

Brinsley Headstocks LNR

Management Plan

2017 – 2022



Broxtowe
Borough
COUNCIL



Nottinghamshire

Acknowledgements

Broxtowe Borough Council and Nottinghamshire Wildlife Trust would like to thank everyone involved in the development of this management plan

**For further information about this site and
its management please contact:**

Broxtowe Borough Council
Friends of Brinsley Headstocks

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PART 1 **SITE DESCRIPTION**

1.1 Location

Brinsley Headstocks is located to the southeast of Brinsley in Nottinghamshire, approximately 14 kilometres northwest of the city of Nottingham.

1.2 Map Coverage

Brinsley Headstocks can be found on the following Ordnance Survey Maps at grid reference SK465485 (centre of site). A location map is provided at Figure 1 below.

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

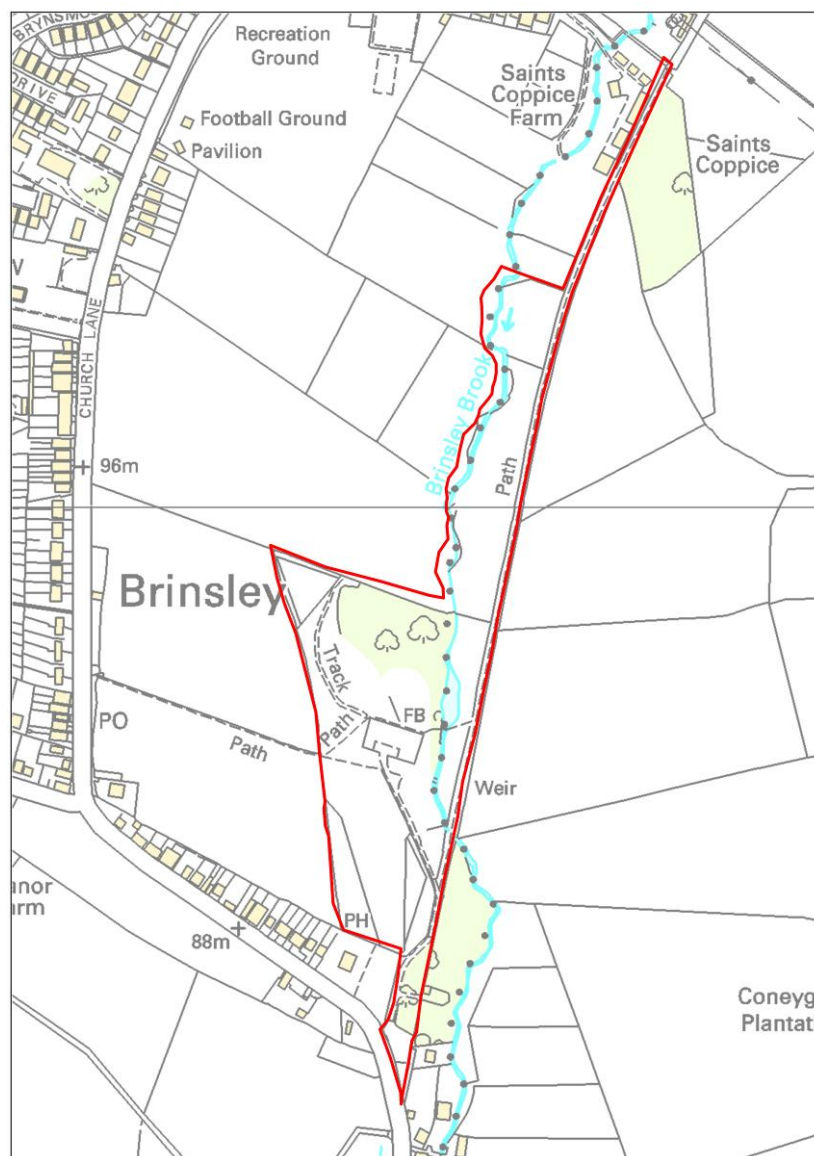


Figure 1: Brinsley Headstocks Location map

1.3 Size

The site is approximately 5.17 hectares (12.78 acres) in size.

1.4 Ownership/Tenure

The site is owned by Broxtowe Borough Council and managed by the council and the Friends of Brinsley Headstocks.

1.5 Local Planning Authority

The whole site is within the boundary of Broxtowe Borough Council planning authority.

1.6 Soil and Geology

The Soilscape Map (Cranfield University) identifies that the site is within Soilscape 24: Restored soils mostly from quarry and opencast spoil. For further information refer to: <http://www.landis.org.uk/soilscales/soilguide.cfm>.

In terms of geology, The British Geological Society's Geology of Britain Viewer reveals the following information about the site's geology (based on 1:50 000 scale maps):

Bedrock geology description: Pennine Middle Coal Measures Formation - Mudstone, Siltstone and Sandstone. Sedimentary Bedrock formed approximately 309 to 312 million years ago in the Carboniferous Period. Local environment previously dominated by swamps, estuaries and deltas.

For further information on geology descriptions see: <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>.

1.7 Aspect, Topography and Altitude

Brinsley Headstocks lies on more or less flat land adjacent to Brinsley Brook on the 85 metre contour line, rising to 99m at the summit of the old pit top (source Ordnance Survey Land-Form PANORAMA®).

1.8 Statutory Designations

There is one statutory designation associated with Brinsley Headstocks. In 2008 it was declared a Local Nature Reserve (LNR) under Section 21 of the National Parks and Access to the Countryside Act 1949. Government Guidance on LNRs states:

- Local authorities can create local nature reserves (LNRs). Town and parish councils can create LNRs if the district council has given them the power to do this.
- The local authority must control the LNR land - either through ownership, a lease or an agreement with the owner. As a manager of an LNR you need to care for, and protect, its natural features. You must also make your land accessible for any visitors.
- It isn't a formal requirement that your LNR is open to the public but you should aim to make at least part of it publicly accessible (source <https://www.gov.uk/create-and-manage-local-nature-reserves>).

1.9 Non-Statutory Designations

The majority of the site meets Nottinghamshire Local Wildlife Site criteria. The northern and eastern portion of the site is designated as Brinsley Brook Grassland LWS (5/2302) and the central-southern area as Brinsley Headstocks LWS (5/3405).

The LNR was first awarded Green Flag Status in 2015.

1.10 Access

The site is publically accessible, with both formal surfaced paths and informal paths throughout. A public footpath runs along the eastern boundary, following the line of the old mineral railway line. Broxtowe Borough Council allows informal use of the route for horse riding. A second public footpath leads off from the old mineral line at the southern end of the site, passing through the Headstocks Meadow and exiting to the eastern boundary. A set of steps and a footbridge allow visitors to cross Brinsley Brook and access the northern half of the site.

The main access point to the site is located at the southern end on the A608 Mansfield Road, where a small car park is also present. Access from the north is via Cordy Lane along the mineral line. Access from the east is via the footpath from Church Lane.



1.11 Surrounding Land Use

Brinsley Headstocks is surrounded by a network of agricultural fields, dominated by pasture with hedgerow boundaries.

1.12 Summary of Resource

The site of a former coal mine, Brinsley Headstocks is relatively linear, with grassland and scrub running north to south along Brinsley Brook and the old mineral railway line. It widens to the south to encompass the pit top, twin headstocks, additional grassland and woodland areas.

An active local volunteer group – The Friends of Brinsley Headstocks work in close partnership with the site's owner to meet heritage and conservation based objectives (see <http://www.brinsleyheadstocks.org/about.html>)

For the purposes of this management plan, the site has been divided into seven management compartments, as shown in Figure 2 below:



Figure 2: Brinsley Headstocks Compartment map

Compartment A – The Long Meadow

This section of unimproved pasture lies to the north of the site. It is bounded to the east by a redundant mineral railway line and to the west by a path and the Brinsley Brook. This path crosses the Long Meadow near to its northern tip.

Stock fencing has been installed around the meadow and it was let to a local farmer for many years for cattle grazing. For the past 5 years it has been managed by the Borough Council as hay meadow, being mown in summer and cuttings removed from site.



There is good species diversity, typical of a damp/seasonally wet clay soil and the area has been designated LWS (Local Wildlife Site), due to the unusual presence of some woodland species, particularly wood anemone, a relic from it previously been covered by trees.

Whips comprising hedgerow species have been planted within the meadow, along the fence line at the western boundary of Long Meadow. The fencing, together with the laid hedge to the east of Long Meadow helps exclude visitors and dogs. This has allowed the meadow to develop and improve in biodiversity. The layout of the fencing, which follows the path as it cuts across the meadow, forms a relatively undisturbed parcel at the northern most tip of the site. Gates have been installed, which allows access for management.

A pond and dipping platform are situated close to the brook on the western side and this is occasionally under water when the brook is in full flow.



Compartment B – Old Mineral Line

This is the line of the railway that served Brinsley and Underwood Collieries when active, and runs north-south on the eastern side of the site. No tracks remain and the line has been surfaced and adopted as a footpath by the County Council. Very old hawthorn hedges bound both sides, a significant proportion of which has been laid in recent years. Either side of the surfaced footpath are approximately 2m wide ‘verges’ with a good mixture of species, typical of woodland fringe/hedgerow. Laid hedges are flail mown annually. The verges tend to be flail mown in summer and this damages the wild flora and fauna that depend on them.



Compartments C1-C3 – “Millennium Woods” around Headstocks Meadow

These comprise three separate compartments, which were planted in 2000 with mixed native hardwoods. There is a good mixture of species including scrub and woodland edge shrubs although due to the nature of the plantation, it has a relatively even age structure. Ground flora generally consists of sparse meadow species, a result of the trees being planted into the original grassland. These will soon be shaded out by the growing trees.



Around 5 years ago the areas were surrounded with hawthorn hedging, which has now established quite well.

Compartment D1 – Headstocks Meadow

This section of grassland lies to the south of the site and begins close to the entrance car park. It is the first point where visitors entering the site are afforded views of the timber headstocks structure. The grassland is surrounded by newly planted woodland (Compartment C) and more mature woodland on the former colliery spoil heap (Compartment E). There are mown paths through the meadow with unrestricted access throughout. The site is managed as hay meadow with an annual cut and collect in summer. There is a good mix of wildflowers present, generally typical of a damp clay soil but grasses do dominate in some areas. Yellow Rattle (*Rhinanthus minor*) was introduced several years ago to help reduce grass vigour and has established well in the damper areas.



To the centre of the area, running east-west is an unusual section of acidic grassland. Ground conditions here may be the result of contamination when the colliery was active.

There is a line of trees on the eastern boundary (along the main path to the headstocks) which were deliberately planted some years ago, possibly originally as a mixed hedgerow.

A very wet area in the meadow was excavated in 2011 using a mini digger to create a shallow 'dew pond'. Frogs have now spawned in this area and aquatic vegetation has established, however without intervention, there is a danger that more vigorous species may take over.



Compartment D2 – Winter Bird Feed Field

To the north-east of the meadow an arable area has been created and an annual crop of 'bird feed mix' is grown. The crop is allowed to stand through the winter and attracts large numbers of wild birds. There was concern at first that this area comprised alien species such as sunflower, but no spread of crop plants from the area has been noted and the benefits to local bird life are clear.

Compartment E – The Wooded Hill

This compartment lies to the centre of the site and is a relatively steep sided 'hump' characteristic of a spoil heap. It has a well-established cover of mature oak and ash, many of which are quite stunted. An understorey exists, predominantly hawthorn. Norway maple is also present and is seeding extensively.



There are a number of paths running through the area, and given the topography quite a few steps which have been recently improved and updated. The canopy is mainly closed and there is only a limited herbaceous presence.

Compartment F – Vine Wood

This is an area of mature planted woodland adjacent to the car park to the south of the site. Immediately to the east lies Vine Cottage, a building closely linked to the site through the D H Lawrence heritage.

The woodland is extensively planted with non-native spring bulbs including crocus, narcissus and snowdrops, providing a colourful show when little else is present. A small rookery has recently established in the larger trees. Several mature Norway maple are present and are seeding freely.

Compartment G – Brook and The Dell

This section of the site follows the line of the Brinsley Brook, running approximately north-south. The northern area is marshy with Crack Willow and Alder present. Most of the willow was heavily coppiced several years ago, as a result of it becoming unstable due to its age and size. The coppicing has let a substantial amount of light in and the ground vegetation (predominantly perennial nettle) has flourished. Three small ponds were dug just off-line of the watercourse in 2011 and some amphibian activity (common frog) has been reported.



The southern half of this compartment was cleared of rank vegetation in 2011 and planting of a small area of hazel undertaken. The hazel is now establishing well and a good variety of woodland wildflowers have developed.

A small bridge crosses the watercourse in the middle of the compartment and appears to be constructed on top of a relic of the colliery. It has recently been repaired and should remain serviceable for the duration of this plan.

60 or so metres downstream (south) of the bridge is a weir which collapsed in 2011. Prior to this it did hold some water back and helped prevent complete drying of the brook bed in hot dry summers. Some investigation into restoring the weir has taken place, but the Environment Agency are reluctant to grant permission for its repair, preferring a free-flowing

watercourse.

Compartment H – Headstocks and Access

This is not a discrete compartment as such, but the key physical structures and picnic area, which are linked by a stone surfaced path.

Beginning at the southern edge of the site is the vehicle access and car park, off the A608 Mansfield Road. There is clear signage identifying the site which is visible from the road. The entrance is on a bend in the road and requires a little more attention than usual when entering or exiting. Interpretation signage is present in the car park.



Moving north into the site is a wide access path which follows the course of an old mineral railway line. There is a horse-style and squeeze point which serve to allow access to pedestrians whilst restricting motorcycles.

Further into the site a bound-gravel surfaced path turns off to the left (west) and heads up a short incline to the fenced headstock structure. The timber tandem headstock is the last remaining example of this type of structure in Britain and is the only visible relic of the once extensive colliery that stood on the site. The headstock was extensively restored in 2009 and grant funding has been secured to apply a preservation treatment in 2013. The Borough Council has limited funds to maintain the structure and its future restoration is dependent on securing further grants for repair and maintenance.

Around and to the rear (north) of the headstock is an area of regularly mown grassland with two picnic tables. Maintenance of this more formal area is undertaken by the Borough Council.

PART 2 **EVALUATION & OBJECTIVES**

2.1 Evaluation of Site Features (Ratcliffe's criteria)

Site evaluation is carried out through a long established and widely accepted method of determining the nature conservation value of a site. This method is known as the 'Ratcliffe Criteria' (Ratcliffe, 1977). The Ratcliffe Criteria provides a standardised and objective way of assessing the value of a site using the attributes of Size, Naturalness, Representativeness, Rarity, Diversity, Position, History, Fragility, Potential, Value and Intrinsic Appeal.

2.1.1 *Size*

The site is approximately 5.17 hectares (12.78 acres) in size. It is a relatively small site but is large enough support a diverse range of species.

Irrespective of its size, it forms part of an important corridor for wildlife through an otherwise largely agricultural landscape.

2.1.2 *Diversity*

Brinsley Headstocks is a diverse site containing a large variety of habitats. An area of unimproved pasture to the north is connected via hedgerows and a riparian corridor to more wooded areas of the site in the south. Riverside habitat alongside Brinsley Brook also includes coppiced woodland and wetter, marshy areas. Additional meadow grassland is present to the south, surrounded by blocks of younger plantation woodland.

Within each habitat type, species diversity is generally good. The variety of ages of woodland as well as grassland, scrub and hedgerows provides some structural diversity. A network of formal and informal paths allows access to different parts of the site and includes steps and a footbridge over the brook.

Structural and species diversity could be enhanced further with some small changes to current management alongside hedgelaying, woodland management work and localised planting of woody species and herbaceous ground flora, which has been carried out in recent years.

2.1.3 *Naturalness*

Situated on the site of the former Brinsley Colliery, the majority of the site (with the exception of compartment A) can be considered man-made. The twin headstocks (the last remaining timber tandem headstocks in the county) and disused mineral railway track are historical artefacts of an extensive coal mining enterprise. The colliery was worked from 1872 until 1934, with surface buildings demolished in 1970.

In addition to the remaining spoil heap (the Wooded Hill), landscaping interventions have also included works to create a number of ponds. Other man-made structures are present, such as a collapsed weir within the brook, stone-surfaced paths and a car park.

Since mining ceased, the woodland areas have been planted over time, some as recently as 2000 (Millennium Woods, compartments C1 –C3). Whilst many native species have been

used, there are examples of non-native species such as Norway maple, crocus and narcissus.

Whilst the majority of the site cannot be considered 'natural', the site has developed over time to support a range of habitats and species and is therefore of considerable nature conservation value.

2.1.4 Rarity

Brinsley Headstocks Local Wildlife Site and Brinsley Brook Grasslands Local Wildlife Site cover most of the site. Both areas are designated as having 'notable flora' which indicates that they are important within a county context and can therefore be considered relatively uncommon. However, none of the plants appear on the Rare Plant Register which suggests that it is the plant assemblage rather than individual species which are important to the site.

Neutral, species rich grasslands are somewhat rare within the county, although there are concentrations of this habitat on the coal measures in the west. The resource at Brinsley Headstocks represents approximately 0.12% of the county total. With up to 99% decline in Nottinghamshire's unimproved grassland since 1930, even small pockets such as this are considered valuable.

Due to the underlying geology, former colliery sites are relatively widespread locally and not particularly rare although where they have been sympathetically restored this can provide valuable wildlife habitat as well as preserving a local heritage resource.

2.1.5 Fragility

The site is not considered highly fragile as it contains habitats that can tolerate some pressure such as nutrient input and planting / felling before its floral and faunal diversity would degrade. However, without appropriate management the site would degrade and lose its wildlife and recreational value. If an overcrowded or even age woodland shrub or canopy layer was allowed to develop this would negatively impact on ground flora.

The riparian and unimproved grassland pasture habitats are more vulnerable to the impacts of pollution, nutrient enrichment or unsympathetic mowing regimes and are therefore considered to be more fragile. Ongoing appropriate management and regular monitoring will help to protect these areas.

2.1.6 Typicalness

The size, structure and species composition of the site is typical of restored collieries in the county. However, whilst there were once 19 collieries within 3 miles of Eastwood, not all have been restored in this way making Brinsley Headstocks fairly unique.

2.1.7 Position in an Ecological/Geographical Unit

Brinsley Headstocks is well connected to the wider countryside, being in a relatively rural environment. Its linear nature is defined by the railway line and the course of Brinsley Brook – both of these features serve as ecological corridors facilitating movement of species throughout the landscape. The pockets of trees also act as stepping stones, providing breeding and foraging habitat and shelter for a range of woodland species.

The fact that the site is so well connected in landscape and ecological terms is recognised in

the Broxtowe Green Infrastructure Strategy (2015-2030). The Brinsley Brook is recognised as a secondary corridor (ref 2.1).

2.1.8 Potential Value

With ongoing management, Brinsley Headstocks could retain and potentially increase its value as a recreational, educational and nature conservation resource.

With the network of paths and other infrastructure, the site has great recreational value. The educational value is already high, with the pond dipping platform, a variety of habitats and the industrial heritage of the site. The value of both could be enhanced further with upgraded or additional interpretation material identifying habitats, species and individual plants of interest.

The site is an ideal area to provide life long education in the form of training for local volunteers in practical conservation work, guided walks, open days, and participation in surveying.

The active friends group are of immense value to the site and their ongoing involvement will continue to strengthen and enhance the site.

Further ecological potential could be realised through some small scale works to help increase the biodiversity of the site. These could be incorporated within the current management activities which benefit local biodiversity.

2.1.9 Intrinsic Appeal

The site provides a valuable recreational resource as well as offering the local community opportunities to experience nature. It is a natural green space, available to a local community that can be enjoyed without the need for transport provision to reach it.

It is large enough to ensure that short walks can be taken through the site and the floral and structural diversity provides recreational and wildlife interest.

The industrial history of the site provides an additional dimension for visitors to enjoy and is celebrated and valued by the local community.

2.1.10 Recorded History

As stated in Section 2.1.3, the site is a former colliery established in 1872. OS mapping from the 1870s shows Brinsley Colliery and the associated mineral railway line with surrounding agricultural fields. Areas alongside Brinsley Brook appear to be partially wooded. Later OS mapping from the 1970s shows the site as being disused, with no sign of buildings present after 1966-67 mapping.

The Brinsley Headstocks website gives a detailed history of the site – see <http://www.brinsleyheadstocks.org/site.html>

The natural history of the site has been documented through formal survey as part of the LWS designation process (Nottinghamshire Biological and Geological Records Centre, July 2014). In addition, an extensive list of wildlife sightings has been maintained by the friends group. Annual reports were compiled by Phillip Oxley and, more recently, John Eyre. Most species groups are recorded, including birds, butterflies, dragonflies, fungi, flora and other

groups including mammals, reptiles, amphibians and insects. These records are important in informing appropriate management of the site as well as assisting in monitoring changes. All records to date (up to January 2017) have been collated into a single list for reference (see Appendix 1).

2.2 Objectives

1. Maintain and enhance the habitat types and species present
2. Encourage public understanding and awareness of issues relating to the site
3. Combine habitat enhancement and management with education, recreation and access provision
4. Survey and monitor the effects of management on the wildlife of the site.

2.3 Factors Influencing Management

- Safety –risk assessments need to be produced and implemented whilst working on site. Any management operations carried out (either by volunteers or contractors) should be insured.
- Community involvement – Broxtowe Borough Council, in conjunction the Friends of Brinsley Headstocks, should be involved in and consulted upon the practical and strategic management of the site 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 – if any of the more mature trees on site are identified as needing management, they should be surveyed by a licensed bat worker prior to any operations taking place. All species of British bat plus their roosting sites are protected by The Wildlife & Countryside Act 1981, the CROW Act 2000 and the Conservation of Habitats and Species Regulations 2010.
- Woodland biosecurity – follow Forestry Commission advice and implement precautions to prevent the introduction and spread of harmful organisms, such as pests, pathogens or invasive species.
- Aquatic biosecurity – guidance should be followed with regard to biosecurity relating to the ponds and river, especially relating to the threat of invasive plants and amphibian diseases. Refer to ARGUK Advice Note 4: Amphibian disease precautions, a guide for UK fieldworkers and the GB Non-native species secretariat, NNSS and

Environment Agency *Check, Clean, Dry* campaign.

- Management - annual meetings regarding the implementation of the management plan for the site are required to identify a work programme and schedule of works. Meetings should involve Broxtowe Borough Council, the Friends of Brinsley Headstocks, contractors and anyone else likely to carry out work on site.
- Only native species characteristic of the area should be introduced to the site, where appropriate.
- Work parties – where conservation work parties are to be carried out by a 'Friends' group, appropriate insurance is required.

2.4 Management Proposals

- 2.4.1 Strim (mow) the main grassland paths regularly during the growing season to maintain easy access for adults and children.
- 2.4.2 Carry out an annual cut and collect of meadow areas to help keep nutrient levels down and maintain species diversity.
- 2.4.3 Continue annual cropping of bird seed area (where budget permits) to provide additional food source for birds and small mammals.
- 2.4.4 Identify new areas for seeding with appropriate meadow mix where possible to increase diversity. This should include an area of less species rich meadow immediately west of the headstocks. Once established, manage as part of the annual cut and collect (see 2.4.2 above).
- 2.4.5 Undertake selective thinning of plantation woodlands to allow more light to the woodland floor, encouraging the herbaceous layer to develop and thrive. Retain the dead wood on site and create habitat piles with logs, or dead hedging with brash.
- 2.4.6 Especially in the more recently established parts of the site, consider further enriching the ground flora by establishing native woodland and hedgerow plants, either by bulb planting, sowing seeds or plug planting. Suitable species are listed below:

<i>Alliaria petiolata</i>	Wild Garlic
<i>Allium ursinum</i>	Ransoms
<i>Anemone nemorosa</i>	Wood Anemone
<i>Ajuga reptans</i>	Bugle
<i>Circaea lutetiana</i>	Enchanter's Nightshade
<i>Digitalis purpurea</i>	Foxglove
<i>Ranunculus ficaria</i>	Lesser Celandine
<i>Viola riviniana</i>	Common (Dog) violet
<i>Galium mollugo</i>	Hedge Bedstraw
<i>Galium odoratum</i>	Woodruff

Hyacinthoides non-scripta	Bluebell
Hypericum hirsutum	Hairy St. John's Wort
Glechoma hederacea	Ground Ivy
Lamiastrum galeobdolon	Yellow Archangel
Primula vulgaris	Primrose
Geranium robertianum	Herb Robert
Silene dioica	Red Campion
Stachys officinalis	Betony
Oxalis acetosella	Wood Sorrel
Stellaria holostea	Greater Stitchwort
Teucrium scorodonia	Wood sage
Vicia cracca	Tufted vetch
Campanula trachelium	Nettle Leaf Bellflower
Viola odorata	Sweet Violet

Mixes containing a similar species selection (usually called woodland mix in wild flower seed catalogues are readily available from suppliers such as:

Emorsgate EW1 <http://wildseed.co.uk/mixtures/view/11>

Naturescape N10F <http://www.naturescape.co.uk>

Boston Seeds BS8 <http://www.bostonseeds.com>

Seed could be sown in trays. When germinated they could be potted on and planted within the woods. Autumn (after the meadow has been cut) or early spring are recommended for wild flower planting. Bulbs are best planted in the autumn (September to November).

- 2.4.7 Establish numerous log and brash piles (only leave long logs to deter theft) and encourage standing dead wood where it is safe to do so (i.e. away from paths) to benefit great spotted woodpeckers, spotted flycatchers, willow tit and bats. Bat roosts can be encouraged if contractors cut vertical chainsaw slits in standing dead wood.
- 2.4.8 Undertake regular tree safety checks and report potentially dangerous trees to BBC. Undertake necessary works as priority.
- 2.4.9 Carry out scrub clearance work where necessary to ensure it does not encroach into meadow areas. Use of a flail could be considered, however hand clearance by volunteer groups may cause less disturbance. Invasion of scrub is not a problem under the current annual mowing regime.
- 2.4.10 Coppice hazel on rotation every 6-10 years, commencing when stem diameter reaches 7.5cm for maximum potential value of the timber (Forestry Commission, 2004 – see Appendix 2 and [http://www.forestry.gov.uk/PDF/fcin056.pdf/\\$FILE/fcin056.pdf](http://www.forestry.gov.uk/PDF/fcin056.pdf/$FILE/fcin056.pdf)).
- 2.4.11 Investigate opportunities to enhance riparian habitat for willow tit (the most rapidly declining resident bird in the UK and a Red List species of conservation concern) which is currently listed as an occasional visitor to site. Willow tits prefer damp woodland with a dense scrub layer and nest in standing dead wood (RSPB, undated – see Appendix 3 and https://www.rspb.org.uk/Images/willow_tit_updated_advisory_sheet_tcm9-357936.pdf).

Identify suitable alder trees to retain as standing dead wood 2-4m high and allow surrounding understorey to develop.

- 2.4.12 Remove invasive and non-native seedlings (i.e. Norway maple) from woodland areas by hand pulling or cutting. If stumps are left, they may require treatment with a suitable herbicide to prevent regrowth.
- 2.4.13 Maintain hawthorn hedging on an annual cutting cycle by mechanical cutter. Consider allowing height to increase where this will not impact on adjacent meadows.
- 2.4.14 Carry out selective pond clearance where required to prevent them becoming choked with vegetation. Where invasive or particularly vigorous species are present, this may require careful application of herbicide, following Environment Agency Guidance notes (*AqHerb01: Agreement to use herbicides in or near water* – see https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/296857/geo0110brzk-e-e.pdf). Cleared vegetation could be collated into piles near the ponds (that will remain undisturbed) to create reptile hibernacula.
- 2.4.15 Consider enhancing marginal habitats surrounding ponds through plug planting with suitable species, for example:
- | | |
|-------------------------|--------------------|
| Caltha palustris | Marsh marigold |
| Stachys palustris | Marsh woundwort |
| Carex pendula | Pendulous sedge |
| Lythrum salicaria | Purple loosestrife |
| Lychnis flos-cuculi | Ragged-robin |
| Stellaria uliginosa | Bog stitchwort |
| Filipendula ulmaria | Meadowsweet |
| Scrophularia auriculata | Water figwort |
- 2.4.16 Create a new pond in the northern part of Long Meadow where the ground slopes to a natural hollow. Spoil could be used to reprofile nearby areas and minimise the risk of inundation from the adjacent Brook.
- 2.4.17 Continue with the annual monitoring of wildlife to assess the impact of management on the habitats and species. This could focus on breeding birds and plants and could also involve photographic monitoring (taken from fixed points on the same week each winter) of woodland condition/ structure. Fixed point photographic monitoring of meadows could also be carried out in June/ early July (again with images taken within the same week each year). Use of standardised methodologies (e.g. Common Bird Census, Butterfly Transect, NARRS methodology for amphibian and reptiles) is recommended to allow year on year comparison and to add to current natural history records. NWT may be able to provide further advice on methodologies if required.
- 2.4.18 Carry out hedgehog surveys to add to site species knowledge. This mammal has not been recorded on site but suitable habitat appears to be present. Use of footprint tunnels is a non-invasive method to survey for hedgehog and other small mammals, is relatively low-cost and requires minimal experience. PTES Guidelines are provided at Appendix 4.
- 2.4.19 Carry out repairs to car park surface in a timely fashion as required.
- 2.4.20 Investigate funding for ongoing maintenance of historic headstock structures. The Borough Council has limited funds to maintain the structure and future restoration is currently dependent on securing further grants for repair and maintenance. This has to be a key and

on-going priority

- 2.4.21 Carry out work parties including activities such as path strimming, litter picking, pond and ditch clearance, coppicing shrubs etc.
- 2.4.22 Install additional interpretation boards to inform and educate regarding the ecology of the site. These could focus on different habitats and/or species groups, for example woodlands, flower meadows, mammals and/or birds. Seasonal information could be provided within a notice board. This could include what birds to expect to visit in the spring, or what wild flowers to see in the summer.
- 2.4.23 Install additional bird boxes to provide additional nesting opportunity across the site. Consider a range of styles for the benefit of a number of different species. Boxes could be purchased or made by volunteers to standard specifications (see <https://www.bto.org/about-birds/nbw/make-a-nest-box>). Little owl is listed as an occasional visitor and may benefit from installation of a specifically designed box. It would also be a worthwhile project to maintain (check condition each winter and repair/ replace as necessary) and monitor them. NWT can provide further information on how to do this, if required.
- 2.4.24 Install bat boxes to provide roost opportunity across the site. Boxes could be purchased or made by volunteers to standard specifications (see http://www.bats.org.uk/data/files/publications/Bat_Box_Information_Pack_FINAL.pdf). Nottinghamshire Bat Group could be approached to do an evening bat walk or NBG automated detectors could be deployed as part of their current EcolocationLocation Project.

PART 3 **MANAGEMENT DETAILS**

3.1 Management Projects and Prescriptions

Ref. No.	Project Title	Prescription	Compartment	Objective
2.4.1	Mow paths	Strim (mow) the main grassland paths regularly during the growing season to maintain easy access for adults and children.	D1	3
2.4.2	Cut and collect meadow grass	Carry out an annual cut and collect of meadow areas to help keep nutrient levels down and maintain species diversity.	A, D1	1
2.4.3	Bird seed crop	Continue annual cropping of bird seed area (where budget permits) to provide additional food source for birds and small mammals.	D2	1,3
2.4.4	New meadow seeding	Identify new areas for seeding with appropriate meadow mix where possible to increase diversity. Once established, manage as part of the annual cut and collect (see 2.4.2 above).	D1, G	1
2.4.5	Woodland thinning	Undertake selective thinning of plantation woodlands to allow more light to the woodland floor, encouraging the herbaceous layer to develop and thrive. Retain the dead wood on site and create habitat piles with logs, or dead hedging with brash.	C1-C3, E, G	1
2.4.6	Woodland ground flora enhancements	Consider enriching the ground flora by establishing native woodland and hedgerow plants, either by bulb planting, sowing seeds or plug planting	C1-3, E, G	1, 3
2.4.7	Encourage standing dead wood	Encourage standing dead wood where it is safe to do so (i.e. away from paths) to benefit great spotted woodpeckers, spotted flycatchers and bats. Bat roosts can be encouraged if contractors cut vertical chainsaw slits in standing dead wood.	C1-3, E, G	1
2.4.8	Tree safety checks	Undertake regular tree safety checks and report potentially dangerous trees to BBC. Undertake necessary works as priority.	All	3
2.4.9	Scrub clearance	Carry out scrub clearance work where necessary to ensure it does not encroach into meadow areas. Use of a flail could be considered, however hand clearance by volunteer groups may cause less disturbance.	All	1,3

2.4.10	Hazel coppice	Coppice hazel on rotation every 6-10 years, commencing when stem diameter reaches 7.5cm for maximum potential value of the timber (Forestry Commission, 2004).	G	1,3
2.4.11	Willow tit enhancements	Investigate opportunities to enhance riparian habitat for willow tit (the most rapidly declining resident bird in the UK and a Red List species of conservation concern) which is currently listed as an occasional visitor to site. Willow tits prefer damp woodland with a dense scrub layer and nest in standing dead wood (RSPB, undated). Identify suitable alder trees to retain as standing dead wood 2-4m high and allow surrounding understorey to develop.	G	1,3
2.4.12	Invasive species	Remove invasive and non-native seedlings (i.e. Norway maple) from woodland areas by hand pulling or cutting. If stumps are left, they may require treatment with a suitable herbicide to prevent regrowth.	E, F	1, 3
2.4.13	Hedge cutting	Maintain hawthorn hedging on an annual cutting cycle by mechanical cutter. Consider allowing height to increase where this will not impact on adjacent meadows.	All	1, 3
2.4.14	Pond maintenance	Carry out selective pond clearance where required to prevent them becoming choked with vegetation. Where invasive or particularly vigorous species are present, this may require application of herbicide. Cleared vegetation could be collated into piles near the ponds (that will remain undisturbed) to create reptile hibernacula.	A, D1, G	1,3
2.4.15	Marginal habitat enhancements	Consider enhancing marginal habitats surrounding ponds through plug planting with suitable species	A, D1, G	1, 3
2.4.16	Pond creation	Create a new pond in the northern part of Long Meadow where the ground is subject to a natural hollow. Spoil could be used to reprofile nearby areas and minimise the risk of inundation from the adjacent Brook. Further ponds or scrapes could be established in compartment G.	A, G	1

2.4.17	Monitoring	Carry out annual monitoring of wildlife to assess the impact of management on the habitats and species. This could focus on breeding birds, amphibians, reptiles, butterflies and plants and could also involve photographic monitoring (taken from fixed points on the same week each winter) of woodland condition/ structure. Use of standardised methodologies is recommended to allow year on year comparison and to add to current natural history records. NWT may be able to provide further advice on methodologies if required.	All	2, 4
2.4.18	Hedgehog survey	Carry out hedgehog surveys to add to site species knowledge. This mammal has not been recorded on site but suitable habitat appears to be present. Use of footprint tunnels is a non-invasive method to survey for hedgehog and other small mammals, is relatively low-cost and requires minimal experience.	All	2, 4
2.4.19	Car park maintenance	Carry out repairs to car park surface in a timely fashion as required.	H	3
2.4.20	Headstock maintenance	Investigate funding for ongoing maintenance of historic headstock structures. The Borough Council has limited funds to maintain the structure and future restoration is currently dependent on securing further grants for repair and maintenance. This has to be a key and on-going priority	H	3
2.4.21	Work parties	Carry out work parties including activities such as path strimming, litter picking, pond and ditch clearance, coppicing shrubs etc.	All	1, 2, 3
2.4.22	Site interpretation	Install additional interpretation boards to inform and educate regarding the ecology of the site. These could focus on different habitats and/or species groups, for example woodlands, flower meadows, mammals and/or birds.	All	2, 3

2.4.23	Bird boxes	Install bird boxes to provide additional nesting opportunity across the site. Consider a range of styles for the benefit of a number of different species. Boxes could be purchased or made by volunteers to standard specifications. Little owl is listed as an occasional visitor and may benefit from installation of a specifically designed box. It would also be a worthwhile project to maintain (check condition each winter and repair/ replace as necessary) and monitor them.	All	1, 2, 3, 4
2.4.24	Bat boxes	Install bat boxes to provide roost opportunity across the site. Boxes could be purchased or made by volunteers to standard specifications. Nottinghamshire Bat Group could be approached to do an evening bat walk or NBG automated detectors could be deployed as part of their current EcolocationLocation Project.	All	1, 2, 3, 4

3.2 Five Year Work Plan (Priority - 1 is high, 3 is low)

Reference Number	Prescription	Years				
		1	2	3	4	5
		2017	2018	2019	2020	2021
2.4.1	Strim (mow) the main grassland paths regularly during the growing season to maintain easy access for adults and children.	1	1	1	1	1
2.4.2	Carry out an annual cut and collect of meadow areas to help keep nutrient levels down and maintain species diversity.	1	1	1	1	1
2.4.3	Continue annual cropping of bird seed area (where budget permits) to provide additional food source for birds and small mammals.	2	2	2	2	2
2.4.4	Identify new areas for seeding with appropriate meadow mix where possible to increase diversity. Once established, manage as part of the annual cut and collect (see 2.4.2 above).	3	3			

2.4.5	Undertake selective thinning of plantation woodlands to allow more light to the woodland floor, encouraging the herbaceous layer to develop and thrive. Retain the dead wood on site and create habitat piles with logs, or dead hedging with brash.		2		2	
2.4.6	Consider enriching the ground flora by establishing native woodland and hedgerow plants, either by bulb planting, sowing seeds or plug planting			3		3
2.4.7	Encourage standing dead wood where it is safe to do so (i.e. away from paths) to benefit great spotted woodpeckers, spotted flycatchers and bats. Bat roosts can be encouraged if contractors cut vertical chainsaw slits in standing dead wood.	3	3	3	3	3
2.4.8	Undertake regular tree safety checks and report potentially dangerous trees to BBC. Undertake necessary works as priority.	1	1	1	1	1
2.4.9	Carry out scrub clearance work where necessary to ensure it does not encroach into meadow areas. Use of a flail could be considered, however hand clearance by volunteer groups may cause less disturbance.	2	2	2	2	2
2.4.10	Coppice hazel on rotation every 6-10 years, commencing when stem diameter reaches 7.5cm for maximum potential value of the timber (Forestry Commission, 2004).			2	2	2

2.4.11	Investigate opportunities to enhance riparian habitat for willow tit (the most rapidly declining resident bird in the UK and a Red List species of conservation concern) which is currently listed as an occasional visitor to site. Willow tits prefer damp woodland with a dense scrub layer and nest in standing dead wood (RSPB, undated). Identify suitable alder trees to retain as standing dead wood 2-4m high and allow surrounding understorey to develop.	2				
2.4.12	Remove invasive and non-native seedlings (i.e. Norway maple) from woodland areas by hand pulling or cutting. If stumps are left, they may require treatment with a suitable herbicide to prevent regrowth.	2	2	2	2	2
2.4.13	Maintain hawthorn hedging on an annual cutting cycle by mechanical cutter. Consider allowing height to increase where this will not impact on adjacent meadows.	1	1	1	1	1
2.4.14	Carry out selective pond clearance where required to prevent them becoming choked with vegetation. Where invasive or particularly vigorous species are present, this may require application of herbicide. Cleared vegetation could be collated into piles near the ponds (that will remain undisturbed) to create reptile hibernacula.	2		2		2
2.4.15	Consider enhancing marginal habitats surrounding ponds through plug planting with suitable species		3		3	
2.4.16	Create a new pond in the northern part of Long Meadow where the ground is subject to a natural hollow. Spoil could be used to reprofile nearby areas and minimise the risk of inundation from the adjacent Brook.		2			

2.4.17	Carry out annual monitoring of wildlife to assess the impact of management on the habitats and species. This could focus on breeding birds and plants and could also involve photographic monitoring (taken from fixed points on the same week each winter) of woodland condition/structure. Use of standardised methodologies is recommended to allow year on year comparison and to add to current natural history records. NWT may be able to provide further advice on methodologies if required.	3	3	3	3	3
2.4.18	Carry out hedgehog surveys to add to site species knowledge. This mammal has not been recorded on site but suitable habitat appears to be present. Use of footprint tunnels is a non-invasive method to survey for hedgehog and other small mammals, is relatively low-cost and requires minimal experience.	2		2		2
2.4.19	Carry out repairs to car park surface in a timely fashion as required.	1	1	1	1	1
2.4.20	Investigate funding for ongoing maintenance of historic headstock structures. The Borough Council do not have a budget to maintain the structure and its future is currently dependent on securing further grants for repair and maintenance. This has to be a key and on-going priority	1				
2.4.21	Carry out work parties including activities such as path strimming, litter picking, pond and ditch clearance, coppicing shrubs etc.	1	1	1	1	1

2.4.22	Install additional interpretation boards to inform and educate regarding the ecology of the site. These could focus on different habitats and/or species groups, for example woodlands, flower meadows, mammals and/or birds.		3			
2.4.23	Install bird boxes to provide additional nesting opportunity across the site. Consider a range of styles for the benefit of a number of different species. Boxes could be purchased or made by volunteers to standard specifications. Little owl is listed as an occasional visitor and may benefit from installation of a specifically designed box. It would also be a worthwhile project to maintain (check condition each winter and repair/ replace as necessary) and monitor them.	2	2	2	2	2
2.4.24	Install bat boxes to provide roost opportunity across the site. Boxes could be purchased or made by volunteers to standard specifications. Nottinghamshire Bat Group could be approached to do an evening bat walk or NBG automated detectors could be deployed as part of their current EcolocationLocation Project.	2	2	2	2	2

3.3 Implementation

Ref No.	Prescription and Priority (1-3)	Compartment	Season (Sp/Su/Au/Wi)	Who? (BBC, Contractor, Friends group)
2.4.1	Mow paths	D1	Sp/Su	BBC
2.4.2	Cut and collect meadow grass	A, D1	Su (late)	BBC
2.4.3	Re-sow bird seed crop	D2	Sp	Contractor
2.4.4	New meadow seeding	D1, G	Sp/Su	BBC/Contractor/Friends of BH

2.4.5	Woodland thinning	C1-C3, E, G	Au/Wi	BBC/Contractor/Friends of BH
2.4.6	Woodland ground flora enhancements	C1-3, E, G	Sp/late Su	Friends of BH
2.4.7	Encourage standing dead wood	C1-3, E, G	Au/Wi	BBC/Contractor
2.4.8	Tree safety checks	All	All	Friends of BH / BBC
2.4.9	Scrub clearance	All	Au/Wi	Friends of BH
2.4.10	Hazel coppice	G	Au/Wi	Friends of BH
2.4.11	Willow tit enhancements	G	Au/Wi	BBC
2.4.12	Invasive species	E, F	Au/Wi	Friends of BH
2.4.13	Hedge cutting	All	Late Wi	BBC/Contractor
2.4.14	Pond maintenance	A, D1, G	Late Wi	Friends of BH / Contractor
2.4.15	Marginal habitat enhancements	A, D1, G	Sp/Su	Friends of BH
2.4.16	Pond creation	A, G	Su	BBC/Contractor
2.4.17	Monitoring	All	All	Friends of BH
2.4.18	Hedgehog survey	All	Sp/Su	Friends of BH
2.4.19	Car park maintenance	H	All	BBC/Contractor
2.4.20	Headstock maintenance	H		BBC/Friends of BH
2.4.21	Work parties	All	All	Friends of BH
2.4.22	Site interpretation	All		BBC/Friends of BH
2.4.23	Bird boxes	All	Au/Wi	Friends of BH
2.4.24	Bat boxes	All	Au	Friends of BH

Appendices

See separate documents