GEO

GEOSPHERE ENVIRONMENTAL

PRELIMINARY ECOLOGICAL APPRAISAL REPORT

REPORT NUMBER:	8070,EC,PEA,FT,TA,EB,KL,02-02-23,V1
SITE:	127-496 Daisy Meadow Car Park Access Road
DATE:	02/02/2024



DOCUMENT CONTROL SHEET

Report Number:	8070,EC,PEA,FT,TA,EB,KL,02-02-23,V1
Client:	Haydn Evans
Project Name:	127-496 Daisy Meadow Car Park Access Road
Project Number:	8070,EC,PEA
Report Type:	Preliminary Ecological Appraisal
Status:	Final
Date of Issue:	02 February 2024

Issued By:

Geosphere Environmental Ltd, Brightwell Barns, Ipswich Road, Brightwell, Suffolk, IP10 0BJ. T: 01603 298 076 / 01473 353 519. W: www.geosphere-environmental.co.uk

Confidentiality, Copyright and Reproduction:

This document has been prepared by Geosphere Environmental Ltd in connection with a contract to supply goods and/or services and is submitted only on the basis of strict confidentiality. The contents must not be disclosed to third parties other than in accordance with the terms of the contract. Geosphere Environmental Ltd accepts no responsibility whatsoever to third parties to whom this report, or any part thereof, is made known. Any such party relies upon the report at their own risk.

Time limit of reliance:

Please note that the reported surveys were conducted on the date(s) stated in the report and that it represents site conditions at the time of the visit. The findings and recommended mitigation are based upon these conditions. If site conditions change materially after the site survey, the original report cannot be relied upon and will need to be updated. Ecological reports can typically be relied on for 18 to 24 months from the date of survey.

Prepared By:	Reviewed By:		Authorised By:
Fletcher Telling	Tracy Amies	Eleanor Baker	Katie Linehan
Seasonal Ecologist	Ecological and Arboricultural Consultant	Ecologist	Technical Director of Ecology
		FRALW	Keo



J. Mutra.

ada H

Version	Record:
Version	Date
1	01/02/2

01/02/24

Document Details Original Version

Prepared By FT

Admin ΗP



Executive Summary

Report	This Preliminary Ecological Appraisal report has been prepared by Geosphere Environmental
Description	Limited for Haydn Evans and relates to the proposed road widening development of the site
	at 127-496 Daisy Meadow Car Park Access Road.
	The purpose of this report is to identify potential ecological constraints to development,
	particularly in relation to potential legally protected species onsite, confirm the need for
	further survey work to confirm all baseline ecological conditions, if necessary, and highlight
	opportunities for ecological enhancement.
Proposed	The proposed development largely consists of the widening and resurfacing of the current
Development	entrance road to Daisy Meadow Car Park and the removal of an ornamental hedgerow along
	the south side of the entrance road. The proposed area of construction works lies within
	the wider survey area.
Summary of Main	The survey area was comprised predominantly of hardstanding with grassland, hedgerow
Findings	and scrub boundaries and scattered trees.
	The findings of the survey confirm that the habitats to be removed have the potential for
	nesting and foraging birds and foraging and connective habitat for hedgehogs. The bat
	foraging and commuting habitat onsite is of low value of less than local importance and the
	limited amount of vegetation to be impacted by the construction works, will likely result in
	a negligible impact. However, an offsite building has high potential to support roosting
	bats and therefore indirect impacts need further consideration.
	The site is not considered suitable for badger, otter, water vole, hazel dormouse, great
	crested newt or reptiles.
Ecological	The constraints to development will be the removal of habitats considered suitable for
Constraints	protected species, including the vegetation suitable for breeding birds and hedgehog and
Avoidance	indirect impacts to the offsite build with high bat roost potential.Birds: Given the onsite presence of potential bird nesting habitat, any clearance of
measures &	vegetation, or buildings that support suitable nesting features, should be timed to avoid
Timings of Works	the bird breeding season (March-August inclusive). If this is not possible, these habitats
to reduce impact	can only be removed following confirmation by a suitably qualified Ecologist that they are
	not in active use by nesting birds.
	Bats: Vegetation removal works must be carried out under a method statement to reduce
	indirect impacts to the offsite building during vegetation removal. The method statement
	should be secured through the condition of a Construction Environmental Management Plan
	(CEMP) which should be secured as an approved planning condition. Due to the very limited
	extent of habitat to be removed, this approach is considered appropriate.
	Hedgehog: Excavations during development or ground investigation works
	should be covered overnight to prevent entrapment of hedgehogs.
Biodiversity	The following has been recommended for consideration within the final scheme:
Enhancement	• Planting of native plant species beneficial to wildlife should be incorporated into the
Opportunities	final design. This will provide additional habitat for invertebrates, which will in turn
	provide a food source for reptiles, birds, bats, and hedgehog.



	• To help achieve biodiversity net gain on the site, areas of natural habitat would need to be included within the scheme.
Conclusions	Provided the recommendations within this report are followed and the mitigation hierarchy
	of avoidance, mitigation, compensation and enhancement is implemented throughout the
	detailed design process, potential negative effects from development on important
	ecological features will be negligible.



CONTENTS

Page No.

EXECU	TIVE SUMMARY	3
1.	INTRODUCTION	7
1.1	Purpose	7
1.2	Site Description	7
1.3	Proposed Development	8
2.	LEGISLATIVE AND POLICY CONTEXT	9
2.1	Current UK Legislation	9
2.2	Planning Policy	9
3.	METHODOLOGY	11
3.1	Technical Approach	11
3.2	Personnel	11
3.3	Ecological Desk Study	11
3.4	Preliminary Ecological Appraisal	12
3.4.1	Habitats and Flora	12
3.4.2	Species Assessment	12
3.5	Ecological Evaluation	13
3.6	Site-specific Limitations	14
4.	RESULTS	15
4.1	Designated Sites	15
4.2	Habitats	15
4.2.1	Developed Land Sealed Surface, Car Park	17
4.2.2	Modified Grassland	17
4.2.3	Artificial unvegetated unsealed surface	17
4.2.4	Artificial unvegetated unsealed surface, bare ground	17
4.2.5	Mixed scrub	17
4.2.6	Baseline Trees	17
4.2.7	Hedgerow, non-native	18
4.2.8	Native hedgerow	18
4.2.9	Drainage feature	18
4.3	Species Appraisal	18
4.3.1	Species Discounted from Further Consideration	18
4.3.2	Plants	18
4.3.3	Invertebrates	19
4.3.4	Great Crested Newt	19
4.3.5	Birds	20
4.3.6	Bats	21
4.3.7	Water Vole	22
4.3.8	Otter	23



CONTENTS

		Page No.
4.3.9	Hedgehog	23
5.	EVALUATION, CONSTRAINTS AND RECOMMENDATIONS	24
5.1	Nature Conservation Sites	24
5.2	Habitats	24
5.3	Biodiversity Net Gain	25
5.4	Legally Protected and Notable Species	25
6.	OPPORTUNITIES FOR ECOLOGICAL ENHANCEMENT	27
7.	CONCLUSIONS	28

APPENDICES

- APPENDIX 1 REPORT LIMITATIONS AND CONDITIONS
- APPENDIX 2 REFERENCES
- APPENDIX 3 SPECIES SPECIFIC LEGISLATION
- APPENDIX 4 DESK STUDY DATA
- APPENDIX 5 HABITAT SUITABILITY INDEX
- APPENDIX 6 SITE PHOTOGRAPHS
- APPENDIX 7 EXAMPLE ENHANCEMENT FEATURES

TABLES

	Page No.
Table 1 – HSI Scores and General Assessment of Waterbodies within 500m	20
Table 2 – Birds Identified During the Survey	21
Table 3 – Habitat Constraints and Recommended Actions	24
Table 4 – Protected Species - Ecological Constraints and Recommended Actions	26

FIGURES

	Page No.
Figure 1 - Combined Survey Area (Red and Blue outline) with Proposed Construction Area Outlin	ed Blue 7
Figure 2 - Habitat Survey Plan	16
Figure 3 - Ponds within 500m of the Site Boundary	19
Figure 4 – Location of High Bat Roost Suitability Building	22



1. INTRODUCTION

1.1 Purpose

This Preliminary Ecological Appraisal report has been prepared by Geosphere Environmental Limited for Haydn Evans and relates to the proposed road widening development of the site at 127-496 Daisy Meadow Car Park Access Road for which detailed planning permission will be sought. The purpose of this report is to:

- Identify if important ecological features are present that may be affected by development proposals.
- Determine if further survey work is necessary, and if so, provide detailed scope for any further survey and assessment that may be required to support a planning application.
- Highlight opportunities for ecological enhancement.

Any limitations and conditions pertaining to the report are stated within Appendix 1, with a full list of technical references provided within Appendix 2.

1.2 Site Description

The site occupies an area of approximately 0.4548 hectares (ha) and is located around National Grid Reference TL8708506951. The indicative survey boundary is shown on Figure 1 below (red and blue line boundary); however, proposed works will be limited to the blue line boundary only.

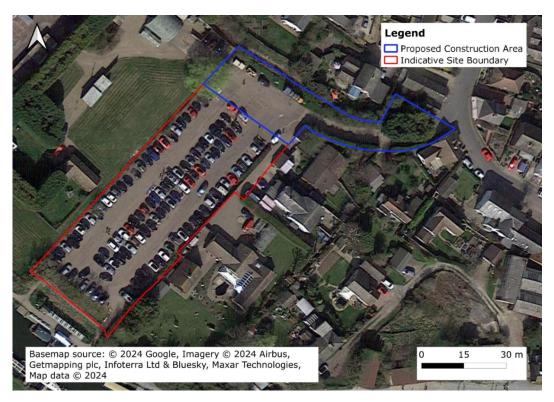


Figure 1 - Combined Survey Area (Red and Blue outline) with Proposed Construction Area Outlined Blue



1.3 Proposed Development

The report relates to proposed road widening redevelopment of the site at Daisy Meadow Car Park, Heybridge Basin.

The proposed development largely consists of the widening and resurfacing of the current entrance road to Daisy Meadow Car Park and the removal of an ornamental hedgerow along the south side of the entrance road. The proposed area of construction works lies within the indicative survey boundary as shown in Figure 1.



2. LEGISLATIVE AND POLICY CONTEXT

2.1 Current UK Legislation

The main legislation that applies to ecological issues within England and Wales is as follows:

- The Environment Act 2021 Act became law on 9 November 2021 and introduced a framework to improve and protect the natural environment, overseen by the Office for Environmental Protection. Under the Act there is a statutory duty for local authorities to create new local nature recovery strategies and a mandatory requirement for developments to achieve measurable biodiversity net gain. All planning permissions in England (subject to exemptions) must be granted subject to a biodiversity gain pre-commencement condition, requiring the approval of a biodiversity gain plan. The planning authority may only approve the biodiversity gain plan if the biodiversity value attributable to a development exceeds the pre-development biodiversity value of the onsite habitat by 10%.
- The Conservation of Habitats and Species Regulations 2017 (as amended) transposes European Union Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (formally the EC Habitats Directive) into national law. Under the regulations, public bodies have a duty in exercising their functions to provide for the protection of 'Habitats Sites' and 'European Protected Species' (EPS).
- The Wildlife and Countryside Act 1981, (WCA) (as amended) provides detail on a range of protection and offences relating to wild birds, other animals, and plants. The level of protection depends upon which Schedule of the Act the species is listed on. Licences are available for specific purposes to permit actions that would otherwise constitute an offence in relation to species.
- The Natural Environment and Rural Communities, (NERC), Act 2006 imposes an obligation on all public bodies, including local authorities, to consider whether their activities can contribute to the protection of wildlife. Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England and states that: "Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity."

Species-specific conservation legislation is detailed within Appendix 3.

The reader is referred to the original legislation for definitive interpretation.

2.2 Planning Policy

The recommendations of this report are in line with the key principles of the National Planning Policy Framework (NPPF) (ref. **R.1**) and Government Circular 05/06: Biodiversity and Geological Conservation (ref. **R.2**).



Local planning policies relating to ecology are invariably based upon the conservation of species protected under the above legislation, including species and habitats of principal importance listed under Section 41 of the NERC Act 2006 and the protection of designated sites.

All these features are considered within the scope of this Preliminary Ecological Appraisal, and therefore any recommendations made herein are likely to be in line with this policy.



3. METHODOLOGY

3.1 Technical Approach

The PEA has been undertaken following guidelines provided by CIEEM's Guidelines for Preliminary Ecological Appraisal, (ref. **R.3**), and BS42020:2013 Biodiversity standards, (ref. **R.4**) to provide an indication of the ecological value of the site and the potential for the site to be used by protected species.

Scientific names and common names of plant species identified are as they appear in Stace, (ref. **R.5**).

The conclusions and recommendations for further works are in accordance with current legislation and guidance.

3.2 Personnel

This report was produced by Fletcher Telling BSc (Hons) (Seasonal Ecologist). This report was reviewed by Tracy Amies BSc (Ecological and Arboricultural Consultant) and Eleanor Baker BSc (Hons) MSc (Ecologist) and approved by Katie Linehan BSc (Hons) MSc PIEMA MCIEEM (Technical Director), who are experienced in ecological consultancy including the production of Preliminary Ecological Appraisals and impact assessments.

All surveyors used to establish baseline information are suitably qualified and experienced; surveyors' names and qualifications are stated under each survey heading below.

3.3 Ecological Desk Study

A data search was conducted of freely available biological records. The sources of information included:

- The Multi-Agency Geographic Information for the Countryside (MAGIC) online database (ref. **R.6**) was consulted to obtain geographic information on key statutory designated nature conservation sites and other ecological features of relevance to the site.
- Essex Field Club (EFC) was contacted to provide details of legally protected species and non- statutory
 designated conservation sites within 2km of the site. Only records of protected species from within the
 last ten years are considered within this report.
- Ordnance Survey maps were used to identify ponds / ditches within 500m of the site to assess the potential for great crested newt (*Triturus cristatus*) (GCN) within the immediate vicinity of the site.

A desk-based search for ponds within 500m of the site was undertaken using the MAGIC online database base maps (ref. **R.6**).



3.4 Preliminary Ecological Appraisal

The surveys used to inform the Preliminary Ecological Appraisal comprise a habitat survey and protected species scoping survey. The Preliminary Ecological Appraisal considers findings of the outcome of the survey work alongside any features highlighted by the desk study.

The site survey was undertaken on 8th January 2024 by Tracy Amies and Fletcher Telling. The weather conditions at the time of the survey were windy and snowing with an approximate temperature of 2°C.

3.4.1 Habitats and Flora

A list of plant species was compiled in accordance with methodology required to establish UK Habitat Classification types (ref. **R.7**) aiming to record to Level 4, ensuring habitats were recorded to at least Level 3 where it was not possible to record to Level 4. Level 5 was recorded wherever possible / relevant. Where relevant, habitats are compared to UK BAP definitions to determine if they meet the criteria to be considered habitats of principal importance (ref. **R.8**).

The frequency and cover of each species identified as they are distributed in each habitat is estimated using the DAFOR scale, (ref. **R.9**), as follows:

- Dominant >75% cover.
- Abundant 51-75% cover.
- Frequent 26-50% cover.
- Occasional 11-25% cover.
- Rare 1-10% cover.
- Locally dominant (LD), abundant (LA) and frequent (LF) is also used where the distribution is patchy.

3.4.2 Species Assessment

The site was assessed for its suitability to support protected species and other species of conservation importance, which could pose a planning constraint. All signs and areas of habitat considered suitable for protected species or those of conservation interest, were recorded and photographed. These include burrows, droppings, footprints / paths, hairs, refuges and particular habitat types, such as ponds, known to be used by certain class of fauna. Sites are taken in the context of their surroundings and so include the immediate environs outside of site boundaries, where appropriate.

Any mammal paths found were noted down and followed where possible.



All ponds within 500m of the site were also assessed for their suitability for GCN if the ponds were publicly accessible or if access had been granted prior to the survey. This includes a habitat suitability index (HSI) assessment (ref. **R.10**) which assesses the pond based upon a number of factors including the size, water quality, permanence, shading, presence of fish, the number of nearby ponds and macrophyte cover. A score between 0 and 1 is given; where 0 represents poor suitability and 1 represents excellent suitability.

All established trees that could be accessed onsite were inspected during a DBW and underwent a ground level tree assessment (GLTA) to assess their suitability, for roosting bats by identifying and classifying potential roost features (PRFs), subject to leaf cover. The categories for assessment are none or negligible, FAR (further assessment required to confirm if PRFs are present) or PRF (a tree with at least one PRF present).

Where possible, an approximation of the PRF categorisation has been provided as PRF-I (whereby the PRF is only considered suitable for individual bats either due to size or lack of suitable surrounding habitats) or PRF-M (PRF is suitable for multiple bats and may therefore be used by a maternity colony), in line with the Bat Conservation Trust (BCT) survey guidelines (ref. **R.11**).

3.5 Ecological Evaluation

The ecological evaluation detailed below is based upon CIEEM Guidelines for Ecological Impact Assessment in the United Kingdom, (ref. **R.12**).

CIEEM Guidelines state that the value or potential value of an ecological resource or feature should be determined within a defined geographical context as follows:

- On an international scale, e.g., Ramsar, Special Area of Conservation (SAC) or Special Protection Area (SPA) site.
- On a UK scale, for example a Site of Special Scientific Interest (SSSI) or a National Nature Reserve, (NNR).
- On a national scale, e.g., a reserve of importance to England/Northern Ireland/Scotland/Wales.
- On a regional scale, e.g., a local site with important regional habitats of principal importance (HoPI) or good populations species of principal importance (SoPI).
- On a county scale, e.g., a local site with a habitat that is characteristic of the county or rare on a county scale, or with local HoPI/SoPI.
- On a district scale, e.g., a site with wildlife corridors likely to improve the biodiversity of the area.
- On a local or parish scale, e.g., areas of green space in a predominantly urban environment.

The potential for protected species to use the habitats onsite contributes significantly towards the potential value of the habitats onsite.



3.6 Site-specific Limitations

Due to the time of year the survey was undertaken, some plant species are not identifiable. However, this does not affect classification of habitats present.

For baseline surveys undertaken between September to April (depending on management at the time), grassland classifications are assumed and should be verified by a condition assessment at a more suitable time of year should a Biodiversity Net Gain assessment be required.



4. **RESULTS**

4.1 Designated Sites

All relevant desk study data relating to designated sites is attached in Appendix 4.

There are no designated sites within the site boundary.

Consultation of the MAGIC online interactive mapping tool confirms the presence of three internationally important statutory designations within 10km of the site boundary:

- Crouch & Roach Estuaries (Ramsar & SPA) 105m east of the site.
- Blackwater Estuaries (Ramsar & SPA) 105m east of the site.
- Essex Estuaries (SAC) 105m east of the site.

There are four nationally important statutory designations present within a 2km search radius of the site boundary, including those mentioned above and the Blackwater SSSI – 105m east of the site.

There are no locally important statutory sites within 2km.

Also, within the 2km radius of the site are two marine conservation sites.

- Special Areas of Conservation (Marine Components GB).
- Special Protection Areas (Marine Components GB).

EFC has confirmed the presence of five non-statutory designations within the 2km search radius including:

- Heybridge Gravel Pit 65m south.
- River Chelmer 225m southwest.
- Chigborough Lakes 1360m north.
- Heybridge Creek 1400m west.
- Limbourne Creek 1770m south.

Designations that have good habitat connectivity to the site, or whose qualifying features have the potential to make use of habitats present at the site, are considered important ecological features that may be affected by development.

4.2 Habitats

A search of Magic Map (ref. **R.6**) identified the following habitats of principal importance near the site:

• Priority Habitat Inventory – Mudflats - 155m east of the site.



The results of the habitat survey is detailed below and annotated on Figure 2.

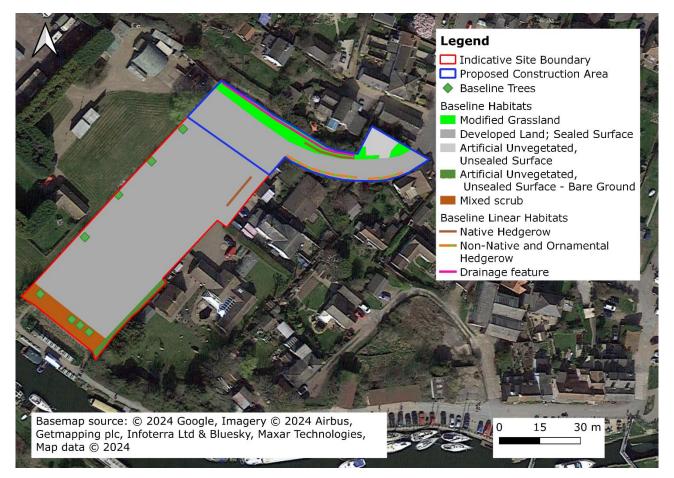


Figure 2 - Habitat Survey Plan

The following area-based habitat types were recorded within the proposed construction zone:

- Developed land sealed surface, car park u1b 804.
- Modified grassland- g4.
- Native hedgerow h2a.
- Drainage feature.
- Artificial unvegetated, unsealed surface u1c.
- Hedgerow, non-native h2b.

The following area-based habitat types were recorded within the wider survey area:

- Developed land sealed surface, car park u1b 804.
- Artificial unvegetated, unsealed surface, bare ground u1c 510.
- Mixed scrub h3h.
- Baseline trees.



4.2.1 Developed Land Sealed Surface, Car Park

Much of the survey area comprises developed land sealed surface, which is currently in active use as a car park and access road. This habitat was unvegetated except for four baseline trees which are scattered along the western edge of the car park. These trees will not be impacted by the development.

4.2.2 Modified Grassland

To the north of the site there is a small patch of modified grassland leading up to the drainage feature. This area comprised of frequent annual meadow grass (*Poa annua*); occasional yarrow (*Achillea millefolium*), daisy (*Bellis perennis*), and rare occurrences of ragwort (*Senecio jacobaea*), mallow (*Malva sylvestris*), creeping thistle (*Cirsium arvense*), milk thistle (*Silybum marianum*), hemlock (*Conium maculatum*) and wild lettuce (*Lactuca virosa*). The northeast section of this habitat will be impacted by the development.

4.2.3 Artificial unvegetated unsealed surface

Northeast of the site a small patch of unvegetated (<10%) unsealed land is present through human activity. Vegetation present includes frequent common mallow, hemlock and occasional occurrences of common nettle (*Urtica dioica*) and ivy (*Hedera helix*). This area will not be impacted by development.

4.2.4 Artificial unvegetated unsealed surface, bare ground

A section of bare ground is present towards the southeast, due to recent tree clearance. This habitat is outside the proposed construction area, this area will not be impacted by development.

4.2.5 Mixed scrub

To the south, towards the river, mixed scrub stands among four baseline trees at the border, comprised mainly of dogwood (*Cornus sanguinea*) and at ground level, mallow and common nettle are present. This habitat is outside the proposed construction area and therefore will not be impacted.

4.2.6 Baseline Trees

Eight trees were identified onsite including four early mature Norway maples (*Acer platanoides*) along the western boundary, all approximately 6m in height. Three early mature field maples (*Acer campestre*) are present to the south along with a willow (*Salix sp.*) all of which are approximately 6m in height. All these trees are outside the proposed construction area and therefore will not be impacted.



4.2.7 Hedgerow, non-native

A non-native hedgerow dominated by Leyland cypress (*Cupressus x leylandii*) extends along the entrance road to the carpark, further west the hedgerow comprises of dominant cherry laurel (*Prunus laurocerasus*) with rare occurrence of passionflower (*Passiflora incarnata*). This habitat will be removed as part of the proposed construction.

4.2.8 Native hedgerow

A native hedgerow is present to the north of the entrance road and overlies part of the ditch present onsite. The hedgerow reaches approximately 5m in height and is comprised of frequent hawthorn (*Crataegus monogyna*) and blackthorn (*Prunus spinosa*) with occasional ivy. The northernmost section of hedgerow is within the proposed construction area and may be impacted by development.

4.2.9 Drainage feature

There is one drainage feature onsite which is likely a tributary of the River Chelmer. This feature is adjacent to the proposed construction area and may be impacted.

4.3 Species Appraisal

4.3.1 Species Discounted from Further Consideration

Legally protected species for which there is no suitable habitat onsite include: badger, hazel dormouse and reptiles.

These species are therefore not considered further in this report.

4.3.2 Plants

EFC has returned 1053 records of rare or otherwise notable plants recorded in the last 10 years within 2km of the site. This includes species such as strawberry clover (*Trifolium fragiferum*) and common vetch (*Vicia sativa* subsp. *segetalis*) that may be present at the site.

All of the plant species recorded at the site are common and widespread native or naturalised species or else ornamental, including non-native species.



Given the nature of the identified habitats (i.e., themselves common and widespread) within and immediately adjacent to the proposed construction area, no notable plant species are expected within the affected areas.

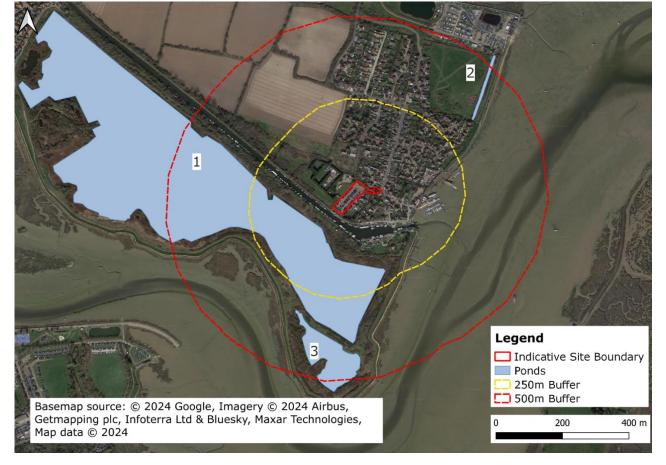
4.3.3 Invertebrates

EFC has returned 1677 records of invertebrates recorded in the last 10 years within 2km of the site. This includes species such as small heath (*Coenonympha pamphilus*), white ermine (*Spilosoma lubricipeda*) and cinnabar (*Tyria jacobaeae*).

The majority of areas that will be impacted are of low species diversity, including the native and non-native hedgerows and are unlikely to support an assemblage of rare invertebrates. Therefore, invertebrates are not considered further within the constraints section of this report.

4.3.4 Great Crested Newt

EFC has returned no records of great crested newt recorded in the last 10 years within 2km of the site.



Three ponds are located within 500m of the site, referenced ponds 1 to 3 and shown on figure 3.

Figure 3 - Ponds within 500m of the Site Boundary



A Habitat Suitability Index (HSI) assessment was undertaken where access was possible to assess the suitability of each pond to support great crested newt. A score between 0 and 1 is given; where 0 represents poor suitability and 1 represent excellent suitability. The results are provided in Appendix 5 and summarised in Table 1 below:

	Table 1 – HSI Scores and General Assessment of Waterbodies within 500m				
Pond	Distance from Site	Connected or Separated from Site	Pond Size (m²)	HSI Score	Pond Suitability for Great Crested Newts
1	65m south	Separated by the Chelmer and Blackwater navigation river.	30,2135	Average	This water body is very large, with frequent waterfowl present, including mallards (<i>Anas platyrhynchos</i>) and moorhens (<i>Gallinula chloropus</i>) and a likelihood that fish are present. Although the HSI has deemed this waterbody 'average', given the size and proximity of the waterbody to the estuary likely resulting in brackish water (photo 16), its unlikely GCN would be present.
2	325m south	Separated by the village of Heybridge.	1508	Excellent	This pond is more suitable for GCN due to its size, potential absence of fish and proximity to neighbouring ponds (Photographs 17 & 18). Terrestrial habitat suitable for GCN is present to the west of the pond.
3	350m northeast	Separated by the Chelmer and Blackwater navigation river.	18,270	Average	There is frequent waterfowl including mallards and moorhens and a likelihood that fish are present. Although the HSI has deemed this waterbody 'average', given the size and proximity of the waterbody to the estuary likely resulting in brackish water (Photograph 15), its unlikely GCN would be present.

Based on the above table, it is considered unlikely that GCN will be present onsite given the isolated nature of the onsite drainage feature. The area of the ditch is well maintained, lacks submerged vegetation and the water flows east to a service drain. As such GCN can be discounted from further consideration.

4.3.5 Birds

EFC has returned 5981 records of birds recorded in the last 10 years within 2km of the site. This includes species such as yellowhammer (*Emberiza citrinella*), starling (*Sturnus vulgaris*) and house sparrow (*Passer domesticus*) that could make use of the hedgerows onsite.



Table 2 below, shows the species of birds that were noted onsite during the survey:

Table 2 – Birds Identified During the Survey				
Common Name	Scientific Name	Status*	Location Notes	
Collared dove	Streptopelia decaocto	Green	In hedgerow on northern boundary.	
Great tit	Parus major	Green	Foraging in hedgerows onsite.	
Herring gull	Larus argentatus	Red	Three flying over site.	
House sparrow	Passer domesticus	Red / SOPI	Three foraging in northern hedgerow.	
Long-tailed tit	Aegithalos caudatus	Green	At least seven foraging in northern hedgerow.	
Magpie	Pica pica	Green	Flying over site.	
Robin	Erithacus rubecula	Green	On the banks of the ditch onsite.	
Woodpigeon	Columba palumbus	Amber	Five dispersed out of neighbouring garden and perched on streetlamp onsite.	
Status abbreviations:				
Red / Amber / Green: Birds of Conservation Concern 5 (BoCC 5) status (ref. R.13)				
SOPI: species of principal importance, listed on section 41 of the NERC Act 2006				
Sch 1: protected species listed on schedule 1 of the WCA 1981 as amended				

The hedgerows onsite provide suitable nesting habitat for common and widespread species. These habitats along with the grassland and drainage feature also provide suitable foraging habitat for birds. There is no suitability for ground nesting birds.

4.3.6 Bats

EFC has returned 27 records of bats recorded in the last 10 years within 2km of the site. Records include soprano pipistrelle (*Pipistrellus pygmaeus*), common pipistrelle (*Pipistrellus pipistrellus*), Nathusius's pipistrelle (*Pipistrellus nathusii*), brown long-eared bat (*Plecotus auritus*) and Daubenton's bat (*Myotis daubentonii*).

There are no buildings onsite, however one building, just offsite to the northeast, was identified as having high suitability for roosting bats, as indicated in Figure 4. This building, although adjacent to the construction area, is outside of the boundary and therefore only a cursory external survey was made as it exhibited features likely to attract bats.

The features noted include lifted tiles, gaps in wooden cladding, broken windows, dense ivy and other miscellaneous gaps. The building had intact ceiling, visible through broken windows, and a bat accessible roof void.



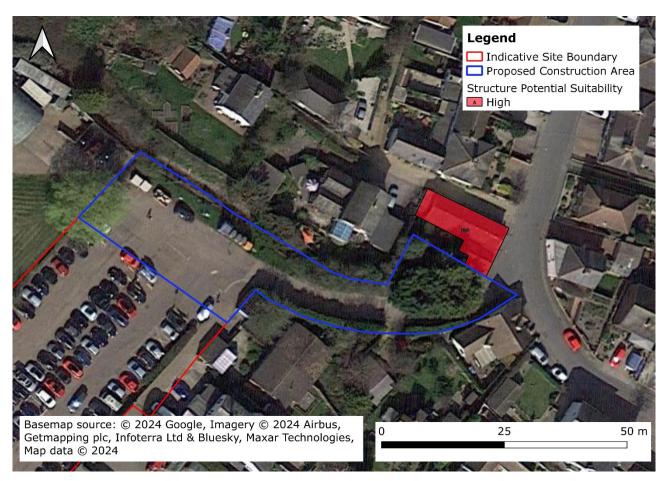


Figure 4 – Location of High Bat Roost Suitability Building

The potential suitability of foraging and commuting habitat within the wider survey area is considered low, however, given the limited amount of vegetation to be impacted by the construction works, the likely impact is considered negligible.

4.3.7 Water Vole

EFC has returned 1 record of water vole (*Arvicola amphibius*) recorded in the last 10 years within 2km of the site. The record is 1200m south from the site across the River Chelmer.

During the site visit the drainage feature was surveyed for possible signs of water vole including burrows, droppings, and evidence of feeding. No evidence of water vole, or other mammal, presence was identified, and the feature is suboptimal for water voles, given the lack of bank vegetation, the underground drainage to the east, the regular disturbance by anthropogenic activity and the lack of suitable connectivity. As such it is unlikely that the site would support this species.



4.3.8 Otter

EFC has returned no records of otter (Lutra lutra) recorded in the last 10 years within 2km of the site.

Despite the presence of the onsite drainage feature it is unlikely this is used by otters due to its lack of connectivity to further suitable sites and the level of human disturbance surrounding the feature. As such otters can be discounted from further consideration.

4.3.9 Hedgehog

EFC returned no records of hedgehog (*Ericanceus europaeus*). The site provides very limited foraging habitat for hedgehog in the grassland, and no hibernating or nesting opportunities are provided onsite.



5. EVALUATION, CONSTRAINTS AND RECOMMENDATIONS

5.1 Nature Conservation Sites

The desk study identified four nature conservation sites with statutory designation, and no non- statutory designated nature conservation sites within 2km radius of the site. One marine conservation zone and one marine designated special area of conservation was also present within 2km of the site. Three internationally protected sites, Crouch & Roach Estuaries (mid-Essex coast phase 3) (Ramsar and SPA), Blackwater Estuary (mid-Essex coast phase 4) (Ramsar and SPA) and Essex Estuaries (SAC) were noted within 10km.

The development site does not contain any habitats which could support the important species associated with either the statutory or non-statutory sites, and there is no potential habitat connectivity between the site and the statutory sites.

The development falls within the zone of influence for all three international sites described as shown in the 'Essex Coast Recreational Disturbance Avoidance and Mitigation Strategy' (Essex RAMS) (ref. **R.14**) by Essex County Council. Despite this, it is considered unlikely, given the localised nature of the proposed development works (non-residential), that the Nature Conservation sites listed above will be directly affected by any construction activity on the surveyed area. Despite being in the impact risk zone for the Blackwater estuary SSSI, this development does not meet any criteria for the local planning authority to be consulted.

5.2 Habitats

The ecological constraints regarding general habitats onsite are detailed within Table 3, along with associated recommendations for avoidance and/or mitigation to reduce likely impact:

Table 3 – Habitat Constraints and Recommended Actions					
Habitat	Value/Importance	Potential Impact/Effect	Recommended Actions (Avoidance Measures or Recommendations to Reduce Impact)		
Hedgerows	Habitat of principal importance. Wildlife resource for foraging/commuting local wildlife.	Loss of foraging and nesting habitat suitable for notable and protected species.	Retain and/or enhance where possible. The loss of any sections of hedgerow should be compensated for by planting new hedgerows onsite to maintain habitat corridors across the site.		



5.3 Biodiversity Net Gain

The proposed development may be subject to the statutory requirement to achieve 10% biodiversity net gain. This may require consideration of offsite compensation for loss of habitats. The biodiversity net gain assessment will require completion of the statutory metric calculator tool to quantify baseline and post-intervention habitats and identify gains/losses (ref. **R.15**).

To provide adequate information to inform the biodiversity net gain assessment, further botanical survey should be carried out between May and August inclusive with an aim to accurately characterise habitats present in accordance with UK Habitat Classification methodology (ref. **R.7**), identify the likely presence of any rare and/or notable species, and include the methodology to assess habitat condition as set out in the statutory guidance for biodiversity net gain assessment (ref. **R.15**).

5.4 Legally Protected and Notable Species

The ecological evaluation for protected species is detailed in Table 4 overleaf:



Table 4 – Protected Species - Ecological Constraints and Recommended Actions						
Ecological Constraint/ Receptor	Biological Records Within 2km	Value of Supporting Feature	Potential Impact/Effect	Recommended Actions (Avoidance/mitigation/compensation Measures and Recommendations for Further Works)	Timing Restrictions	
Breeding Birds	Yes	Habitats including scrub, hedgerows and trees offer value to breeding birds for common passerine birds.	Loss of habitat for breeding and foraging birds. Destruction of active nest sites.	To ensure that no offences occur under the WCA, it is recommended that any vegetation clearance work is undertaken outside of the bird nesting season. If it is not possible to undertake clearance works outside of the breeding bird season, a suitably qualified Ecologist should be employed to determine if nesting birds are using the site prior to works commencing, to avoid negative impact on protected species. Any active nests that are found would need to be provided with a minimum of a 10m buffer (depending on species and site conditions) which would have to be left until the young have fledged.	Clearance during September to February only unless supervised by an Ecologist.	
Bats: Offsite Building with roost potential and foraging and commuting habitat	Yes	The foraging and commuting habitat onsite is of low value of less than local importance. The limited amount of vegetation to be impacted by the construction works, will likely result in a negligible impact. However, the offsite building has high potential to support roosting bats and therefore indirect impacts need further consideration.	Indirect impacts to offsite building including noise and vibration.	Risk reduction measures: Vegetation removal works must be carried out under a method statement. The method statement must be prepared by a suitably qualified Ecologist and will detail methods to reduce indirect impacts to the offsite building during vegetation removal. The method statement should be secured through the condition of a Construction Environmental Management Plan (CEMP) which should be secured as an approved planning condition. Due to the very limited extent of habitat to be removed, this approach is considered appropriate.	N/A	
Hedgehog - foraging	No	The modified grassland identified to the north offers possible foraging suitability, albeit limited.	Direct harm during construction.	 Reduction of impact: Excavations during development or ground investigation works should be covered overnight to prevent entrapment of hedgehogs. Mitigation: Hedgehog friendly fencing should be incorporated into the final design to allow hedgehogs to continue to commute and forage in the local area. A 15cm diameter hole should be placed at the base of each fence, allowing all gardens and greenspace to be accessible to hedgehog. 	N/A	



6. OPPORTUNITIES FOR ECOLOGICAL ENHANCEMENT

The following general enhancements have been recommended to be included within the final development Scheme:

- Planting of native plant species beneficial to wildlife should be incorporated into the final design. This will provide additional habitat for invertebrates, which will in turn provide a food source for reptiles, birds, bats, and hedgehog.
- To help achieve biodiversity net gain on the site, areas of natural habitat would need to be included within the scheme.

Examples of potential enhancement features are included as Appendix 7.



7. CONCLUSIONS

The proposed development will not adversely affect the four statutory designated nature conservation sites identified within 2km.

None of the habitats that occur within the survey area were considered to have high ecological importance on an international, national, regional or county scale. The native hedgerow onsite is of site significance only.

The findings of the habitat survey and protected species scoping survey confirm that the habitats to be impacted by the proposed works have the potential to support breeding birds and hedgehogs. The bat foraging and commuting habitat onsite is of low value of less than local importance. The limited amount of vegetation to be impacted by the construction works, will likely result in a negligible impact. However, an offsite building has high potential to support roosting bats and therefore indirect impacts need further consideration. The recommendations within Section 5 of this report should be implemented to reduce the potential impact on protected species.

To help achieve biodiversity net gain on the site, areas of natural habitat would need to be included within the scheme.

Opportunities exist for the provision of ecological enhancements in the incorporation of locally sourced native plant species, or those of known wildlife benefit, into the landscape strategy.

Provided the recommendations within this report are followed and the mitigation hierarchy of avoidance, mitigation, compensation and enhancement is implemented throughout the detailed design process, potential negative effects from development on important ecological features will be negligible.



APPENDICES



Appendix 1 – Report Limitations and Conditions

General Limitations and Exceptions

This report was prepared solely for our Client for the stated purposes only and is not intended to be relied on by any other party or for any other use. No extended duty of care to any third party is implied or offered. Third parties should not rely on the facts, matters or opinions set out in this report without the express written permission of Geosphere Environmental Ltd.

Geosphere Environmental Ltd does not purport to provide specialist legal advice.

The Executive Summary, Conclusions and Recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon until considered within the context of the whole report.

Interpretations and recommendations contained within the report represent our professional opinions, which were arrived at in accordance with currently accepted industry practices at the time of reporting and based upon current legislation in force at that time.

Ecology Limitations and Exceptions

Any limitations associated with the report will be stated. The consequences of any limitations, findings and/or recommendations in the report are made clear in line with CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine, Chartered Institute of Ecology and Environmental Management, Winchester, and BSI (2013) BS 42020:2013 Biodiversity – 'Code of practice for planning and development'.

This report is prepared and written in the context of the proposals stated in the introduction to this report and should not be used in a differing context.

The wildlife and habitats present on any site are subject to change over time. Surveys of this kind can have limited validity, with the possibility of behaviour patterns and territory boundaries varying over time, due to the dynamics of adjacent populations.

New information, improved practices and legislation may necessitate an alteration to the report in whole or in part after its submission. Therefore, with any change in circumstances or after the expiry of one year from the date of the report, the report should be referred to us for re-assessment and, if necessary, re-appraisal.



It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation can ensure the complete characterisation of the natural environment.

The scoping survey does not assess the presence or absence of a species but is used to assess the potential for habitat to support them. Additional surveys may be recommended if, based on the preliminary assessment or during subsequent surveys, it is considered reasonably likely that protected species may be present.

If bats or any other European protected species are found to be present onsite, and the proposed activities will cause disturbance or destruction of a roost site then this report will only summarise the potential requirements. For works to continue a detailed mitigation plan with appropriate compensation measures would be required and a development licence would need to be sought from Natural England.

This survey does not constitute an invasive species survey and should not be treated as such.

Owing to seasonal variances and prevailing weather, conditions may sometimes be sub-optimal for surveying, and this may delay or disrupt planned survey programmes. If applicable, full details are given in the report.

Geosphere Environmental Ltd may not be aware of information that could be held by other organisations or individuals, and it is always possible for features of nature conservation interest to be unrecorded during surveys.

Scientific survey data will be shared with local biological records centre in accordance with the CIEEM professional code of conduct.



Appendix 2 – References

- **R.1.** Department for Levelling Up, Housing and Communities (2023) National Planning Policy Framework (NPPF)
- **R.2.** ODPM (2005) Government Circular: Biodiversity and Geological Conservation statutory obligations and their impact within the planning system.
- **R.3.** CIEEM, (2017). Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- **R.4.** BSI (2013) BS 42020:2013 Biodiversity Code of practice for planning and development. BSI Standards Limited 2013.
- **R.5.** Stace, C. A. (2010).New Flora of the British Isles (third edition), Cambridge University Press.
- **R.6.** Magic [accessed 10th January 2023] Site Check Report. <u>www.magic.gov.uk</u>.
- **R.7.** Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020). The UK Habitat Classification User Manual Version 1.1. <u>http://www.ukhab.org/</u>
- **R.8.** BRIG (ed. Ant Maddock). UK Biodiversity Action Plan; Priority Habitat Descriptions. <u>https://jncc.gov.uk/our-work/uk-bap-priority-habitats/</u>
- **R.9.** Goldsmith, B. (1991). Monitoring for Conservation and Ecology, Chapman & Hall.
- **R.10.** Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*). Herpetological Journal 10 (4), 143-155.
- **R.11.** BCT (2016). 'Bat Surveys Good Practice Guidelines' Bat Conservation Trust, London, 3rd Edition.
- R.12. CIEEM (December 2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.
- R.13. 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: 723-747. Available online at <u>https://britishbirds.co.uk/content/status-our-bird-populations</u>



- R.14. Essex RAMS Essex County Council (2018) Essex Coast Recreational Disturbance Avoidance & Mitigation, Strategy (RAMS) Habitat Regulations Assessment Strategy Document (2018 2038)
- R.15. Department for Environment, Food & Rural Affairs. (29 November 2023). Statutory biodiversity metric tools and guides. <u>https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides</u>
- **R.16.** Institution of Lighting Professionals (2018) Bats and artificial lighting in the UK, Bats and the Built Environment series Guidance Note 08/18



Appendix 3 – Species Specific Legislation

Introduction

This is a summary only. The reader is referred to the original legislation for definitive interpretation.

Bats

All bat species are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017. It is illegal to kill or injure bats, cause disturbance at their resting places or to block access to, damage or destroy their roost sites.

Birds

Wild birds are protected under the Wildlife and Countryside Act 1981 (as amended). It is illegal to take or harm them, their nests (whilst in use or being built) or their eggs.

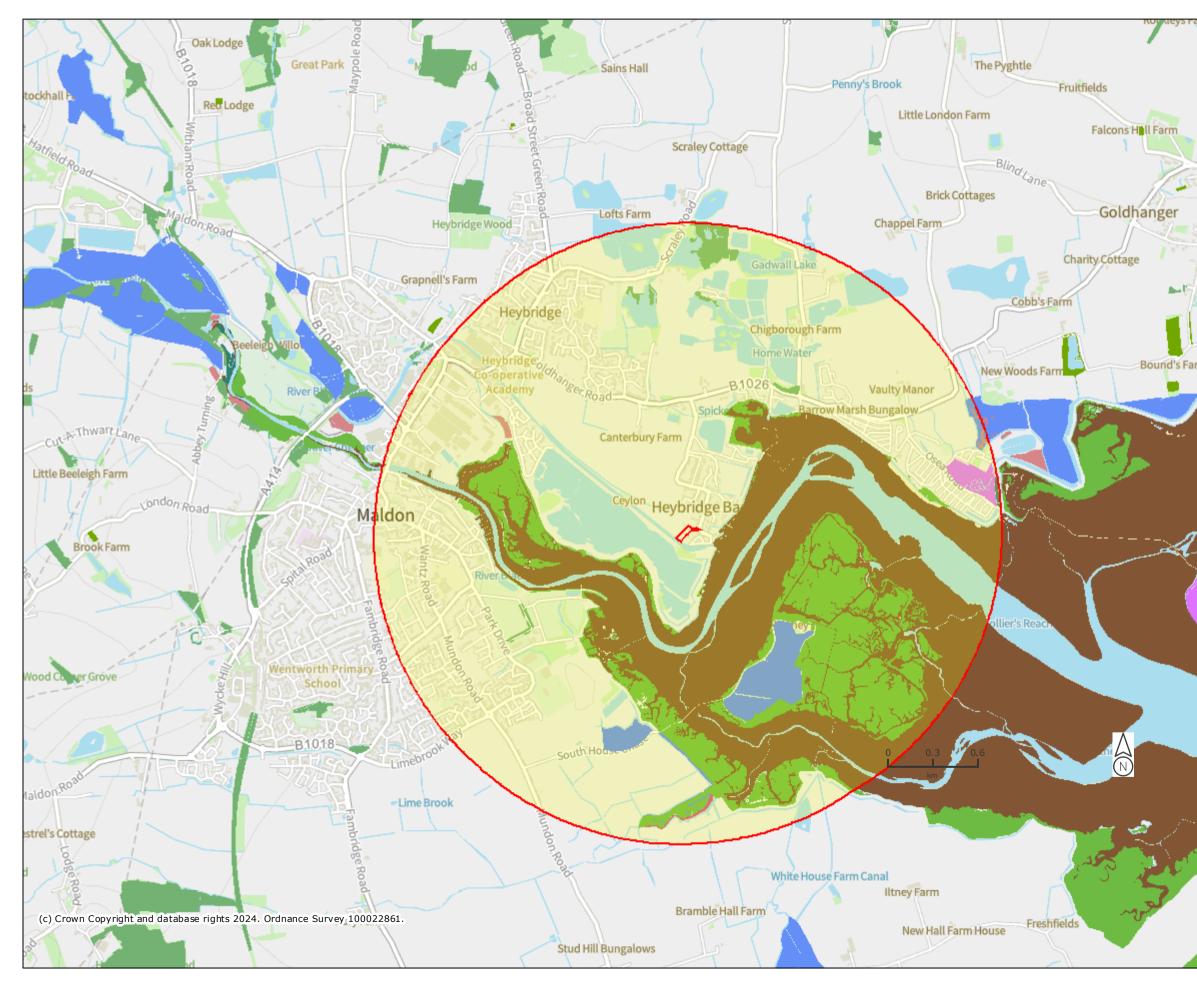
Additionally, for some species listed under Schedule 1 of the Act, it is an offence to intentionally or recklessly disturb the adults while they are in and around their nest or intentionally or recklessly disturb their dependent young.



Appendix 4 – Desk Study Data

MAGiC

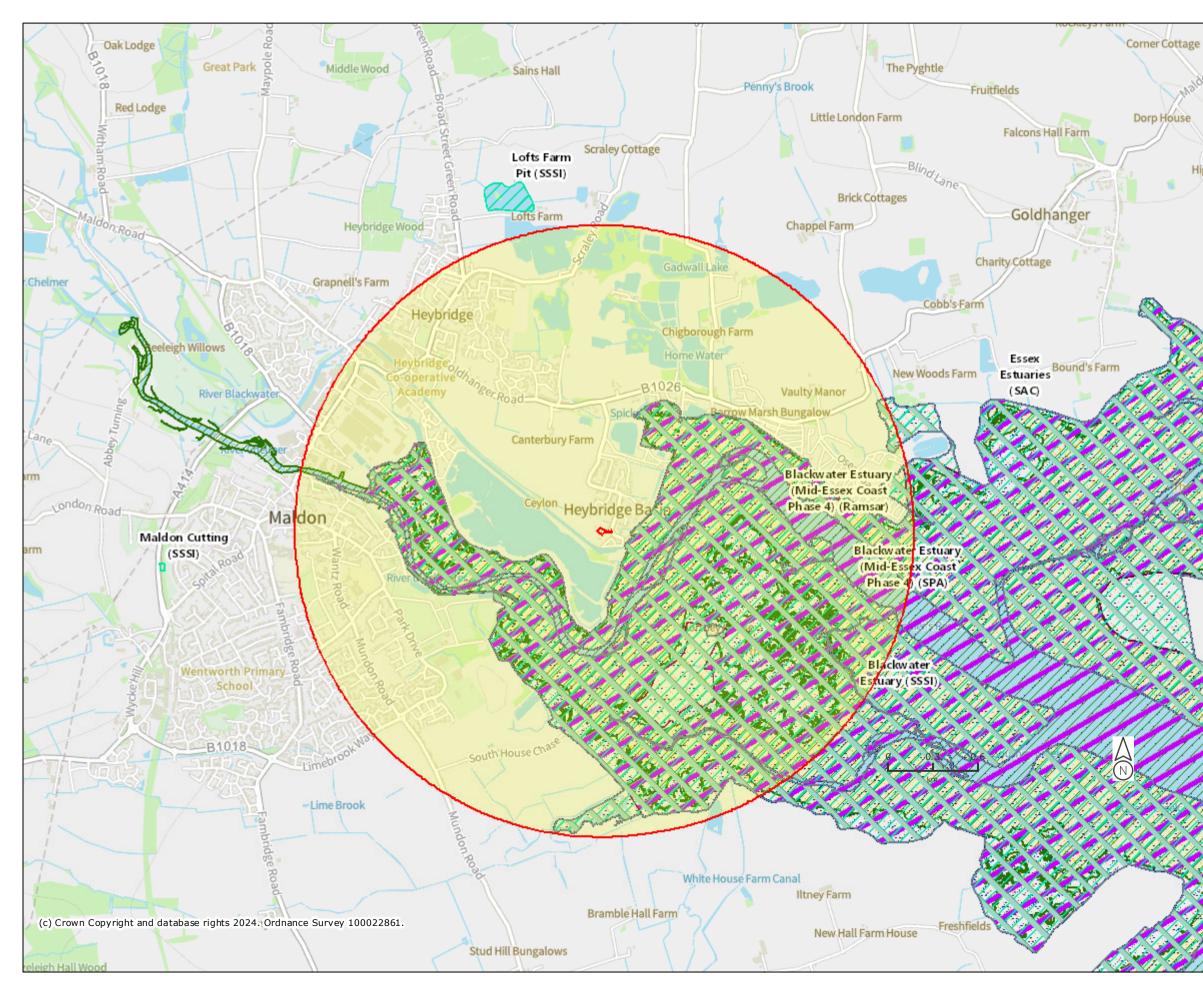
2km Priority Habitats

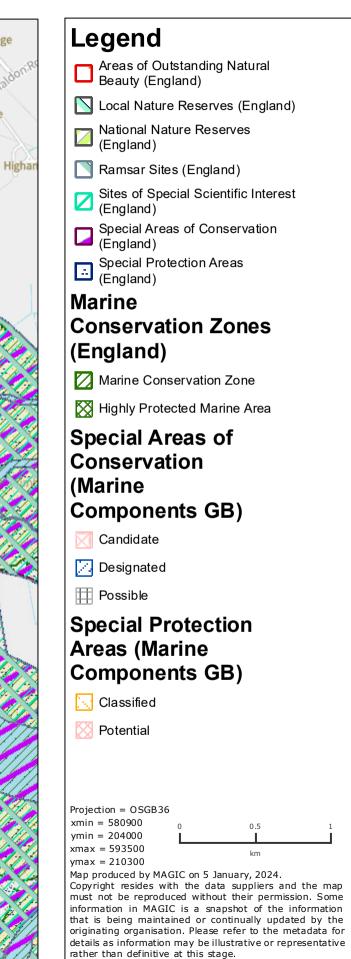


Co	Legend
	Priority Habitat Inventory - Coastal Saltmarsh (England)
r	Priority Habitat Inventory - Mudflats (England)
	Priority Habitat Inventory - Saline
	 Lagoons (England) Priority Habitat Inventory -
	Coastal and Floodplain Grazing Marsh (England)
	Priority Habitat Inventory - Good quality semi-improved grassland (Non Priority) (England)
	Priority Habitat Inventory - Blanket Bog (England)
	Priority Habitat Inventory -
	 Lowland Fens (England) Priority Habitat Inventory -
m	 Reedbeds (England) Priority Habitat Inventory -
	Deciduous Woodland (England) Priority Habitat Inventory -
e l'	Traditional Orchards (England)
1	
~	
	Projection = OSGB36
	xmin = 580300 0 0.5 1 ymin = 204000
	xmax = 592900 km ymax = 210300 Map produced by MAGIC on 10 January, 2024.
	Copyright resides with the data suppliers and the map must not be reproduced without their permission. Some information in MAGIC is a snapshot of the information
	that is being maintained or continually updated by the originating organisation. Please refer to the metadata for details as information may be illustrative or representative
تمنين	rather than definitive at this stage.

MAGiC

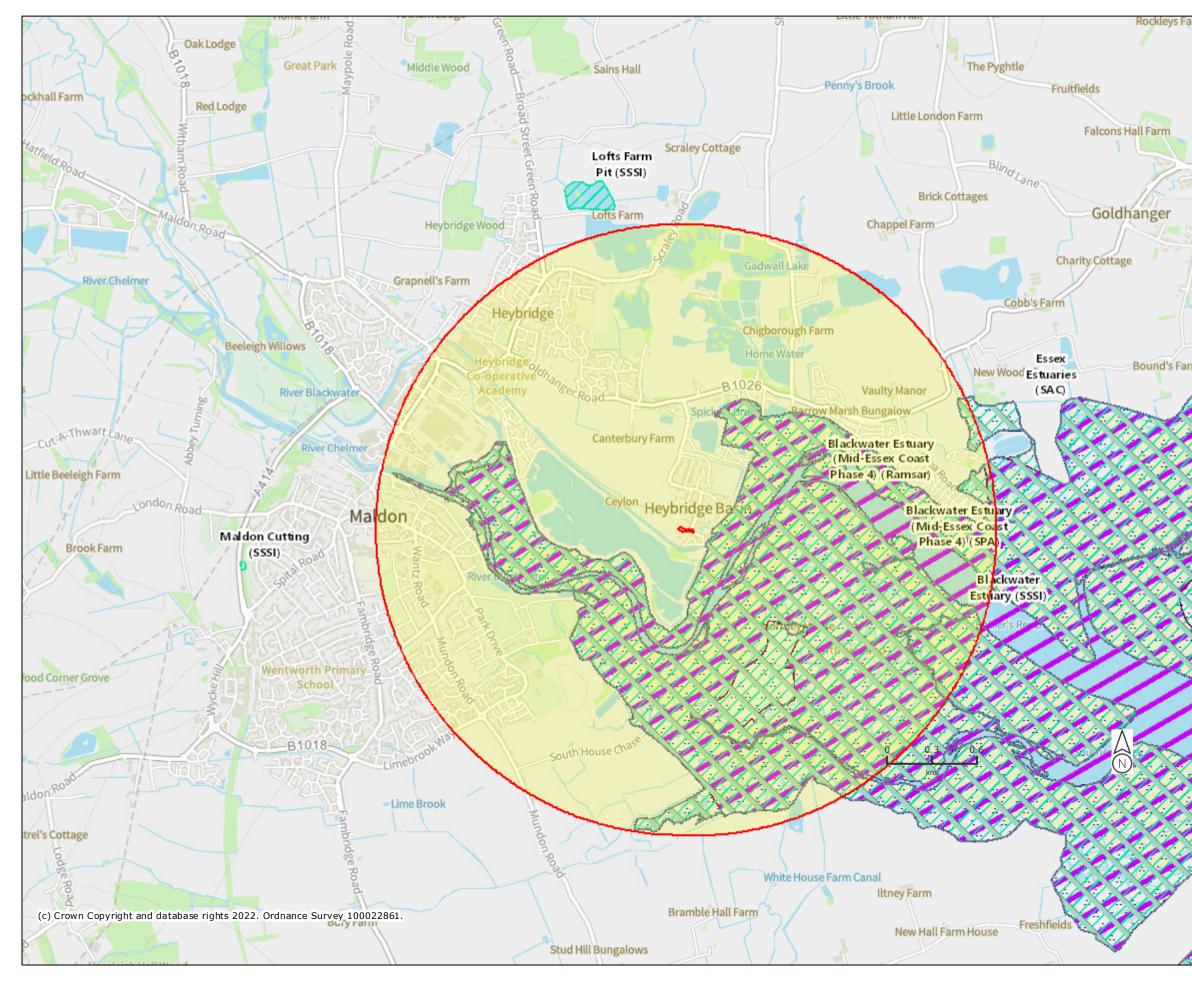
2km Statutory Sites with Marine zones





MAGiC

2km Statutory Sites



Cor	Legend
	Areas of Outstanding Natural Beauty (England)
	Local Nature Reserves (England)
Do	National Nature Reserves
F	(England)
	Ramsar Sites (England)
4	Sites of Special Scientific Interest (England)
	Special Areas of Conservation
	(England)
	(England)
-	
×~	
>	
	Projection = OSGB36
	$xmin = 580400 \qquad 0.5 \qquad 1$ $ymin = 204100 \qquad 1$
	xmax = 593000 km ymax = 210400
	Map produced by MAGIC on 11 December, 2023. Copyright resides with the data suppliers and the map
	must not be reproduced without their permission. Some information in MAGIC is a snapshot of the information
	that is being maintained or continually updated by the originating organisation. Please refer to the metadata for
	details as information may be illustrative or representative rather than definitive at this stage.

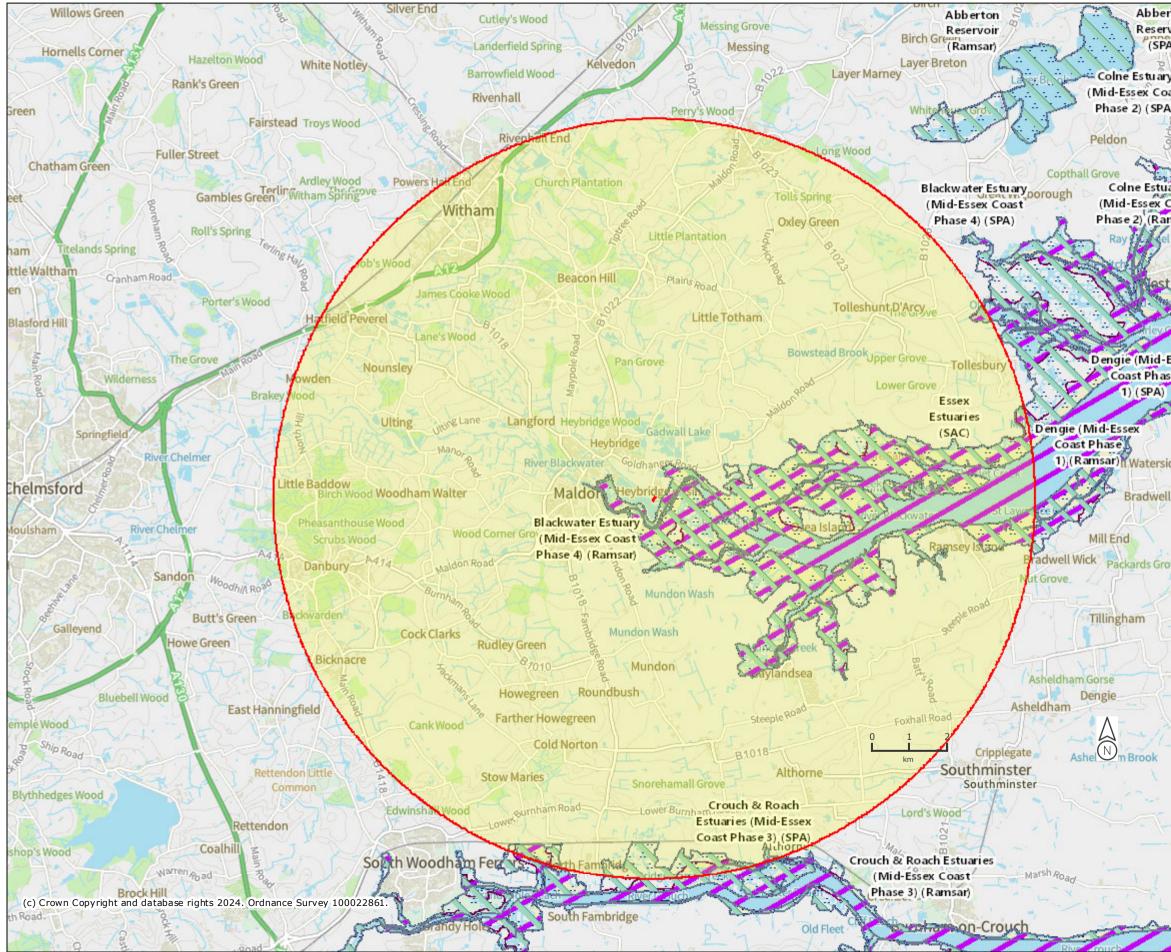
Site Check Report Report generated on Mon Dec 11 2023 You selected the location: Centroid Grid Ref: TL87080694 The following features have been found in your search area:

Ramsar Sites (England)

Name	CROUCH & ROACH ESTUARIES (MID-ESSEX COAST PHASE 3)
Reference	UK11058
Hectares	1847.87
Name	BLACKWATER ESTUARY (MID-ESSEX COAST PHASE 4)
Reference	UK11007
Hectares	4403.41
Name	CROUCH & ROACH ESTUARIES (MID-ESSEX COAST PHASE 3)
Reference	UK11058
Hectares	1847.87
Name	BLACKWATER ESTUARY (MID-ESSEX COAST PHASE 4)
Reference	UK11007
Hectares	4403.41
Special Areas of Conservation (England)	
Name	ESSEX ESTUARIES
Reference	UK0013690
Hectares	46111.43
Hyperlink	https://sac.jncc.gov.uk/site/UK0013690
Special Protection Areas (England)	
Name	CROUCH & ROACH ESTUARIES (MID-ESSEX COAST PHASE 3)
Reference	UK9009244
Hectares	1847.87
Name	BLACKWATER ESTUARY (MID-ESSEX COAST PHASE 4)
Reference	UK9009245
Hectares	4403.41

MAGIC

10km International Sites



rton	1
rton	1
voir	P
A)	1
~,	12
Ve	Gri
v. D	leine
y _o R	TPILIE
ast	1
U.	-
1)	
20	n
0 V	- / -
3 6	
1	1
110	
- And	<u>-</u>
ary	~
ary Coas msa	
msa	r) 🗧
1	2
1	2
	-m,
3 /F	-1
t Me	erse
1	
and the	
1	
e an	nel.
	-
1	
Esse	X 💋
se	1.10
~	1
2-	-1
	10
	$\sim V$
	-1
	1.01
de	
	-
1.00	
lon	Sea
ion	Sea
ion	Sea
ron	Sea
ron	Sea
ton	Sea
ve	Sea
ove	Sea 15 - 7 - 1
ove	Sea 17 - V-J
ove	Sea 17 - C
ove	Sea It
ove	Sea 12
ove	Sea 17 - C-J - Sea
ove	Sea 12 - C-J - Sea 12 - C-J - Sea
ove A	Sea 12 - 7 - 1 - 1 - 1 - 1
ove i i i i i i i i i i i i i i i i i i i	N
ove i i i i i i i i i i i i i i i i i i i	Se is is is is in a
ave a	Sa 12-12-1 22 1 24 1
ave a second	Sa 12 - 2 - 1 - 2 - 1 - 1 - 2
ove a state of the	Sa 12 - 2 - 1 - 2 - 1 - N / N/
ave a second sec	1 1 1 V 1 1 2 1 1 - 0 - 2 8
ove -	Sa The second se
we have	2 1 N 1 V 1 1 2 1 1 1 1 1 1 1 1 1 1
wether of the the	
wether of the the	Same and the second sec
wether of the the	Sa way and a second sec
ion we have have have have have have have hav	Sa
wether of the the	Sea where we have a second sec
wether of the the	Salar N/N V I Salar I
	Level V. V. V. Lever C. S.
	Level V. V. V. Lever C. S.
wether of the the	Level V. V. V. Lever C. S.
	Level V. V. V. Lever C. S.
	Level V. V. V. Lever C. S.
	Level V. V. V. Lever C. S.
	Level V. V. V. Lever C. S.
	Level V. V. V. Lever C. S.
	Level V. V. V. Lever C. S.
	Level V. V. V. Lever C. S.

Legend

Ramsar Sites (England)

Special Areas of Conservation (England)

Special Protection Areas (England)

Projection = OSGB36			
xmin = 560700	0	2	4
ymin = 194800		I	
kmax = 611000		km	
/max = 220100			
Map produced by MAG		,,	
17 5		he data suppliers and the	
		without their permission. a snapshot of the inform	
		l or continually updated b	
		Please refer to the metada	'
details as information	ma	y be illustrative or represer	ntativ
ather than definitive	at t	his stage.	



Appendix 5 – Habitat Suitability Index

HSI SCORES

Project Number:	8070,EC
-----------------	---------

Project Name:

Daisy Meadow, Car Park

Pond Ref:	SI1	SI2	SI3	SI4	SI5	SI6	SI7	S18	SI9	SI10	HSI	Suitability
i ond ken	Location	Pond Area	Pond Drying	Water quality	Shade	Fowl	Fish	Ponds	Terr'l Habitat	Macrophytes	1151	Suitability
1	1	N/A*	0.9	1	1	0.1	0.67	0.4	1	0.65	0.66	Average
2	1	0.85	0.9	0.67	1	0.67	1	1	1	0.7	0.87	Excellent
3	1	N/A*	0.9	1	1	0.1	0.67	0.4	1	0.45	0.64	Average

HSI Score	Pond suitability
<0.5	Poor
0.5-0.59	Below average
0.6-0.69	Average
0.7-0.79	Good
>0.8	Excellent

N/A*: For ponds larger than 2000 meters squared this factor is omitted from HSI calculations



Surveyor: FT & TA

Date: 08/01/2024



Appendix 6 – Site Photographs



Photograph 2



Photograph 4



GEO

GEOSPHERE ENVIRONMENTAL

DESCRIPTION

Photograph 1 Drainage feature onsite looking east.

Photograph 2 Drainage feature.

Photograph 3 Drainage feature below native hedgerow.

Photograph 4

The entrance road leading west to Basin Road. The native hedgrow on the left and the non native hedgerow to the right. PROJECT

127-496 Daisy Meadow Car Park, Lock Hill, Heybridge Basin, Maldon CM9 4RP

PROJECT NUMBER

8070,EC

Selected Photographs Relating To Extended Phase 1 Habitat Survey

DATE

08/01/2024

PAGE NO. 1 of 5

Photograph 3



Photograph 7



Photograph 6



Photograph 8





GEO

GEOSPHERE ENVIRONMENTAL

DESCRIPTION

Photograph 5 The eastern border of the site leading to Basin Road.

Photograph 6

The area of artificial unvegetated unsealed surface to the northeast of the site.

Photograph 7

Eastern end of native hedgerow with ivy.

Photograph 8

The non-native hedgerow comprising of cherry laurel along the entrance road to the car park.

PROJECT

127-496 Daisy Meadow Car Park, Lock Hill, Heybridge Basin, Maldon CM9 4RP

PROJECT NUMBER

8070,EC

TITLE

Selected Photographs Relating To Extended Phase 1 Habitat Survey

DATE 08/01/2024 PAGE NO. 2 of 5



Photograph 10



Photograph 11



Photograph 12



GEO

GEOSPHERE ENVIRONMENTAL

DESCRIPTION

Photograph 9 Car park looking south with the neighbouring properties shown.

Photograph 10

Car park looking towards the Chelmer and Blackwater Navigation.

Photograph 11

Area of artificial unsealed unvegetated surface, bare ground.

Photograph 12

Line of Norway maples present on the western border.

PROJECT

127-496 Daisy Meadow Car Park, Lock Hill, Heybridge Basin, Maldon CM9 4RP

PROJECT NUMBER

8070,EC

TITLE

Selected Photographs Relating To Extended Phase 1 Habitat Survey

DATE 08/01/2024 PAGE NO. 3 of 5

ECO 32 / 28/02/2023 / V3



Photograph 14



Photograph 15



Photograph 16



GEO

GEOSPHERE ENVIRONMENTAL

DESCRIPTION

Photograph 13 Three field maples and willow present in the mixed scrub to the south.

Photograph 14 Modified grassland onsite.

Photograph 15 Pond 3 offsite, and the surrounding terrestrial habitat.

Photograph 16 Pond 1 offsite, and the surrounding terrestrial habitat.

PROJECT

127-496 Daisy Meadow Car Park, Lock Hill, Heybridge Basin, Maldon CM9 4RP

PROJECT NUMBER

8070,EC

TITLE

Selected Photographs Relating To Extended Phase 1 Habitat Survey

DATE

08/01/2024

PAGE NO. 4 of 5



Photograph 18



GEO

GEOSPHERE ENVIRONMENTAL

DESCRIPTION

Photograph 17 Pond 2.

Photograph 18 Terrestrial habitat surrounding Pond 2.

PROJECT

127-496 Daisy Meadow Car Park, Lock Hill, Heybridge Basin, Maldon CM9 4RP

PROJECT NUMBER

8070,EC

TITLE

Selected Photographs Relating To Extended Phase 1 Habitat Survey

DATE

08/01/2024

PAGE NO. 5 of 5



Appendix 7 – Example Enhancement Features

GENERAL PLANTS CONSIDERED BENEFICIAL TO WILDLIFE

The lists of plants below are taken from current Natural England guidance (ref. 1), a web-based data based managed on behalf of the RHS and the Wildlife Trusts (ref. 2) and professional judgement. When buying native plants, ensure they are from a reputable source, as many wildflowers are illegally taken from the wild.

Large Trees

Common Name	Latin Name	Common Name	Latin Name
Beech	Fagus sylvatica	Pedunculate Oak	Quercus robur
Wild Cherry	Prunus avium	White Willow	Salix alba
Bird Cherry	Prunus padus	Small-leaved Lime	Tilia cordata
Sessile Oak	Quercus petraea		

Medium/Small Trees

Common Name	Latin Name	Common Name	Latin Name
Field Maple	Acer campestre	Apples	Malus spp.
Alder	Alnus glutinosa	Pears	<i>Pyrus</i> spp.
Silver Birch	Betula pendula	Rowan	Sorbus aucuparia
Holly	Ilex aquifolium		

Other Shrubs for Nectar, Pollen or Fruits

Common Name	Latin Name	Common Name	Latin Name
Serviceberry	Amelanchier canadensis	Himalayan Honeysuckle	Leycesteria formosa
June Berry	Amelanchier lamarckii	Mahonia	Mohonia spp.
Californian lilac	Ceanothus spp.	Mock Orange	Philadelphus spp.
Japanese quince	Chaenomeles japonica	Firethorn	Pyracantha spp
Creeping Cotoneaster	Cotoneaster frigidus	Lilac	Syringa vulgaris
Daphne	Daphne mezereum	Laurustinus	Viburnum tinus
Hebes	Hebe spp.	Bodant Viburnum	Viburnum x bodnantense
Lavenders	Lavandula spp.		

Drought-Tolerant Herbaceous Plants

Common Name	Latin Name	Common Name	Latin Name
Onion	Allium christophii	Giant dead-nettle	Lamium orvala
False dittany	Ballota acetabulosa	Lavender	Lavandula augustifolia
Calamint	Calamintha nepeta	Myrtle	Myrtus communis
Giant scabious	Cephalaria gigantean	Honey garlic	Nectaroscordum siculum
Honeywort	<i>Cerinthe major</i> and <i>C. purpurascens</i>	Golden drops	Onosma spp.
Sun-roses	Cistus spp.	Marjoram	Origanum vulgare
Large-flowered Tickseed	Coreopsis grandiflora	Jerusalem sage	Phlomis russeliana
Crocus	Crocus tommasinianus	Rosemary	Rosmarinus officinalis

TITLE

General Plants Considered Beneficial To Wildlife

DATE 02/02/2024

PAGE NO. 1 of 4

GEOSPHERE ENVIRONMENTAL

REFERENCE

- 1. Natural England (2007). Plants for Wildlife-friendly Gardens: NE29.
- RHS and the Wildlife Trusts (2015). Gardening with Wildlife in Mind. <u>http://www.joyofplants.com/</u> wildlife/.

Cardoon	Cynara cardunculus	Winter savoury	Satureja montana
Teasel	Dipsacus fullonum	Chile black scabious	Scabious atropurpurea
Coneflower	Echinacea purpurea	Stonecrops	Sedum acre, S. anglicum, S. forsterianum and S. album
Giant Echium	Echium pininana	Lamb's lung/ears	Stachys olympica and S. lanata
Sea-hollies	Eryngium spp.	Thyme	Thymus vulgaris
Escallonia	Escallonia spp.	Crimson clover	Trifolium incarnatum
Hebe	Hebe sp.	Tulip	<i>Tulipa</i> sp.
Rock-roses	Helianthemum spp.		

GEOSPHERE ENVIRONMENTAL

Native Wildflowers for Borders

Common Name	Latin Name	Common Name	Latin Name
Yarrow	Achillea millefolium	Toadflax	Linaria vulgaris
Agrimony	Agrimonia eupatoria	Yellow loosestrife	Lysimachia vulgaris
Corncockle	Agrostemma githago	Common mallow	Malva sylvestris
Chives	Allium schoenoprasum	Marjoram	Origanum vulgare
Harebell	Campanula rotundifolia	Common poppy	Papaver rhoeas
Cornflower	Centaurea cyanus	Cowslip	Primula veris
Greater knapweed	Centaurea scabiosa	Primrose	Primula vulgaris
Chicory	Chichorium intybus	White campion	Silene alba
Foxglove	Digitalis purpurea	Red campion	Silene dioica
Teasel	Dipsacus fullonum	Goldenrod	Solidago virgaurea
Sea hollies	Eryngium spp.	Devil's-bit scabious	Succisa pratensis
Lady's bedstraw	Galium verum	Tansy	Tanacetum vulgare
Meadow crane's-bill	Geranium pratense	Dandelion	Taraxacum officinale
Herb-robert	Geranium robertianum	Wild thyme	Thymus drucei
Dame's-violet	Hesperis matronalis	Great mullein	Verbascum thapsus
Field Scabious	Knautia arvensis	Germander speedwell	Veronica chamaedrys
Oxeye daisy	Leucanthemum vulgare	Spiked speedwell	Veronica spicata

Cultivated Plants for Borders

Common Name	Latin Name	Common Name	Latin Name
Alliums	Allium spp.	California poppy	Eschscholzia californica
Hollyhock	Althaea rosea	Snowdrop	Galanthus nivalis
Yellow alyssum	Alyssum saxatile	Sunflowers	Helianthus spp.
Grecian windflower	Anemone blanda	Christmas rose	Helleborus niger
Angelica	Angelica archangelica	Lenten rose	Helleborus orientalis
Snapdragon	Antirrhinum majus	Candytuft	Iberis sempervirens
Alpine rock-cress	Arabis alpina	Poached-egg plant	Limnanthes douglasii
Michaelmas daisies	Aster spp.	Hybrids sweet alyssum	Lobularia maritime
Lilacbush	Aubrieta deltoidea	Honesty	Lunaria rediviva or annua
Borage	Borago officinalis	Sweet bergamot	Monarda didyma
Pot marigold	Calendula offinialis	Grape hyacinth	Muscari botryoides

TITLE

Basic General Purpose Meadow Mixture

DATE 02/02/2024

PAGE NO. 2 of 4

Red valerian	Centranthus ruber	Forget-me-not	Myosotis spp.
Wallflower	Cheiranthus cheiri	Tobacco plant	Nicotiana sylvestris
Corn marigold	Chrysanthemum segetum	Evening primrose	Oenothera biennis
Cosmos	Cosmos bipinnatus	Phlox	Phlox paniculata
Spring crocus	Crocus chrysanthus	Black-eyed Susan	Rudbeckia fulgida
Sweet William	Dianthus barbatus	Scabious	Scabiosa spp.
Purple coneflower	Echinacea purpurea	Ice plant	Sedum spectabile
Globe thistle	Echinops ritro	French marigold	Tagetes spp.
Winter aconite	Eranthis hyemalis	Mulleins	Verbascum spp.
Fleabane	Erigeron spp.		



Plants for Shady Areas

Common Name	Latin Name	Common Name	Latin Name
Bugle	Ajuga reptans	Bluebell	Hyacinthoides non-scripta
Lords and Ladies/ Cuckoopint	Arum maculatum	Yellow archangel	Lamiastrum galeobdolon
Lilly of the Valley	Convallaria majalis	Daffodils	Narcissus pseudonarcissus
Foxglove	Digitalis purpurea	Primrose	Primula vulgaris
Wood avens	Geum urbanum	Sweet Violet	Viola odorata

Plants for Wildflower Meadows/Intensive Green Roofs

Common Name	Latin Name	Common Name	Latin Name
Yarrow	Achillea millefolium	Poached-egg plant	Limnanthes douglasii
Corncockle	Agrostemma githago	Toadflaxes	Linaria spp.
Chives	Allium schoenoprasum	Flax	Linum usitatissimum
Yellow alyssum	Alyssum saxatile	Hybrids sweet alyssum	Lobularia maritima
Grecian windflower	Anemone blanda	Bird's-foot Trefoils	Lotus spp.
Snapdragon	Antirrhinum majus	Honesty	Lunaria rediviva
Alpine rock-cress	Arabis alpina	Yellow loosestrife	Lysimachia vulgaris
Michaelmas daisy	Aster spp.	Scentless Mayweed	Matricaria recutita
Red Orache	Atriplex hortensis	Black Medick	Medicago lupulina
Purpletop vervain	Berbena bonariensis	Forget-me-not	Myosotis spp.
Fingered Sedge	Carex digitata	Tobacco plant	Nicotiana affinis
Glaucous Sedge	Carex flacca	Love-in-a-mist	Nigella damascena
Cornflower	Centaurea cyanus	Oreganos	Oreganum spp.
Common Knapweed	Centaurea nigra	Common poppy	Papaver rhoeas
Greater knapweed	Centaurea scabiosa	Poppies	Papaver spp.
Red valerian	Centranthus ruber	Tunicflower	Petrorhagia saxifraga
Wallflower	Erysimum cheiri	Phlox	Phlox paniculata
Chicory	Cichorium intybus	Meadow-grasses	Poa sp.
Rock-roses	Cistus spp.	Cowslip	Primula veris
Larkspur	Consolida spp.	Yellow Rattle	Rhinanthus minor
Tickseed	Coreopsis spp.	Black-eyed Susan	Rudbeckia hirta
Cosmos	Cosmos bipinnatus	Common Sorrel	Rumex acetosa

TITLE

Basic General Purpose Meadow Mixture

DATE 02/02/2024

PAGE NO. 3 of 4

Heath-grass	Danthonia decumbens	Sheep's Sorrel	Rumex acetosella
Teasel	Dipsacus fullonum	Ice plant	Sedum spectabile
Fleabane	Erigeron spp.	Stonecrops	Sedum spp.
Stork's-bills	Erodium spp.	White campion	Silene alba
Wallflowers	Erysimum spp.	Red campion	Silene dioica
California poppy	Eschscholzia californica	Goldenrod	Solidago virgaurea
Spiky Fescue	Festuca gautieri	Devil's-bit scabious	Succisa pratensis
Lady's bedstraw	Galium verum	French marigold	Tagetes spp.
Dove's-foot Crane's-bill	Geranium molle	Tansy	Tanacetum vulgare
Meadow crane's-bill	Geranium pratense	Dandelion	Taraxacum officinale
Herb-robert	Geranium robertianum	Wild thyme	Thymus drucei
Heliotrope	Heliotropium arborescens	Red Clover	Trifolium pratense
Horseshoe Vetch	Hippocrepis comosa	Great mullein	Verbascum thapsus
Candytuft	Iberis sempervirens	Germander speedwell	Veronica chamaedrys
Field Scabious	Knautia arvensis	Spiked speedwell	Veronica spicata
Oxeye daisy	Leucanthemum vulgare		



Marginal Plants/Marshy Areas

Common Name	Latin Name	Common Name	Latin Name
Water plantain	Alisma plantago-aquatica	Water mint	Menthe aquatica
Marsh marigold	Caltha palustris	Bogbean	Menyanthes trifoliate
Cuckooflower	Cardamine pratensis	Water forget-me-not	Myosotis scorpioides
Lesser pond sedge	Carex aucuparia	Amphibious bistort	Persicaria amphibia
Water avens	Geum rivale	Water Plantain	Alisma Plantago-aquatica
Water violet	Hottonia palustris	Lesser spearwort	Ranunculus flammula
Rushes	Juncus spp.	Marsh woundwort	Stachys palustris
Ragged robin	Lychnis flos-cuculi	Brooklime	Veronica beccabunga
Creeping Jenny	Lysimachia nummularia		

Submerged Plants

Common Name	Latin Name	Common Name	Latin Name
Water starwort	Callitriche	Curled pondweed	Potamogeton crispus
Hornwort	Ceratophyllum demersum	Other pondweeds	Potamogeton spp.
Spiked water milfoil	Myriophyllum spicatum	Willow moss	Fontinalis antipyretica
Common water-crowfoot	Ranunculus aquatilis	Water-violet	Hottonia palustris

Floating Plants

Common Name	Latin Name	Common Name	Latin Name
Frogbit	Hydrocharis morsus-ranae	Broad-leaved pondweed	Potamogeton natans
Fringed water-lily	Nymphoides peltata	Water crowfoot	Ranunculus aquatilis
Amphibious bistort	Persicaria amphibian	Yellow waterlily	Nuphar lutea

TITLE

Basic General Purpose Meadow Mixture

DATE 02/02/2024

PAGE NO. 4 of 4

NATIVE PLANTS CONSIDERED BENEFICIAL TO BIRDS

When buying native plants, ensure they are from a reputable source, as many wildflowers are illegally taken from the wild.

Trees and Shrubs for Birds

Common Name	Latin Name	Common Name	Latin Name
Field maple	Acer campestre	Wild cherry	Prunus avium
Common alder	Alnus glutinosa	Blackthorn	Prunus spinosa
Silver birch	Betula pendula	English oak	Quercus robur
Hazel	Corylus avellana	Dog rose	Rosa canina
Hawthorn	Crataegus monogyna	Elder	Sambucus nigra
Common dogwood	Cornus sanguinea	Whitebeam	Sorbus aria
Beech	Fagus sylvaticus	Rowan	Sorbus aucuparia
Holly	Ilex aquifolium	Yew	Taxus baccata
Wild privet	Ligustrum vulgare	Guelder rose	Virburnum opulus
Honeysuckle	Lonicera caprifolium		
Crab apple	Malus sylvestris		

Wildflowers for Birds

Common Name	Latin Name	Common Name	Latin Name
Musk thistle	Carduus nutans	Field scabious	Knautia arvensis
Greater knapweed	Centaurea scabiosa	Devil's bit scabious	Succisa pratensis
Spear thistle	Cirsium vulgare	Dandelion	Taraxacum agg.
Teasel	Dipsacus fullonum		

Wild birds will benefit from most wild plants as they are a food source and attract invertebrates. The following tables are lists of plants for different habitat types:

Native Wildflowers for Borders

Common Name	Latin Name	Common Name	Latin Name
Yarrow	Achillea millefolium	Toadflax	Linaria vulgaris
Agrimony	Agrimonia eupatoria	Yellow loosestrife	Lysimachia vulgaris
Corncockle	Agrostemma githago	Common mallow	Malva sylvestris
Chives	Allium schoenoprasum	Marjoram	Origanum vulgare
Harebell	Campanula rotundifolia	Common poppy	Papaver rhoeas
Cornflower	Centaurea cyanus	Cowslip	Primula veris
Greater knapweed	Centaurea scabiosa	Primrose	Primula vulgaris
Chicory	Chichorium intybus	White campion	Silene alba
Foxglove	Digitalis purpurea	Red campion	Silene dioica
Teasel	Dipsacus fullonum	Goldenrod	Solidago virgaurea
Sea hollies	Eryngium spp.	Devil's-bit scabious	Succisa pratensis
Lady's bedstraw	Galium verum	Tansy	Tanacetum vulgare
Meadow crane's-bill	Geranium pratense	Dandelion	Taraxacum officinale
Herb-robert	Geranium robertianum	Wild thyme	Thymus drucei



REFERENCE

- 1. <u>https://www.woodlandtru</u> <u>st.org.uk/blog/2023/05/b</u> <u>est-trees-for-birds-and-</u> <u>other-wildlife/</u>
- 2. <u>https://greenwoodplants.</u> <u>co.uk/blog/plants-to-</u> attract-wildlife/
- 3. <u>https://www.bto.org/how</u> <u>-you-can-help/providing-</u> <u>birds/wildlife-</u> <u>gardening/plants-fruits-</u> <u>and-seeds</u>
- 4. Natural England (2007). Plants for Wildlife-friendly Gardens: NE29.
- 5. RHS and the Wildlife Trusts (2015). Gardening with Wildlife in Mind. <u>http://www.joyofplants.c</u> <u>om/wildlife/</u>.

TITLE

General Plants Considered Beneficial To Birds

DATE 02/02/2024

PAGE NO. 1 of 2

Dame's-violet	Hesperis matronalis	Great mullein	Verbascum thapsus
Field Scabious	Knautia arvensis	Germander speedwell	Veronica chamaedrys
Oxeye daisy	Leucanthemum vulgare	Spiked speedwell	Veronica spicata

Plants for Shady Areas

Common Name	Latin Name	Common Name	Latin Name
Bugle	Ajuga reptans	Bluebell	Hyacinthoides non-scripta
Lords and Ladies/ Cuckoopint	Arum maculatum	Yellow archangel	Lamiastrum galeobdolon
Lilly of the Valley	Convallaria majalis	Daffodils	Narcissus pseudonarcissus
Foxglove	Digitalis purpurea	Primrose	Primula vulgaris
Wood avens	Geum urbanum	Sweet Violet	Viola odorata

Plants for Wildflower Meadows

Common Name	Latin Name	Common Name	Latin Name
Yarrow	Achillea millefolium	Black Medick	Medicago lupulina
Corncockle	Agrostemma githago	Forget-me-not	Myosotis spp.
Glaucous Sedge	Carex flacca	Common poppy	Papaver rhoeas
Cornflower	Centaurea cyanus	Meadow-grasses	Poa sp.
Common Knapweed	Centaurea nigra	Cowslip	Primula veris
Greater knapweed	Centaurea scabiosa	Yellow Rattle	Rhinanthus minor
Red valerian	Centranthus ruber	Common Sorrel	Rumex acetosa
Chicory	Cichorium intybus	Sheep's Sorrel	Rumex acetosella
Heath-grass	Danthonia decumbens	White campion	Silene alba
Teasel	Dipsacus fullonum	Red campion	Silene dioica
Lady's bedstraw	Galium verum	Goldenrod	Solidago virgaurea
Dove's-foot Crane's-bill	Geranium molle	Devil's-bit scabious	Succisa pratensis
Meadow crane's-bill	Geranium pratense	Tansy	Tanacetum vulgare
Herb-robert	Geranium robertianum	Dandelion	Taraxacum officinale
Field Scabious	Knautia arvensis	Wild thyme	Thymus drucei
Oxeye daisy	Leucanthemum vulgare	Red Clover	Trifolium pratense
Bird's-foot Trefoils	Lotus spp.	Great mullein	Verbascum thapsus
Yellow loosestrife	Lysimachia vulgaris	Germander speedwell	Veronica chamaedrys
Scentless Mayweed	Matricaria recutita		

TITLE

General Plants Considered Beneficial To Birds

GEO

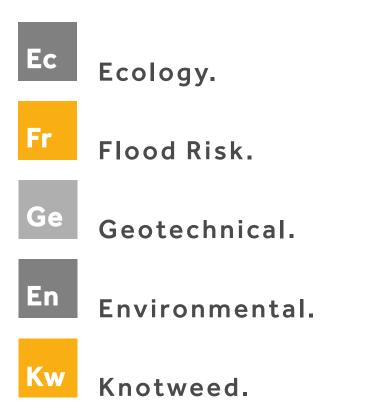
GEOSPHERE ENVIRONMENTAL

DATE 02/02/2024

PAGE NO. 2 of 2



GEOSPHERE ENVIRONMENTAL



GEOSPHERE ENVIRONMENTAL LTD

Brightwell Barns, Ipswich Road, Brightwell, Suffolk, IP100BJ **T**: 01603 298076 | 01473 353519 | **E**: info@geosphere-environmental.co.uk | **W**: geosphere-environmental.co.uk