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# THORNBURY GREEN SPACES

# ECOLOGICAL ENHANCEMENT PLANS

## SUMMER 2022

## For

## THORNBURY TOWN COUNCIL

# MUNDY PLAYING FIELDS

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# ECOLOGICAL ENHANCEMENT PLAN

## 1 INTRODUCTION

This plan is one of a series commissioned by Thornbury Town Council with the aim of identifying measures by which the biodiversity interest of green spaces in the town might be enhanced, whilst maintaining their value for both formal and informal recreation.

A site survey was carried out on 18th August 2022. It covered vegetation types and plant species, insects and birds, and potential for other groups was assessed.

## 2 SITE DESCRIPTION

### 2.1 Summary

The site is dominated by large areas of mown grass, some of which is used as football pitches and some for informal play, with smaller areas of tree and shrub cover, which include lengths of species-rich hedge, and a stretch of stream.

The site is on the western edge of Thornbury, between the town and open countryside, so has the potential to contribute to the ecological connectivity of both public spaces and private gardens in that part of the town.

### 2.2 Vegetation

The areas described below are shown on the attached map.

#### 2.2.1 Grassland

Area A

The grassland across most of the site is dominated by perennial rye-grass (*Lolium perenne*) with other grass species including creeping bent (*Agrostis stolonifera*), cocksfoot (*Dactylis glomerata*) and rough-stalked meadow-grass (*Poa trivialis*). The diversity of herb species is low, with the most frequent being dandelion (*Taraxacum vulgare*), white clover (*Trifolium repens*) and creeping buttercup (*Ranunculus repens*).

The following areas are broadly similar but have a slightly higher diversity:

Ai): The frequency of herbs is higher here, with species in reasonable quantity including ribwort plantain (*Plantago lanceolata*), bulbous buttercup (*Ranunculus bulbosus*), autumnal hawkbit (*Scorzoneroides autumnalis*) and self-heal (*Prunella vulgaris*).

Aii): The frequency of creeping bent and red fescue (*Festuca rubra*) is higher here, and the frequency of perennial rye-grass lower, than in the main grassland. Common catsear (*Hypochaeris radicata*) is reasonably frequent.

Aiii) Herbs make up a high proportion of the sward here, and include yarrow (*Achillea millefolium*), red clover (*Trifolium pratense*), lesser trefoil (*Trifolium dubium*) and self-heal.

Aiv) Herb species across this area include yarrow, common catsear, ribwort plantain and fiddle dock (*Rumex pulcher*).

Av) Herb species here include yarrow, common castear, ribwort plantain, red clover and fiddle dock.

Area B

The grassland on the banks around the play area and to the south is significantly more diverse than that elsewhere on the site.

The west-facing and south-facing banks have very sparse grassland around small rock outcrops and patches of bare soil, with large quantities of sheep's sorrel (*Rumex acetosella*) in a sward dominated by common bent (*Agrostis capillaris*). Other species here include grey sedge (*Carex divulsa*), black knapweed (*Centaurea nigra*) and fiddle dock as well as the mosses *Ceratodon purpureus* and *Brachythecium rutabulum*.

The north-facing banks have a grass-dominated sward, without bare earth, but herbs are fairly frequent and include common sorrel (*Rumex acetosa*), glaucous sedge (*Carex flacca*) and burnet saxifrage (*Pimpinella saxifraga*).

### 2.2.2 Hedges

There are several stretches of hedge on and around the site, as follows:

Hedge 1

This is a section of low ivy (*Hedera helix*) and bramble (*Rubus fruticosus agg*), rather than a true hedge. There is a small area of ornamental planting, which includes feverfew (*Tanacetum parthenium*) and iceplant (*Hylotelephium spectabile*), adjacent to the hedge.

Hedge 2

The hedge here is low and dominated by hawthorn (*Crataegus monogyna*), elder (*Sambucus nigra*) and English elm (*Ulmus procera*). Trees, which include sycamore (*Acer pseudoplatanus*), cherry (*Prunus mahaleb*) and pedunculate oak (*Quercus robur*), have been planted alongside the hedge.

There is a strip of tall grassland alongside the hedge for much of its length. This strip is dominated by false oat-grass (*Arrhenatherum elatius*), with associated species including hogweed (*Heracleum sphondylium*) and ribwort plantain.

The southern part of the hedge runs alongside a ditch. This held little water at the time of survey, but had fairly well-developed wetland vegetation, including water mint

(*Mentha aquatica*), brook-lime (*Veronica beccabunga*), water figwort (*Scrophularia auriculata*), fool's water-cress (*Helosciadicum nodiflorum*), soft rush (*Juncus effusus*), pendulous sedge (*Carex pendula*) and flote-grass (*Glyceria plicata*).

Hedge 3
A dense hedge of laurel (*Prunus laurocerasus*).

Hedge 4
This boundary runs along the eastern side of a green lane. Several rowan (*Sorbus aucuparia*) trees have been planted along the edge of the playing field.

The hedge on the western side of the green lane is tall and diverse, having a mix of hawthorn, field maple (*Acer campestre*), hazel (*Corylus avellana*), sallow (*Salix x reichardtii*), blackthorn (*Prunus spinosa*), dogwood (*Cornus sanguinea*), spindle (*Euonymus europaea*) and dog rose (*Rosa canina*), with semi-mature ash (*Fraxinus excelsior*) trees.

Hedge 5
This is a low hedge with two semi-mature ash trees. It is diverse and contains hawthorn, field maple, elder, English elm, sallow, dogwood, blackthorn and dogwood. Associated ground flora includes red campion (*Silene dioica*) and wood avens (*Geum urbanum*).

A ditch that runs along the northern side of the hedge is dry but supports hard rush (*Juncus inflexus*) and angelica (*Angelica sylvestris*).

Hedge 6
The hedge between the playing field and the green lane is low and supports a good diversity of woody species: hawthorn, hazel, field maple, elder, ash, spindle, sycamore, holly (*Ilex aquifolium*) and dog rose. It becomes taller to the south, where there are several semi-mature field maple trees and a large pollarded ash. Associated ground flora includes dog's mercury (*Mercurialis perennis*), black bryony (*Tamus communis*), hart's-tongue fern (*Asplenium scolopendrium*) and hedge woundwort (*Stachys sylvatica*). Species in the grassland adjacent to the hedge include common fleabane (*Pulicaria dysenterica*) and common bent.

There is a species-rich hedge on the western side of the green lane.

Hedge 7
This is a tall and leggy hedge of ash, field maple, hazel, dogwood, English elm and sycamore, with associated ground flora species including dog's mercury, hart's-tongue fern, wood dock (*Rumex sanguineus*) and male fern (*Dryopteris filix-mas*).

A line of pedunculate oak trees has been planted parallel to the hedge.

Hedge 8
This hedge is a continuation of hedge 7 but is dominated by tall trees of crack willow (*Salix x fragilis*), with smaller quantities of hazel and grey sallow (*Salix cinerea*). The hedge's ground flora includes hart's-tongue fern, male fern and dog's mercury, and species associated with a small ditch include yellow flag (*Iris pseudacorus*), hemlock water dropwort (*Oenanthe crocata*) and greater pond sedge (*Carex riparia*).

Hedge 9
A low hedge with immature field maple and horse chestnut (*Aesculus hippocastanum*) trees and a mature pedunculate oak. Shrubby species in the hedge are field maple, hawthorn, elder and English elm. At the eastern end of the boundary there is a small copse of hazel, pedunculate oak and dogwood.

Hedge 10
A wide and dense hedge running along a section of the stream, with hawthorn, English elm, field maple and elder.

Hedge 11
A low hedge of hawthorn, hazel and blackthorn, with a semi-mature sallow and associated tree planting including field maple, silver birch (*Betula pendula*), holly and Corsican pine (*Pinus nigra*).

### 2.2.3 Wetlands
As well as the ditches associated with hedges, described above, the following wetland habitats are present:

Area 12
An open ditch with water mint (*Mentha aquatica*), fool's water-cress, angelica and square-stemmed willow herb (*Epilobium tetragonum*).

Area 13
The small stream has limited wetland vegetation, but small quantities of water figwort and hemlock water dropwort are present. The streamside has scattered trees of hybrid poplar, white willow (*Salix alba*) and Italian alder, which support a moderate growth of bryophytes including the liverwort *Radulua complana* and the moss *Orthotrichum affine*.

## 2.3 Fauna
The following bird species were recorded:

Hedge 6. Wood pigeon.
Hedge 8: Robin, wood pigeon and wren.
Hedge 9: Blue tit, chiffchaff, robin, treecreeper, wood pigeon and wren
Hedge 10: Blackcap, chiffchaff, dunnock and goldfinch.

Other species present across the site were greenfinch, green woodpecker, jackdaw and magpie, with house martin feeding overhead.

The following insect species were recorded:

Hedge 6: *Stigmella plagicolella* moth.
Hedge 7: *Phyllonorycter coryli, Phyllonorycter nicellii, Stigmella micotheriella, Stigmella floslactella, Parornix devoniella* and *Celypha lacunana* moths.
Hedge 10: *Phyllonorycter coryfoliella* moth.

### 2.4 Amenity

The playing field provides a major resource for the population of Thornbury, which includes providing formal children's play, football pitches and areas for informal recreation.

## 3 EVALUATION

### 3.1 Introduction

Various criteria are used in assessing the biodiversity value of sites. These include rarity, in terms of either habitats or species, which can be viewed in a range of contexts from international to local and also degree of threat: some species remain widespread but are of conservation concern because their populations have declined rapidly. Some habitats take many centuries, or require very specialised conditions, to develop their full diversity and those that cannot be recreated are more highly valued than those that can be readily created. The extent and connectivity of habitats is of importance, since many species rely on large areas of habitat or on having access to different habitat types at different stages in their life cycle. This can be particularly important in urban areas, where species can be lost from small and isolated areas of habitat, even if these remain in good condition. Conversely, sites can have value in a wider context if, for example, they allow wildlife to colonise gardens and other sites in the surrounding area or if they allow wildlife to move into and across otherwise inhospitable areas. In accessible urban areas the public appeal or visibility of wildlife is also a factor in contributing to public enjoyment and wellbeing.

Guidance on site evaluation is given by various sources, including the South Gloucestershire Biodiversity Action Plan (BAP) and the 2006 Natural Environment and Rural Communities (NERC) Act, and has been followed here.

### 3.2 Habitats

<u>Grasslands</u>

The most interesting area of grassland is at Area B, on the banks around the playground and to the east of the stream. The plants present here include several species that are indicative of unimproved grassland, a habitat type that has undergone serious declines, largely as a result of agricultural intensification, and is recognised as a priority for conservation in BAPs and the NERC Act. The indicator species recorded here include sheep's sorrel, burnet saxifrage and glaucous sedge. Sheep's sorrel is

indicative of soils with a low pH, which are rare in most of South Gloucestershire, and is therefore locally uncommon. Grasslands of this type frequently support plants that appear only in spring and it is possible that further uncommon species might be present here. The grassland is frequently mown, which limits its potential for invertebrates, but there are suitable areas for species such as burrowing bees, which also appear in spring, on the west-facing banks.

Area B is of high nature conservation value in a local context; spring survey might show it to be of value in a South Gloucestershire context.

Other grasslands are of lower nature conservation value. They lack any plants associated with unimproved grassland and the overall diversity of species is low.

Most of Area A is of minimal nature conservation value.

Fiddle dock was found in two area, Aiv and Av. This species is an uncommon plant that has been recorder from fewer than ten sites in South Gloucestershire, and from only three others since 2000. It had not been recorded in Thornbury previously (it was also found at Chantry Playing Fields during these surveys).

The populations of fiddle dock are of nature conservation value in a local context.

Hedges and Trees

Hedges 4, 5, 6, 7 and 8 qualify as Important Hedgerows under the 1997 Hedgerow Regulations, largely due to the diversity of woody species that they support. This diversity indicates that the hedges are likely to be historic features. They may also support notable ground flora species, which would not have been visible at the time of survey.

These hedges are of nature conservation value in a local context.

There are notable trees associated with some of the hedges; the most valuable of these are in hedges 4, 6, 8 and 9. As well as contributing to the nature conservation value of the hedges these trees are of ecological value in their own right.

Wetlands

Ditches and streams provide wetland habitat in parts of the site.

The ditches are small, but they support a reasonable diversity of wetland plant species. The most diverse are those along hedges 2 and 8 and at area 12. None of the plant species recorded is uncommon but they add diversity to the site and the ditches are likely to be of value for a range of insect species.

The stream has limited amounts of wetland vegetation but there is potential for the development of more extensive stands, which would be of value for invertebrates and

birds. The poplar and willow trees associated with the stream provide habitat for a range of invertebrates and are a valuable feature in their own right.

These wetland features are of nature conservation value in a local context.

### 3.3 Protected and Invasive Species

No sign of any protected species recorded was seen.

Bats may use habitats across the site, particularly the hedges, tree lines and the stream, for foraging and there are potential bat roosts in trees on the boundaries of the playing fields and along the stream.

No scheduled invasive species were recorded on the site.

### 3.4 Summary

| Area | Feature | Scale of Interest | Features of Interest |
|---|---|---|---|
| B | Grassland | South Gloucestershire context | Diverse vegetation, including indicator species of unimproved grassland and locally uncommon plants. |
| Aiv and v | Grassland | Local context | Populations of fiddle dock. |
| Hedges 4, 5, 6, 7 & 8 | Important hedges | Local context | Diverse woody species, historic and cultural interest |
| Hedges 4, 6, 8 and 9 | Standard trees | Local context | Intrinsic value, and potential for birds, insects and other wildlife |
| Hedges 2 & 8 and area 12 | Wetland | Local context | Plant populations. Potential for invertebrates |
| Whole site | Amenity | Local context | Formal and informal recreation |

## 4 MANAGEMENT

### 4.1 Aims

To maximise the biodiversity interest of the site whilst maintaining its role as an important resource for both formal and informal recreation.

### 4.2 Objectives

To maintain species-rich grassland on the site.

To maintain and enhance hedges.

To maintain and enhance wetlands.

### 4.3 Constraints

The main constraint on management for biodiversity is the need to maintain the value of the site for recreation. The formal play and sports areas should be maintained as at present and short grassland should be retained across other areas of the site, where it is important for informal recreation.

## 4.4 Rationale

Biodiversity objectives relate to the maintenance of existing features of interest and to further enhancement of certain areas.

The species-rich grassland in area B will survive under the existing management regime. The plant species recorded are tolerant of mowing and the over-riding requirement is that fertilisers should not be used in any part of the area. The plants of interest present on the south-facing banks are favoured by frequent mowing and a short sward, and a change in the management regime is not recommended here. The west and north-facing parts of the area (i.e. the banks above the stream) support plants that would benefit from a relaxation in the mowing regime.

The populations of fiddle dock should persist under the current management regime.

The hedges and trees will maintain much of their nature conservation value as long as they are retained in their current state. There are opportunities to enhance the value of some hedges, which are discussed below.

The wetlands should maintain their existing value as long as inputs of clean water are maintained and the ditches are kept clear of encroaching scrub and are cleared of silt as necessary. The ditch along hedge 2 would benefit from sensitive clearance in the near future. There are opportunities for enhancement, which are discussed below.

There are opportunities for enhancement on the site. Some measures have already been undertaken, notably tree-planting along hedges 2, 4, 7 and 11. This tree planting will be of significant value as it matures, for instance providing additional habitat for birds and invertebrates and sheltered corridors for foraging bats.

There are enhancement measures that could be targeted at relatively small areas but as a general principle the greatest benefits are achieved where relatively large areas of habitat are created in close proximity. Mundy Playing Fields offers greater potential for measures of this kind than do the other sites surveyed, due to its larger size and ability to support wildlife habitats without compromising other amenity interests. It is therefore proposed that most enhancement activities are concentrated in the north-eastern part of the site. In this area there is the potential to build on the biodiversity interest currently provided by the stream and the grassland in Area B. There are also patches of grassland here that are slightly richer in herb species than those across most of the site and are therefore suitable for management as flowering lawn, where the sward is allowed to grow slightly taller so that low-growing plants can flower, which would have benefits for insects. Arisings should be gathered and removed in order to keep soil nutrient levels low. Meadow-length grassland, would provide habitats for insects and other wildlife, could be provided in small areas – this would require an annual cut, with the arisings removed. Paths following desire lines through areas of taller grassland should be mown regularly to maintain public access through the area. The value of the stream could be enhanced by relaxing mowing regimes to allow more significant areas of wetland vegetation to develop.

Elsewhere on the site, there is the potential to achieve enhancement by, for example, relaxing some hedge cutting regimes, planting further trees and allowing strips of tall grassland to develop along hedgerows.

Mundy Playing Fields is a particularly suitable site for the provision of bird and bat boxes as it has offers good feeding habitat for both groups and has connections to further areas of habitat in the wider countryside.

### 4.5 Management Proposals

1 No fertilisers or herbicides of any kind should be used on any area of grassland.

2 Continue grassland mowing as at present across the most of site

3 Manage the areas shown on the attached map too allow low-growing plants to flower, whilst maintaining a formal appearance. mow once a month from April to September set mower blades to 100mm, remove arisings as possible.

4 Manage the areas shown on the attached map as hay meadow: leave unmown between May and August, then cut and remove arisings.

5 Allow tall grassland to develop as shown on the map below. Keep clear of encroaching scrub as necessary.

6 Allow the hedges shown on the map below to grow taller, cut every other year in February.

7 Plant trees alongside hedges as indicated on the map below, using the following species:

| | |
|---|---|
| Field maple | *Acer campestre* |
| Silver birch | *Betula pendula* |
| Crab apple | *Malus sylvestris* |
| Pedunculate oak | *Quercus robur* |
| Rowan | *Sorbus aucuparia* |

8 Remove vegetation and silt from ditch at hedges 2, 5 and 12; leave undisturbed patches of vegetation as refuge areas.

9 Leave sections of stream at area 13 unmanaged.

10 Fit bird and bat boxes to trees. Boxes can be either purchased commercially or made by the local community or schools.

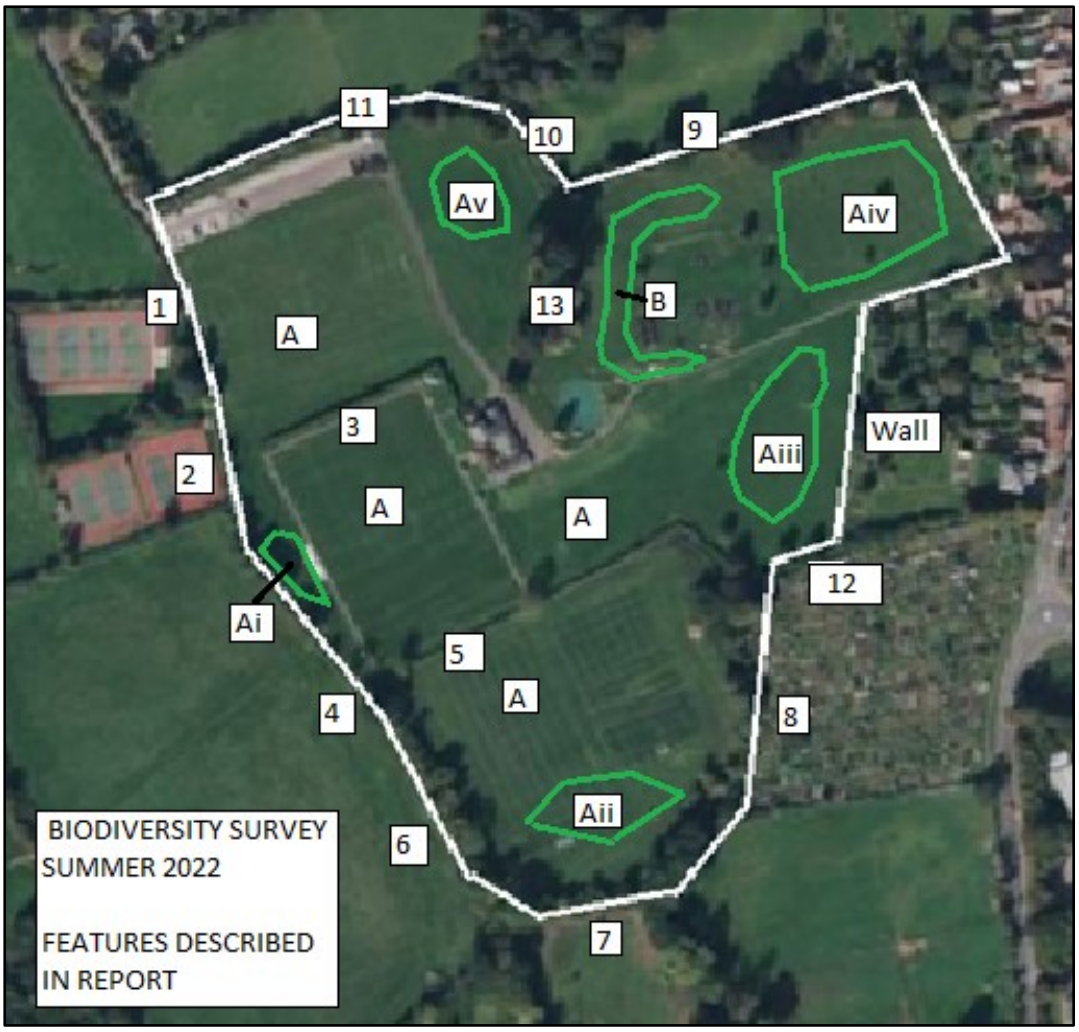
11 Retain any dead wood as a habitat feature, place in partial shade on the eastern boundary of the cemetery. Logs should be kept in as large sections as possible, because this makes them difficult for the public to move and also provides optimal habitat for wildlife.

## 4.6 Work Planner

| Task | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|
| Mow wildflower lawns | Monthly, Apr-Sept | Monthly, Apr-Sept | Monthly, Apr-Sept | Monthly, Apr-Sept | Monthly, Apr-Sept |
| Mow hay meadow; gather and remove arisings | August | August | August | August | August |
| Remove encroaching scrub from tall grasslands | | | February | February | February |
| Cut hedge 5 | | | February | | February |
| Plant trees | As resources allow | As resources allow | As resources allow | As resources allow | As resources allow |
| Clear out ditch along hedge 5 | August | | | August | |
| Clear out ditch along hedge 2 | | | August | | |
| Fit bird and bat boxes to trees | January | January | | | |
| Check bird and bat boxes, and replace as necessary | | | January | January | January |
| Create dead wood piles | As dead wood becomes available | As dead wood becomes available | As dead wood becomes available | As dead wood becomes available | As dead wood becomes available |

Photograph 1: Area B, south-facing banks – the brown area is droughted stony grassland that supports uncommon species

Photograph 2: The west-facing banks of Area B, which are less immediately obvious than the south-facing banks.



Map 1: Existing features


Map 2: Management proposals.