# **Bishop Middleham Wildlife Garden** (Local Nature Reserve)

# **MANAGEMENT PLAN**

(MARCH / 2018)

**REVISION DUE IN APRIL 2023** 

**BISHOP MIDDLEHAM PARISH COUNCIL** 

John Olley

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## 1 GENERAL INFORMATION

## 1.1 Site Name

Bishop Middleham Wildlife Garden



Plan 1: Location of Bishop Middleham Wildlife Garden

#### 1.3 Grid Reference

NZ 328313

## 1.4 Designations

Local Nature Reserve (LNR) declared 2003

## 1.5 Land tenure

Freehold (Bishop Middleham Parish Council)

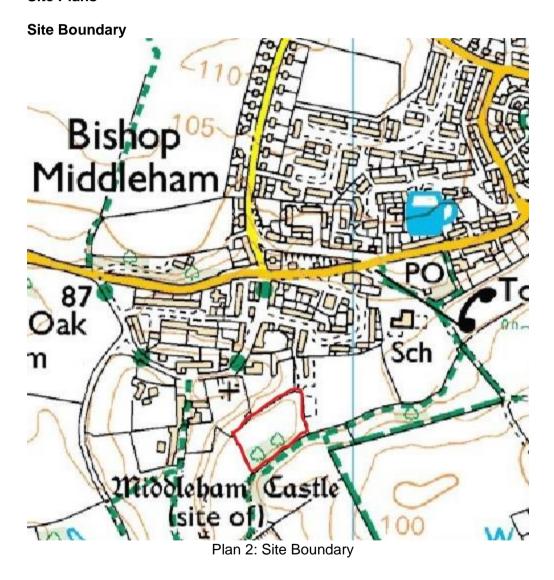
## 1.6 Size of Site

0.8 Hectares

## 1.7 Agreements

Management carried out under Local Nature Reserve status with advice from Natural England.

## 1.8 Site Plans



#### 2 SITE DESCRIPTION

#### 2.1 General Description

Bishop Middleham Wildlife garden lies to the south of Bishop Middleham village in a low-lying valley part of a leisure facility called the park. The nature reserve boundary to the north is situated adjacent to St Michael's Church with the play grounds and football pitch to the east.

The site lies within the a very important natural character area the Durham Magnesium Limestone Grassland Plateau (<a href="http://publications.naturalengland.org.uk/publication/8308038?category=587130">http://publications.naturalengland.org.uk/publication/8308038?category=587130</a> a series of diverse wetlands and pasture system surrounding the village attracting an important community of flora and fauna.

The site has developed into a mature biodiverse site consisting of small areas of mixed woodland, small areas of standing open water, phragmites reed bed and fen carr surrounded by a gentle steepening gradient towards the outer edges of wildflower meadow and grassland vegetation. Due to the history of the area the land has a mixed soil type dominated by sandy loam and peat with some water holding capacity. The site has scattered trees around the perimeter consisting of Willow, Silver Birch, Black Poplar, Alder and a range of shrubs many have recently planted. Wooden boardwalks extend out over the standing water, marsh and fen carr areas with a fibredec footpath running from the main entrance east to west.

## 2.2 History

The site was previously an allotment, but flooding caused an abandonment of the area. More recently, the site was converted into a wildlife garden for residents and the general public.

### 2.3 Utilities

No utilities are found on site.

#### 2.4 Past Management

From around 2003 the site management was to maintain access, manage the marsh and wildflower meadow with an annual cutting regime. Maintenance of the woodland and scrub areas. The surface of the easy access path which starts at the car park entrance has been treated twice annually with glyphosate herbicide to control emergent plant growth through the fibredec surface. The amenity grassland at the picnic area has been regularly cut.

## 3 HABITATS, FLORA AND FAUNA

#### 3.1 HABITATS

Phase 1 Habitat Survey

A full Phase 1 habitat survey has been carried out; it is recommended that further survey work is undertaken at a suitable time of the year to gain further information on species present on the site.

#### Bird Survey

A bird survey was carried out during October 2017 to February 2018. One visit per month was carried out to give best coverage of species utilising the site however it would be recommended to carry out a breeding survey when possible. Records were also received from Durham Bird Club covering the period from 2010 to 2017.

#### 3.1.1 Woodland

The woodland on the site comprises mainly of planted trees on the southern and eastern boundary dominated by willow, birch and poplar. Two large mature sycamores are found on the south eastern edge of the reserve which dominate this area.



## 3.1.2 Amenity Grassland

The only amenity grassland on the reserve is a small grassed picnic area found in the north-west corner of the site, left of the main entrance to the site from the car park.



## 3.1.3 Conservation Grassland

There are two large areas of conservation neutral and wet grassland which are dissected by a boardwalk adjacent to the marsh to the west of the site





## 3.1.4 Running Water

Running water was found during heavy rainfall. Water was found to be flowing in from the north east of the site under the boardwalk.



04/01/2018

## 3.1.5 Marsh-Fen

The marsh and fen carr areas consist of a mix of willow, phragmites reed, sedge, rush and open water.



## 3.1.6 Fen Carr

The fen carr area is situated on the south western boundary of the site primarily consisting of willow species, poplar and aspen. The area is rather transient in nature with variable water levels depending on water inundation.



## 3.1.7 Scrub

The main area of scrub and trees is situated on the northern boundary to the church grounds consisting mainly of hazel, crab apple, rowan, bird cherry, guelder rose and hawthorn.



#### 3.2 FAUNA

#### 3.2.1 Mammals

No formal survey has been carried out but species which have been noted on site include Fox, Stoat, Hedgehog, Rabbit and Vole species.

#### 3.2.2 Birds

A bird survey was carried out during the winter of 2017-2018. Species recorded to date include Blackbird, Song Thrush, Mistle Thrush, Yellowhammer, Willow Tit, Reed Bunting, Starling, Dunnock, Chaffinch, Greenfinch, Bullfinch. A full species list can be found in the appendices.

#### 3.2.3 Amphibians and Reptiles

No formal survey has been carried out, but species noted have been great crested newt, smooth newt, common frog and common toad, which are on site in substantial numbers.

## 3.2.4 Invertebrates

No formal survey has been carried out, but there are various butterflies on site including small and large white, small tortoiseshell and peacock. A full species list can be found in the appendices, moth species include cinnabar and burnet a moth trapping event would be beneficial.

#### 4 EVALUATION

#### 4.1 Nature Conservation

Designation: LNR

<u>European Protected Species</u>: Great Crested Newt

<u>UKBAP Habitats</u>: Ponds

DBAP Habitats: Reed Bed, Fen

UKBAP Species: Linnet, Reed Bunting, Willow Tit, Dunnock, Starling, Bullfinch.

<u>DBAP Species</u>: Hedgehog, Linnet, Reed Bunting, Song Thrush, Starling, House Sparrow, Tree Sparrow, Spotted Flycatcher.

Other Notable Species: Little Grebe, Green Woodpecker, Hawfinch (2018)

#### 4.2 Legally Protected Species

Great Crested Newt, all wildlife on this site is protected by the Wildlife and Countryside Act 1981.

#### 4.3 Public Amenity

The site is open to the public at all times. Public footpath PROW 9 runs along the southern boundary. Three boardwalks intersect the site crossing the conservation grassland, woodland and the marsh accessing the public footpath at two localities to the western and eastern corners.

There are 3 numbered sections of Public footpath close to the nature reserve and are all within the parish of Bishop Middleham.

The path numbers are: 8, 9, 10,

#### 4.4 Education

There is no specific provision for education at present, but the site is available for use by schools.

#### **5 MANAGEMENT**

#### 5.1 General Principles

#### 5.1.1 Health and Safety

Public safety is a priority as there is unrestricted public access to the site.

Regular inspections of the site will be carried out on a predetermined frequency by parish service staff and any hazards dealt with in an appropriate and timely manner.

A Site Check sheet and a list of incident codes should be developed.

#### 5.1.2 Access

Monitoring of paths and infrastructure within the site is part of the inspection regime. Any barriers to access are dealt with as soon as possible.

#### **5.1.3** Litter

Litter is removed on a regular basis and any fly tipping reported to the appropriate authority. Litter/Dog waste bins are provided, these are maintained by the parish service; any issues should be directed to the parish council as soon as possible.

#### 5.1.4 Use of Chemicals

There is a general presumption against the use of chemicals but their use may be required for controlling invasive vegetation, biodiversity conservation and controlling vegetation encroachment onto surfaced paths. Where chemicals are used, the minimum amount required to achieve the desired affect should be applied.

Chemicals may only be used by suitably qualified individuals and in accordance with relevant Health & Safety and COSHH guidelines. Before any pesticide use a Pesticide Use Decision Record Form must be completed and placed on file for a minimum of 7 years. Chemical use adjacent to watercourses should be avoided unless comprehensive advice provided by the Environment Agency

enquiries@environment-agency.gov.uk

#### 5.1.5 Introductions

Where introductions of plant species are required (e.g. hedgerows species) all plants should be native species and preferably of local provenance.

Introductions of animals will not be considered.

#### 5.1.6 Dead Wood

Dead wood is a fundamental habitat component for fungi, bryophytes and insects. It is desirable to retain as much dead wood as possible within scrub and woodland areas. The intention is to accumulate a minimum of  $20m^3$  per hectare with equal proportions of standing and fallen dead wood. Standing dead trees should be allowed to remain in situ, except in circumstances where they are likely to be a safety hazard.

#### 5.1.7 Species Management and Control

Alien invasive species will be dealt with as soon as they are recorded on site with immediate eradication being the aim; eradication would be undertaken using suitable methodologies and compliance with legislation. Ongoing invasive species issues are addressed within the main body of the management plan.

Invasive or pest animal species will only be the subject of an eradication programme if they pose a direct threat to public health or if eradication on site is undertaken as part of a valid strategic eradication programme. This activity will be led by appropriately qualified officers of the relevant authority.

#### 5.1.9 Review of the Management Plan

This management plan is written to cover a period of five years and a full review of this management plan should be completed by the beginning of **2023**.

This management plan supersedes any previous plan regardless of its review date.

An annual review on the delivery of the Management Plan will take place, the first of these being in **April 2019.** 

## 5.2 Management Aims and Objectives

The general long term aims are to conserve and enhance the existing nature conservation value of the site and provide local people with a reasonably accessible place in which they can view, enjoy wildlife and participate in appropriate informal leisure pursuits

The objectives of the site management are:

- Manage woodland by thinning where necessary.
- Maintain amenity grassland-picnic area with a regular cutting regime.
- Maintain conservation grassland with a cutting and raking regime.
- Manage and maintain wetland system creating a diverse structure.
- Maintain footpath network in good, safe condition.
- Maintain access and infrastructures.

#### 5.3 Habitat Management

#### 5.3.1 Woodland

The objective is to maintain an open woodland structure allowing native species to thrive and dominate. This will allow favourable tree growth and enable a more species rich ground vegetation to flourish. Standing dead wood should be encouraged with any felled timber left in habitat piles.

A felling license is not required:

- To fell less than 5 cubic metres in a calendar quarter (Note; not more than 2 cubic metres may be sold in a calendar quarter)
- For trees that have the following diameters when measured 1.3 metres from the ground
  - o 8 cm or less
  - o 10 cm or less for thinnings
  - o 15cm or less for cutting coppice

https://www.gov.uk/tree-felling-licence-england-scotland-wales

#### 5.3.2 Grassland (Amenity)

The small area of amenity grassland should be cut regularly during the growing season, along with all surfaced paths throughout the site. Monitor the condition of the seating structures.

#### 5.3.3 Grassland (Conservation)

The grassland should be divided into two sections alternatively cut and raked with the removal of arisings. The area is now much less diverse thus will require some effort to bring the grassland back as a biodiverse feature especially for pollinating invertebrates some re seeding and or scraping may be required.

#### 5.3.4 Fen Carr

The reserve holds a small area of fen carr on the southern boundary which can have varying water inundation in any given year thus its boundary can be rather transient encroaching the marsh.

#### 5.3.5 Marsh Fen

This should be managed and maintained to retain areas of open water, reed bed and fen. There has been a gradual loss of open water due to the increase of vegetation thus a there is a need for the removal of invasive phragmites and willow by cutting and dredging.

#### 5.3.6 Scrub

The linear area of scrub and trees on the northern boundary is a mixed species and age structure little effort is required to maintain the area however some coppicing and cutting back will be necessary. The replacement and further development of hibernacula would be beneficial.

## 5.4 Management by Compartments

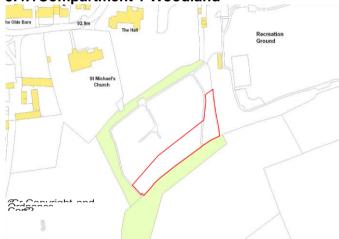
To assist in implementation of the management plan the site has been divided into a number of compartments on the basis of habitat type or other physical attribute.

Each compartment is described below along with the management required. The compartment boundaries and summary management statements are shown in compartment maps 1 to 6.

**Plan 3 Compartments** 







Woodland **Description:** 

Objectives: Maintain an open diverse structure and annual monitoring of health of trees.

Prescription: Monitor particularly during the winter period November to March for dangerous conditions (diseased and or rotten limbs) especially the

health of the more mature trees. Removal of dangerous overhanging branches from the public footpath, surfaced reserve path and board walks.

Removal of invasive saplings and encroachment into the wetland compartment and remove any new yearling and older saplings which create invasive shady conditions treat with glyphosate by stump painting branches can be left for the beneficial of wildlife in habitat piles. Standing dead wood should be encouraged by ring barking. A small nest box scheme would be helpful to attract titmice and tree sparrow.

5.4.2 Compartment 2 Amenity Grassland



**Description**: Amenity grassland

Objectives: To maintain a clean and tidy area for residents and the public

Prescription: Cut regularly especially during the growing season to maintain a lawn

feature around the picnic benches and seating.

5.4.3 Compartment 3 Conservation Grassland



Description: Species poor grassland area divided into two sections by a boardwalk

fringed by wet rush areas on the southern boundary adjacent to the

marsh.

Objectives: Endeavour to improve quality of the compartment over time.

Prescription: Improve area by mowing and the introduction of yellow rattle to control

invasive grass species with further introduction of suitable grassland species (scarification to allow wildflower seed distribution or plug planting) cut one section annually and remove arisings. Also treat

undesirable tall herb species with appropriate herbicides by spot spraying (Glyphosate for all other target species). Maintain the rush boundary close to the marsh this will allow species diversity.

5.4.4 Compartment 4 Marsh Fen



<u>Description</u>: The area is dominated by a mix of phragmites reed bed, willow

species, water figwort, rush and small areas of open water.

Objectives: Increase open water and maintain the diverse structure especially the

removal of invasive willow, phragmites and water figwort.

Prescription: Monitor and map vegetation distribution and diversity during spring

and summer 2018. Dredge and remove invasive vegetation when necessary during the winter period to create larger open areas of water. Retain soft marginal marsh vegetation for invertebrate

populations and breeding birds.

5.4.5 Compartment 5 Fen Carr



Description: A predominantly transient wet willow dominated carr area drying

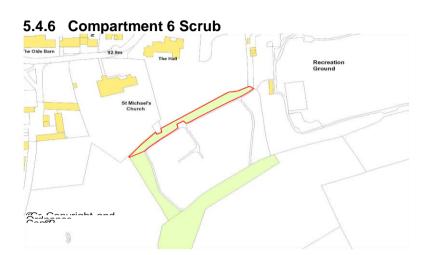
toward its northern boundary.

Objectives: Coppicing of the willow on an annual rotation and removal of any

overhanging branches that may restrict access or cause damage to the adjacent boardwalk. Creation of habitat piles retain any standing

dead wood if safe to do so.

<u>Prescription</u>: Rotational coppicing of the willow will allow light to penetrate which will develop and maintain fen carr ground flora and allow regeneration.



Description: A linear feature consisting of a mix of scrub species including

hawthorn, hazel, guilder rose and trees ash, cherry, crab apple and silver birch running along the main entrance footpath to the western corner of the fen carr compartment. A number of well matured natural timber hibernacula exist on the floor of the compartment with planted

ground flora.

Objectives: Monitor trees and scrub regularly for health and safety maintain open

structure by thinning, coppcing and cut overhanging branches form

footpath.

<u>Prescription</u>: Coppice hazel on an annual rotation (one to two trees per year) and

pollard hawthorn if required to maintain ground flora. Re development of the hibernacula with the introduction of mixed materials would be

beneficial and creation of habitat piles from any cut timber.

#### **6 MONITORING PROTOCOLS**

#### 6.1 DBAP / UKBAP Bird Recording

DBAP and UKBAP birds should be recorded when seen on site. No formal visits are required to recorded BAP birds. Species that have occurred within the wildlife garden are listed below:

Lesser Redpoll
Linnet
Carduelis cabaret
Carduelis cannabina
Reed Bunting
Hedge Accentor
Common Bullfinch
Common Starling
Carduelis cabaret
Carduelis cannabina
Emberiza schoeniclus
Prunella modularis
Common Starling
Sturnus vulgaris

Willow Tit Peocile montanus
Tree Sparrow Passer montanus
House Sparrow Passer domesticus
Song Thrush Turdus philomelos

A full list of UKBAP and DBAP species can be found at <a href="http://jncc.defra.gov.uk/page-5717">http://jncc.defra.gov.uk/page-5717</a>

http://www.durhambiodiversity.co.uk/

## 7 WORK PROGRAM

This should take the form of a table showing the type of work to be carried out, the compartment(s) in which it should be carried out the years in which it will be required – see worked lines below – continue filling in table and extend as required

Task	Compartment	2018	2019	2020	2021	2022
Health and safety management	All	<b>√</b>				
Removal of invasive species (general)	All	✓				
Cut, rake & remove arisings (one section per year)	3	✓				
Tree felling if required	1,4,5,6	✓				
Regular grass cutting	2	✓				
Footpath maintenance (mowing edges & herbicide control of emergent growth) Mowing: Monthly May – Oct' Herbicide treatment: June	Surfaced path	<b>√</b>				
Invasive willow re-growth Cut, treat stumps with glyphosate and pile cuttings.	1,4,5,6	✓				
Invasive phragmites and figwort dredged and or pulled to create and maintain open water habitat.	4	✓				
Coppicing of hazel one to two trees per year.	6	✓				
Re seeding or planting of conservation grassland	3	✓				
Re instalment and construction of new hibernacula.	1, 6	<b>√</b>				
Installation of a nest box scheme	1,5,6	✓				

Monitoring						
Task	Compartment	2018	2019	2020	2021	2022
Monthly monitoring of structures: main access arch, boardwalks, litter bins, lifebuoy, fencing, seating and footpath.	All					
Monthly monitoring of overhanging and dead vegetation.	All					
Weekly litter pick if necessary.	All					

# Appendices:

# Bird Species recorded:

Common Name	Scientific Name
Little Grebe	Tachybaptus ruficollis
Grey Heron	Ardea cinerea
Mallard	Anas platyrhynchos
Sparrowhawk	Accipiter nisus
Kestrel	Falco tinnunculus
Moorhen	Gallinula chloropus
Feral Pigeon	Columba livia
Stock Dove	Columba oenas
Wood Pigeon	Columba palumbus
Collard Dove	Streptopelia decaocto
Tawny Owl	Strix aluco
Little Owl	Athene noctua
Swift	Apus apus
Green Woodpecker	Picus viridis
Great Spotted Woodpecker	Dndrocopos major
Swallow	Hirundo rustica
House Martin	Dlichon urbica
Pied Wagtail	Moticilla alba
Wren	Troglotytes troglotytes
Dunnock	Prunella modularis
Robin	Erithacus rubecula
Blackbird	Turdus merula
Fieldfare	Turdus merula Turdus pilaris
Song Thrush	Turdus philomelos
Redwing	Turdus iliacus
Mistle Thrush	Turdus illacus Turdus viscivorus
Sedge Warbler	Acrocephalus
Seage Warbler	schoenobaenus
Whitethroat	Sylvia communis
Blackcap	Sylvia atricapilla
Chiffchaff	Phylloscopus collybita
Willow Warbler	Phylloscopus trochilus
Goldcrest	Regulus regulus
Spotted Flycatcher	Muscicapa striata
Long Tailed Tit	Aegithalos caudatus
Willow Tit	Parus montanus
Coal Tit	Parus ater
Blue Tit	Parus caeruleus
Great Tit	Prus major
Nuthatch	Sitta europaea
Treecreeper	Certhia familiaris
Jay	Garrulus glandarius
Magpie	Pica pica
Jackdaw	Corvus monedula
Rook	Corvus frugilegus
Carrion Crow	Corvus corone
Starling	Sturnus vulgaris
House Sparrow	Passer domesticus
Tree Sparrow	Passer montanus
Chaffinch	Fringilla coalebs
Brambling	Fringilla montifrngilla
Greenfinch	Carduelis chloris
Oreeninon	Carduciis Giiloris

Goldfinch	Carduelis carduelis
Siskin	Carduelis spinus
Linnet	Carduelis cannabina
Lesser Redpoll	Carduelis cabaret
Bullfinch	Pyrrhula pyrrhula
Hawfinch	Coccothraustes
	coccothraustes
Reed Bunting	Emberiza schoeniculus

# **Butterfly Species Recorded:**

Common Name	Scientific Name
Small Skipper	Thymelicus sylvestris
Large Skipper	Ochlodes venata
Common Blue	Polyommatus icarus
Small Copper	Lycaena phlaeas
Comma	Polygonia c-album
Small Tortoiseshell	Aglais urticae
Peacock	Inachis io
Ringlet	Aphantopus hyperantus
Speckled Wood	Pararge aegeria
Meadow Brown	Maniola jurtina
Wall Brown	Lasiommata megera
Painted Lady	Vanessa cardui
Red Admiral	Vanessa atalanta
Orange Tip	Anthocharis cardamines
Green Veined White	Pieris napi
Large White	Pieris brassicae
Small White	Pieris rapae

## **Tree Species Recorded:**

Common Name	Scientific Name
Crack Willow	Salix fragilis
Goat Willow	Salix caprea
Oiser Willow	Salix viminalis
Aspen	Populus tremula
Black Poplar	Populus nigra
Downy Birch	Betula pubescens
Hazel	Corylus avellana
Hornbeam	Carpinus betulus
English Oak	Quercus patraea
Whitebeam	Sorbus aria
Crab Apple	Malus sylvestris
Sliver Birch	Betula pendula
Field Mapel	Acer campestre
Rowan	Sorbus aucuparia
Bird Cherry	Prunus padus
Wild Cherry	Prunus avium
Beech	Fagus sylvatica
Holly	llex aquifolium
Buddleia	Buddleia davidii
Dog Rose	Rosa canina
Guelder Rose	Rosa avensis
Hawthorn	Crataegus monogyna
Spindle	Euonymus eurpaeus
Cotoneaster	Cotoneaster frigidus

## **Herbaceous Plants Recorded:**

Common Name	Scientific Name
Dark Mullein	Verbascum nigrum
Gypsy Wort	Lycopus europus
Hedge Bedstraw	Galium mollugo
Lesser Knapweed	Centaurea nigra
Marsh Marigold	Caltha palustris
Meadow Buttercup	Ramunculus acris
Meadowsweet	Filipendula ulmaria
Ox-eye Daisy	Leucanthemum vulg.
Purple Loosestrife	Lythrum salicaria
Ragged Robin	Lychnis flos-cuculi
Red Campion	Silene dioica
Ribwort Plantain	Plantago lanceolata
Self-Heal	Prunella vulgaris
Snowdrop	Galanthus nivalis
Sorrel	Rumex acetosa
Teasel	Dipsacus fullonum
Water Avens	Geum rivale
Water Betony	Scrophularia auricul
Yarrow	Achellia millefolium
Yellow Flag Iris	Iris peusdocorus
Yellow Rattle	Rinanthus minor
Greater Willowherb	Epilobium hirsutum
Stinging Nettle	Urtica dioica

## **Grasses Recorded**;

Common Name	Scientific Name
Meadow Foxtail	Alopecurus pratensis
Crested Dogstail	Cynosurus crystatus
Chewings Fescue	Festuca rubra commutata
Slow creeping Red Fescue	Festuca rubra rubra
Meadow Barley	Hordeum secalinum
Common Rush	Juncus effusus
Common Reed	Phragmites australis
Blue Moor Grass	Sesleria caerulea
Jointed Rush	Juncus articulatis
Heath Rush	Juncus squarrosus