

## GEOSPHERE ENVIRONMENTAL

REPORT            6074,EC,PEA,RH,RF,KL-10-01-22,V3  
NUMBER:  
SITE:             White Rock, Cole Street, Wilby, Suffolk, IP21 5LH  
  
DATE:             10/01/2022



**DOCUMENT CONTROL SHEET**

Report Number: 6074,EC,PEA,RH,RF,KL-10-01-22,V3  
 Client: Mr Alex Anstee-Parry  
 Project Name: White Rock, Cole Street, Wilby, Suffolk, IP21 5LH  
 Project Number: 6074,EC  
 Report Type: Preliminary Ecological Appraisal  
 Status: Final  
 Date of Issue: 10 January 2022

**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](http://www.geosphere-environmental.co.uk)

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**Prepared By:**

Rachel Hall  
 Ecologist

**Reviewed By:**

Richard Fenna  
 Senior Arboricultural and

**Authorised By:**

Katie Linehan  
 Technical Director of Ecology

**VERSION RECORD**

| Version | Date     | Document Revision Details | Prepared By | Admin |
|---------|----------|---------------------------|-------------|-------|
| V1      | 01-12-21 | Original                  | RH          | CJ    |
| V2      | 13-12-21 | Minor Amendments          | RH          | CJ    |
| V3      | 10-01-22 | Minor Amendments          | RH          | CJ    |

## Executive Summary

|   |   |
|---|---|
| <p><b>Report Description</b></p>  | <p>This Preliminary Ecological Appraisal report has been prepared by Geosphere Environmental Limited for Mr Alex Anstee-Parry and relates to the proposed development of the site at White Rock, Cole Street, Wilby, Suffolk, IP21 5LH.</p> <p>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.</p>  |
| <p><b>Summary of Main Findings</b></p>  | <p>The development comprises of less than 0.01 hectare (ha) within a 1.9 (ha) site located at National Grid Reference TM 2338 7108. A walkover was undertaken of the wider site boundary, with focus on habitats present within the proposed development zone.</p> <p>The site comprises Amenity Grass, Scattered scrub, Introduced Shrubs, Tall Ruderal and Scattered Trees within the amenity grassland.</p> <p>The findings of the extended Phase 1 Habitat Survey confirm that the habitats onsite have the potential to support foraging bats, nesting birds, Hedgehog and Great Crested Newts.</p> <p>The site is not considered suitable for Badger, Water Vole, Otter, Dormouse, and Reptiles.</p>  |
| <p><b>Ecological Constraints</b></p>  | <p>The constraints to development will be the removal of habitats considered suitable for protected species, including tall ruderal, scattered shrubs and log piles suitable for Amphibians (Great Crested Newt), foraging bats and nesting birds.</p> <p>Trees and retained hedges within influencing distance should be protected by barriers as per BS5837: Trees in relation to design, demolition and construction.</p>  |
| <p><b>Avoidance measures &amp; Timings of Works to Reduce Impact Within Development Zone and Influencing Distance</b></p> | <p><b>Birds:</b> Given the onsite presence of potential bird nesting habitat, any clearance of vegetation that support suitable nesting features, should be timed to avoid the bird breeding season (March-August inclusive). If this is not possible, these habitats can only be removed following confirmation by a suitably qualified Ecologist that they are not in active use by nesting birds.</p> <p><b>Amphibians:</b> Vegetation clearance of trees and shrubs can be undertaken over winter (to above ground level only), providing they are undertaken and planned under the supervision of an Ecological Clerk of Works, ensuring that any potential Great Crested Newt hibernation habitats (ground level vegetation, log piles, debris piles, roots, stumps and grass tussocks etc.) are protected from disturbance during these works.</p> <p><b>Hedgehogs:</b> Excavations during development should be covered overnight to prevent entrapment of Hedgehogs and other species.</p> |

|  |  |
|--|--|
| <p><b>Further Survey Work Required</b></p>           | <p>The following are recommended at the appropriate time of year to establish an ecological baseline:</p> <p>An eDNA survey of Pond 1 and Pond 2, to determine the presence/likely absence of GCN within the ponds with a hand search of the construction area to determine the likely presence/ absence of Great Crested Newts using the terrestrial habitats within the construction zone. Surveys can be undertaken between April 15<sup>th</sup> and June 30<sup>th</sup>.</p> <p>Or</p> <p>Apply for district level licence from Natural England with the assumption that Great Crested Newts are present. The licence would require that works are undertaken when Great Crested Newts are active (February to October).</p> |
| <p><b>Biodiversity Enhancement Opportunities</b></p> | <p>The following has been recommended for consideration within the final development scheme:</p> <p>Bat/bird boxes and log piles should be included within the final development design to improve the site for birds, bats and Amphibians.</p>  |
| <p><b>Conclusions</b></p>                            | <p>The recommendations within Section 7 of this report should be adhered, to reduce the impact on protected species. Provided the recommendations within Section 7 of this report are undertaken and mitigation measures adhered to, then potential negative impacts on protected species, if present, will be negligible.</p>   |

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## 1. INTRODUCTION

This Preliminary Ecological Appraisal report has been prepared by Geosphere Environmental Limited for Mr Alex Anstee-Parry and relates to the proposed development of an outdoor heated swimming pool at White Rock, Cole Street, Wilby, Suffolk, IP21 5LH. Any limitations and conditions pertaining to the report are stated within Appendix 1, with a full list of technical references provided within Appendix 2.

The report relates to the proposed development of less than 0.01 hectare (ha) within the 1.9 (ha) site located at National Grid Reference TM 23387108.

The development boundary is shown on Figure 1 below:



Figure 1 – The proposed development boundary is outlined in orange, the overall site boundary is outlined in red.

### 1.1 Aims

This report provides baseline data for the assessment of the ecological features of the site and identifies any potential constraints with regards to protected species. It also outlines recommendations for further surveys if necessary.

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## 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 Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 transposes 'The Conservation of Habitat and Species Regulations 2017', regarding the conservation of natural habitats and of wild fauna and flora (formally the EC Habitats Directive). 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 legislation is detailed within Appendix 4.

### 2.2 Planning Policy

The recommendations of this report are in line with the key principles of the Ministry of Housing, Communities and Local Government (MHCLG) National Planning Policy Framework (NPPF) (2021) (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 of 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.



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### 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 BS 42020: 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 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 of relevance to the site;

Suffolk Biological Information Service (SBIS) 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 (GCN) within the immediate vicinity of the site.

All relevant desk study data obtained is attached in Appendix 5, except for detailed lists of species given the sensitive nature of the information.

#### 3.3 Preliminary Ecological Appraisal

The surveys used to inform the Preliminary Ecological Appraisal comprise of a Phase 1 Habitat and Protected Species Scoping Survey, more often referred to as an extended Phase 1 Habitat Survey.

An extended Phase 1 Habitat Survey of the site was undertaken on 08 November 2021 by Rachel Hall (Ecologist) BSc (hons) Natural England Level 1 Bat Class Survey Licence (2020-6136-CLS-CLS) Natural England Great Crested Newt Survey Licence level 1 (WML-CL08- licence number 2018-36580-CLS-CLS). The weather conditions at the time of the survey were 20% cloud cover, Light air (Beaufort Scale 1) and an approximate temperature of 14°C.

The Phase 1 Habitat Survey involved a walkover of the site in which the habitats are classified according to JNCC Phase 1 Habitat Survey guidelines, (ref. R.7). Habitats on and adjacent to the site were mapped and target notes added for any interesting or notable biodiversity features.

The frequency and cover of each species identified as they are distributed in each habitat is estimated using the DAFOR scale, (ref. R.8), 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.

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. Any mammal paths found were noted down and followed where possible. Sites are taken in the context of their surroundings and so include the immediate environs outside of site boundaries, where appropriate.

All established trees that could be accessed onsite were inspected and assessed in terms of their suitability (negligible, low, moderate or high) to support roosting bats, in line with the Bat Conservation Trust (BCT) survey guidelines (ref. R.9).

All ponds within 500m of the site were also assessed for their suitability for Great Crested Newt (*Triturus cristatus*) 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.

### 3.4 Ecological Impact Assessment

The ecological evaluation and impact assessment detailed below is based upon CIEEM Guidelines for Ecological Impact Assessment in the United Kingdom, (ref. R.11).

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

On an International scale, e.g. Ramsar, SAC or SPA site;

On a UK scale, for example a 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 or UKBAP species;

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 LBAP species;

- On a District scale, e.g. a site with wildlife corridors likely to improve the biodiversity of the area;
- Local or Parish, e.g. areas of green space in a predominantly urban environment;
- On a Site scale, e.g. habitats with value within the zone of influence only.

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

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## 4. DESK STUDY RESULTS

### 4.1 Nature Conservation Sites

There are no designated sites within the site boundary.

#### 4.1.1 Non-Statutory Sites

Biological records have confirmed the presence of one non-statutory designation within the 2km search radius. A Roadside Nature Reserve (RNR 193) is a Country Wildlife Site (CWS) and which is notable for Sulphur Clover (*Trifolium ochroleucon*), located 1.9Km to the west of the site.

#### 4.1.2 Statutory Sites

No statutory designated areas were identified within 2km of the site.

#### 4.1.3 Habitats Sites

As part of the Habitats Regulations 2017, some areas of the country are looking more closely at impacts to Ramsar, SPA and SAC sites. The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 provides an additional level of protection for sites of internationally value, specifically Special Protection Area (SPA), Special Area of Conservation (SAC) and Ramsar. As such, a wider 20km search was undertaken for internationally protected sites. Four internationally protected sites were returned within this search, the closest of which is Dews Pond SAC located 15.3km to the east of the site. The area is classified for being one of the best areas in the United Kingdom for supporting Great crested newt (*Triturus cristatus*).

Other internationally protected sites returned within this wider search, included:

- Waveney and Little Ouse Valley Fens SAC, located 19.6km north west of the site;
- Redgrave and South Lopham Fens Ramsar, located 19.6km north west of the site;
- Sandlings SPA, located 19.7km south east of the site;

### 4.2 Protected Species Records

There are records of protected and notable species listed within 2km of the site returned from SBIS. Absence of records should not be taken as confirmation that a species is absent from the search area.

Table 1 provides a summary below:

**Table 1 – Selected Protected Species Records**

| Common Name             | Scientific Name                  | Biological Records Within 2km | Date of Most Recent Record | Protective Status *                       |
|-------------------------|----------------------------------|-------------------------------|----------------------------|---|
| <b>Amphibian</b>        |                                  |                               |                            |   |
| Great Crested Newt      | <i>Triturus cristatus</i>        | Yes                           | 2019                       | HabsDir, WCA Sch 5 + 6, Priority species. |
| <b>Reptile</b>          |                                  |                               |                            |   |
| Common Lizard           | <i>Zootoca vivipara</i>          | -                             | -                          | WCA Sch 5, Priority species.              |
| Slow Worm               | <i>Anguis fragilis</i>           | -                             | -                          | WCA Sch 5, Priority species.              |
| Adder                   | <i>Vipera berus</i>              | -                             | -                          | WCA Sch 5, Priority species.              |
| Grass Snake             | <i>Natrix helvetica</i>          | Yes                           | 2009                       | WCA Sch 5, Priority species.              |
| <b>Mammal</b>           |                                  |                               |                            |   |
| [REDACTED]              |                                  |                               |                            |   |
| Otter                   | <i>Lutra lutra</i>               | Yes                           | 2008                       | HabsDir, WCA Sch 5 + 6, Priority species. |
| Water Vole              | <i>Arvicola amphibius</i>        | Yes                           | 2020                       | HabsDir, WCA Sch 5 + 6, Priority species. |
| Hedgehog                | <i>Erinaceus europaeus</i>       | Yes                           | 2019                       | WCA Sch 6, Priority species.              |
| Barbastelle Bat         | <i>Barbastella barbastellus</i>  | Yes                           | 2019                       | HabsDir, WCA Sch 5 + 6, Priority species. |
| Brandt's Bat            | <i>Myotis brandtii</i>           | -                             | -                          | HabsDir, WCA Sch 5 + 6.                   |
| Whiskered Bat           | <i>Myotis mystacinus</i>         | -                             | -                          | HabsDir, WCA Sch 5 + 6.                   |
| Natterer's Bat          | <i>Myotis nattereri</i>          | Yes                           | 2019                       | HabsDir, WCA Sch 5 + 6.                   |
| Serotine Bat            | <i>Eptesicus serotinus</i>       | -                             | -                          | HabsDir, WCA Sch 5 + 6.                   |
| Noctule Bat             | <i>Nyctalus noctula</i>          | -                             | -                          | HabsDir, WCA Sch 5 +6, Priority species.  |
| Leisler's bat           | <i>Nyctalus leisleri</i>         | -                             | -                          | HabsDir, WCA Sch 5 + 6.                   |
| Soprano Pipistrelle     | <i>Pipistrellus pygmaeus</i>     | Yes                           | 2018                       | HabsDir, WCA Sch 5 + 6, Priority species. |
| Common Pipistrelle      | <i>Pipistrellus pipistrellus</i> | Yes                           | 2019                       | HabsDir, WCA Sch 5 + 6.                   |
| Nathusius's pipistrelle | <i>Pipistrellus nathusii</i>     | -                             | -                          | HabsDir, WCA Sch 5 + 6.                   |
| Brown Long-eared Bat    | <i>Plecotus auritus</i>          | Yes                           | 2019                       | HabsDir, WCA Sch 5 + 6, Priority species. |
| Daubenton's bat         | <i>Myotis daubentonii</i>        | -                             | -                          | HabsDir, WCA Sch 5 + 6.                   |
| Hazel Dormouse          | <i>Muscardinus avellanarius</i>  | -                             | -                          | HabsDir, WCA Sch 5 + 6, Priority species. |
| <b>Plants</b>           |                                  |                               |                            |   |

**Table 1 – Selected Protected Species Records**

| Common Name  | Scientific Name | Biological Records Within 2km | Date of Most Recent Record | Protective Status * |
|--|-----------------|-------------------------------|----------------------------|---------------------|
| 1 record of a WCA Sch 8 species was returned within the biological records which was a Bluebell ( <i>Hyacinthoides non-scripta</i> ). 21 other records include Red list species such as Sulphur Clover ( <i>Trifolium ochroleucon</i> ) which is a RLGB vulnerable species.  |                 |                               |                            |                     |
| <b>Invertebrates</b>   |                 |                               |                            |                     |
| No UKBAP or NERC species were returned within the biological records.  |                 |                               |                            |                     |
| <b>Birds</b>   |                 |                               |                            |                     |
| 9 WCA Sch 1 species were returned within the biological records including Western Barn Owl ( <i>Tyto alba</i> ), Redwing ( <i>Turdus ilacus</i> ) and Quail ( <i>Corturnix cortunix</i> ). 13 UKBAP species were also returned within the biological records including Turtle Dove ( <i>Streptopelia turtur</i> ), Lapwing ( <i>Vanellus vanellus</i> ) and Linnet ( <i>Linaria cannabina</i> ).   |                 |                               |                            |                     |
| Notes:<br>*WCA Sch 1 - Wildlife and Countryside Act (1981) Schedule 1. WCA Sch 5 - Wildlife and Countryside Act (1981) Schedule 5 (Killing, injuring and sale of certain species), WCA Sch 6 - Wildlife and Countryside Act (1981) Schedule 6 (Animals which may not be killed or taken by certain methods), WCA Sch 8 - Wildlife and Countryside Act (1981) Schedule 8 (Plants which are protected), Priority species- species listed within UK Biodiversity Action Plan Species, and Natural Environment and Rural Communities Act (2006) Section 41. Species and Habitats of Principal Importance. PBA - Protection of Badgers Act (1992). HabsDir- Conservation of Habitats and Species Directive (2010) Annex II, Annex IV. BoCC Red / Amber - Birds of Conservation Concern - Red or Amber listed. |                 |                               |                            |                     |

**4.3 Habitat Suitability Index (HSI) Assessments**

16 ponds are located within 500m of the site, referenced ponds 1 to 16 therein and shown on Drawing ref. 6074,EC/001/Rev0, in Appendix 3. An HSI assessment has been undertaken where access was possible.

## 5. FIELD SURVEY RESULTS

The results of the Phase 1 Habitat Survey and Protected Species Scoping Survey are detailed below and annotated on Drawing ref. 6074,EC/002/Rev0, showing the proposed development area in detail and Drawing ref. 6074,EC/003/Rev0 showing habitats present in the wider site area. Both are included in Appendix 3. Descriptions of the target notes (TN) and relevant photographs are included in Appendix 6.

### 5.1 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.

### 5.2 Phase 1 Habitat Survey

The following habitat types were recorded within the survey area:

- Amenity Grass;
- Scattered scrub;
- Introduced Shrubs;
- Tall Ruderal; and
- Scattered Trees.

#### 5.2.1 Habitat Within the Development Zone

The majority of the development area comprises amenity grassland (TN1) dominated by Perennial Ryegrass (*Lolium perenne*) with occasional Creeping Bent (*Agrostis stolonifera*) and rare occurrences of forbs such as Dandelion (*Taraxacum officinale*).

The introduced shrubs comprise ornamental species such as Baby Sage (*Salvia microphylla*), Guelder Rose (*Viburnum opulus*), and Heuchera sp (TN2). Rare occurrences of Elder (*Sambucus nigra*) and Dogwood (*Cornus sanguinea*) are also present within the introduced shrub area.

Chopped wood/logs are located between the area of scattered Bramble (*Rubus fruticosus* agg.) scrub and scattered trees (TN3).

The tall ruderal species include frequent Curled Dock (*Rumex crispus*) occasional Spear Thistle (*Cirsium vulgare*), Common Nettle (*Urtica dioica*), Mallow (*Malva sylvestris*), White dead-nettle (*Lamium album*), Wild Carrot (*Daucus carota*), Comfrey (*Symphytum* sp.), and Ivy (*Hedera helix*) (TN4).

Four mature/semi-mature trees within the development zone comprise and Leyland Cypress (*Cupressus × leylandii*) and Norway spruce (*Picea abies*) (TN5).

### 5.2.2 Wider Survey Area

The wider survey area comprised residential garden with buildings, hardstanding, amenity grassland, pond, intact species poor hedgerow, introduced shrubs, scattered trees, scattered scrub, tall ruderal and an allotment area. A Phase 1 Habitat Survey of the wider survey area is attached as Drawing ref. 6074,EC/003/Rev0 in Appendix 3.



## 6. SPECIES APPRAISAL

### 6.1 Plants

No records of rare plants were returned within biological records and no evidence of any rare plants was noted during the site survey.

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

It should be noted that additional plant species may be present at the site at other times of the year. That said, given the nature of the identified habitats (i.e. themselves common and widespread) within and immediately adjacent to the proposed works areas, no notable plant species are expected within the affected areas. The site’s proposed re-development is therefore expected to be unconstrained by notable flora.

### 6.2 Invertebrates

The majority of areas that will be impacted within the development zone are of low species diversity, comprising amenity grassland, ornamental shrubs and tall ruderal vegetation and are unlikely to support an assemblage of rare invertebrates.

### 6.3 Great Crested Newts

There are 16 ponds within 500m of the site. These ponds are referred to as Ponds 1 to 16 on Drawing ref. 6074,EC/001/Rev0 within Appendix 3. Ponds 4, 9 and 16 were not accessible and Ponds 3, 5, 10, and 12 were dry at the time of survey.

A Habitat Suitability Index, (HSI), was undertaken to assess their suitability to support Great Crested Newts. A score between 0 and 1 is given; where 0 represents poor suitability and 1 represent excellent suitability. The results are provided in Appendix 7 and summarised in Table 2 below:

| Table 2 – HSI Scores of Ponds |                    |  |                             |           |  |
|-------------------------------|--------------------|--|-----------------------------|-----------|--|
| Pond                          | Distance From Site | Connected or Separated From Site                                   | Pond Size (m <sup>2</sup> ) | HSI Score | Pond Suitability For Great Crested Newts |
| 1 (Onsite)                    | 20m south west     | Connected to the development area via amenity grass within garden. | 40                          | 0.62      | Average                                  |
| 2                             | 63m west           | Connected to the development area via residential gardens          | 287                         | 0.62      | Average                                  |
| 3                             | 170m south west    | Separated from site via road (not busy) and arable field           | 129                         | N/A       | Dry                                      |

Table 2 – HSI Scores of Ponds

| Pond | Distance From Site | Connected or Separated From Site       | Pond Size (m <sup>2</sup> ) | HSI Score                            | Pond Suitability For Great Crested Newts |
|------|--------------------|--|-----------------------------|--------------------------------------|--|
| 4    | 270m south         | Separated from site via arable fields  | 354                         | Unknown as it could not be accessed. | No access                                |
| 5    | 231m north         | Separated from site via arable fields  | 80                          | N/A                                  | Dry                                      |
| 6    | 300m north         | Separated by arable fields.            | 308                         | 0.67                                 | Average                                  |
| 7    | 492 north          | Separated by arable fields.            | 445                         | Unknown as it could not be accessed. | No access                                |
| 8    | 300m north         | Separated by arable fields.            | 2,233                       | 0.45                                 | Poor                                     |
| 9    | 500m north west    | Separated by arable fields and roads.  | 450                         | Unknown as it could not be accessed. | No Access                                |
| 10   | 500m south east    | Separated by arable fields             | 178                         | N/A                                  | Dry                                      |
| 11   | 427 south east     | Separated by arable fields             | 313                         | 0.57                                 | Below Average                            |
| 12   | 500m south east    | Separated by arable fields             | 75                          | N/A                                  | Dry                                      |
| 13   | 341m west          | Separated by arable fields and a road. | 60                          | 0.63                                 | Average                                  |
| 14   | 361m north west    | Separated by arable fields and a road. | 197                         | 0.59                                 | Below Average                            |
| 15   | 489 north west     | Separated by arable fields and a road. | 78                          | 0.56                                 | Below Average                            |
| 16   | 90m south          | Separated by arable fields             | 20                          | Unknown as it could not be accessed. | No Access                                |

Pond 1, is a pond within the wider survey area located approximately 20m south west of the development zone. The HSI score was calculated as 'Average' and the surrounding terrestrial habitat was classified as 'Moderate' as the surrounding habitat comprises amenity grassland and introduced shrubs which provides some sheltering, foraging and hibernation opportunities.

Ponds 2 and 6, were deemed 'Average' for their suitability for GCN. The surrounding habitat was classified as 'Moderate' as the pond was located along the wider site boundary by hedgerows, residential garden and arable field, providing some sheltering, hibernation and foraging opportunities.

The HSI score for Pond 8 was calculated as 'Poor' which suggests GCN are unlikely to be using the pond for breeding habitat, due to the pond's low suitability.

Ponds 11, 14, and 15, were deemed 'Below Average' for their suitability for GCN, the surrounding habitat for all three ponds was classified as 'Poor' due to the large extent of arable fields surrounding the ponds and sub-optimal connectivity.

Ponds 3, 5, 10 and 12, were dry at the time of survey (8<sup>th</sup> November 2021). Due to the time of year, this suggests that the pond is also often dry within the spring and summer months which drastically reduces the ponds suitability for breeding GCN.

Ponds 4, 7, 9 and 16, were unable to be viewed due to ownership/access constraints.

During the desk study, the biological records highlighted that Pond 9 had received a positive GCN eDNA survey results in 2019. Pond 9 has some connectivity to the site via hedgerows and arable fields which run adjacent to Cole Street. Worlingworth Road is not deemed a significant barrier which would prevent the movement of GCN.

There is moderate terrestrial habitat within the development area, the tall ruderal vegetation, introduced shrubs and log piles on site provide some foraging and sheltering habitat albeit an overall a small area. As Ponds 1 and 2, are considered suitable to support GCN and terrestrial habitat connectivity is present in close proximity to the site (Pond 1 is within the survey area and Pond 2 is present along the north west boundary), there is potential that GCN could be present onsite.

The development area is of a small size (less than 0.01ha) so it is anticipated that only low numbers of individual GCN would only likely be found; sheltering under the small area of log pile and tall ruderal habitats, and introduced shrubs if present.

## 6.4 Bats

### 6.4.1 Trees

The preliminary roost assessment of the established trees onsite identified no trees within the proposed development boundary with suitability to support roosting bats. The approximate location of the trees is shown on the phase 1 habitat plan, Drawing ref. 6074,EC/002/Rev0, attached in Appendix 3.

### 6.4.2 Foraging

The scattered trees, tall ruderal and introduced shrubs offers limited foraging habitat for bats. The wider area of the residential garden provides more foraging opportunities within the scattered trees. The connectivity of the site with surrounding suitable habitats is not optimal given the large amount of arable however, hedgerows run adjacent along the wider site boundary which go on to extend along the surrounding arable fields.

## 6.5 Reptiles

The majority of the proposed development area comprises amenity grassland with very small sections of tall ruderal and introduced shrubs; these habitats provide limited foraging opportunities for reptiles. The residential garden has limited connectivity to the wider landscape; therefore, reptiles are likely absent from the development area and residential garden.

## 6.6 Birds

The scattered trees provide habitat for nesting birds, the amenity, tall ruderal and introduced shrubs provide foraging opportunities for birds.

During the walkover Blackbird (*Turdus merula*), Robin (*Erithacus rubecula*), Wren (*Troglodytes troglodytes*), Blue Tit (*Cyanistes caeruleus*), Great Tit (*Parus major*), Magpie (*Pica pica*) and Woodpigeon (*Columba palumbus*) were observed on site.

## 6.8 Dormouse

No records of Hazel Dormouse were returned in the desk study. Dormouse require a large area of connected habitat for a population to survive. The habitats within the site boundary are not suitable for Hazel Dormouse, and are also not of a sufficient quality to support a population of Hazel Dormouse in isolation. As such it is unlikely that the site supports a population of Hazel Dormouse.

## 6.9 Riparian Mammal

No watercourses were present near the site, as such the site was not suitable for Water Vole or Otter.

## 6.10 Hedgehog

The wider survey area and development zone provides suitable foraging habitat for hedgehog in the amenity grassland and tall ruderals. However, the area within the development zone is deemed too sparse to provide any hibernation habitat for hedgehog.

---

## 7. EVALUATION, CONSTRAINTS AND RECOMMENDATIONS

### 7.1 Proposed Development

The proposed development involves the installation of heated swimming pool with associated underwater LED lighting within a residential garden, by which three trees have been removed (stumps remaining). Materials for the development will be stored on the amenity grassland area adjacent to the proposed pool area. Access for machinery for the development will use the main entrance, the materials will then be transported close the northern boundary of the site north of the garage building to the proposed development area. Soil from excavations will be retained on site and spread upon an area of bare ground/in the centre of the site near the bonfire area.

The development will not create any change in use of the site therefore, the impacts are limited to the local area only (up to 500m of the site boundary).

### 7.2 Nature Conservation Sites

No nature conservation sites with statutory designation within 2km of the site boundary. Only one non- statutory designated nature conservation site was located within 2km radius of the site.

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

It is considered unlikely, given the distance from the survey area and localised nature of the proposed development works, that the Nature Conservation sites listed above will be directly affected by any construction activity on the surveyed area. It is considered unlikely that development is of sufficient size to have any indirect impacts on the designated sites.

### 7.3 Habitat Sites

Four Internationally protected sites: Dews Pond SAC, Waveney and Little Ouse Valley Fens (SAC), Redgrave and South Lopham Fens (Ramsar) and Sandlings (SPA) were noted within 20km, however the proposed development is not located within the ZOI of these sites, and is considered to be sufficiently separated, such that the proposed development will not impact these sites.

### 7.4 Habitat Constraints

Trees and retained hedges within influencing distance should be protected by barriers as per BS5837: Trees in relation to design, demolition and construction (R.12).

7.5 Legally Protected and Notable Species

The ecological evaluation and impact assessment for protected species is detailed Table 3 below:

| Table 3 – Protected Species - Ecological Constraints and Recommended Actions |                               |  |   |   |   |
|--|-------------------------------|--|---|---|---|
| Ecological Constraint/ Receptor  | Biological Records Within 2km | Value of Supporting Feature  | Impact without Appropriate Mitigation in Place                | Recommended Actions (Avoidance/mitigation/compensation Measures and Recommendations for Further Works)  | Timing Restrictions   |
| Great Crested Newt – tall ruderal, introduced shrubs and log pile.           | Yes                           | Tall ruderal, introduced shrubs, and log pile on site provide some foraging and sheltering habitat albeit limited.   | Unmitigated loss of habitat of Site to District significance. | <p>There is potential for Great Crested Newts to be present on site, and a small area of terrestrial habitat suitable for Great Crested Newts has potential to be disturbed during the proposed works. As such a survey must be undertaken to determine if Great Crested Newts are present in order to confirm use of the construction area and working zones (e.g. haul roads stock piles etc.).</p> <p>The surveys cannot be undertaken when Great Crested Newts are hibernating, because it would not be possible to observe them, without disturbing them. As such it is recommended to undertake an eDNA survey of Pond 1 and Pond 2 to determine the presence/likely absence of GCN within the ponds. A hand search of the construction area should also be undertaken at the same time, to determine the likely presence/ absence of Great Crested Newts using the terrestrial habitats within the construction zone.</p> <p>Alternatively, a district level licence could be sought from Natural England with the assumption that Great Crested Newts are present. The licence would require that and ground works are undertaken when Great Crested Newts are active (February to October) under a working method statement to reduce direct impact.</p> <p>Vegetation clearance of trees and shrubs to above ground level can be undertaken over winter, providing they are undertaken and planned under the supervision of an Ecological Clerk of Works, ensuring that any Great Crested Newt hibernation habitats (ground level vegetation, log piles, debris pies, roots, stumps and grass tussocks etc.) are protected from disturbance during the works.</p> | eDNA sampling and testing can be relied upon for 'likely absence' when samples are taken between April 15 <sup>th</sup> and June 30 <sup>th</sup> . |
| Bats: Foraging- Scattered trees  | Yes                           | <p>The scattered trees, tall ruderal and introduced shrubs offers limited foraging habitat for bats.</p> <p>The wider area (residential garden) provides more foraging opportunities within the scattered trees.</p> | Site to district significance.                                | <p>Avoidance measures should be designed into the scheme to avoid negative impact according to current best practice guidelines (R.13). This should include:</p> <ul style="list-style-type: none"> <li>All luminaires should lack UV elements.</li> <li>A warm white spectrum (ideally &lt;2700Kelvin) should be adopted to reduce blue light component.</li> <li>Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.</li> </ul> <p>The proposed lighting scheme should ensure that foraging or commuting habitat remains as unlit as possible to allow continued and future use by bats.</p>  | N/A   |
| Nesting Birds – Scattered trees  | Yes                           | Habitats offer value to breeding birds for common passerine birds and are considered important on a site scale.  | Site scale  | 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 which would have to be left until the young had fledged, (typically up to four weeks from eggs being laid for the garden and woodland species likely to be present). Clearance works within the area can recommence only once the nest is no longer in use.  | Clearance during September to February only unless supervised by an Ecologist.  |
| Hedgehog   | Yes                           | Suitable foraging habitat within the amenity grassland and tall ruderals.  | Site scale  | Excavations during development should be covered overnight to prevent entrapment of Hedgehogs.  | N/A   |



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## 8. GENERAL ENHANCEMENTS AND OPPORTUNITIES

The following general enhancements could 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 amphibians, birds, bats, and Hedgehog.

The final development plan could incorporate bat and bird boxes into the scheme. This will provide additional roosting and nesting habitats for bats and birds post-development.

Log piles could be placed in connectivity to the boundary vegetation onsite, enhancing the habitats onsite for both reptiles and invertebrates post-development.

Examples of potential enhancement features are included as Appendix 8. Example plant lists are included as Appendix 9.



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## 9. CONCLUSIONS

The proposed development will not adversely affect statutory or non-statutory designated nature conservation sites.

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 habitats onsite are of site significance only.

The findings of the extended Phase 1 Habitat Survey confirm that the habitats onsite have the potential to support foraging bats, Great Crested newt and Nesting Birds. The recommendations within Section 7 of this report should be adhered, to reduce the impact on protected species.

Trees and retained hedges within influencing distance should be protected by barriers as per BS5837: Trees in relation to design, demolition and construction.

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

# APPENDICES

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## 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.

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 in 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 (2017) Guidelines for Preliminary Ecological Appraisal, 2nd edition, 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, on the basis of the preliminary assessment or during subsequent surveys, it is considered reasonably likely that protected species may be present.

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.

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## Appendix 2 – References

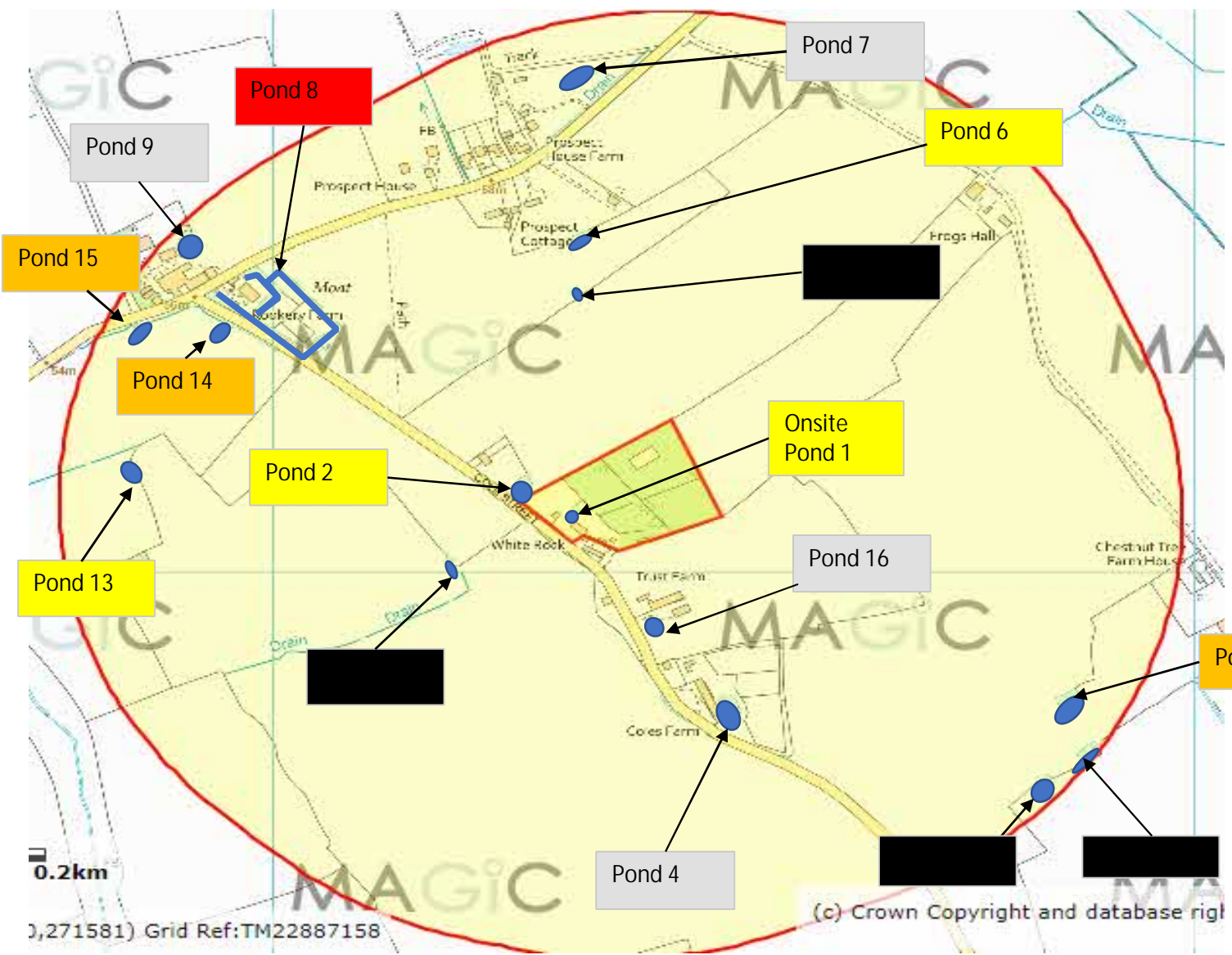
- R.1. Ministry of Housing, Communities and Local Government (MHCLG) (2021) National Planning Policy Framework (NPPF).
- R.2. ODPM (2005) Government Circular: Biodiversity and Geological Conservation – statutory obligations and their impact within the planning system.
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- R.6. Magic 6/11/2021 Site Check Report. [www.magic.gov.uk](http://www.magic.gov.uk).
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- R.8. Goldsmith, B. (1991). Monitoring for Conservation and Ecology, Chapman & Hall.
- R.9. BCT (2016). 'Bat Surveys – Good Practice Guidelines' Bat Conservation Trust, London, 3<sup>rd</sup> Edition.
- 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. CIEEM, (2017). Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- R.12. BS 5837: (2012), 'Trees in Relation to Design, Demolition and Construction'.
- R.13. Institution of Lighting Professionals (2018) Bats and artificial lighting in the UK, Bats and the Built Environment series – Guidance Note 08/18
- R.14. Natural England (2010). Farm Environment Plan (FEP) Manual.

## Appendix 3 – Drawings

Pond Location Plan – Drawing ref. 6074,EC/001/Rev0

Phase 1 Habitat Survey Plan – Drawing ref. 6074,EC/002/Rev0

Phase 1 Habitat Survey Plan of Wider Area Drawing ref. 6074,EC/003/Rev0.



**LEGEND**

- 500m Buffer
- Site Boundary
- Pond
- Pond
- Red hatched box - ponds were dry at time of survey

**SOURCE**

[© OpenStreetMap contributors](#)

**PROJECT**

WHITE ROCK, COLE STREET, WILBY, SUFFOLK, IP21 5LH

**TITLE**

Pond locations

**DRAWING NUMBER**

6074,EC/001/Rev0

**SCALE**

As marked

**DATE**

05/11/2021

**DRAWN BY**

RH

**CHECKED BY**

RF

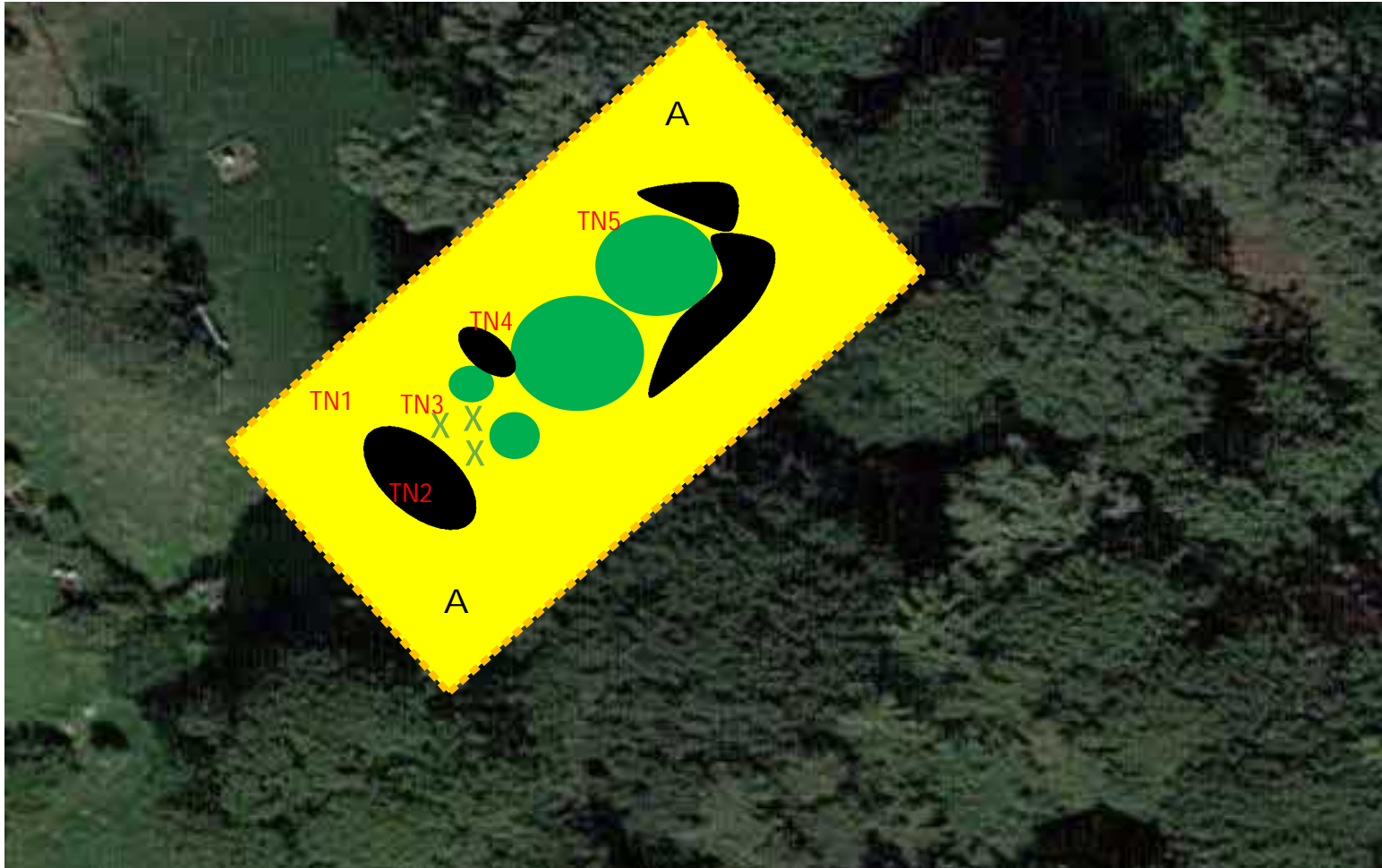
0.2km

Grid Ref: TM22887158








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| 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        |





**LEGEND**

-  Development area
-  Amenity Grassland
-  Introduced Shrubs
-  Tall Ruderal
-  Scattered Scrub
-  Scattered Trees
-  Target Note 1

**SOURCE**

[© OpenStreetMap contributors](#)

**PROJECT**

WHITE ROCK, COLE STREET, WILBY,  
SUFFOLK, IP21 5LH

**TITLE**

Phase 1 Habitat Plan (Zoomed in development  
Zone)

**DRAWING NUMBER**

6074,EC/002/Rev0

**SCALE**

As marked

**DATE**

18/11/2021

**DRAWN BY**

RH

**CHECKED BY**

RF







LEGEND

|  |  |
|--|--|
|  | Overall site boundary                  |
|  | Development area                       |
|  | Hardstanding                           |
|  | Introduced Shrubs                      |
|  | Intact Species-poor Hedgerow           |
|  | Scattered Trees over amenity grassland |
|  | Scattered Scrub                        |
|  | Amenity Grassland                      |
|  | Building Location                      |
|  | Pond                                   |
|  | Allotment                              |
|  | Tall ruderal                           |

PROJECT

WHITE ROCK, COLE STREET, WILBY, SUFFOLK, IP21 5LH

TITLE

Phase 1 Habitat Survey Plan of Wider Area

DRAWING NUMBER

6074,EC/003/Rev0

SCALE

As marked

DRAWN BY

RH

DATE

26/11/2021

CHECKED BY

RF



---

## Appendix 4 – Species Specific Legislation

### **Bats**

All bat species are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010. 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.

### **Great Crested Newts**

Great Crested Newts are protected under the Wildlife and Countryside Act 1981 (as amended) Section 5 and the Conservation of Habitats and Species Regulations 2010. It is illegal to intentionally or deliberately kill, injure or capture Great Crested Newts or intentionally, deliberately or recklessly damage or destroy their breeding and resting places or obstruct access to their place of shelter or protection.

### **Hazel Dormouse**

Hazel Dormice are protected under the Wildlife and Countryside Act 1981 (as amended) Schedule 5 and the Conservation of Habitats and Species Regulations 2010. It is illegal to intentionally or deliberately kill, injure or capture a Dormouse or intentionally, deliberately or recklessly disturb a Dormouse, or damage its breeding or resting place or obstruct its place of shelter or protection.

### **Otters and Water Voles**

Otters are protected under the Wildlife and Countryside Act 1981 (as amended) Schedule 5 and the Conservation of Habitats and Species Regulations 2010. It is illegal to take, injure, kill or sell an otter, it is also an offence to damage, destroy or obstruct access to a resting place or disturb or harm an Otter at any time.

Water Voles are protected under the Wildlife and Countryside Act 1981 (as amended) Schedule 5. It is illegal to deliberately kill, injure, capture or disturb them or to destroy, damage or obstruct access to any places used for shelter or protection

### **White-clawed Crayfish**

White-clawed Crayfish (*Austropotamobius pallipes*) are protected under the Wildlife and Countryside Act 1981 (as amended) Schedule 5, Sections 9(1) & 9 (5). It is an offence to intentionally take White-clawed

Crayfish from the wild or to sell them. It is also a qualifying Annex II species for some Special Areas of Conservation under the Habitats Directive.

## 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.

## Reptiles

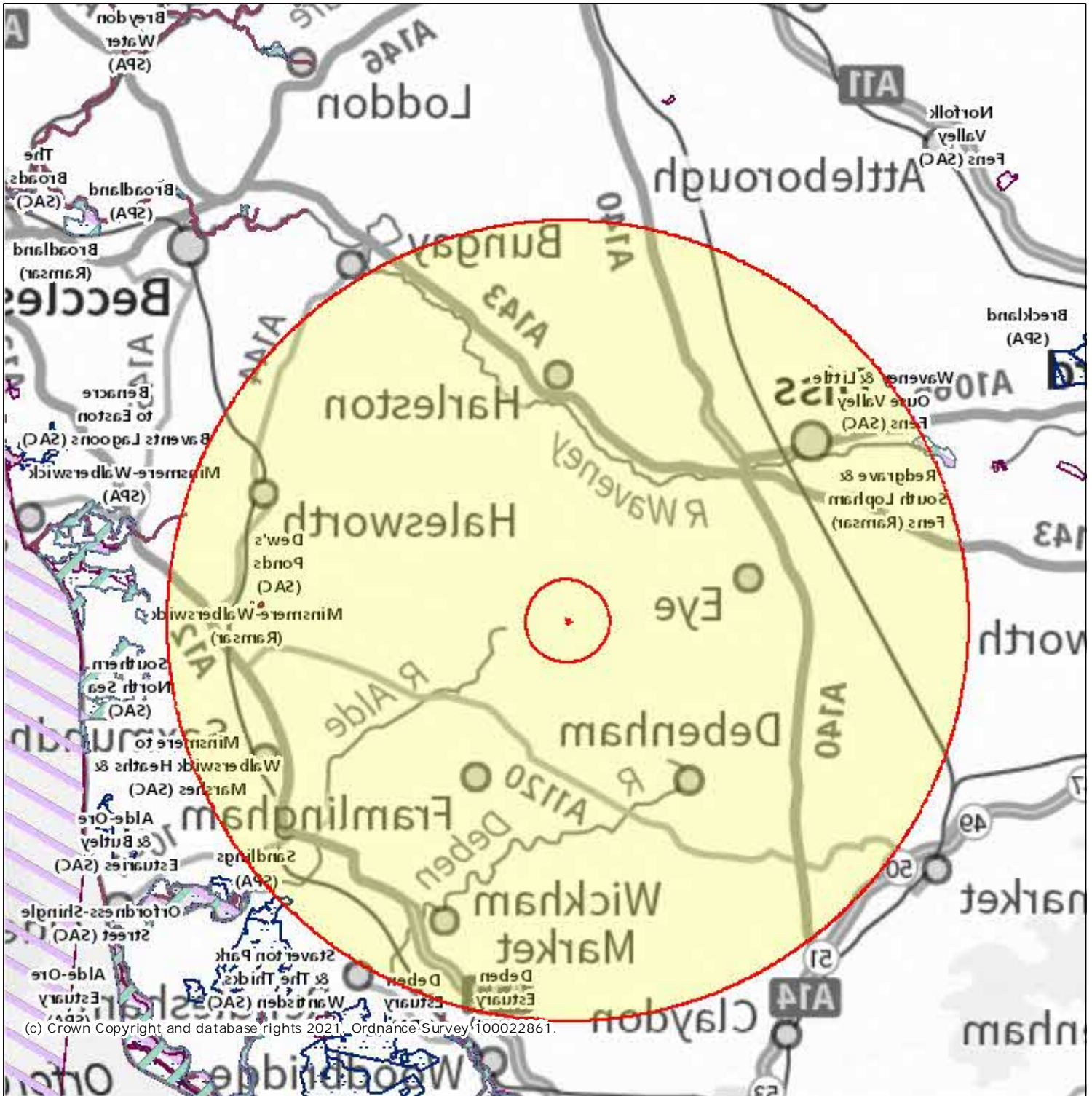
Common reptiles include Slow-worm, Adder, Grass Snake and Common Lizard. These are protected under the Wildlife and Countryside Act 1981 (as amended) Schedule 5, Sections 9 (1) & 9 (5) only. It is illegal to kill or injure them.

It is not illegal to capture, disturb or to damage their habitats. However, the reptiles themselves are protected so any works to damage their habitat could risk causing harm to reptiles and hence could be illegal.

Rare reptiles which include Sand Lizard and Smooth Snake are restricted to a few locations in Britain and are fully protected under the Wildlife and Countryside Act 1981 (as amended) Schedule 5, Section 9 and the Conservation of Habitats and Species Regulations 2010. It is illegal to kill, injure or intentionally disturb them whilst occupying a 'place used for shelter or protection' and destruction of these places.

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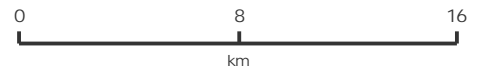
## Appendix 5 – Desk Study Data



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Legend

-  Ramsar Sites (England)
-  Proposed Ramsar Sites (England)
-  Special Areas of Conservation (England)
-  Possible Special Areas of Conservation (England)
-  Special Protection Areas (England)
-  Potential Special Protection Areas (England)



Projection = OSGB36

xmin = 575200

ymin = 250600

xmax = 673900

ymax = 298700

Map produced by MAGIC on 5 November, 2021. 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.

05/11/2021, 13:10

Site Check Report Report generated on Fri Nov 05 2021

**You selected the location:** Centroid Grid Ref: TM23377110

The following features have been found in your search area:

**Ramsar Sites (England)**

|                  |                              |
|------------------|------------------------------|
| <b>Name</b>      | REDGRAVE & SOUTH LOPHAM FENS |
| <b>Reference</b> | UK11056                      |
| <b>Hectares</b>  | 127.03                       |

**Special Areas of Conservation (England)**

|                  |   |
|------------------|---|
| <b>Name</b>      | DEW'S PONDS   |
| <b>Reference</b> | UK0030133   |
| <b>Hectares</b>  | 6.72  |
| <b>Hyperlink</b> | <a href="http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?euocode=UK0030133">http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?euocode=UK0030133</a> |

|                  |   |
|------------------|---|
| <b>Name</b>      | WAVENEY & LITTLE OUSE VALLEY FENS   |
| <b>Reference</b> | UK0012882   |
| <b>Hectares</b>  | 193.76  |
| <b>Hyperlink</b> | <a href="http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?euocode=UK0012882">http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?euocode=UK0012882</a> |

**Special Protection Areas (England)**

|                  |           |
|------------------|-----------|
| <b>Name</b>      | SANDLINGS |
| <b>Reference</b> | UK9020286 |
| <b>Hectares</b>  | 3408.37   |

**Proposed Ramsar Sites (England)**

No Features found

**Possible Special Areas of Conservation (England)**

No Features found

**Potential Special Protection Areas (England)**

No Features found

05/11/2021, 13:07

Site Check Report Report generated on Fri Nov 05 2021

**You selected the location:** Centroid Grid Ref: TM23377110

The following features have been found in your search area:

**Areas of Outstanding Natural Beauty (England)**

No Features found

**Limestone Pavement Orders (England)**

No Features found

**Local Nature Reserves (England)**

No Features found

**National Nature Reserves (England)**

No Features found

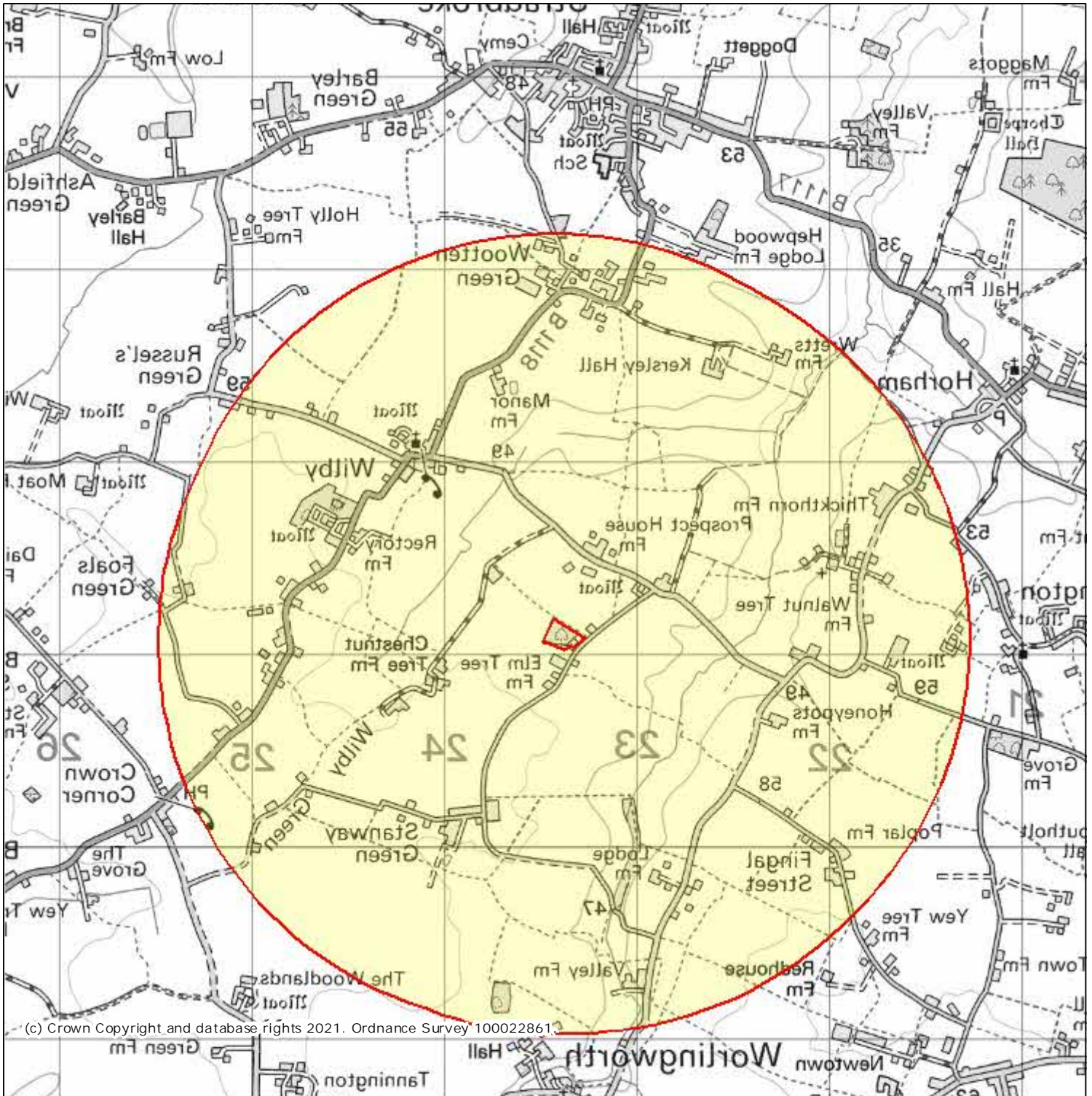
**Sites of Special Scientific Interest (England)**

No Features found

**Biosphere Reserves (England)**

No Features found

# MAGIC Statutory sites within 2km



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## Legend

- Areas of Outstanding Natural Beauty (England)
- Limestone Pavement Orders (England)
- Local Nature Reserves (England)
- National Nature Reserves (England)
- Sites of Special Scientific Interest (England)
- Biosphere Reserves (England)



Projection = OSGB36

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ymin = 269100

xmax = 628600

ymin = 274000

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## Appendix 6 – Target Notes

Target Note 1



Target Note 2



**NOTE**

Target Note 1  
View of development area (surveyor facing facing north).

Target Note 2  
Introduced shrubs by south western boundary of development area.

Target Note 3  
Log piles and scattered scrub.

Target Note 3



Target Note 4



Target Note 4  
Tall ruderal vegetation within centre of development area.

**PROJECT**

WHITE ROCK, COLE STREET, WILBY,  
SUFFOLK, IP21 5LH

**PROJECT NUMBER**

6074,EC

**TITLE**

Ecological Target Notes Relating to  
Extended Phase 1 Habitat Survey

**DATE**

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Target Note 5



NOTE

Target Note 5  
Two mature Norway Spruce (*Picea abies*).

PROJECT

WHITE ROCK, COLE STREET, WILBY,  
SUFFOLK, IP21 5LH

PROJECT NUMBER

6074,EC

TITLE

Ecological Target Notes Relating to  
Extended Phase 1 Habitat Survey

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## Appendix 7 – Habitat Suitability Index

# HSI SCORES



Project Number: 6074,EC

Project Name: WHITE ROCK, COLE STREET, WILBY, SUFFOLK, IP21 5LH

Date: 02/12/2021

| Pond Ref:       | SI 1     | SI 2      | SI 3        | SI 4          | SI 5  | SI 6      | SI 7 | SI 8  | SI 9           | SI 10       | HSI  | Suitability   |
|-----------------|----------|-----------|-------------|---------------|-------|-----------|------|-------|----------------|-------------|------|---------------|
|                 | Location | Pond Area | Pond Drying | Water quality | Shade | Fowl      | Fish | Ponds | Terr'I Habitat | Macrophytes |      |               |
| 1 (Onsite Pond) | 1        | 0.1       | 0.9         | 0.67          | 1     | 1         | 0.67 | 1     | 0.67           | 0.3         | 0.62 | Average       |
| 2               | 1        | 0.25      | 1           | 0.33          | 0.8   | 1         | 0.67 | 1     | 0.67           | 0.3         | 0.62 | Average       |
| 3               |          |           |             |               |       | Dry       |      |       |                |             |      | Dry           |
| 4               |          |           |             |               |       | No Access |      |       |                |             |      | N/A           |
| 5               |          |           |             |               |       | Dry       |      |       |                |             |      | Dry           |
| 6               | 1        | 0.2       | 1           | 1             | 1     | 0.67      | 0.67 | 1     | 0.67           | 0.3         | 0.67 | Average       |
| 7               |          |           |             |               |       | No Access |      |       |                |             |      | N/A           |
| 8               | 1        | 0.8       | 0.9         | 0.33          | 1     | 0.01      | 0.67 | 1     | 0.67           | 0.3         | 0.45 | Poor          |
| 9               |          |           |             |               |       | No Access |      |       |                |             |      | N/A           |
| 10              |          |           |             |               |       | Dry       |      |       |                |             |      | Dry           |
| 11              | 1        | 0.3       | 0.5         | 0.33          | 0.8   | 1         | 1    | 1     | 0.33           | 0.3         | 0.57 | Below Average |
| 12              |          |           |             |               |       | Dry       |      |       |                |             |      | Dry           |
| 13              | 1        | 0.3       | 0.5         | 0.67          | 1     | 1         | 1    | 1     | 0.33           | 0.3         | 0.63 | Average       |
| 14              | 1        | 0.3       | 0.5         | 0.33          | 1     | 1         | 1    | 1     | 0.33           | 0.3         | 0.59 | Below Average |
| 15              | 1        | 0.3       | 0.5         | 0.33          | 0.6   | 1         | 1    | 1     | 0.33           | 0.3         | 0.56 | Below Average |
| 16              |          |           |             |               |       | No Access |      |       |                |             |      | N/A           |

| 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        |

## Appendix 8 – Example Enhancement Features

## EXAMPLE BAT BRICKS AND BOXES

### External Bat Box: 1FF Schwegler Bat Box with Built-in Wooden Rear Panel



The Schwegler 1FF bat box is spacious enough for bats to use as a summer roost or nursery site and is open at the bottom, allowing droppings to fall out so it does not need cleaning. The 1FF is, therefore, especially suitable for hanging in inaccessible places such as high in trees, or on steep slopes and house walls.

The 1FF is manufactured from long-lasting Woodcrete, which is a blend of wood, concrete and clay which will not rot, leak, crack or warp, and will last for at least 20 - 25 years, making it suitable for long-term mitigation projects.

The inner dimensions of the 1FF have a reducing width making it ideal for bat species which inhabit crevices such as pipistrelle and noctule bats. For conservation projects and studies, the entire front of the box can be easily swung open for inspection purposes.

The 1FF bat box can be sited in trees or on buildings and is best positioned at a height of between 4 to 6 metres.

#### SOURCE

<https://www.nhbs.com/1ff-schwegler-bat-box-with-built-in-wooden-rear-panel>

### External Bat Box: 2F Schwegler Bat Box with Double Front Panel



This box has a front panel and a second inner wooden panel fitted to it to create a cavity wall. This provides ideal quarters for bats that inhabit crevices, such as Nathusius' Pipistrelle (*Pipistrellus nathusii*), Daubenton's Bat (*Myotis daubentonii*) and the Common Pipistrelle (*Pipistrellus pipistrellus*).

It has been designed as a summer roosting space for bats and has a simple entrance hole at the front. The Schwegler 2F double front panel is removable and can be converted in to a bird nest box using a replacement 1B front panel if there is no evidence of bat activity after a couple of years. The 2F Double Front Panel is manufactured from long-lasting Woodcrete, which is a blend of wood, concrete and clay which will not rot, leak, crack or warp, and will last for at least 20 - 25 years, making it suitable for long-term mitigation projects. Woodcrete is breathable and maintains a stable temperature inside the box and the 2F is painted black to absorb warmth. It also provides a good rough surface for bats to cling on to and climb.

The 2F Double Front Panel bat box can be sited in trees or on buildings and is best positioned at a height of between 3 to 6 metres.

#### SOURCE

<http://www.birdbrickhouses.co.uk/brick-nesting-boxes/bat-box/>

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## EXAMPLE BIRD BRICKS & BOXES

### External Bird House: 1B Schwegler Bird Nest Box (General)



These Woodcrete nest boxes last for at least 20-25 years. Woodcrete is a breathable blend of wood, concrete and clay which will not rot, leak, crack or warp, whilst preventing condensation and maintaining more constant temperatures inside than wooden boxes.

Schwegler bird boxes are backed by conservation organisations, government agencies and forestry experts and experiments have shown that the highest density of bird populations (i.e. breeding pairs per hectare) is achieved with Schwegler nest boxes.

They are carefully designed to provide a stable environment and to mimic natural nest and roost sites with internal brood chamber dimensions that are similar to natural woodpecker cavities. Schwegler have a patented method of installation on trees that prevents the tree trunk from growing over the hanger from which the box is suspended.

#### SOURCE

<https://www.nhbs.com/1sp-schwegler-sparrow-terrace>

#### SOURCE

<https://www.nhbs.com/1za-schwegler-wren-roundhouse>

### External Bird House: 1ZA Schwegler Wren Roundhouse



The nest box is designed to encourage Wrens as they like to nest near the ground, in undergrowth. They are not particularly good flyers, preferring to hop about in the undergrowth. They like shady places - in hedges, thickets, heavily overgrown areas and bushes as well as balconies.

Hang the nest box in undergrowth, in a shady place. It can also be placed upon a pile of brushwood or garden clippings, for example. If hung in a totally unobstructed place it will also attract other types of birds that nest in holes and cavities, including Blue-, Coal- and Great Tits, as well as Tree and House Sparrows.

These Woodcrete nest boxes last for at least 20-25 years.

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# LOG PILE AND INSECT HOTEL GUIDANCE

## 1. LOG PILES

### Resourcing Logs

Try to avoid taking logs from woods and hedges as you will be removing the resource from its natural environment, along with any associated flora or fauna. A local tree surgeon may be able to supply you with some logs. Alternatively sourcing logs from friends or neighbour who have had recent tree work is a viable way of sourcing the raw materials required.

### Which Wood to Use

Logs at least 100mm thick (4 ins) with the bark still attached provide the best wood. Hard wood trees such as ash, oak and beech are particularly good. Birch logs can look particularly attractive.

Be careful of freshly cut willow and poplar logs, as these can easily re-sprout if left lying on the ground.

### Establishing the Log Pile

Leaving woody cuttings from trees, shrubs and herbaceous plants in piles within a shrub bed is an ideal way of attracting invertebrate to site. The damp conditions behind peeling bark are very inviting for woodlice, spiders and beetles, while butterflies and ladybirds take up residence in the drier parts over winter.



It is best to not cut the wood into small pieces. Leave it in direct contact with the ground, in compact piles to maintain humidity. Larger diameter pieces are of most value, but even small twigs and branches should not be discounted.

Bury the lower logs into the soil a few centimetres. This keeps them damp and the resident creatures happy.



### REFERENCE

<http://www.nhbs.com/title/186142/solitary-beehive>

[Bug Box Kit | NHBS Practical Conservation Equipment](#)

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## 2. INSECT HOTELS

### Solitary Beehive



Available from: <http://www.nhbs.com/title/186142/solitary-beehive>

This unique solitary beehive is manufactured from durable FSC timber and provides valuable habitat for bees in modern gardens. Designed specifically to attract non-swarming bees like the Red Mason Bee, Leafcutter Bee and other solitary bees which are naturally attracted to holes in wood.

Fascinating and great for education, the beehive can be easily dismantled to see the formation of small cells where the eggs are laid, or indeed where predators have been active.

Always a friend to the gardener, attracting solitary bees to the garden is not only safe, but beneficial to pollination of flowers, fruit and vegetables.

Siting: Site in a visible warm place ideally oriented to face between southeast and south and to catch some sun. It is helpful to have soil nearby, and food sources such as flowers, orchards and fruit.

Nb. Solitary bees will often roost in this product during periods of cold weather and overnight. The product should not be dismantled at these times.

#### REFERENCE

<http://www.nhbs.com/title/186142/solitary-beehive>

[Bug Box Kit | NHBS Practical Conservation Equipment](#)

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## Bug and Bee Box



Available from: <http://www.nhbs.com/title/186175/bee-and-bug-biome>

The Bee and Bug Biome will provide valuable habitat in your garden for solitary bees and other insects. At a time when many of our native insects are struggling, this is a fantastic way to give them a helping hand.

The top chamber features seven wooden nesting tubes in a wooden block, together with bamboo tubes of various sizes. A centre feeding hole is perfect for attracting ladybirds, earwigs and lacewings. The lower chamber is filled with pine cones which provide plenty of nooks and crannies for insects such as lacewings. These little creatures, as natural predators of aphids, are great friends of the gardener! Removing the wooden retainer dowel allows you to replace the pine cones with alternative natural materials, such as straw or bark, which will provide an excellent winter habitat for lacewings, ladybirds, woodlice, earwigs and many other bugs.

The Bug and Bee Biome can be painted with a water-based exterior paint. (An annual coat of paint will both keep it looking its best and prolong its life).

### REFERENCE

<http://www.nhbs.com/title/186142/solitary-beehive>

[Bug Box Kit | NHBS Practical Conservation Equipment](#)

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## Appendix 9 – Example Plant Lists

## 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       | <i>Fagus sylvatica</i> | Pedunculate Oak   | <i>Quercus robur</i> |
| Wild Cherry | <i>Prunus avium</i>    | White Willow      | <i>Salix alba</i>    |
| Bird Cherry | <i>Prunus padus</i>    | Small-leaved Lime | <i>Tilia cordata</i> |
| Sessile Oak | <i>Quercus petraea</i> |                   |                      |

### Medium/Small Trees

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

### Other Shrubs for Nectar, Pollen or Fruits

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

### Drought-Tolerant Herbaceous Plants

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

### REFERENCE

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

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|              |                    |                      |   |
|--------------|--------------------|----------------------|---|
| 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                | Tulipa sp.  |
| Rock-roses   | Helianthemum spp.  |                      |   |



### 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 officinalis | Grape hyacinth        | Muscari botryoides        |
| Red valerian       | Centranthus ruber     | Forget-me-not         | Myosotis spp.             |
| Wallflower         | Cheiranthus cheiri    | Tobacco plant         | Nicotiana sylvestris      |
| Corn marigold      | Chrysanthemum segetum | Evening primrose      | Oenothera biennis         |

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|-------------------|--------------------|------------------|-------------------|
| 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 | Lamium galeobdolon        |
| Lilly of the Valley          | Convallaria majalis | Daffodils        | Narcissus pseudonarcissus |
| Foxglove                     | Digitalis purpurea  | Primrose         | Primula vulgaris          |
| Wood avens                   | Geum urbanum        | Sweet Violet     | Viola odorata             |

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GEOSPHERE ENVIRONMENTAL LTD

Brightwell Barns, Ipswich Road, Brightwell, Suffolk, IP10 0BJ

T: 01603 298076 | 01473 353519 | E: [info@geosphere-environmental.co.uk](mailto:info@geosphere-environmental.co.uk) | W: [geosphere-environmental.co.uk](http://geosphere-environmental.co.uk)