PIT LANE RECREATION AREA, TROWELL: POTENTIAL LOCAL NATURE RESERVE: HABITAT MANAGEMENT PLAN 2014-2023

A report to:

Nottinghamshire Wildlife Trust

On behalf of:

Broxtowe Borough Council

By:

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CONTENTS

Item Page no.

1. INTRODUCTION

1.1 General

This Management Plan has been prepared by EMEC Ecology, the consultancy arm of the Nottinghamshire Wildlife Trust (NWT), for Broxtowe Borough Council (Broxtowe BC). It provides the details of the ecological management and improvement scheme for a site known as Pit Lane Recreation Area (the Site).

The site, a former open cast coal pit, is now a popular recreational area. It has several areas of young woodland which were planted for aesthetic and wildlife benefit. It comprises an area of land forming almost 5.3ha and is centred on grid reference SK 493 390. It is accessed off Pit Lane where a small car park is available. This site located between Stapleford and Trowell in the west of Nottingham.

To provide an ecological baseline for the site, ecological walk-over surveys were carried out by a suitably experienced ecologist. The walk-over surveys comprised of habitat and botanical surveys, with any sightings or evidence of protected / notable faunal species recorded.

This Management Plan will be the responsibility of Broxtowe BC.

1.2 Local Context

The Site occurs in a rural area of Nottingham and forms an access point (Eastern Access Point 10) to the 'Erewash Valley Trail (EVT). The EVT is a 30 mile circular trail focused around the Erewash Valley. The route is available for walking and cycling and offers good access to the rich wildlife and heritage features which make this area so interesting.

The EVT partners work together to enhance the biodiversity, amenity and healthy living opportunities in the valley and recognising the unique character of the area. This partnership created the Trail in 2010. It is a very important area for wildlife with key wildlife habitats along the valley supporting both common and rare plants and animals, making the valley a key landscape area for biodiversity.

1.3 Purpose of the Management Plan

This management plan is intended to provide habitat improvement recommendations with a 10 year management plan for the site (primarily for the management of the new proposed habitats) in order to achieve Local Nature Reserve (LNR) status for the Site.

The site occurs adjacent to an area known as 'Field Farm' which is allocated within the Local Development Framework for residential development. The land use of Field Farm is currently agricultural fields with a disused residential property. The management plan for the Site therefore will need to take into account the perceived increased disturbance pressures as a result of the increased residential capacity of the immediate area. This must balance the amenity needs

of the site (both current and predicted levels of use) whilst ensuring and delivering a sustainable biodiversity enhancement for the site.

In determining LNR status it is considered that 'Pit Lane' will deliver on the requirements set out by Natural England, which include;

- 'Land management not only for a conservation purpose but also for a recreational purpose, if the land management of the land for the recreational purpose does not compromise its management for conservation purpose'
- And that the site be 'of reasonable natural interest and of high value locally for enjoyment of nature by the public'

Also, within Natural England's selection criteria, the site will fulfil the following considerations;

It provides an area for recreation of children with identifiable public access rights and car parking facilities which can also be accessed via local public transport links. The site is a safe place where enjoyment of nature can be gained and it provides important links to the wider green spaces locally by forming part of the EVT.

In addition the production of this management plan seeks to create areas which give a 'sense of public ownership' for the site and encourages local enthusiasts groups to implement management for the site and expands upon those groups already responsible for the sites management. Also by compartmentalising the site into discrete management operations it will keep the site a viable and affordable management unit. Additionally its long term future is secured in the Local Development framework and it should be investigated if any of the maintenance funding secured from the 106 agreement for the proposed Field Farm development could be used to allow future management maintenance to offset the demands placed on the site by increased disturbance pressures as a result of the development.

Should the Site be successful in obtaining LNR status it will form a vital bridge in the west of Nottingham between several LNR sites and further enhance the EVT. This is considered particularly pertinent with the provision for the Fields Farm development and the increased pressures on local wildlife as a direct result.

The map section overleaf, extracted from the Nature Conservation Strategy for the Borough of Broxtowe 2009-2014 (NCSBB 2009) identifies the LNR's within the local area and has been adapted to show Pit Lane and how LNR status of this site would bridge the gap between existing LNR sites. Hatches areas indicate current LNR's, the red boundary indicates the Site and the blue line indicates the proposed Fields Farm residential development.

LNR's within the local area and how LNR status of this site would bridge the gap between existing LNR sites

Key

LNRs

Site (Pit Lane Recreation Area)

Proposed Field Farm Residential Development

2. SITE INFORMATION

2.1 General

The Site is located in the western edge of Nottingham on a reclaimed open cast colliery known as Trowell Colliery. The site has been in filled with closure of the colliery with what is believed to be the open cast wastes. The top soils on site have been imported and so do not necessarily reflect the true nature of the local top soils. The colliery was active until the early 1990's upon which time reclamation to an open public amenity area was carried out. This included large areas of open short mown amenity grassland bordered by several plantation woodlands. The footpaths passing through the Site form Public Rights Of Way, identified on Ordinance Survey Maps. To the north of the survey area is the Nottingham to Heanor railway line, beyond which lies the Nottingham Canal LNR.

The current site management is primarily undertaken by Broxtowe BC with help from The Conservation Volunteers (TCV), formerly the British Trust for Conservation Volunteers (BTCV). Broxtowe BC and the TCV meet with NWT on a twice yearly basis to discuss the management plans and assess their suitability and implementation with a view to biodiversity.

The site is currently on a long term lease to the Broxtowe BC from Nottinghamshire County Council, who are responsible for the future management of the site.

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2.2 Ecological Baseline

2.2.1 *Site Survey*

Surveys of the site were conducted and notes were made on the habitat types present and their suitability for protected species. Target Notes were used to record any habitats or features of particular interest and any sightings, signs or evidence of protected or notable faunal species or any potential habitat for such species, as detailed below:

- The suitability of habitats for badgers (*Meles meles*) was recorded and any evidence of badgers including setts, dung pits, badger paths, hairs, bedding, footprints and scratching trees was noted;

- Trees with features suitable for roosting bats were noted, such as hollows, cracks and cavities within trunks and branches (e.g. old woodpecker holes), crevices behind loose bark and ivy growth;
- The suitability of habitats was assessed for amphibians (including great crested newt *(Triturus cristatus*) and reptiles;
- The suitability of the ditches and brook was also assessed for water vole (*Arvicola amphibius*);
- The suitability of habitats was assessed for nesting birds.

The NWT also provided any records for protected or notable species which have been recorded within the survey area or adjacent to it in the past. These are discussed in the relevant parts of Section 2.2.7.

2.2.2 *Survey Details*

EMEC Ecology carried out the above survey on the 7th of March 2013. The survey was carried out by Nick Sanderson MSc MIEEM. Nick is a local resident and knows the site well.

2.2.3 *Survey Limitations*

Only a brief assessment was made and no other systematic surveys to establish the presence / absence of protected species were undertaken. As such, a lack of evidence of a protected species does not indicate an absence of the species.

2.2.4 *Habitat Types*

The approximate distribution of habitats within the survey area are shown on Figure 1, in Appendix 1. The following broad habitat types were recorded:

- Amenity grassland
- Dense scrub
- Dry ditch
- Hard standing
- Hedgerow (species-poor intact)
- Scattered broadleaved tree
- Semi-natural broadleaved woodland
- Plantation broadleaved woodland

In the report text, species are referred to using their English names. Appendix 3 provides the complete lists of floral species including scientific names. Nomenclature follows that of Stace (1997).

2.2.5 *Habitat Descriptions*

a) *Amenity grassland*

The site was largely formed of closely managed species poor amenity grassland with a large, flattened area in the centre. The sward was dominated by perennial rye grass as would be expected from such a habitat. There was occasional clumps of wall barely and cock's-foot grass as well as common daisy and creeping buttercup.

In four areas along the edge of the plantation woodlands small swathes of grassland have been subject to reduced management. This has allowed the grass

to grow taller but as it appears to be a relatively recent management change the sward remains dominated by species discussed previously and lacks flora indicative of a more established wildflower grassland.

b) *Dense scrub*
Thin belts of hawthorn and bramble dominated scrub were formed along the northern boundary of the survey area, along the railway embankment. These formed dense stands of vegetation with tall ruderal understory of common nettle with occasional weld, tansy and cleavers.

c) *Dry ditch*
Running along the south west and south eastern boundaries of the site was a small field ditch. This was located at the base of the hills which slope upwards into the site. The ditch was relatively deep (up to 1m deep) and 1m wide at the tops. The ditch had a short mown amenity grassland sward although occasional clumps of tufted hair grass and soft rush were present indicating damper conditions. During the survey some areas of standing water were present but overall lacked any flow and considered to be presently holding water as a result of recent rains.

d) *Hard standing*
Throughout the survey area were a series of compacted stone surface footpaths.

e) *Hedgerow (species-poor intact)*
The south western boundary is formed of a species poor hawthorn and hazel hedgerow. This was a relatively young hedgerow, approximately 1.5m tall and 1m wide. It lacked any ground flora owing to the dense canopy and footpath immediately adjacent to its base.

f) *Scattered broadleaved tree*
Along the edges of the main central playing field were a series of immature broadleaved trees. Species included alder, cherry, Norway maple, willow and ash.

g) *Semi-natural broadleaved woodland*
Part of the survey area includes the top edge of the railway embankment to the north and a woodland habitat which flanks a brook (off site) in the south east.

The top edge of the railway embankment was formed of a steep earthy bank with a mature silver birch and sessile oak woodland canopy. The ground flora was sparse with areas of common nettle, bramble and mugwort.

Running alongside the brook was a mature willow woodland with an understory of elder. The ground flora appeared sparse but dead stems of Himalayan balsam were present. This may indicate why the ground flora of the area was so sparse as Himalayan balsam can form dense monocultures as it out competes native flora. Some non-native daffodils and blue bells were recorded here. The adjacent field brook (outside the survey area) did contain water with a sluggish, turbid flow. However, from local knowledge (surveyors own personal knowledge of the site) the brook is an ephemeral feature and only contains water during the winter months, typically dry for at least half of the year in normal conditions.

h) *Plantation broadleaved woodland*
Four areas of plantation woodlands flanked the hills of the survey area. These were planted with a mixed canopy of broadleaved species including alder, sessile oak, hazel, silver birch, field maple, Norway maple, cherry, hawthorn and dog rose. The canopy appeared to have undergone management appropriate to its age and had been 'thinned' with all brash piled in columns along the centre of each plantation.

The age of the plantations was relatively immature and as a result the ground flora has not established a flora more characteristic of a mature woodland. It was dominated by grass species such as common bent with false oat grass and rare clumps of tufted hair grass. There were also rare tall ruderal species such as wild teasel, willow herb and spear thistle.

2.2.6 *Fauna*

a) *Amphibians*
There are no ponds within the survey area or vicinity. However the brash piles within each plantation woodland will provide potential refuge for amphibians.

b) *Badger*
There was no evidence of badger within the survey area. The railway embankment and plantation woodlands provide potential sett digging opportunities. NWT records indicate badger records within the local vicinity, not within the survey area.

c) *Bats*
No trees were identified as providing potential for roosting bats. The woodland habitats and railway embankments will provide potential foraging and flight lines for bats.

d) *Nesting Birds*
Numerous small bird nests were found within the plantation woodland habitats. The plantations will provide numerous opportunities for nesting birds, owing to the nature of the site, its regular human disturbance it is considered that these would be suited to a range of common garden species only.

e) *Reptiles*
The survey area lacked suitable basking or foraging opportunities for reptiles. The adjacent brook will provide potential grass snake (*Natrix natrix*) commuting route. There are past records for grass snake in 2012 near to the survey area. There are also historic records (1995) for common lizard (*Zootoca vivipara*) from along the railway line.

f) *Invertebrates*
The survey area offered limited scope for invertebrate species having short mown species poor grassland and immature woodlands with limited ground flora.

However, in 2011, EMEC Ecology undertook a series of surveys of the Nottingham Canal LNR (adjacent to Pit Lane) in order to inform a site management plan. During these surveys a range of butterfly species were

recorded which included those species itemised in the table below (EMEC Ecology 2011).

Common Name	**Scientific Name**
Common blue	*Polyommatus icarus*
Small copper	*Lycaena phlaeas*
Speckled wood	*Pararge aegeria*
Gatekeeper	*Pyronia tithonus*
Small white	*Pieris rapae*
Green veined white	*Pieris napi*
Holly blue	*Celastrina argiolus*
Comma butterfly	*Polygonia c-album*
Peacock butterfly	*Inachis io*

g) *Water Vole*

The ditch within the survey area was an isolated field drain with short vegetation and lacked suitable cover. Although it had earth banks suitable for burrowing it did not contain water. The adjacent brook, although contained water at the time of the survey, is known to be an ephemeral feature and lacked any vegetation indicative of a more regular wetland habitat and lacked food sources for water vole. No records for water vole occur within the survey area or close proximity.

3. EVALUATION

3.1 Evaluation of Features

3.1.1 *Approach*

The parameters used to evaluate the site are taken from the criteria used in Ratcliffe (1977). To evaluate individual habitats and species, reference to the following has been made: the Wildlife and Countryside Act 1981 (as amended), the National Biodiversity Action Plan (BAP) (UKBAP 2007), Nottinghamshire BAP (Nottinghamshire BAG 1998) and the Birds of Conservation Concern (Eaton et al 2009).

3.1.2 *Key Ecological Features*

The key habitats on the site include plantation and semi-natural broadleaved woodlands.

3.1.3 *Size*

The Site occupies approximately 5.3ha of land.

3.1.4 *Geology and Hydrology*

The site is a former open cast colliery which was remediated in the early 1990's and as such the geology and hydrology has been subject to human modification. Its underlying geology is thought to be carboniferous mudstones, however it is thought that largely the site exists on former colliery wastes.

3.1.5 *Soil Substrates*

The top soils are considered to have been imported during the sites remediation and little information exists as to the precise methods and medium used. As such the soils present may not be typically characteristic of the area. From the floral species identified as part of this management plan review, the soils are likely to be base rich and neutral. The nearby LNR site of Stapleford Hill including the Hemlock Stone, identify the character of the area to be characterised by sandy loamy soils and so the top soils of Pit Lane are perhaps in keeping with the natural area.

3.1.6 *Archaeology*

No information has been provided in relation to archaeology at this site. However, given its past industrial nature and reclamation since, it is considered the site has limited archaeological value.

3.1.7 *Diversity*

Being a reclaimed site in its relative infancy, at present the site provides limited diversity of habitats. Although the plantation woodlands have been successfully established with a variety of native broadleaved species, their relative age is currently restricting faunal diversity and function. The site will however support a range of bird species as well as potential foraging bats, reptiles and amphibians.

3.1.8 *Naturalness*

This is a man made, managed and disturbed (dog walkers) habitat that currently could not be considered a 'natural' environment. As the woodlands mature a more established ground flora will eventually take hold which would be more

indicative of a natural woodland flora. The large swathes of amenity grassland offer limited scope for flora or fauna and would not be considered a natural habitat.

3.1.9 *Fragility*
In its current state the site would not be considered to be a 'fragile' ecosystem as it is an area that tolerates high levels of maintenance and disturbance.

3.1.10 *Typicallness*
In terms of a reclaimed colliery site the plantation woodlands are relatively typical of such sites. These are however being appropriately managed with obvious signs of thinning and use of brash for invertebrate and amphibian refuges.

3.1.11 *Position in an Ecological Unit*
As a stand alone site, the Site is currently of low ecological value, this is largely a factor of its relative age. However as time passes and the habitats mature its ecological value will undoubtedly improve. It must also be considered that the site also forms part of the EVT and the value of this 'wildlife corridor' in its entirety is extremely high.

3.1.12 *Potential Value*
The Site is currently considered to be of 'Low' ecological value. However the possibilities for the site as the plantation woodlands mature, in combination with the implementation of new habitat areas would potentially result in a vastly improved local ecological site whilst retaining its amenity use.

As a recreational area this is a highly valued local site providing an area for junior football in the football season. No permanent posts are erected. The central part of the site is also used for informal recreation as well as a dog walking amenity.

The Site forms important pedestrian links to the adjacent Nottingham Canal and Stapleford Hills Wood Local Nature Reserves. It also provides good views of the surrounding area.

The proposed habitat improvements (Section 4) will retain these core amenity requirements whilst improving the ecological value side by side of the recreational value.

3.1.13 *Intrinsic Appeal*
The site currently has a low intrinsic appeal. Although it is a regular dog walking area and a well used playing field the perceived value would be low when factoring in ecological value as it is considered to have limited naturalness. The aims therefore would be to increase the areas of ecologically valuable habitat and improve the diversity of the site and thereby its intrinsic value.

3.1.14 *Identification of Important Features*
No rare habitats or species are present within the Site and no habitats are considered to be Habitats of Principal Biological Importance on Section 41 of the NERC Act 2006. None of the habitats are listed on the UK BAP (UK BAP 2007) or the Nottinghamshire BAP (Nottinghamshire BAG 1998).

3.2 Factors Influencing Management

3.2.1 *External Factors*

i) *Erewash Valley Trail*
The site is part of the Erewash Valley Trail and subsequently linked to many surrounding areas for wildlife. This increases the potential for new terrestrial species to colonise, as well as the potential for the site to be further colonised by bird and bat species.

ii) *Dog Walkers*
The site is regularly used for dog walking and amenity purposes and so any biological improvements will need to factor in the disturbance effects of dog walking / amenity use and the successfulness of management procedures / habitat improvements to attract faunal and flora species as a result.

3.2.2 *Site Objectives*

In designating the site as a LNR the objectives should be to protect and enhance the wildlife habitats with the aid of the Management Plan. On the urban fringe the site provides a fantastic opportunity to involve the local community to learn about / participate in the conservation of the site and enjoy the site for recreational activities. This is particularly relevant if the housing development at the adjacent Field Farm takes place.

4. OVERVIEW OF CURRENT MANAGEMENT AND FUTURE TARGETS

4.1 Current Management

Currently the management for the site is broken into two constituent areas;

i) Management of Amenity Areas
ii) Management of Plantation Woodlands.

i) *Management of Amenity Areas*

The site must retain its amenity value, in particular the centre of the site which during the football season is a junior football pitch. Consequently large areas of the site are occupied by short mown grasslands. The management prescriptions outlined in the subsequent sections of this report therefore do not include any details in relation to the retention of these grassland habitats. Management of the grasslands will continue and be the responsibility of Broxtowe BC.

ii) *Management of Plantation Woodlands*

It is considered that the management of the plantation woodlands, carried out by TCV and Broxtowe BC have been completed to a high standard and appropriately to the age of the woodlands. Plantations are often planted with saplings in high density to allow for failures. However these require 'thinning out' after the first five to ten years to allow the more established trees to flourish. In absence of such management the trees often grown with trunks that are too thin and incapable of supporting the canopy weight as the tree matures leading to large scale failures. At the Site it appears that thinning has occurred and the trees appear healthy and well spaced to allow for future growth without detriment to individual trees.

Additionally the use of brash piles in the centre of the plantations is a welcome addition as this will provide refuge for amphibians and invertebrates.

Currently it is not considered that any management of the plantations will be necessary within the next 10 year phase for the site. This is because of the age of the canopy and the past management will allow for the canopy to mature well within its current bounds. Any tree failures should not be replaced and the deadwood should be allowed to rot in-situ to create a wildlife resource for invertebrates. Failures would also open up smaller sections of the canopy creating lighter areas within the woodland allowing for different ground flora's to establish creating a more diverse woodland area. Eventually these would fill with either scrub or new self-set tree saplings creating a mixed age canopy.

Therefore, no management prescriptions are put forward for the plantation woodlands. Once this 10 year cycle has been completed it is recommended a reassessment is made and that the plantation woodlands be re-entered into the management scheme post 2023.

4.2 Targets

There are two key aims of the management plan which would be to i) increase the sense of community involvement / 'ownership' and ii) increase habitat quality and thereby diversity of the site. Both will be achieved by a range of habitat

creation recommendations. It is these habitat creations that will form the basis of the management plan over the next ten years. There are four proposed habitat creations recommended across the site, three of which are considered 'core targets', the fourth being a 'desired' addition to the site. This desired item is considered separately due to monetary constraints and is considered that this an achievable target with a high biodiversity gain.

The proposed habitat creation include;

i)	Community orchard	} *Core*
ii)	Species rich wildflower meadow	
iii)	Native species rich hedgerow	
iv)	'Railway Siding' Nature Area	} *Desired*

The habitat creation recommendations are detailed on site plans as Figures 2 and 3 in Appendix 1.

The habitat creation schemes listed in the below section are aimed to meet the two primary targets of increased community involvement /ownership whilst improving site diversity in keeping with potential LNR selection. This is directly in line with the NCSBBC which aims to 'Conserve and enhance the Borough's natural heritage for the benefit of people and wildlife'.

The habitats suggested are aimed at Priority habitats within the National and local BAP lists as well as forming suitable habitats for a range of priority faunal species which are likely to occur locally.

4.3 Habitat Creation

i) *Community Orchard*

An area of mown grassland on the northern boundary of the Site has been designated for its potential to become a 'community orchard'. Nottinghamshire was historically a large apple producing area until the 1920's and therefore this habitat does have historical value for the local area. The aim of the orchard would be to seek community involvement with the project and establish a small group responsible for its maintenance. The group could be run by or in conjunction with either the TCV, NWT or local 'friends of' groups.

Traditional Orchards are a Priority Habitat on the UK BAP and were a Priority Habitat 'target' during 2010/2011 for the Nottingham Biodiversity Action Group. It is understood that a Priority Habitat Action Plan for Orchards is to be produced for the Nottinghamshire BAP.

Orchard habitats provide a valuable food source for bird and invertebrate species as well as becoming an aesthetically pleasing area. As the orchard matures the additional benefits of a mature orchard include;

- The combination of individual trees within grassland creates a habitat structure with similarities to wood pasture and parkland.
- Fruit trees decay more quickly than most British hardwoods and therefore provide good habitats for deadwood dependent invertebrates and a variety of mosses and lichens.

Nottinghamshire local varieties could be chosen, such as apples 'Crimson Bramley' (1913, Southwell), 'Beauty of Stoke' (bred 1889 at Rufford Park) or 'Bess Pool' (18th century, found in a Nottinghamshire wood); medlar 'Nottingham'; damsons 'Merryweather' (Southwell) or Bradley's King; the medlar 'Nottingham' and the hazelnut 'Nottingham Cobnut'. These local varieties are available from several stockists, including Keepers Nursery (www.keepers-nursery.co.uk) or Cool Temperature (http://www.cooltemperate.co.uk/index.shtml).

As the orchard matures within the next 10 year management plan, (post 2023) the grassland habitat under the trees could be reviewed and potential improvements to a more shade tolerant wood pasture sward could be sown. An immature canopy would not provide sufficient shade to support a shade tolerant mix and in the interim continued management of a short amenity sward is recommended.

Each tree should be protected with a rabbit guard with the full orchard area protected with a rabbit proof fence and a native hedgerow (see item iii). It is also advised that an interpretation board is placed at the area identifying it as a community orchard and discussing the historic significance and wildlife benefits of such an orchard.

ii) *Species Rich Wildflower Meadow*

Within the east of the site is an expanse off short mown grassland which is currently too narrow to support use as a sports amenity area. This provides the ideal opportunity to create a new wildflower meadow area. Wildflower meadows are a visually attractive feature but also create habitat suited to invertebrates, particularly butterfly species.

Habitat creation of this nature would fall into the 'Blue Butterfly Scheme' and the 'Mini Meadows' scheme supported by NWT and Broxtowe BC. A range of butterfly species were recorded by EMEC Ecology in 2011 along the Nottingham Canal LNR (as discussed in Section 2.2.7); the creation of the new wildflower meadow area should therefore increase the local habitat resource for species known to occur locally.

The area should be gently ploughed (to disturb the current amenity grass sward) and a wildflower and grass seed mix sown. The area should then only be mown once annually in late September with the arising taken off the grassland. A 1m buffer along the edge of the pathways can be cut in line with amenity grassland areas to indicate that the area is not being purposefully neglected. If necessary short, 50cm tall wooden posts should be placed at the changes between amenity grass and wildflowers to denote the area and prevent large grass cutting machinery from entering.

A proportion of the grass cuttings could be piled in areas within the plantation woodlands to provide habitat piles suited to amphibian and invertebrate refuge.

An NWT interpretation board could be placed alongside the grassland area to identify the environmental targets and gains for the grassland. This would also be used to identify core target species which the public could potentially observe on site.

The sown seed mix would ideally include the Naturescape 'N4 summer flowering butterfly and bee meadow mixture'

Wildflower species include;

Yarrow	*Achillea millefolium*
Kidney vetch	*Anthyllis vulneraria*
Clustered bellflower	*Campanula glomerata*
Nettle leaved bellflower	*Campanula trachelium*
Common knapweed	*Centaurea nigra*
Greater knapweed	*Centaurea scabiosa*
Wild carrot	*Daucus carota*
Viper's bugloss	*Echium vulgare*
Lady's bedstraw	*Galium verum*
Meadow cranesbill	*Geranium pratense*
Common St. John's wort	*Hypericum perforatum*
Field scabious	*Knautia arvensis*
Meadow vetchling	*Lathyrus pratensis*
Common toadflax	*Linaria vulgaris*
Birdsfoot trefoil	*Lotus corniculatus*
Purple loosestrife	*Lythrum salicaria*
Wild marjoram	*Origanum vulgare*
Self heal	*Prunella vulgaris*
Yellow rattle	*Rhinanthus minor*
Small scabious	*Scabiosa columbaria*
Betony	*Stachys officinalis*
Hedge woundwort	*Stachys sylvatica*
Devilsbit scabious	*Succisa pratensis*
Wild red clover	*Trifolium pratense*
Dark mullein	*Verbascum nigrum*
Tufted vetch	*Vicia cracca*

Grass species include;

Common Bent	*Agrostis capillaris*
Sweet Vernal Grass	*Anthoxanthum odoratum*
Quaking Grass	*Briza media*
Crested Dogstail	*Cynosurus cristatus*
Sheep's Fescue	*Festuca ovina*
Chewing's Fescue	*Festuca rubra* ssp. *commutata*
Slender Creeping Red Fescue	*Festuca rubra* ssp. *litoralis*
Meadow Barley	*Hordeum secalinum*
Smooth Stalked Meadow Grass	*Poa pratensis*
Yellow Oatgrass	*Trisetum flavescens*

iii) *Native Species Rich Hedgerow*

It is recommended to plant a new species rich hedgerow around the proposed community orchard boundary. Hedgerows are habitats listed on the UKBAP (2007) and the county BAP (Notts BAG 1998). Ecologically it is hoped to provide an increase in bird nesting territory as well as providing a foraging and flight route for bats. This would also become a potential foraging and refuge area for amphibians.

It is recommended that the hedgerow is grown to an eventual height of 1.5m. The hedgerow canopy and standard trees chosen are based on the Nottinghamshire 'landscape character area'; the Site occurs within 'Nottinghamshire Coalfield'. However, the species chosen will not include ash as a result of the 'ash dieback' disease.

The hedgerow canopy species should include the following species, blackthorn (*Prunus spinosa*), guelder rose (*Viburnum opulus*), hawthorn (*Crataegus monogyna*), hazel (*Corylus avellana*), holly (*Ilex aquifolium*) and wild privet (*Ligustrum vulgare*). The standard trees should include wild cherry (*Prunus avium*), lime (*Tilia x europaea*), field maple (*Acer campestre*), English oak (*Quercus robur*) and rowan (*Sorbus aucuparia*). For the hedgerow canopy species it is recommended that 1+1 saplings are planted.

1 + 1 = 1 year seedling plus 1 year transplanted saplings height between 40-60 cm.

The newly planted hedgerow should be protected during the first 5 to 10 years by a waist height wooden post fence with either wooden rails or wire mesh screen.

iv) *'Railway Siding' Nature Area*

The desired target habitat improvement would be to create a mock railway siding. This is recommended along the northern edge of the survey area and is located to reflect the sites past industrial use, where there used to be active sidings to service the colliery.

The area will be created by removing the top soils from the site and laying down a deep layer of coarse railway aggregate which would be allowed to colonize with early competitive species that can tolerate limited nutrients. No specific seeding will take place as the area will be allowed to naturally colonize.

Within the area, railway sleepers will be used with top soils placed partly covering them over. Management of the area will be limited to an annual inspection to remove scrub species that may begin to colonise. Small stands of butterfly bush or saplings of silver birch can be allowed to grown but would be cut back to prevent them from dominating the area. Silver birch and butterfly bush often colonize abandoned sidings where as other scrub elements, such as bramble would be less desirable.

Railway habitats provide an ideal habitat for reptile basking and there are records for reptiles locally. These can also be an attractive feature for invertebrates which will in turn attract foraging bats and birds to the area. Additionally within the area piles of wooden sleepers would provide a potential refuge and hibernation area for reptiles, amphibians and invertebrate species.

4.4 Wildlife Trust Membership / Community Groups

The proposed development of Field Farm poses a potential detrimental impact to the Site if incorrectly managed. This would largely be through the increase disturbance pressures of people, dog walking and domestic cats.

However, it also provides an excellent opportunity for community engagement from the immediate outset of the development. It may be possible in partnership with the Nottinghamshire Wildlife Trust for the developer of Field Farm to provide each new house with a years membership to the NWT. The NWT have successfully partnered a similar initiative for a site in North Muskham where NWT membership was secured for new residents of an adjacent new housing development.

Membership would provide new residents with an insight to the NWT objectives and allow residents to see how and where membership funds are spent on improving Nottinghamshire natural heritage. Within the membership package a welcome pack could be provided to the residents with information on Pit Lane and the EVT but also identifying local enthusiasts groups who are working within the Pit Lane site and who may benefit from additional members.

4.5 Summary of Gains

Four of the primary aims listed in the NCSBB include;

i) *'Maintain and extend the network of quality wildlife sites in the borough of Broxtowe with particular regard to protecting and enhancing wildlife corridors especially those with strategic values outside the borough boundaries'*

By improving the habitats and working towards LNR status, the Site will form a valuable bridge linking other LNR's in the vicinity and forms part of the wider EVT improvements.

ii) '*Encourage local 'ownership' of sites so that community engages in delivering local biodiversity gain'*

The creation of the community orchard, and the use of interpretation boards for the wildflower meadows are specifically aimed at community involvement. Local enthusiast groups will be a key target for their maintenance.

There are further possibilities under the proposed Field Farm development to increase membership to the NWT and bolster local support for Pit Lane and local enthusiast groups.

iii) *'Provide good quality access to wildlife areas'.*

The Site already forms an 'access point' to the EVT. However the habitat improvements recommended are aimed at achieving an increased intrinsic appeal of the Site as a stand alone area for natural heritage.

iv) *'Contribute towards achieving targets for improving the species and habitats identified in the Nottinghamshire BAP'*

The habitats to be created are specifically aimed at created habitats listed on both local and national BAPs and provided habitats suited to flora and fauna also listed within the BAP documents and within the NCSBB.

5. MANAGEMENT OPERATIONS

5.1 Management Objectives

A list of management objectives which are achievable within a 10 year time frame of this Management Plan, are listed below. The aim is to create and maintain the habitat recommendations made in section 4. As discussed however, this management plan does not include provision for the amenity grassland areas or the current plantation woodland habitats. The rationale for the objectives is detailed in Section 5.2 and the management operations and plan of works is provided in Section 5.3.

The management objectives are:

1) Community orchard – to create and maintain a community orchard;

2) Native species rich hedgerow – to create and maintain a species rich native hedgerow;

3) Species rich wildflower meadow – to create and maintain a diverse wildflower meadow;

4) Railway sidings – to create and maintain the 'railway sidings' nature area;.

5) Woodland edge grassland – to maintain an unmanaged grassland edge of all plantation woodlands;

6) Monitoring – to monitor species within Pit Lane;

7) Invasive species – removal of invasive species;

8) Litter, waste and vandalism – to ensure the site is managed for litter, waste and vandalism;

9) Site access and interpretation – to ensure the site is accessible, its amenity value is maintained and provision is made for interpretation;

5.2 Management Rationale

5.2.1 Objective 1 – Community Orchard

To create and maintain a community orchard

Rationale

The newly planted orchard will require annual maintenance and replacement of any failed trees. Maintenance in the form of pruning will be necessary to establish a well maintained tree canopy but will also proliferate fruit production.

5.2.2 Objective 2 – Native Species Rich Hedgerow

To create and maintain a species rich native hedgerow with mature standards.

Rationale

Native canopy species are recommended.

As this is to be a newly created habitat, management will be relatively limited from the outset as the hedgerow will require several years to establish. Some primary management measures are however put forward to retain the shape and prevent the hedgerow growing loose.

5.2.3 Objective 3 – Species Rich Wildflower Meadow

To create and maintain a diverse wildflower meadow

Rationale

In absence of appropriate management, wildflower meadow swards can become dominated by one or two less desirable species and begin to scrub over. Additionally, over management will also result in stress tolerant species more typically associated with amenity grass area dominating.

An annual cut in late September after seed heads have dispersed should be carried out. Arising's must also be taken off site to prevent nutrient enrichment. These could be piled in discrete locations within the plantation woodlands to provide amphibian and invertebrate refuge areas.

5.2.4 Objective 4 – Railway Sidings

To create and maintain the 'railway sidings' nature area.

Rationale

This habitat will provide new opportunities for reptile basking and invertebrate foraging. New railway sleeper piles will also provide new refuge and hibernation areas for reptiles, amphibians and invertebrates.

However, the area may quickly become overgrown if mismanaged. Annual management of scrub will therefore be required.

5.2.5 Objective 5 – Woodland Edge Grassland

To maintain an unmanaged grassland edge of all plantation woodlands.

Rationale

A 1m to 2m wide strip of grassland with reduced management should occur around all plantation woodlands. The grassland should be cut once annually in late September and cuttings removed from the site. Rather than directly sowing with a wildflower seed mix the area should be allowed to naturally colonise with wildflower species. This management activity has occurred in a few areas already adjacent to the plantation woodlands but this should be increased to a wider area.

A rough grassland buffer around the woodlands will be a more attractive feature for invertebrates and amphibians and will help separate the woodlands habitats from the more harshly managed amenity grassland areas.

5.2.6 Objective 6 – Monitoring

To monitor species diversity within the LNR.

Species Monitoring
There are few records of faunal species from within the survey area. This is perhaps largely due to the current availability of habitats and site disturbance pressures. However, annual monitoring should be carried out, especially as the new habitats develop.

Keeping an updated record of the species within the site is important for knowing how to manage the area effectively for the different species present as well as the habitats. This is also important to ensure that the legal restrictions for working within specific habitats and areas are adhered to.

It is also important to keep a record of the species (faunal and floral) present to understand if any long term impacts are taking place (specifically considering the potential impacts of the adjacent Field Farm development). Records should include;

- A full detailed botanical list should be carried out as regularly as possible (potentially every 3 years). This could also be carried out by local volunteers, community groups or local university students.

- All faunal species records should be compiled in one central area and held on file for this information to be collated and used to determine future management objectives.

One key objective for the future management of the Site would be to compile all of the historic records of all management that has been carried out within the site.

5.2.7 Objective 7 – Invasive Species

Floral Species

Removal of invasive species.
Himalayan balsam has been recorded within the site and is regarded as a highly invasive species. Himalayan balsam is commonly found along the banks of water courses and will also spread extremely quickly, out-competing native species in the vicinity. It is listed on Schedule 9 of the Wildlife and Countryside Act 1981, which makes it an offence under Schedule 14(2) if any person plants or otherwise causes to grow in the wild any plant listed on Schedule 9. Due to the invasive nature of the species it should be noted that it could easily spread further within the site without monitoring and treatment.

There are several methods of removing this species including one very effective method of chemical control, however this will remove all plants and grasses within the area could have a detrimental impact on the wildlife and amenity value.

To avoid chemical control, the most effective method of removal within the site is considered to be hand pulling. This has previously been carried out by TCV along the Nottingham Canal and the arrangement could expand to cover the area within Pit Lane. This should ideally be carried out before the end of June to ensure that the plant does not flower. Pulling too early could also result in the formation of further flower heads later in the season.

It will be important to consider before the pulling takes place, the adjacent land; as in some areas the adjacent land supports a large amount of balsam, specifically in the surrounding woodlands. It is therefore recommended that a walk of the route is carried out prior to the pulling and notes made of all of the surrounding habitats that contain Himalayan balsam. It is recommended that land owner permission is granted where possible to carry out pulling on adjacent land also.

The Himalayan balsam should be removed for either composting or burning. The area should remain untouched for the following years, this will allows seeds already present in the ground to germinate and be removed in the same manner in the flowing year. This would need to be carried out every June until the plant is no longer apparent.

5.2.8 Objective 8 – Litter, Waste and Vandalism

To ensure the site is managed for litter, waste and vandalism.

Rationale

Since the site is situated on the urban fringe it needs to be managed to control littering, the dumping of waste and potential vandalism. These activities reduce the sites intrinsic appeal and amenity value and could also have a negative impact on the sites ecological value.

During the 2011 surveys of the Nottingham Canal LNR it was noted that local residents and community group members carry out regular litter picking along

the Nottingham Canal. These voluntary acts by the members of public show the feeling of ownership with the local community and the LNR and these relationships should be actively encouraged and aimed at expanding into Pit Lane.

5.2.9 Objective 9 – Site Access and Interpretation

To ensure the site is accessible, its amenity value is maintained and provision is made for interpretation.

Rationale

Site Access
Retention of the public rights of way is a statutory requirement and they should be regularly maintained. The habitats overhanging the paths will need to be regularly maintained as they may begin to obstruct the pathways.

Of primary importance however is a railway sleeper run of steps in the east of the site. In places the railway sleepers have begun to rot and have an uneven footing. The eastern side of the staircase has also become undercut as a result of rainwater and approximately 10-15cm under the staircase's eastern edge is now undercut. This will need an immediate repair to retain it as a safe access. The undercut portion should be in filled and made good so that future run off events do not undercut it. A diversion channel at the side of the stairs may be necessary. Any rotten timbers should also be replaced. This work could potentially be undertaken by the Trust for Conservation Volunteers (TCV).

Interpretation
It is recommended that new interpretation boards are installed for the grassland, orchard and railway sidings habitats. The aim is to create public awareness of the habitat improvement schemes and give a sense of involvement with the projects.

5.3 Management Operations: Plan of Work

The following is an ideal plan of work. Although every effort should be made to implement the actions listed, this will be governed by certain constraining factors including resource availability.

5.3.1 Objective 1 – Community Orchard

To create and maintain a community orchard.

Initial management will be minimal as the trees will need time to establish.

Obj	Action	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1/1	Plant new trees including protective guards	Nov/Dec									
1/2	Monitor newly planting saplings. Any failed specimens should be replaced either like for like or where a particular species is not successful on site should be replaced with a different species		Nov/Dec	Nov/Dec							
1/3	Prune tree canopy			November -March	November -March	November -March	November -March	November -March	November -March	November -March	November -March
1/4	Remove windfall fruit if necessary			August-November	August-November	August-November	August-November	August-November	August-November	August-November	August-November

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5.3.2 Objective 2 – Native Species Rich Hedgerow

To create and maintain a species rich hedgerow with mature standards.

Obj	Action	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
2/1	Plant new hedgerow including protective fence	Nov/Dec									
2/2	Monitor newly planting saplings. Any failed specimens should be replaced either like for like or where a particular species is not successful on site should be replaced with a different species		Nov/Dec	Nov/Dec							
2/3	Cut hedgerow canopy to maintain edge and height. Eventual canopy height of 1.5m				Feb		Feb		Feb		Feb

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5.3.3 Objective 3 – Species Rich Wildflower Meadow

To create and maintain a diverse wildflower meadow

Obj	Action	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
3/1a	*Habitat Creation* Rotate grassland area and sow new wildflower seeds. Install wooden posts and interpretation board		April or Sept								
3/1b	*Weed Control* During the first-year following sowing it may be necessary to carry out area specific weed control to remove undesirable species (such as docks, nettle, thistles and other 'weed' species). This could either be undertaken manually or by use of spot applications of a glyphosate based herbicide.		Bi-Monthly	Bi-Monthly							
3/2	*Mowing* Cut annually in September or early October (after flowering and setting of seed). Strim / mow to approximately 10cm height Remove all cuttings and either take off site or alternatively used for creating habitat piles. The arisings must be removed immediately following cutting.		Late Sept / early Oct	Late Sept / early Oct	Late Sept / early Oct	Late Sept / early Oct	Late Sept / early Oct	Late Sept / early Oct	Late Sept / early Oct	Late Sept / early Oct	Late Sept / early Oct

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5.3.4 Objective 4 – 'Railway sidings' nature area

To create and maintain the railway sidings nature area.
N.B: the timings given here refer to year one as it is anticipated that funding for this habitat improvement may not be secured in time for production in 2014.

Obj	Action	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
4/1a	*Habitat Creation* Create new 'sidings' area by removing top soils and laying aggregate. Two piles of sleepers in corners of the area to be partially covered with top soils				Sept / Oct						
4/1b	*Weed Control* During the first years following habitat creation it may be necessary to carry out area specific weed control to remove undesirable species (such as docks, nettle, thistles and other 'weed' species). This could either be undertaken manually or by use of spot applications of a glyphosate based herbicide.				Bi-Monthly	Bi-Monthly					
4/1c	*Scrub Control* Annual control of scrub will be required to ensure the area does not become overgrown by scrub species such as bramble. Occasional butterfly bush and silver birch may be retained					Sept/Oct	Sept/Oct	Sept/Oct	Sept/Oct	Sept/Oct	Sept/Oct
4/2a	*Hedgerow Creation* Plant new hedgerow including standard trees including protective fence				Sept/Oct						
4/2b	Monitor newly planting saplings. Any failed specimens should be replaced either like for like or where a particular species is not					Sept/Oct	Sept/Oct				

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Obj	Action	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	successful on site should be replaced with a different species										
4/2c	*Hedgerow* Cut hedgerow canopy to maintain edge and height. Eventual canopy height of 1.5m					Feb		Feb		Feb	

5.3.5 Objective 5 – Woodland Edge Grassland

To maintain an unmanaged grassland edge of all plantation woodlands.

Obj	Action	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
5/1	Maintain a 1m to 2m buffer of grassland around the plantation woodland edge. Cut once annually to a height of 10cm and remove arising from grassland.	Late Sept	Late Sept	Late Sept	Late Sept	Late Sept	Late Sept	Late Sept	Late Sept	Late Sept	Late Sept

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5.3.6 Objective 6 – Monitoring

To monitor species within Pit Lane.
A Pit Lane Biodiversity Champion should be appointed as the person in charge of collating all of the data of management works carried out, as well as species recorded on site.

Obj	Action	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
6/1	Collate records from 'friends of groups', local enthusiast. Provide posters and details of person to contact with records for general public to contact				November	November	November	November	November	November	November
6/2	Botanical survey of the newly created habitats to provide a detailed species list and assess management success / alterations					May/June		May/June		May/June	

5.3.7 Objective 7 – Invasive species

Removal of invasive species.

Obj	Action	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
7/1	A program of eradication of Himalayan balsam should be put in place, ideally consisting of pulling up the plants (including the entire root). Continued monitoring will also be required at this time to assess success rates of control and control of the species may not be necessary depending on success later in the 10 year management cycle.	Early June	Early June	Early June	Early June	Early June	Early June	Early June	Early June	Early June	Early June

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5.3.8 Objective 8 – Litter, Waste and Vandalism

To ensure the site is managed for litter, waste and vandalism. The site is already managed by Broxtowe Borough Council for litter. This is an intense litter pick by 'friends' of the site to remove any hard to reach litter.

Obj	Action	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
8/1	Carry out annual litter-picking once annually as a minimum to ensure the site is free of litter. Litter should be removed from the site and disposed of appropriately. Any vandalism / fly tipping should be appropriately dealt with / removed, as and when required.	Once annually Jan to Feb	Once annually Jan to Feb	Once annually Jan to Feb	Once annually Jan to Feb	Once annually Jan to Feb	Once annually Jan to Feb	Once annually Jan to Feb	Once annually Jan to Feb	Once annually Jan to Feb	Once annually Jan to Feb

5.3.9 Objective 9 – Site Access and Interpretation

To ensure the site is accessible, its amenity value is maintained and provision is made for interpretation.

Obj	Action	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
9/1	Repair existing steps in east of site	Immediate									
9/2	Promotion of the site to the local community should be continued to ensure that the community continue to be involved. This could include local interest groups as well as schools and the surrounding residents. Interpretation boards to be erected at new habitat areas	Oct/Sept									
9/3	Ensure that all pathways are in good condition and suitable for public access. Monitor and maintain as appropriate.		Any time		Any time		Any time		Any time		Any time
9/4	Monitor and maintain condition of benches, bins and interpretation boards.		Any time		Any time		Any time		Any time		Any time

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Mammal Society Available: http://www.mammal.org.uk/

National Biodiversity Network (*nbn*) Available: www.nbn.org.uk

Nottinghamshire Online Maps and Data (NOMAD) Available at: www.nottinghamcity.gov.uk/nomad

Ordnance Survey (OS) Available: www.ordnancesurvey.co.uk

UK BAP 2007 Available: www.ukbap.org.uk

UK Biodiversity Action Plan Available: http://www.ukbap.org.uk/NewPriorityList.aspx

APPENDIX 1: FIGURES

FIGURE 1: SURVEY AREA, SURVEY RESULTS AND TARGET NOTES

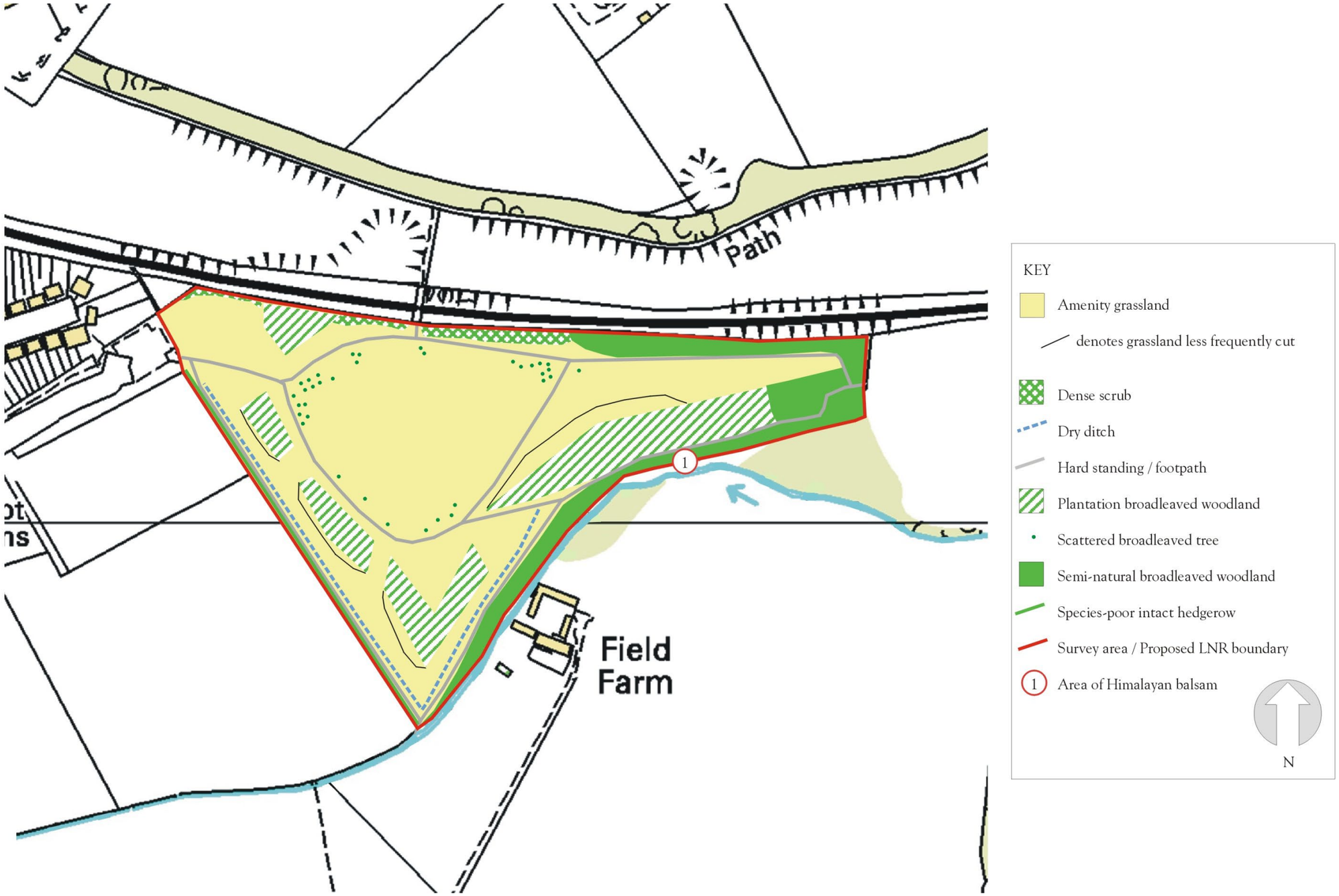

FIGURE 2: CORE HABITAT IMPROVEMENTS AND MANAGEMENT RECOMMENDATIONS

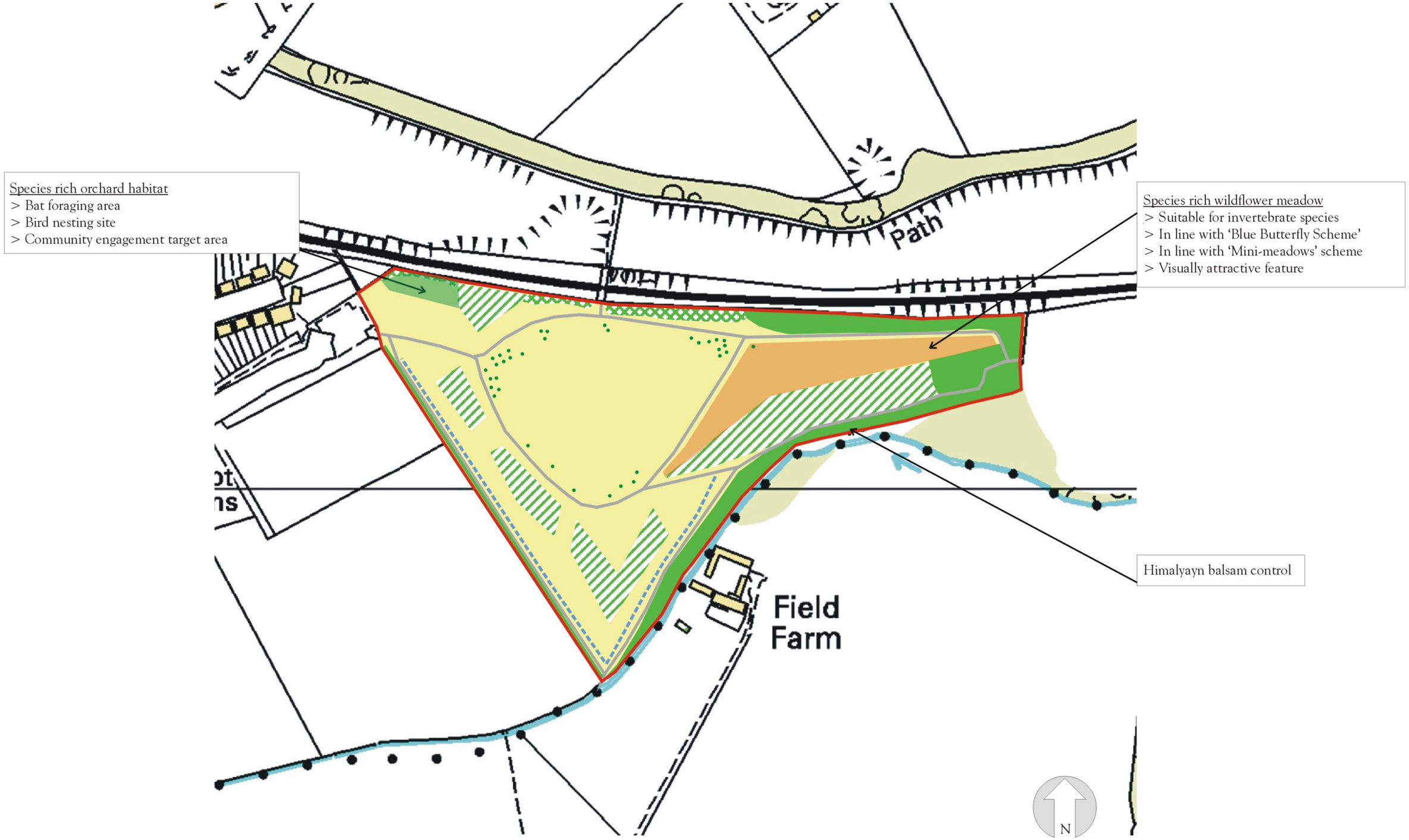

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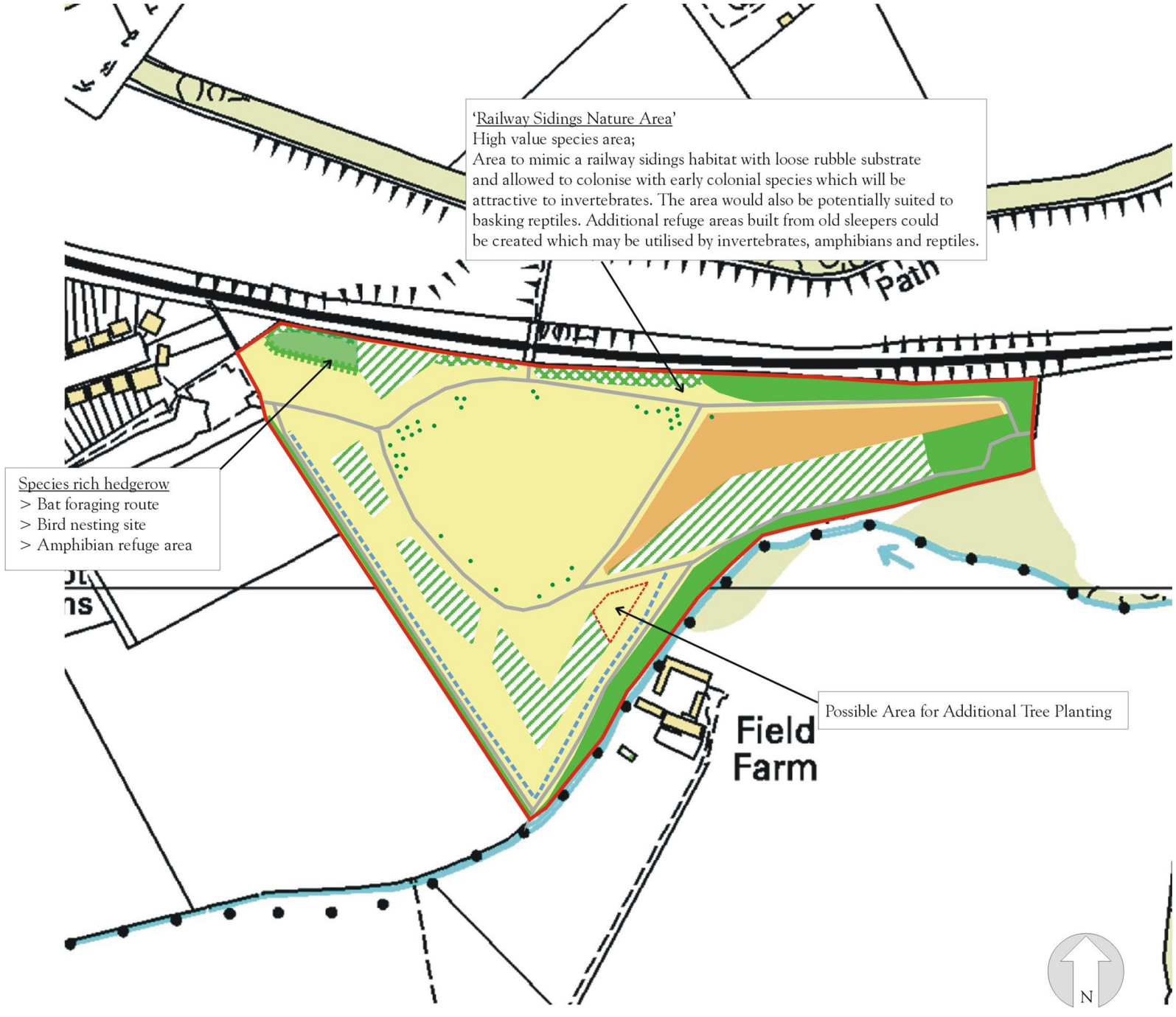
FIGURE 3: ADDITIONAL HABITAT IMPROVEMENTS



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APPENDIX 2: SITE PHOTOGRAPHS

View of plantation with amenity grassland

View of plantation with brash

Footpath with field drain

Brash pile in plantation woodland

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APPENDIX 3: SPECIES LISTS

Common	Scientific (Stace)
Alder	*Alnus glutinosa*
Ash	*Fraxinus excelsior*
Beech	*Fagus sylvatica*
Blackthorn	*Prunus spinosa*
Bluebell	*Hyacinthoides* sp
Bramble	*Rubus fruticosus* agg.
Broad-leaved Dock	*Rumex obtusifolius*
Cock's-foot	*Dactylis glomerata*
Common Bent	*Agrostis capillaris*
Common Ivy	*Hedera helix* ssp. *helix*
Common Nettle	*Urtica dioica*
Common Ragwort	*Senecio jacobaea*
Creeping Buttercup	*Ranunculus repens*
Creeping Thistle	*Cirsium arvense*
Daffodil (non native)	*Narcissus* sp
Daisy	*Bellis perennis*
Dandelion	*Taraxacum officinale* agg.
Dog rose	*Rosa canina* agg.
Elder	*Sambucus nigra*
False Oat-grass	*Arrhenatherum elatius*
Field Maple	*Acer campestre*
Goat Willow	*Salix caprea*
Guelder-rose	*Viburnum opulus*
Hawthorn	*Crataegus monogyna*
Hazel	*Corylus avellana*
Himalayan Balsam	*Impatiens glandulifera*
a maple	*Acer* sp.
Mugwort	*Artemisia vulgaris*
Norway maple	*Acer platanoides*
Perennial Rye-grass	*Lolium perenne*
Red Fescue	*Festuca rubra* agg.
Ribwort Plantain	*Plantago lanceolata*
Rosebay Willowherb	*Chamerion angustifolium*
Sessile Oak	*Quercus petraea*
Silver Birch	*Betula pendula*
Soft Rush	*Juncus effusus*
Tansy	*Tanacetum vulgare*
Tufted Hair-grass	*Deschampsia caespitosa*
Wall Barley	*Hordeum murinum*
Weld	*Reseda luteola*
White Clover	*Trifolium repens*

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Common	**Scientific (Stace)**
Wild Cherry	*Prunus avium*
Wild Teasel	*Dipsacus fullonum*
a willow	*Salix caprea* ssp. *caprea*
a willowherb	*Epilobium* sp.
Yorkshire-fog	*Holcus lanatus*

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APPENDIX 4: PROTECTED SPECIES LEGISLATION

Plants
All wild plants are protected against unauthorised removal or uprooting under Section 13 of the Wildlife and Countryside Act (WCA) 1981 (as amended). Plants listed on Schedule 8 of the Act (e.g. triangular club rush and Deptford Pink) are afforded additional protection against picking, uprooting, destruction and sale.

Amphibians (Common Species)
Common amphibian species (i.e. common frog, common toad, smooth newt and palmate newt) are afforded partial legal protection under UK legislation, i.e. Schedule 5, Section 9 (5) of the WCA 1981 (as amended) and the Countryside and Rights of Way (CRoW) Act 2000. This legislation prohibits:

- Sale;
- Transportation; and
- Advertising for sale.

Badger
Badger is a widespread and generally common species. However, they are legally protected under The Protection of Badgers Act 1992, which is based primarily on the need to protect badgers from baiting and deliberate harm or injury. Under this legislation it is illegal to:

- Wilfully kill, injure, take, or cruelly ill-treat a badger, or attempt to do so;
- Possess any dead badger or any part of, or anything derived from, a dead badger; and
- Intentionally or recklessly interfere with a sett by disturbing badgers whilst they are occupying a sett, damaging or destroying a sett, causing a dog to enter a sett, or obstructing access to it.

A badger sett is defined in the legislation as "*any structure or place, which displays signs indicating current use by a badger*".

Bats
All bat species are afforded full protection under UK and European legislation, including the WCA 1981 (as amended), the CRoW Act 2000 and The Conservation of Habitats and Species Regulations 2010 (as amended). Together, this legislation makes it illegal to:

- Intentionally or deliberately take, kill or injure a bat;
- Damage, destroy or obstruct access to bat roosts; and
- Deliberately disturb bats.

A bat roost is defined in the legislation as *"any structure or place which a bat uses for shelter or protection". Roosts are protected whether or not bats are present at the time.* If a development activity is likely to result in disturbance or killing of a bat, damage to its habitat or any of the other activities listed above, then a licence will usually be required from Natural England.

Birds
The bird breeding season generally lasts from early March to September for most species. All birds are protected under the WCA 1981 (as amended) and the CRoW Act 2000. This legislation makes it illegal, both intentionally and recklessly to:

- Kill, injure or take any wild bird;
- Take, damage or destroy the nest of any wild bird while it is being built or in use;
- Take or destroy the eggs of any wild bird; and
- Possess or control any wild bird or egg unless obtained legally.

Birds listed under Schedule 1 of the WCA 1981 (as amended) are afforded additional protection, which makes it an offence to disturb a bird while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

Great Crested Newt
Great crested newts and their habitat are afforded full protection under UK and European legislation, including the WCA 1981 (as amended), the CRoW Act 2000 and The Conservation of Habitats and Species Regulations 2010 (as amended). This makes it is an offence to kill, injure or disturb great crested newts and to destroy any place used for rest or shelter by a newt. The great crested newt is also listed on Annexes II and IV of the EC Habitats Directive and Appendix II of the Bern Convention. If a development activity is likely to result in disturbance or killing of a great crested newt, damage to its habitat etc, then a licence will usually be required from Natural England.

Reptiles
There are six native species of reptiles in the UK, including slow-worm, common lizard, grass snake and adder, smooth snake and sand lizard, which are afforded varying degrees of protection under UK and European legislation.

Slow-worm, viviparous/common lizard, adder and grass snake are protected under Schedule 5, Section 9 (1 and 5) of the WCA 1981 (as amended) and the CRoW Act 2000 against deliberate or reckless killing and injuring and sale.

QUALITY ASSURANCE:

TITLE: Broxtowe Pit Lane: Potential Local Nature Reserve:
Habitat Management Plan 2014-2023

SUBMITTED TO: Nottingham Wildlife Trust

ISSUE AND REVISION RECORD:

Contract Number: NS/13/3550/01

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Description: Draft Report

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THE BRITISH ASSESSMENT BUREAU
ISO9001

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