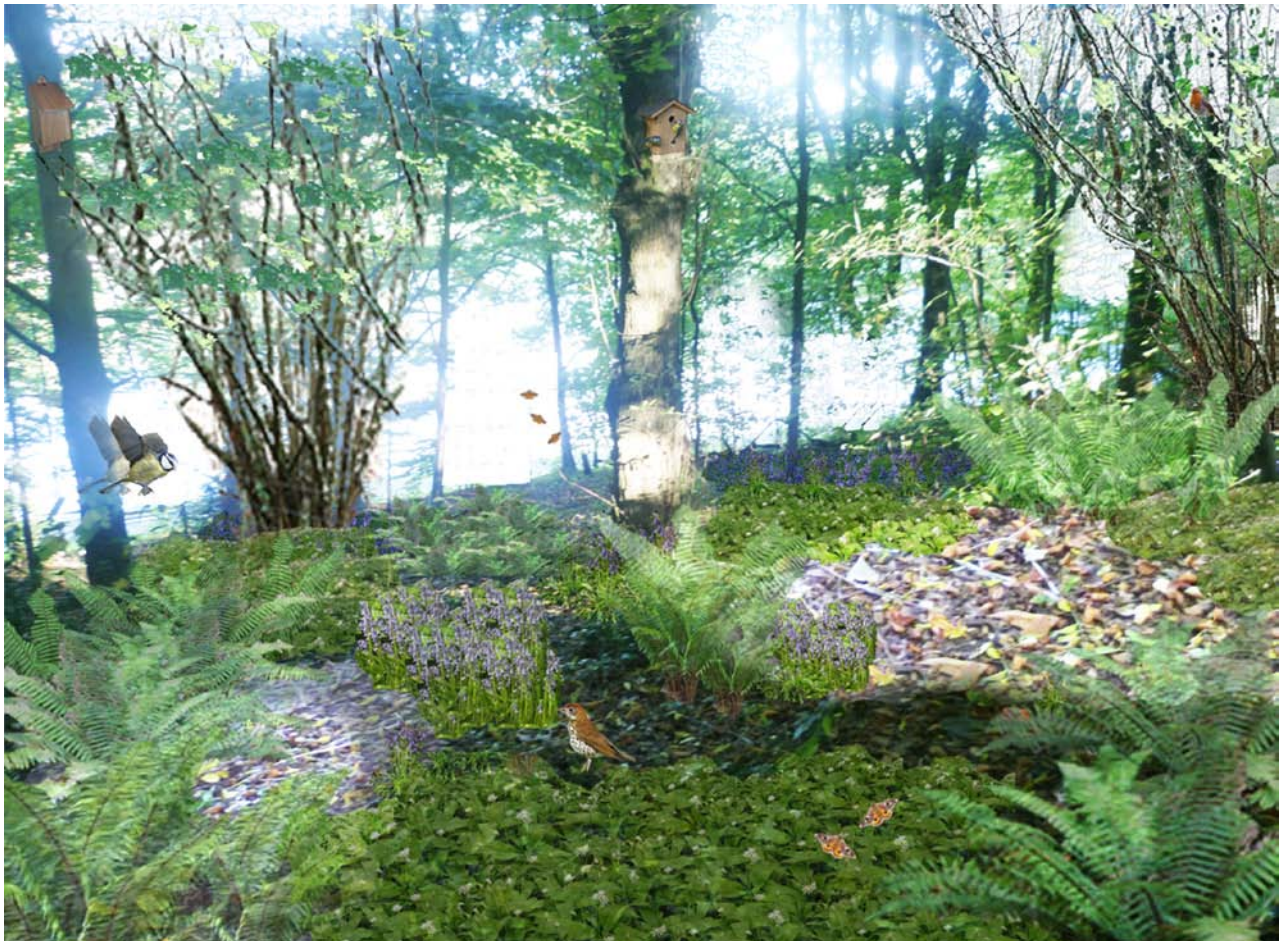
| Establish a vibrant and bio-diverse wetland edge to the engineered lake | |
|---|---|
| • Create terraced levels at all lake edges into the water (pulling lake bed soil from the centre of the lake), the highest terrace being less than 30cm from water surface. This will allow for varying types of aquatic vegetation to establish. Leaving the existing contours nearest the steps to allow access for kayaks. | • Local construction company with a suitable digger to reach as far as possible into the lake. Could be utilised for P.R purposes as part of a media event to improve the Crookes Valley Park. Will raise public awareness and interest and therefore will encourage new volunteers to support the new lake edge and wildlife in the area. |
| • Plant the terraces of the bank with a mixture of; *Ranunculus aquatilis, Nymphaea alba, Iris pseudacorus, Butomus umbellatus, Typha and Caltha palustris* to increase biodiversity and soften the water's edge. It will create more naturalistic character to the lake and allow for seasonal variation through *Iris* and *Nymphaea* flowers. They will also attract many insects and provide shelter to aquatic wildlife.<br>• Remove weeds growing in cracks in the hard surface as they look 'messy' and do not enrich the human experience by the water.<br>• Create some areas with piled wood and stones which rise to the surface of the water and to the path edge to create an access point and shelter for frogs and newts. Allow some piles to be above the water for frog habitat during hibernating months and for toads. | • Local nature group or Friends of Crookesmoor Parks can be involved in planting and creating access points for frogs. Will create a sense of ownership and attract people to return to see seasonal changes at the lake and view the increased wildlife in the area.<br>• Opportunity for event day. |
| • Monitor the pond for string algae (blanket weed) and *Lemna minor* (duck weed). Physically remove once a week. | • Local nature group or Friends of Crookesmoor Parks can monitor for these weeds and ensure they do not choke other preferable species at the water's edge. |

## 5.2 Map of Interventions




- Remove roses and replace with higher wildlife value species with winter interest
- Open and enrich woodland at entrance
- Introduce meadow planting
- Improve visual impact and wildlife value of beds
- Establish a vibrant and biodiverse lake edge
- Plant new species and ensure high quality of existing trees

# 6.0 Detailed Specification- South Eastern Woodland



Aims:

- Create greater visual interaction for people and establish greater community interaction with the woodland.
- Increase the choice of habitats for wildlife.
- Lessen the sense of 'enclosure'.
- Improve the appearance of the woodland edge.
- Establish an interesting route through the woodland.

## 6.1 Specific Recommendations

| | TASK | JUSTIFICATION | RESOURCE | COST PER TASK (LABOUR HOURS) | COST PER ANNUM |
|---|---|---|---|---|---|
| Upper Canopy | • Remove 20% of tree canopy so that light in the woodland increases and sunlight can reach more of the ground layer in summer months. This is to be spread evenly over the woodland. From the path, views to the lake should be accessible when walking along. | This will vary the experience for people moving through the woodland and reduce the sense of 'enclosure'. | Tree surgeon | 20 | N/A<br>Main removal will be greatest cost - six year cycle thinning (8 hours) will continue to maintain the canopy in the future. |
| | • Fell any dead or over mature trees within a 5m radius of the path to ensure safety to visitors. Leave all other dead trees for nest habitat for birds (e.g. Woodpeckers and Tree-creepers) and for bat roosts. Dead wood is also very popular with insects. | Reduces the risk of injury from falling wood. Leaving dead trees will support a wide variety of wildlife and support biodiversity. | Tree surgeon | 4 | 4 |
| | • Chip any felled material and use to surface the existing informal path/ desire line. | Reduces cost for removal of wood material and cost of new path surface. | Tree surgeon | 4 | 4 |
| | • Retain some logs to create creature habitats which can be placed in areas dense in *Hedera* and away from the path so as to be undisturbed by people walking through. | Supports biodiversity in the woodland and reduces cost of removing the material from the site. *Hedera* is the only species which flowers in the winter so contributes to biodiversity at a time of year when little else does therefore it should be retained. | Local nature group, Friends of Crookesmoor Parks | 2 | 2 |
| | • Install bird and bat boxes on larger trees at the woodland edge which will receive sun at some part of the day. Place twelve bat boxes at a range of heights from 1.5m above ground level to 6m above ground to attract a wider variety of bat species. Place twenty five bird boxes with different entrance hole sizes at a minimum of 3m above ground level to protect from vandalism and cats. Place throughout the woodland. | To encourage wildlife and increase biodiversity. Will create a community interest in the woodland to monitor the levels of activity within the boxes. Different entrance hole sizes will attract a variety of birds.<br>Bat boxes require some sun in order to be warm enough to inhabit and bats prefer roosts along a line of trees. | Local nature group, Friends of Crookesmoor Parks | 4 | 10<br><br>Leave bat boxes.<br><br>Take down bird boxes annually in October to empty of previous years nest material and to scold with boiling water to kill any parasite. Place back into trees. |

| | TASK | JUSTIFICATION | RESOURCE | COST PER TASK (LABOUR HOURS) | COST PER ANNUM |
|---|---|---|---|---|---|
| Woodland Understory | • In early spring, remove 20% of young self-seeded trees (those less than 5m in height) focusing on areas with five or more saplings in a 2m2 distance. Remove all *Fraxinus excelsior, Prunus avium, Betula pendula* and *Acer pseudoplatanus*, leave all other species. Retain the removed material for creature habitat creation. | This will reduce overcrowding and allow space for new species which are more supportive of wildlife. By removing more *Fraxinus* and *Acer* it will encourage greater diversity in the woodland by providing space for other species to establish. | Local nature group, the Friends of Crookesmoor Parks. | 5 | 5 (In future years only remove where species are with a 5m radius of an existing young tree). |
| | • In November, clear 30% of the leaf litter in lower areas of the woodland (area which lies lower than the path within the woodland) to allow space for new species and add leaves collected from the rest of the park in autumn to creature habitat areas | Provide food for insects and support the insects in the creature habitat areas. | Local nature group, the Friends of Crookesmoor Parks. | 4 | 4 |
| | • Plant twenty four *Corylus avellana* in late winter/early spring, scatter evenly through the woodland, avoiding areas dense in *Hedera*.<br>• Mulch 1m radius around newly planted trees and water with 30 litres of water or until saturated on surface once a week for first six months. Monitor for weeds weekly at the same time as watering. Apply glyphosate in spring, removing dead weeds the following week and repeat five weeks later if required.<br>• Coppice (cut back to 50-100mm above ground level) every six years. | A sustainable option through coppicing as this regenerates the tree before decline and therefore it will not require replanting. Coppicing allows for increased light to enter the woodland and to support floral diversity at the field layer level.<br>Potential for community involvement and therefore sense of ownership of the woodland. | Local nature group, the Friends of Crookesmoor Parks. | 12 | N/A<br>Coppice *Corylus* on a six year cycle (20 hours that year).<br>48 hours labour required for the first six months establishment period. |

Fig 3. Area for main planting

| | TASK | JUSTIFICATION | RESOURCE | COST PER TASK (LABOUR HOURS) | COST PER ANNUM |
|---|---|---|---|---|---|
| Field Layer | • Remove all *Rubus fruticosus* and *Urtica diocea*, (leave *Ribes sanguineum* as its berries provide food for birds and insects) in late September and apply glyphosate in the following spring to any emergents. | Clears some ground layer space for new species and reduces negative visual impact of emergent weeds. | City council | 8 | 8 |
| | • In April plant sixty *Dryopteris wallichiana* in groups of 4-8 at 4 per m2 focusing on areas of light created by canopy clearance. Mulch 30cm around the base and water until saturated on the soil surface. | Varies the plant population at this level and creates shelter and leaf litter which is attractive to insects. Create interest for people at lower levels of sight when walking within the woodland. | Local nature group, the Friends of Crookesmoor Parks. | 6 | 2 (divide if density increases to more than six per m2 if not no maintenance required, they will spread naturally) |
| | • During October plant *Allium ursinum* in groups of 70 per m2 focusing on partially shaded areas close to newly created lighter sections following canopy clearance. Plant fifteen groups at 2m2 in a scattered distribution across the woodland which is lower than the path (See Fig 3). | Brings visual interest through its flowers and basal foliage before the deciduous trees are in full leaf.<br>Flowers and seeds will support wildlife. Very popular with bees.<br><br>The high density means no maintenance is required. Will eventually establish over the whole woodland if canopy layer and light accessible is controlled successfully. If necessary divide in future years and plant in spaces in field layer. | Local nature group, the Friends of Crookesmoor Parks. | 4 | 0 |
| | • Scatter *Digitalis pupurea* seeds in May at thirty seeds per m2 and plant *Hyacinthoides non-scripta* bulbs at 100 bulbs per m2 in October in sunny or semi-shaded spots (consider new canopy shade pattern) | Digitalis is very attractive to bees and provides colour and height to the field layer. People will engage with the seasonal events of the arrival of the *Hyacinthoides* flowers and the *Digitalis*. They add colour and interest before the woodland leaves appear. They will spread naturally and will require no future maintenance. | Local nature group, the Friends of Crookesmoor Parks. | 4 | 0 |
| | • Weed around young trees within a 1.5m radius biannually, once in April, once in July. Apply glyphosate in spring, removing dead weeds the following week and repeat five weeks later if required. | Reduces the chance of the young trees failing and supports the natural regeneration of the woodland. | City council | 4 | 4 |

Woodland Edge

<table>
<tr><th>TASK</th><th>JUSTIFICATION</th><th>RESOURCE</th><th>COST PER TASK (LABOUR HOURS)</th><th>COST PER ANNUM</th></tr>
<tr><td>• Within the first 5m of woodland edge remove Rubus fruticosus and Urtica diocea, leave Ribes sanuineum. Apply glyphosate in spring, removing dead weeds the following week and repeat five weeks later if required..<br><br>• Remove all young self-seeded trees and any grasses creeping into the woodland in April.</td><td>Allows space for new species which are richer for wildlife and have higher aesthetic value.</td><td>City council</td><td>8</td><td>8</td></tr>
<tr><td>• Plant mix of new woodland edge shrubs at 2 per linear m in an a double staggered row:<br><br><table><tr><th>Percentage (%)</th><th>Species</th></tr><tr><td>40</td><td>Rosa webbiana</td></tr><tr><td>30</td><td>Viburnum opulus</td></tr><tr><td>30</td><td>Hamamelis x intermedia 'Aphrodite'</td></tr></table><br>• Plant in groups of 3-6 placing species evenly over the length of the edge, ensuring a 2m gap between planting. Leave a 2m spacing either side of the path entrance to allow clear access after growth. Mulch 30cm around base and water until saturated on the soil surface.</td><td>Will provide a range of seasonal highlights through flower, seed and foliage and create a more bio-diverse edge to the woodland.</td><td>Local nature group, the Friends of Crookesmoor Parks.</td><td>16</td><td>N/A</td></tr>
<tr><td>• Coppice Rosa and Hamamelis to ground level once every five years. Chip removed stems on site and use for mulch in ornamental beds.</td><td>Regenerates the plant and encourages health new growth with subsequent flowers and fruits.</td><td>City council</td><td>4</td><td>(4 per five year cycle).</td></tr>
<tr><td>• Prune back the Viburnum once every two years, removing youngest growth (back to woody stem growth). Chip removed stems on site and use for mulch in ornamental beds.</td><td>Encourages healthy new growth with lots of flowers and bright autumn colour.</td><td>City council</td><td>4</td><td>(4 hours per two year cycle).</td></tr>
<tr><td>• Scatter an even mix of Galantus nivalis, Hyacinthoides non-scripta and Crocus speciosus bulbs in first 1m of woodland and first 4m of grass.</td><td>The flowers will soften the woodland gradient and add colour early in the spring.</td><td>Local nature group, the Friends of Crookesmoor Parks.</td><td>4</td><td>0</td></tr>
</table>

## 6.2 Season Visual Interest

Foliage Flowers Fruit

| SPECIES | MONTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | J | F | M | A | M | J | J | A | S | O | N | D |
| Corylus avellana | | | | | | | | | | | | |
| Dryopteris wallichiana | | | | | | | | | | | | |
| Allium ursinum | | | | | | | | | | | | |
| Digitalis purpurea | | | | | | | | | | | | |
| Hyacinthoides non-scripta | | | | | | | | | | | | |
| Viburnum opulus | | | | | | | | | | | | |
| Rosa webbiana | | | | | | | | | | | | |
| Galanthus nivalis | | | | | | | | | | | | |
| Crocus speciosus | | | | | | | | | | | | |

## 6.3 Subsequent Maintenance

Tree surgeon City council Local nature group/ Friends of Crookesmoor Park

| AREA | TASK | YEAR | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Upper Canopy | Thin 20% of tree canopy | | | | | | | | | | | | |
| | Fell any dead or over mature trees 5m from path and chip for path surface | | | | | | | | | | | | |
| | Pile wood and leaf litter in creature habitat areas. | | | | | | | | | | | | |
| | Remove 20% of young self-seeded trees | | | | | | | | | | | | |
| | Clear 30% of leaf litter in lower areas of woodland. Add to creature habitat areas. | | | | | | | | | | | | |
| | Coppice *Corylus avellana* (once every six years) | | | | | | | | | | | | |
| Field Layer | Remove *Rubus fruiticosus* and *Urtica diocea* | | | | | | | | | | | | |
| | Plant *Dryopetris wallichiana* and check establishment | | | | | | | | | | | | |
| Woodland Edge | Remove *Rubus fruiticosus* and *Urtica diocea* and any self-seeded trees or grasses within first 5m of edge | | | | | | | | | | | | |
| | Coppice *Rosa webbiana* and *Hamamelis x intermedia* 'Aphrodite' to ground level. Chip on site for mulch or use in creature habitat areas. | | | | | | | | | | | | |
| | Weed around young trees. | | | | | | | | | | | | |
| | Prune *Viburnum opulus*. Chip on site for mulch or use in creature habitat areas. | | | | | | | | | | | | |
| | Monitor *Galantus nivalis, Hyacinthoides non-scripta* and *Crocus speciosus* and replant if required until more established. | | | | | | | | | | | | |

## 6.4 Cost/ Resource of Six Year Maintenance Cycle

| YEAR (Cycle) | COST (HOURS) | | | |
|---|---|---|---|---|
| | Tree Surgeon | City Council | Local nature group/ Friends of Crookesmoor Parks | TOTAL |
| 1 (Establishment year) | 28 | 20 | 71 | 119 |
| 2 | 8 | 24 | 23 | 55 |
| 3 | 8 | 20 | 23 | 51 |
| 4 | 8 | 24 | 23 | 55 |
| 5 | 8 | 28 | 23 | 59 |
| 6 | 16 | 24 | 43 | 83 |
| TOTAL | 70 | 140 | 206 | |

As shown in the table adjacent, the majority of maintenance for the South eastern woodland can be carried out by a local nature group or the Friends of Crookesmoor Parks.

There is still a cost to the city council for the new recommendations but the value it will provide in terms of visual interest for people and for biodiversity will greatly improve the experience for those who visit.

Time costs will be saved elsewhere in the park and therefore can be utilised here as a result. Species chosen are of low maintenance, high aesthetic seasonal value and attractive to wildlife.

Coppicing and pruning allows for some years to have a lower cost. However due to the skilled nature of maintaining mature trees, there is a demand for a tree surgeon, which does result in a higher cost.

However this work will support the sustainability of the woodland and reduce maintenance and replanting of field and lower canopy species in years to come.

# 7.0 Summary

Following the recommendations for the different areas of the park, the Crookes Valley will become a rich and varied landscape for people to engage with.

Seasonal events of the vegetation will invite people into the park at different times of the year and create a welcoming environment for local users. New species will provide greater value to wildlife through flowers, fruit and foliage and will encourage new birds and invertebrates to inhabit the area. Biodiversity will increase and human interest in the local wildlife will provide the opportunity for greater community involvement and sustained interest and contribution to maintenance in the future.

Selected new plants are of low maintenance and many can be treated as groups to prune, coppice and manage. There are few species which require specialist knowledge and many tasks can be carried out by a local nature group or the Friends of Crookesmoor Parks, therefore reducing pressure and cost to the city council.

The lake will become a new focal point and will be a unique feature to this part of Sheffield. Human interaction with the water will be positive and the variety of species to be planted will attract a wide range of aquatic wildlife. Due to their self-establishing qualities they will require little or no maintenance but will contribute highly to the experience for people and for nature.

A mixture of bulbs and meadow planting over the site will visually tie the park together and will provide coherence to the current character of the park.

Increasing the density of planting in the ornamental and shrub beds will not only add to the quality of their appearance but will reduce the likelihood of weed invasion, therefore reducing demand and money spent on weeding.

Species which have winter interest and high wildlife value will replace species limited in their seasonal variety and in their benefit for biodiversity.

These recommendations do not require expensive re-design of the Crookes Valley Park but will visually enhance the existing vegetated areas and allow them to be more sustainable for biodiversity and for continued maintenance in the future.

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