BIODIVERSITY ASSESSMENT AND ENHANCEMENT PLAN

CEMETERY AND POND, CORRINGHAM, LINCOLNSHIRE

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Figure 2: Aerial view of the village pond area outlined in red (Apple Maps, 2022)

1 INTRODUCTION

CGC Ecology Ltd has been commissioned by Diane Semley of Corringham Parish Council to undertake a biodiversity assessment and enhancement plan of the new cemetery at St Laurence's Church and the village pond area, both in the village of Corringham, Lincolnshire. The surveys are required in connection with plans to improve the biodiversity of the areas through appropriate management and enhancements.

The sites were assessed on 24th May 2022 in dry and sunny conditions by Celia Commowick (registered to use Natural England Class Licences WML-CL08 to survey great crested newts and WML-CL18 to survey bats; registration numbers 2016-25124-CLS-CLS and 2018-37729-CLS-CLS respectively, and FISC Level 4).

During the biodiversity assessment of the sites, all species present were identified, and the potential for protected or priority species to occur was also assessed.

This report details the methods used, describes the habitats and species found on the sites, discusses the results and makes recommendations for future management.

2 METHODS

2.1 Biodiversity assessment

During the assessment, a walkover of each site was completed and all flora and fauna noted were recorded. Any plant species listed on Schedule 8 or Schedule 9 of the Wildlife and Countryside Act (1981, reviewed in 2010) were recorded, and the sites were assessed against the Local Wildlife Site (LWS) criteria for Lincolnshire.

2.2 Survey constraints and limitations

There are no known constraints related to the survey methodology or the timing.

3 SITE ASSESSMENT

3.1 Location and grid reference

The survey sites comprise the newer cemetery area to the north of St. Laurence's Church and the communal village pond area off Middle Street within the village of Corringham near Gainsborough, Lincolnshire - central grid references SK871917 and SK871914 respectively.

The habitats on each site are described below and representative photographs are included in the text. Aerial views of each site location are provided as Figures 1 and 2, and a combined plant list for both of the sites is included as Appendix 1.



Figure 1: Aerial view of the cemetery site outlined in red (Apple Maps, 2022)



Figure 2: Aerial view of the village pond area outlined in red (Apple Maps, 2022)

3.2 The cemetery

The majority of the cemetery area comprises mown amenity grassland, with some areas of longer grass around the edges. Within the mown areas species such as orange hawkweed, Yorkshire-fog, dandelion, red fescue, cat's-ear, lady's bedstraw, Germander speedwell, meadow foxtail, creeping cinquefoil, common mouse-ear, common sorrel, yarrow and a small patch of cowslips were recorded, indicating that this grassland has historically had low inputs of nutrients as it is fairly species-rich, and would benefit from a reduced mowing regime.



Photograph 1: General view of the amenity grassland



Photograph 2: The amenity grassland

The areas of tall vegetation along the western, south-eastern and north-eastern boundaries of the cemetery are mostly dominated by grasses, with species such as common nettle, barren brome, false oat-grass, Yorkshire-fog, ground-ivy, garlic mustard, lord's-and-ladies, cow parsley, cleavers, common hogweed, bramble and meadow foxtail recorded. Towards the eastern end of the north-eastern boundary a good variety of wildflowers was noted within the grasses, with oxeye daisy, bulbous buttercup, common knapweed, lady's bedstraw, field wood-rush and common sorrel present. This area may have been seeded with a wildflower mixture in the recent past, which is why it is more botanically diverse.



Photograph 3: Area of species-poor long grass along the north-eastern boundary



Photograph 4: Area of species-rich grassland along the north-eastern boundary

A number of semi-mature trees and shrubs occur around the edges of the cemetery, with a large number of cherry trees present, but also walnut, hawthorn, rowan, pedunculate oak, silver birch, sycamore, field maple, holly, elder and lilac. There are also some non-native cherry laurel shrubs and cotoneaster along the western edge, and some flower beds. Plants within the flower beds include feverfew, red campion, vetch species, herb-Robert, nipplewort, Yorkshire-fog, salad-burnet, cleavers, ribwort plantain, green alkanet, daffodil, willowherb species and smooth sow-thistle. Along the western boundary of the cemetery is a hedgerow of hawthorn, holly and bramble and the southern site boundary comprises metal railings.



Photograph 5: Trees in the north-western corner of the cemetery



Photograph 6: Trees along the northeastern boundary



Photograph 7: Cherry laurel along the western edge



Photograph 8: Hedgerow and flower beds along the western boundary

3.3 The village pond

The village pond contains fish and is approximately 400m², with a dense area of marginal vegetation surrounding it, including yellow iris, common bulrush, water figwort and willowherb species. Other areas of tall vegetation further from the pond edge include species such as cow parsley, broad-leaved dock, common nettle, creeping buttercup, hemlock, comfrey species, oxeye daisy, hedge woundwort, cleavers and spear thistle. There are a number of trees and shrubs around the pond, including alder, willow species, elder and dogwood. Aquatic vegetation was hard to identify as the pond is not easily accessible, but water-lily and celery-leaved buttercup was recorded.



Photograph 9: View of the pond

Photograph 10: Further view of the pond



Photograph 11: Vegetation surrounding the pond

Photograph 12: Large willow tree next to the pond

The remaining area around the pond comprises moderately species-rich mown amenity grassland, with species including daisy, dandelion, meadow foxtail, cut-leaved crane's-bill, thyme-leaved speedwell, Yorkshire-fog, creeping buttercup, red campion, common mouse-ear, Germander speedwell, cock's-foot and white clover noted. There are also a number of semimature trees present, with ash, pedunculate oak, walnut, field maple and cherry species recorded.

Along the north-western boundary, adjacent to the road is a managed hedgerow of hawthorn, wild privet, elm species, elder and ivy. There is a newly planted hedgerow along the eastern boundary, comprising blackthorn, hazel, hawthorn, cherry species and rowan. Established hawthorn hedgerows form the remaining boundaries, with the exception of part of the south-western boundary, where a number of trees had recently been removed.



Photograph 13: The amenity grassland and trees on site

Photograph 14: Hedgerow along the north-western boundary



Photograph 15: Newly planted hedgerow along the eastern boundary



Photograph 16: Established hedgerow in the south-eastern corner

4 RESULTS

4.1 Faunal species

A number of common birds were seen or heard across both sites during the surveys. These are listed below along with their current status as species of principle importance, or SPI, (NERC Act, 2006) or Birds of Conservation Concern 5 (Stanbury A. *et al*, 2021).

English name	Scientific name	SPI	BoCC5
moorhen	Gallinula chloropus		Amber
wood pigeon	Columba palumbus		Amber
rook	Corvus frugilegus		Amber
jackdaw	Corvus monedula		Green
blue tit	Cyanistes caeruleus		Green

Table 1: Bird species recorded on or flying over the sites

English name	Scientific name	SPI	BoCC5
house martin	Delichon urbicum		Red
chiffchaff	Phylloscopus collybita		Green
blackbird	Turdus merula		Green
robin	Erithacus rubecula		Green
house sparrow	Passer domesticus	Y	Red
chaffinch	Fringilla coelebs		Green

The trees, shrubs and hedgerows on the sites are considered to offer good nesting potential for common bird species. Several moorhen chicks were present on the pond, so it is clearly used by breeding moorhen.

The sites are considered to offer good foraging habitat for hedgehog *Erinaceus europaeus*, and foraging opportunities for common bat species such as common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus*, all of which are species of principle importance (NERC Act, 2006).

The pond may also provide foraging and shelter opportunities for amphibians such as toad *Bufo bufo* and common frog *Rana temporaria*, of which the toad is a species of principle importance, although the presence of fish makes it less likely to be used by breeding amphibians. Grass snake *Natrix helvetica* may also be present within the pond area, as this species predates amphibians.

4.2 Habitats and plant species

The habitats and plant species recorded on the site are common and widespread in the local area and in the country and the plant species recorded on the site are not listed on Schedule 8 or Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

The pond area would not qualify as a Local Wildlife Site, but the cemetery contains a total of eight scoring species for neutral grassland, indicating its higher botanical diversity, and it would therefore qualify as a Local Wildlife Site. The scoring species within the cemetery for neutral grassland are as follows;

Bulbous buttercup Cat's-ear Common knapweed Cowslip Field wood-rush Lady's bedstraw Meadow foxtail Oxeye daisy

4.3 Summary

The biodiversity of the cemetery is considered to be moderate/high, with a diverse range of plant species present that would lead the area to qualify as a Local Wildlife Site for Lincolnshire. The biodiversity of the pond area is also considered to be moderate despite its small size, due to the variety of habitats present (open water, short grass, tall vegetation and hedgerows). The implementation of measures aiming to improve the diversity of plants on both sites and to maintain and enhance the habitats present for the benefit of invertebrates would lead to an increase in overall biodiversity.

5 ENHANCEMENT RECOMMENDATIONS

The following recommendations would lead to biodiversity gains on each site.

Within the cemetery, it is recommended that some of the mown amenity grassland is left unmown, or mown less frequently, to allow the diverse plant species to flourish.

New areas of wildflowers could be created along the edges of the cemetery or within the grassland of the pond area. To achieve this, the areas must be re-seeded with a wildflower mixture. The ground must be scarified thoroughly immediately beforehand, to reveal at least 60% bare soil. The areas should then be seeded by hand, with the ground then rolled to ensure good contact between the seeds and the soil. The recommended seed mixture is Emorsgate Seeds EM5 meadow mixture for loamy soils (available at https://wildseed.co.uk/mixtures/view/6) at a rate of 40kg/ha, or Boston Seeds BS4M mixture for loam and alluvial soils, available at https://www.bostonseeds.com/products/wildflower-seeds.html.

Any wildflower areas should be cut once in spring (if required) and once in early autumn with the arisings removed after 7 days to allow the seed to drop. The application of herbicides should be avoided, with weeds removed by pulling or topping. In order to inform and educate the public about the management of these areas, signage is recommended, such as those used by the Blue Campaign (<u>https://bluecampaignhub.com/</u>).

If new wildflower areas are proposed around the edges of the cemetery, it is recommended that the trees within these areas are crown-lifted first, to allow more light to penetrate so that the wildflowers can thrive. The wood from this operation should be trimmed and stacked in the corners of the site to create habitat piles for invertebrates.

The cherry laurel and cotoneaster along the western edge of the cemetery should be removed, and replaced with native shrub species such as hazel *Corylus avellana*, holly *llex aquifolium*, hawthorn *Crataegus monogyna* or guelder rose *Viburnum opulus*.

The flower beds along the western edge already contain a good variety of wildlifefriendly plants, but could be enhanced further with a woodland wildflower mixture such as Boston Seeds BS7P or BS8P, available at

<u>https://www.bostonseeds.com/products/wildflowers-seed/wildflower-seed-mixtures-</u> <u>100/</u>. These seed mixes could also be used for enhancing any area of either site that is shaded out by trees.

The margins of the pond could be enhanced by planting additional native wetland species. It is recommended that plug plants are used rather than seed to avoid undue ground disturbance; these can be purchased from Boston Seeds at <a href="https://www.bostonseeds.com/products/wildflower-plants/wildflo

Some of the common bulrush around the pond should be removed annually by hand on a rotational basis (one third removed each year), to avoid it dominating and outcompeting the other plant species. This work should be carried out in late September or October, once the birds have finished nesting but before amphibians go into hibernation.

Any plant material removed as a result of hedge trimming or grass cutting on either site should be made into habitat piles, and placed around the edges of the sites to provide additional habitats for invertebrates, amphibians and reptiles.

The newly planted hedgerow within the pond area would benefit from some additional hedgerow plants being added, to ensure a dense hedgerow is created. Hedgerows ideally should comprise two lines of plants in staggered rows, and biodegradable guards and ties should be used to avoid plastic pollution.

The hedgerow along the north-western boundary of the pond area is to be reduced in height, to allow for enhanced visibility from the road. This should be carried out between late September and early March, to avoid the bird nesting season. This reduction will be compensated for by planting a new section of hedgerow, to replace a small section along the roadside that has collapsed, and along part of the south-western boundary where trees were recently removed.

The new hedgerow to be planted should be species-rich, comprising only native species that provide pollen, nectar and fruit in order to provide opportunities for birds and invertebrates. The species mixture of this new hedgerow should comprise at least six of the following; hazel *Corylus avellana*, holly *llex aquifolium*, hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, dog rose *Rosa canina*, wayfaring tree *Viburnum lantana*, dogwood *Cornus sanguinea*, elder *Sambucus nigra*, wild cherry *Prunus avium*, bird cherry *Prunus padus* and guelder rose *Viburnum opulus*. Hedgerows ideally should comprise double lines of plants in staggered rows to ensure a dense hedgerow, and biodegradable guards and ties should be used to avoid plastic pollution.

The ongoing management of the hedgerows on both sites should comprise trimming on a rotational basis (half or a third of the hedgerow each year), so that not all of the hedgerow is cut at once. This ensures that there is always something in flower or fruit for birds and invertebrates. Hedgerows should only be cut outside of the bird nesting season, which runs from late March to early September.

The addition of hedgehog nest boxes beneath a hedgerow or within an overgrown corner on either site would be a benefit to this declining species. These can be purchased from <u>www.nhbs.co.uk</u> or <u>www.wildcareshop.co.uk</u> or can be made as part of a community project (<u>https://www.wildlifetrusts.org/actions/how-build-hedgehog-home</u>). Note: due to recent concerns with some hedgehog nest box designs, those constructed from timber, recycled plastic or woodcrete are recommended, as there is no risk of entanglement.

Bat boxes could be installed on any larger trees on the sites, in order to maximise opportunities for bat species in the local area. The bat boxes should be positioned at least 3 metres above ground level on the northern or southern elevations of the trees. A suitable style of bat box would be the Vincent Pro bat box, available at <u>www.nhbs.co.uk.</u> Alternatively, they can be hand-made using instructions found at <u>https://www.wildlifetrusts.org/actions/how-build-bat-box</u>.

Nesting features could be installed on suitable trees, facing east or north at a minimum height of 3 metres. Details of nest boxes suitable for use by a range of common bird species can be obtained from <u>www.nhbs.co.uk</u> or <u>www.wildcareshop.co.uk</u>.

Insect houses and bee hotels would encourage invertebrates on both sites - these are

available to buy from <u>www.nhbs.co.uk</u> or <u>www.wildcareshop.co.uk</u>, or can be handmade using recycled and natural materials, with more information available at <u>https://www.wildlifetrusts.org/actions/how-build-bug-mansion</u>.

Wildflower planters could be attached to the railings on the southern boundary of the cemetery. These could be seeded with cornfield annual wildflower mixes, which will provide a source of nectar and pollen for bees and butterflies, and will provide an attractive floral display. A suitable annual mixture can be sourced from https://www.bostonseeds.com/products/wildflowers-seed/wildflower-seed-mixtures-100/bs9p-100-cornfield-annuals-wildflower-seeds.html. Please note that annual mixtures need to be re-sown every year, so are not suitable for creating wildflower meadows/areas. Perennial mixtures are required for this, as previously recommended.

6 SUMMARY

The cemetery and the village pond in Corringham near Gainsborough were surveyed in connection with plans to improve the biodiversity of each site through appropriate enhancements.

There is scope to achieve an increase in biodiversity on both sites if some or all of the recommendations can be implemented.

7 REFERENCES

Collop C (revised Bouic A 2015) *Lincolnshire Biodiversity Action Plan 2011-20*. 3rd Edition. Greater Lincolnshire Nature Partnership.

Poole J. & Fraser J. (eds.) 2013. *Local Wildlife Site Guidelines for Greater Lincolnshire*, 3rd Edition, Greater Lincolnshire Nature Partnership.

Stanbury A. et al (2021). The status of our bird populations; The fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. British Birds 114, pp723–747.

APPENDIX 1 Plant list

ENGLISH NAME

alder ash barren brome blackthorn bramble broad-leaved dock bulbous buttercup cat's-ear celery-leaved buttercup cherry laurel cherry species cleavers cock's-foot comfrey species common bulrush common knapweed common mouse-ear common nettle common sorrel cotoneaster cow parsley cowslip creeping buttercup creeping cinquefoil cut-leaved crane's-bill daffodil daisy dandelion dogwood elder elm species false oat-grass feverfew field maple

SCIENTIFIC NAME

Alnus glutinosa Fraxinus excelsior Bromus sterilis Prunus spinosa Rubus fruticosus Rumex obtusifolius Ranunculus bulbosus Hypochaeris radicata Ranunculus sceleratus Prunus laurocerasus Prunus sp. Galium aparine Dactylis glomerata Symphytum sp. Typha latifolia Centaurea nigra Cerastium fontanum Urtica dioica Rumex acetosa Cotoneaster sp. Anthriscus sylvestris Primula veris Ranunculus repens Potentilla reptans Geranium dissectum Narcissus sp. Bellis perennis Taraxacum agg. Cornus sanguinea Sambucus nigra Ulmus sp. Arrhenatherum elatius Tanacetum parthenium Acer campestre

ENGLISH NAME	SCIENTIFIC NAME
field wood-rush	Luzula campestris
garlic mustard	Alliaria petiolata
Germander speedwell	Veronica chamaedrys
green alkanet	Pentaglottis sempervirens
ground-ivy	Glechoma hederacea
hawthorn	Crataegus monogyna
hazel	Corylus avellana
hedge woundwort	Stachys sylvatica
hemlock	Conium maculatum
herb-Robert	Geranium robertianum
hogweed	Heracleum sphondylium
holly	llex aquifolium
ivy	Hedera helix
lady's bedstraw	Galium verum
lilac	Syringa sp.
lord's-and-ladies	Arum maculatum
meadow foxtail	Alopecurus pratensis
nipplewort	Lapsana communis
orange hawkweed	Pilosella aurantiaca
oxeye daisy	Leucanthemum vulgare
pedunculate oak	Quercus robur
red campion	Silene dioica
red fescue	Festuca rubra
ribwort plantain	Plantago lanceolata
rowan	Sorbus aucuparia
salad burnet	Sanguisorba minor
silver birch	Betula pendula
smooth sow-thistle	Sonchus oleraceus
spear thistle	Cirsium vulgare
spurge species	Euphorbia sp.
sycamore	Acer pseudoplatanus
thyme-leaved speedwell	Veronica serpyllifolia
vetch species	Vicia sp.
walnut	Juglans sp.
water figwort	Scrophularia auriculata
water-lily	Nymphaea sp.
white clover	Trifolium repens
wild privet	Ligustrum vulgare

ENGLISH NAME

willow species willowherb species wood avens yarrow yellow iris Yorkshire-fog

SCIENTIFIC NAME

Salix sp. Epilobium sp. Geum urbanum Achillea millefolium Iris pseudacorus Holcus lanatus