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THORNBURY GREEN SPACES

ECOLOGICAL ENHANCEMENT PLANS

SUMMER 2022

For

THORNBURY TOWN COUNCIL

THORNBURY CEMETERY

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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 cemetery consists largely of mown grassland between graves; the composition of the grassland varies between different areas of the site, with species-rich grassland concentrated in the western parts of the site and less diverse areas to the east. There are scattered trees throughout the cemetery and hedges on some of the boundaries.

The cemetery is within open countryside just to the north-west of Thornbury.

2.2 Vegetation

The areas described below are shown on the attached map.

Area 1

The grassland between the graves is dominated red fescue (*Festuca rubra*) with other grass species including common bent (*Agrostis capillaris*) and yellow-oat grass (*Trisetum flavescens*). Herb species make up a high proportion of the sward, with species present including mouse-ear hawkweed (*Pilosella officinarum*), lesser hawkbit (*Leontodon saxatils*), rough hawkbit (*Leontodon hispidus*), bird's-foot trefoil (*Lotus corniculatus*), meadow vetchling (*Lathyrus pratensis*), hedge bedstraw (*Galium album*) and glaucous sedge (*Carex flacca*). The mosses *Rhytidiadelphus squarrosus* and *Kindbergia praelonga* are locally frequent.

Mature and semi-mature trees, most of them conifers are scattered through the area.

Gravestones in the area support a reasonable range of lichens, which include *Parmelia saxatilis, Melanelixia fuliginosa, Tephromela atra* and *Acarospora fuscata*.

Disturbed ground on graves and elsewhere in the area supports a variety of ruderal species of plant, which include many-seeded goosefoot (*Lipandra polysperma*) and broad-leaved warty spurge (*Euphorbia platyphyllos*). More established vegetation on graves includes woodland species such as common dog violet (*Viola riviniana*), wild strawberry (*Fragaria vesca*) and barren strawberry (*Potentilla sterilis*).

Area 2
The grassland here is less diverse and perennial rye-grass (*Lolium perenne*) frequent. Herb species include yarrow (*Achillea millefolium*), ribwort plantain (*Plantago lanceolata*) and autumnal hawkbit (*Scorzoneroides autumnalis*).

Area 3
The sward across this area is less diverse than in area 1 but more diverse than in area 2. Herb species in this area include mouse-ear hawkweed, lesser hawkbit, common catsear (*Hypochaeris radicata*) and red clover (*Trifolium pratense*).

Area 4
This is a clump of horse chestnut trees, with a single pedunculate oak.

Area 5
This area comprises a larger clump of trees, which include copper beech (*Fagus sylvatica*) and red oak (*Quercus ruber*).

Area 6
There is a well-developed hedge on the north-western boundary of the site, which includes two mature pedunculate oak (*Quercus robur*) trees, but woody species are otherwise limited to hawthorn (*Crataegus monogyna*) and ash (*Fraxinus excelsior*).

Area 7
The northern boundary of the cemetery has a low hedge of English elm (*Ulmus procera*), hawthorn, dogwood (*Cornus sanguinea*) and elder (*Sambucus nigra*). Trees, which include Italian alder (*Alnus cordata*), rowan (*Sorbus aucuparia*) and horse chestnut (*Aesculus hippocastanum*), have been planted adjacent to the hedge.

Area 8
The eastern boundary of the cemetery has a tall line of trees, which include horse chestnut, ornamental cherry (*Prunus mahaleb*) and pedunculate oak, together with various conifers. An associated hedge has English elm, hawthorn, hazel (*Corylus avellana*) and dog rose (*Rosa canina*).

2.3 Fauna
The following bird species were recorded: blue tit, chiffchaff, goldcrest, goldfinch, great tit, long-tailed tit, robin, wood pigeon and wren.

The insect species recorded were: rush veneer and *Agriphila tristella* moths; buff-tailed bumblebee and *Lasioglossum calceatum* bee; and *Syrphus vitripennis* fly.

2.4 Amenity
The cemetery remains in active use and the maintenance of a suitable environment for funeral attendees and for visitors to graves is a prime consideration in site management.

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 in various publications, 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

The grassland across the western part of the cemetery, which also has the oldest tombs, is moderately diverse. 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 mouse-ear hawkweed, lesser hawkbit, rough hawkbit, ox-eye daisy, bird's-foot trefoil and glaucous sedge. The grassland is frequently mown, which limits its potential for invertebrates, but there may be species of interest associated with features such as the edges of graves.

Gravestones within the cemetery support a reasonable quantity and diversity of lichens. The BRERC (Bristol Regional Environmental Records Centre) has very few records of some of the species recorded – with none in South Gloucestershire for *Melanelixia fuliginosa, Tephromela atra* and *Acarospora fuscata* – but this may be due to under-recording. A full lichen survey would probably reveal species of interest – there is a good range of monuments here and air quality is reasonably high.

The western part of the cemetery is of nature conservation value in a South Gloucestershire context.

Other parts of the cemetery are of lower nature conservation value.

The grassland at area 2, across much of the eastern part of the cemetery, which has recent burials and is in active use, lacks any plant species associated with unimproved grassland.

This area is of minimal nature conservation value.

Area 3, in the south-western part of the cemetery, supports some species of unimproved grassland, notably mouse-ear hawkweed, but the diversity of these species is lower than in area 1.

This area is of nature conservation value in a local context.

The oaks in the hedge at area 4 are the most valuable of the trees and shrubs on the site. The hedges are not outstandingly diverse and their potential for birds and other wildlife is limited by their low height and narrow width. The trees within the cemetery are largely non-native, but they provide habitat for birds.

The trees and shrubs across the cemetery 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 cemetery for foraging.

The cemetery lacks habitat suitable for any other protected species.

No scheduled invasive species were recorded on the site.

3.4 Summary

Area	Feature	Scale of Interest	Features of Interest
1	Grassland	South Gloucestershire context	Diverse vegetation, including indicator species of unimproved grassland
1	Monuments	Local context, possibly greater	Lichen populations
3	Grassland	Local context	Small populations of unimproved grassland indicator species
6	Oak trees	Local context	
All	Trees	South Gloucestershire context	

4 MANAGEMENT

4.1 Aims

To maximise the biodiversity interest of the site whilst maintaining its role as a cemetery

4.2 Objectives

To maintain species-rich grassland on the site.

To maintain graves and monuments in a suitable condition for lichen growth.

To enhance site boundaries.

4.3 Constraints

The main constraint on management for biodiversity here is the need to ensure the good condition of the monuments. For these and general amenity reasons it is appropriate to maintain the grassland around most of the site in a fairly formal condition.

4.4 Rationale

The cemetery is currently of high interest for biodiversity and significant changes to existing management practices are not recommended.

The main biodiversity objective here is to ensure that species-rich grassland survives in the cemetery. This requires management of the grassland, which is normally in the form of either grazing or mowing. Grazing is not possible here so a mowing regime should continue. The lower diversity and therefore limited nature conservation value in parts of the cemetery is due to high levels of fertility in the soil, probably a consequence of former agricultural management. There is very little that can be done to lower nutrient levels, but in the long term continues mowing without any further inputs of fertiliser would lead to a gradual increase in diversity.

The grassland is at present mown frequently to maintain a short sward. This regime allows most grassland plant species, which are perennial, to survive but not to flower. The current management has maintained the nature conservation value, but there would be some gain if the grassland was allowed to grow slightly taller so that low-growing plants could flower, which would have benefits for insects. Arisings should be gathered and removed in order to keep soil nutrient levels low and to protect populations of fungi. Meadow-length grassland would be harder to manage and might not be welcomed by site-users.

The shorter sward also keeps monuments in better condition by discouraging vegetation growth across stones and by allowing access to stones for management. This has benefits for lichen populations, as well as for heritage and amenity reasons.

There may, however, be potential for allowing narrow strips of grassland to grow tall alongside some of the site boundaries. This would create additional habitat for insects and for insectivorous wildlife such as birds and bats. Allowing hedges to grow taller and additional tree planting along boundaries would also benefit biodiversity.

The cemetery has a good balance of trees and open habitats, and this should be maintained – additional tree planting away from the boundaries is not recommended but any lost trees should be replaced.

4.5 Management Proposals

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

2 Continue grassland mowing across the cemetery. In order to allow low-growing plants to flower, whilst maintaining a formal appearance and protecting graves, mow once a month from April to September set mower blades to 100mm. Gather and remove arisings from at least the more species-rich parts of the cemetery (area 1).

3 Mow north-eastern part of cemetery (area 2) annually in August, gather and remove arisings.

4 Continue to keep monuments clear of scrub and ivy.

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

6 Allow the hedges on the north-western and northern boundaries of the cemetery to grow taller.

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

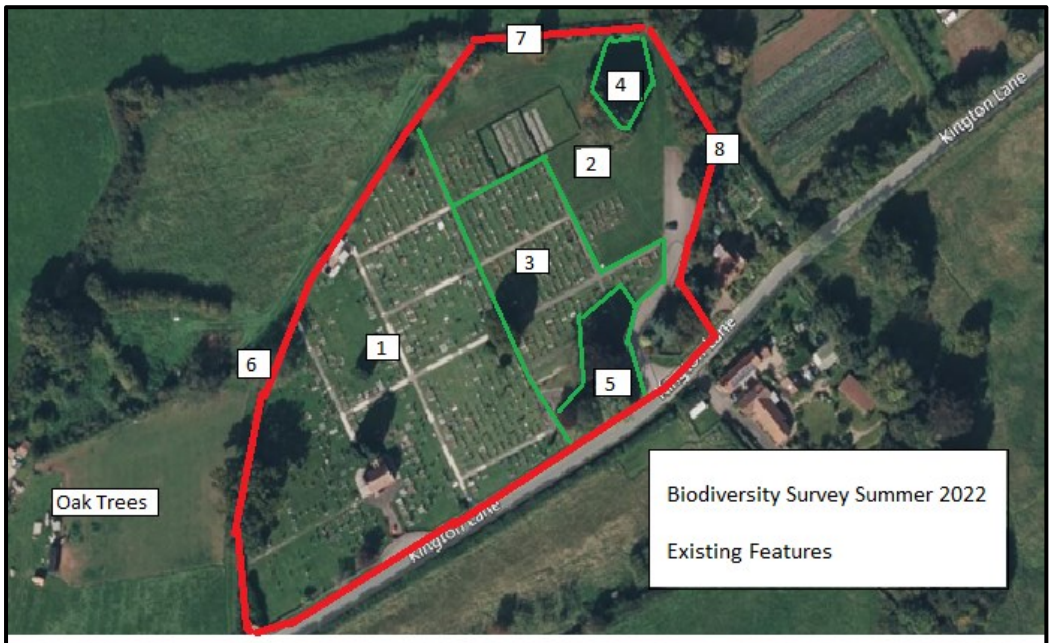
Field maple	*Acer campestre*
Silver birch	*Betula pendula*
Crab apple	*Malus sylvestris*
Rowan	*Sorbus aucuparia*

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

9 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 to move and also provides optimal habitat for wildlife.

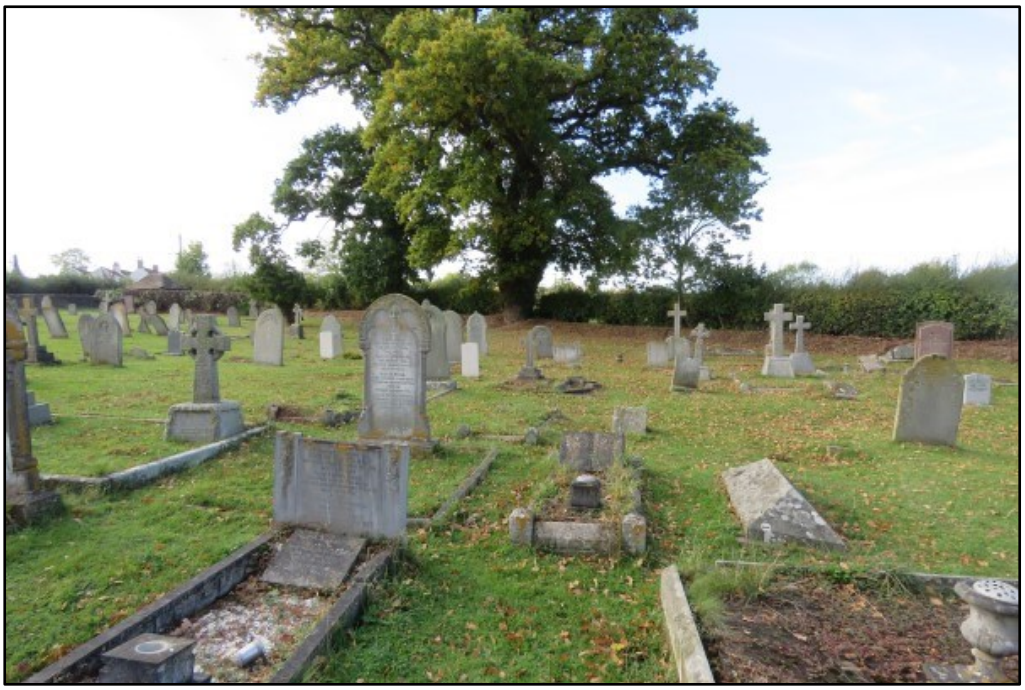
4.6 Work Planner

Task	Year 1	Year 2	Year 3	Year 4	Year 5
Mow area 1, gather and remove arisings	Monthly, Apr-Sept	Monthly, Apr-Sept	Monthly, Apr-Sept	Monthly, Apr-Sept	Monthly, Apr-Sept
Keep monuments clear of ivy and scrub	As necessary	As necessary	As necessary	As necessary	As necessary
Mow area 2, gather and remove arisings	August	August	August	August	August
Clear scrub in area 3	Sept-Feb		Sept-Feb		Sept-Feb
Mow area 3	Monthly, Apr-Sept	Monthly, Apr-Sept	Monthly, Apr-Sept	Monthly, Apr-Sept	Monthly, Apr-Sept
Trim back trees on edge of area 4	Nov-Jan		Nov-Jan		Nov-Jan
Fit bird and bat boxes to trees in area 4	January	January			
Check bird and bat boxes, and replace as necessary			January	January	January
Maintain bug hotel	As necessary	As necessary	As necessary	As necessary	As necessary
Create dead wood piles in area 4	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



1	Species-rich grassland
2	Species-poor grassland
3	Moderately species-rich grassland
4	Tree clump
5	Tree clump
6	Hedge with mature trees
7	Hedge
8	Tree line with hedge


Allow hedge to grow taller
Mow grassland in August, gather and remove arisings
Create dead wood piles
Mow monthly through summer, gather and remove arisings
Mow monthly through summer
Allow hedge to grow taller
Kington Lane
Biodiversity Survey Summer 2022
Management Proposals
Allow tall grassland to develop
Bug hotel locations
Plant trees alongside hedges



Photograph 1: Part of area 1, with tree in area 6 in background

Photograph 2: Diverse grassland between monuments, providing a rich habitat for plants of fungi

Photograph 3: Species-poor grassland in area 2