

## PRELIMINARY ECOLOGICAL APPRAISAL (PEA) WITH NEWT HABITAT SUITABILITY INDEX (HSI) AND PUBLIC RECORDS SEARCH

---

LAND AT BETTISFIELD, WHITCHURCH SY13 2LU  
for  
TAYLOR REED HOMES LTD

---

PLEASE NOTE, ALTHOUGH THIS REPORT CURRENTLY  
HOLDS A RED INDICATOR, STEPS ARE BEING TAKEN  
TO OBTAIN A MITIGATION LICENCE FOR GREAT  
CRESTED NEWTS TO ASSURE THEIR PROTECTION.  
ONCE THIS IS OBTAINED, THE STATUS WILL BE  
REDUCED TO **AMBER**, AND A REVISED VERSION OF  
THIS REPORT WILL BE ISSUED ACCORDINGLY. PLEASE  
ALWAYS ENSURE YOU ARE READING THE MOST  
CURRENT VERSION.

### RESULT INDICATOR OF THIS SURVEY

- **RED.** Do not proceed. Without major modification this project will have significant adverse ecological & biodiversity impacts. It will not be sustainable or compliant with current legislation and approved planning policy. Discussion is required with the Planning Authority.
- **AMBER.** Caution. The proposals as conceived would have substantial negative impacts and cannot achieve “No Net Loss to Biodiversity” and “Biodiversity Net Gain” outcomes unless changes are made to avoid, mitigate/restore or, as a last resort, compensate for the ecological impacts, and introduce habitat and species enhancements. With such changes and subject to pre-application agreement with the Planning Authority, the project is considered likely to be feasible, however.
- **GREEN.** On present information, the proposals are expected to have only minor adverse impacts on ecology & biodiversity, and significant gains. In terms of ecology, the project can proceed providing all the recommendations are met, enforced and monitored.

February 2023  
S:7079 J001758

Bank House Martley Worcester WR6 6PB  
United Kingdom

T +44 (0)1886 888445  
E nature@bettsecology.com  
[www.bettsecology.com](http://www.bettsecology.com)

*N.B.* Information on legally protected, rare or vulnerable species may appear in ecological reports. In such cases it is recommended that appropriate caution be used when circulating copies.

©BETTS/TAYLOR REED HOMES LTD

| PRELIMINARY ECOLOGICAL APPRAISAL       |                                                               |
|----------------------------------------|---------------------------------------------------------------|
| Surveyor                               | Nicholas Valori                                               |
| Confirm site risk assessment completed | YES                                                           |
| Site address                           | Land at Bettisfield, Whitchurch SY13 2LU                      |
| Project proposed if known              | Construction of four new dwellings and associated access road |
| Boundary as specified by client        | YES                                                           |
| Central OS Grid Ref.                   | SJ460353                                                      |
| Survey date                            | 2/2/2023                                                      |

| REPORT CONTROL             |               |
|----------------------------|---------------|
| General Report Information |               |
| Date report issued         | 6 March 2023  |
| Contract manager           | Natalie Loben |

### *Report Version Control*

| Version | Date       | Author          | Description        |
|---------|------------|-----------------|--------------------|
| 1.0     | 10/2/2023  | Nicholas Valori | Document created   |
| 1.0     | 23/2/2023  | Nicholas Valori | Document completed |
| 1.1     | 28/3/2023  | Nicholas Valori | Document updated   |
| 1.2     | 31/3/2023  | Nicholas Valori | Document updated   |
| 1.3     | 28/06/2023 | Cesca Beamish   | Document updated   |
| 1.4     | 03/07/23   | N Loben         | Document Updated   |
| 1.5     | 18/07/23   | N Loben         | Document Updated   |

*Whilst all due and reasonable care is taken in the preparation of reports, Betts accept no responsibility whatsoever for any consequences of the release of this report to third parties. Clients are reminded that all work carried out by Betts is subject to our Terms of Trading which may be viewed at any time on our web site at [www.bettsecology.com](http://www.bettsecology.com) or can be provided on request.*

| REPORT TITLES – AN EXPLANATORY NOTE.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>PEA of a site is exactly that: an examination of a defined area that includes a walk-over to provide a reliable basic reference for clients. The terminology for reports varies between practitioners. Please note that the old Phase 1 habitat codes are replaced by the newer UK Habitat Classification (UKHab) and “Phase 1” is being phased out as a report title.</p> <p>For more extensive or ecologically complex sites, please be aware that an EcIA - Ecological Impact Assessment and/or other more detailed examinations may be required, and please remember that, in any case, all basic surveys may identify matters that require more thorough investigation. <u>PEAs may not be sufficient for a formal Planning Application.</u></p> |

---

## CONTENTS

---

|                                                            |    |
|------------------------------------------------------------|----|
| INTRODUCTION .....                                         | 3  |
| WORK NEEDED FOR COMPLIANCE AS REVEALED BY THE SURVEY ..... | 4  |
| RESULTS – WHAT WE FOUND .....                              | 7  |
| HABITATS PLAN .....                                        | 9  |
| RESULTS TABLE .....                                        | 10 |
| MAMMALS.....                                               | 14 |
| BIRDS .....                                                | 16 |
| HERPETOFAUNA.....                                          | 16 |
| FISH .....                                                 | 17 |
| MACRO-INVERTEBRATES .....                                  | 18 |
| SPECIES .....                                              | 18 |
| INVASIVE ALIEN SPECIES (IAS) AND PATHOGENS .....           | 19 |
| PUBLIC RECORDS SEARCH RESULTS .....                        | 21 |
| GREAT CRESTED NEWT HABITAT SUITABILITY INDEX RESULTS ..... | 23 |
| CONCLUSION.....                                            | 25 |
| PHOTOGRAPHS .....                                          | 27 |
| CAPABILITY AND QUALITY ASSURANCE .....                     | 35 |

---

## INTRODUCTION

---

As almost all ecological surveys relate to a planning application, it is useful to consider our work in this context. British Standard 42020: 2013 *Biodiversity. Code of practice for planning and development* is helpful in this respect ([www.bsigroup.com](http://www.bsigroup.com)) as it makes recommendations in the five typical stages of a planning application:

- Stage 1 (pre-application) – biodiversity in project design, the mitigation hierarchy (avoidance, adequate mitigation, or as last resort compensation), the impacts with constraints and opportunities, proportionality, surveys and reports;
- Stage 2 (validation, registration) – ensuring submitted information is sufficient;
- Stage 3 (decision making) – consultation, further information if needed, resolving issues;
- Stage 4 (determination) – setting deliverable Conditions, obligations if not covered by Conditions, additional consents that may be needed;
- Stage 5 (implementation) – protecting wildlife/biodiversity during construction, long term management and monitoring.

We are often only contacted after a project has been designed, which can be costly and problematic if biodiversity has not been sufficiently considered. We always ask clients to contact us at the very earliest stage of a project, preferably when options for alternative sites are available. This can save significant costs and delays. We can and do assist with all five stages. The PEA is primarily confined to Stages 1 and 2 but, subject to any more detailed investigations that may be required, we can provide text suitable for incorporation as Conditions where relevant and we can offer assistance in negotiating, writing and discharging them. When appropriate, as is commonly the case to ensure the overarching aim of No Net Loss but rather Net Gains to Biodiversity, we can take full responsibility for all long-term ecological management and monitoring as an exclusive service through our Estates division.

## WORK NEEDED FOR COMPLIANCE AS REVEALED BY THE SURVEY

| REQUIRED FURTHER WORK (PROTECTED SPECIES & HABITATS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| From observations of this walk-over examination, is further work likely to be needed regarding notable/protected species, habitats, planning policy, biodiversity duty or related regulatory compliance?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Yes                                                                                          |
| <u>Work required if "yes":</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <u>Reason</u>                                                                                |
| Produce a Reasonable Avoidance Measures Statement (RAMS) outlining all mitigation and precautionary measures necessary during both construction and use of the properties to remove adverse impacts on protected species and surrounding habitats. These are to be integrated within the site's Construction Environmental Management Plan (CEMP), and the information supplemented by the results of a full botanical and phytosociological survey and Ecological Impact Assessment, to be conducted during the optimal survey season (June to August inclusive). This will require to be followed by a permanent Management Plan for Biodiversity should planning consent be granted. | Compliance with law protecting wetland species and habitats of significant ecological value. |
| Acquire a European Protected Species (EPS) licence for working in proximity and unavoidable road work affecting great crested newt habitat. This will require a full great crested newt survey to be conducted during the optimal survey period between February and May inclusive, to determine the overall population size and necessary mitigation measures required proportional to the findings.                                                                                                                                                                                                                                                                                   | Compliance with law protecting amphibians.                                                   |
| Undertake site clearance outside the bird nesting season (usually taken as March to mid-August inclusive in this part of Britain). If this is unavoidable, pre-clearance inspection by a suitably experienced ornithologist will be required to identify whether any nests are present, and ensure appropriate action is taken.                                                                                                                                                                                                                                                                                                                                                         | Compliance with law protecting active birds' nests.                                          |
| If there are any steep-sided excavations created during construction, please ensure they are covered overnight or provided with ramps to prevent any vulnerable animals becoming trapped. Re-fill such excavations as soon as feasible. Also, take care to seal/cover over open pipes, tanks, materials/rubble piles, bonfire stacks or other features that may be a danger to wildlife taking shelter/hibernating/ <i>etc.</i>                                                                                                                                                                                                                                                         | Prevention of cruelty, maintaining best practice.                                            |
| Avoid unnecessary negative impacts of new lighting at night, e.g. on bats, invertebrates, plants, night sky. Minimise the hours when lighting is used, avoid "spillage" by using directional down-lighting, reduce brightness of necessary illumination and keep light from shining on bat roost entries, mammal holes, <i>etc.</i> Supply a detailed lighting plan for ecological review.                                                                                                                                                                                                                                                                                              | Reducing ecological impact and compliance with National Planning Policy Framework.           |
| Generally, retain habitats and features of manifest ecological interest and wildlife value such as the hedgerows and trees forming the site boundaries (seeking further advice from us if uncertain) within the development proposals. Create new                                                                                                                                                                                                                                                                                                                                                                                                                                       | Best practice and compliance with government policy on biodiversity protection and           |

| REQUIRED FURTHER WORK (PROTECTED SPECIES & HABITATS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <p>wildlife habitats appropriate to the site's context, e.g. through the use of log piles, "wild" corners and native planting; install four bird and three bat boxes. Incorporate these features into the project's landscape/building design scheme.</p> <p>Retain, enhance and monitor the condition of the western field's wetland habitats, as features of significant value to local biodiversity.</p> <p>The bird boxes should accommodate different, small garden bird species present within the area, with entrance holes 28 and 32mm wide. The bat boxes should be general purpose models suitable for both crevice- and void-dwelling. (We can provide specific recommendations for models and siting on request, but they must be of good quality and durable.) Bat and bird boxes must be inspected annually and replaced when needed (usually after ten years).</p> <p>Permeability for hedgehogs commuting through the landscape should be ensured within the development through the provision of hedgehog gates or gaps at the base of any proposed fencing.</p> | enhancement. |

| REQUIRED FURTHER WORK FOR GENERAL REGULATORY & GOOD PRACTICE COMPLIANCE                                                                                                                                                                                                                                             |                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Is further work recommended to observe ecological best practice and/or planning policy as recognised by the various statutory authorities at local, regional, national, or international levels as may be applicable?                                                                                               | Yes                                                                                   |
| <u>Work required if "yes":</u>                                                                                                                                                                                                                                                                                      | <u>Reason</u>                                                                         |
| Appoint an Ecological Clerk of Works <sup>1</sup> and formally instruct ("toolbox talk") contractors and site personnel on agreed policies, recommendations, and requirements to maintain environmental quality and minimise impacts during construction, generally avoiding unnecessary disturbance and pollution. | Best practice (BS42020, etc.)                                                         |
| Establish "green" roofs and walls on all suitable structures that can accommodate them, ensuring appropriate ecological science input to their management and maintenance.                                                                                                                                          | Green Infrastructure and biodiversity enhancement.                                    |
| Use native planting (preferably of local origin and reflecting local botany) wherever feasible in all landscaping. Where exotic species are planted, always avoid invasive species, and choose those with wildlife value such as for nectar or shelter. (A selection of species is available from us.)              | Biodiversity enhancement and helping to assure Biodiversity Net Gain and no net loss. |
| Embody Green Infrastructure protocols in landscaping and ensure ecological linkage out from and into the site. (Please                                                                                                                                                                                              | Ecological connectivity and future biodiversity protection/                           |

<sup>1</sup> This should be a suitably qualified senior person who will keep a daily log and report throughout the construction process.

| REQUIRED FURTHER WORK FOR GENERAL REGULATORY & GOOD PRACTICE COMPLIANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| ask us if you require further details.) Please ensure we are provided with the proposed landscape planting plan to verify compliance with Green Infrastructure, Pollinator Policy and Biodiversity Net Gain. Ensure that permanent monitoring and management of all ecological elements and greenspace of the site is established. This should be confirmed within the planning approval. Include a full sustainable drainage plan/details of foul and surface water treatment.                                                                                            | enhancement in accordance with latest guidelines.                                                                 |
| Always retain mature trees and established native hedgerows on site and at the periphery by designing around them. Protect trees in line with BS5837 and do not remove ivy, mistletoe, standing dead wood, snags, or rot unless there is a clear and material safety risk or presence of a serious pathogen. (Ask for advice on pathogens from a qualified silvicultural ecologist if in doubt.)                                                                                                                                                                           | Tree and biodiversity protection; BS5837: 2012 <i>Trees in relation to design, demolition, and construction</i> . |
| Ensure that the "carbon footprint" and measures to combat climate change (see also tree planting above) in all aspects of the project and its future operation are compliant with current best practice. This should include taking appropriate steps to avoid or reduce the use of fossil fuels, minimising ground disturbance to conserve soil biology/ecology, employing scientifically sound carbon offset/CO <sub>2</sub> sequestration and instating renewable energy technologies. Ensure the measures agreed are quantified, independently verified and monitored. | To follow government and international policy on climate change and soils conservation.                           |

---

## RESULTS – WHAT WE FOUND

---

### Objectives

- To conduct a Preliminary Ecological Appraisal;
- To conduct a newt Habitat Suitability Index of all nearby water bodies; and
- To undertake a Public Records Search from local data repositories.

### Methods and Limitations

The site was examined using appropriate methods generally following the current guidance from the (Chartered) Institute of Ecology and Environmental Management<sup>2</sup> and the UK Habitat Classification<sup>3</sup>, with further reference to British Standards such as 42020<sup>4</sup> and 8683<sup>5</sup> as appropriate or practicable.

It should be noted that, whilst the investigation of the site was appropriately intensive within the intended framework of the commission, and we feel it is unlikely that significant matters have been overlooked, a single visit will inevitably miss species not apparent on the date of survey by reason of seasonality, mobility, habits or chance. The month of February is not within the optimal survey period for many taxa of nature conservation interest in this part of the United Kingdom. This is of particular importance in regards to the wetland and unmanaged, marshy grassland areas on site, in which a wide range of specialist plant species of ecological interest would only be detectable later in the season. Follow-up surveys are therefore required as above.

It should always be recalled that wildlife surveys of the kind required for planning and development or similar project purposes are seldom granted sufficient time or resources to examine non-vascular plants, invertebrates or fungi in great detail, yet these are the fundamental elements of ecosystems that provide the niches and habitats for larger fauna to exploit. Fungal mycelia in soil and associated with roots and decaying organic material are of exceptional importance in healthy ecosystem function, biological sustainability, biodiversity and as a carbon sink. It should always be borne in mind that land-use change, ground disturbance and intensive agriculture/forestry will usually have a significant adverse effect on fungal communities. This should be taken into account when appraising any project and appropriate avoidance/mitigation prescribed. In an ideal world, all surveys would

---

<sup>2</sup> The Chartered Institute of Ecology and Environmental Management guidelines which are regularly updated and we use our best endeavours to observe.

<sup>3</sup> The UK Habitat Classification and User Manual, see <https://ukhab.org/>.

<sup>4</sup> British Standards Institute (2013). *British Standard 42020: 2013 Biodiversity. Code of practice for planning and development*. British Standards Institute, London, UK.

<sup>5</sup> British Standards Institute (2021) *British Standard 8683 Process for designing and implementing Biodiversity Net Gain* British Standards Institute, London, UK.

include results of full sampling of vascular and non-vascular plants, micro- and macro-invertebrates and mycological status at individual, population and community levels. As that involves skills, time and expense well beyond what is available, we ask readers of our general survey reports to understand that we do consider the larger species we record in their wider ecosystem context and take into account the impacts of proposals at an ecosystem level when prescribing avoidance, mitigation, enhancement and/or compensation.



Preliminary Ecological Appraisal



Based upon Ordnance Survey © Crown Copyright, under licence 100005485, unauthorized reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings.  
Please note: this plan is intended only to indicate the approximate location of features and should therefore, not be treated as an accurate scale plan.

## Results Table

| ITEM                                                                                                                                               | OBSERVATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Habitats &amp; Vegetation</b><br>(NB. Please be aware that several designated habitat types and many plants enjoy legal protection in Britain.) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| General description                                                                                                                                | <p>This document is in support of the proposed construction of four dwellings within the eastern portion of a site in the village of Bettisfield, 8.25km north-west of the town centre of Wem.</p> <p>The site is located among a set of detached and semi-detached residences. The surrounding landscape is predominantly rural, with extensive surrounding areas of wetland, such as Fenn's Whixhall and Bettisfield Mosses, being present to the north- and south-east. The Llangollen branch of the Shropshire Union Canal crosses Bettisfield 60m to the north of the site.</p> <p>The 1.1ha site is composed of two fields. Both are occupied by a variety of wetland and scrub features, linked to the wider rural landscape by a network of ditches along its northern boundary and a hedgerow leading to an adjacent agricultural field to the south. The larger western field is characterised by three prominent mounds, separating the marshy, rush-dominated wetland habitat at their base into two distinct basins. The eastern-most of these basins is further characterised by an area of open water, whereas the other is more relatively overgrown with vegetation. The field's northern, southern and western boundaries are drier, with dense patches of bramble scrub and establishing shrub saplings growing amidst a largely neutral, cock's foot and false oatgrass-dominated disturbed neutral grassland.</p> <p>The eastern field is relatively drier, being partially located on an elevated slope on a north-west aspect. The northern boundary of this area is dominated by a dense strip of bramble, with a shallow stream and a deep, water-filled ditch marking the field's northern and western boundaries respectively.</p> <p>Trees and woody shrubs recorded during this survey were:<br/>           Elder <i>Sambucus nigra</i>, silver birch <i>Betula pendula</i>, downy birch <i>Betula pubescens</i>, goat willow <i>Salix caprea</i>, <i>Salix</i> spp, hawthorn <i>Crataegus monogyna</i>, blackthorn <i>Prunus spinosa</i>, alder <i>Alnus glutinosa</i>, pedunculate oak <i>Quercus robur</i>, dogwood <i>Cornus sanguinea</i>, Leyland cypress <i>Cupressus x leylandii</i></p> <p>Grasses and forbs recorded were:<br/>           Cock's foot <i>Dactylis glomerata</i>, common bent <i>Agrostis capillaris</i>, creeping bent <i>Agrostis stolonifera</i>, soft rush <i>Juncus effusus</i>, <i>Juncus</i> sp, red fescue <i>Festuca rubra</i> s.l., false oatgrass <i>Arrhenatherum elatius</i>, Yorkshire-fog <i>Holcus lanatus</i>, viper's bugloss <i>Echium vulgare</i>, herb-robert <i>Geranium robertianum</i>, hogweed <i>Heracleum sphondylium</i>, cleavers <i>Galium aparine</i>, broad-leaved dock <i>Rumex obtusifolius</i>, creeping buttercup <i>Ranunculus repens</i>, ivy <i>Hedera helix</i>, bulrush <i>Typha latifolia</i>, snowdrop <i>Galanthus nivalis</i>, ragwort <i>Jacobaea vulgaris</i>, bristly oxtongue <i>Helminthotheca echioides</i>, prickly sow-thistle <i>Sonchus asper</i>, knapweed <i>Centaurea nigra</i>, creeping</p> |

## Preliminary Ecological Appraisal

| ITEM                                                              | OBSERVATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                   | <p>thistle <i>Cirsium arvense</i>, ribwort plantain <i>Plantago lanceolata</i>, male fern <i>Dryopteris filix-mas</i>, foxglove <i>Digitalis purpurea</i>, common mouse-ear <i>Cerastium fontanum</i>, dandelion <i>Taraxacum officinale</i> agg., bramble <i>Rubus fruticosus</i> agg.</p> <p>Eleven Target Notes were assigned during the survey, reflecting potential ecological interest or consequential development impact.</p>                                                                                                                                                                                                                                                                                                                           |
| Statutory designations (on/near)                                  | <p>A Public Records Search revealed five Statutory Designated Sites being present within a 2km radius. These include: Fenn's Whixhall, Bettisfield, Wem and Cadney Mosses Site of Special Scientific Interest (SSSI) as well as two Designated Special Areas of Conservation (SAC) a RAMSAR site and a National Nature Reserve (NNR) by the same name.</p> <p>While the site is not directly adjacent to any of the above-listed sites, its waterways are connected to the Shropshire Union Canal and in turn the wider ditch and wetland network within the area. Measures taken to control and mitigate the potential for off-site run-off are essential to avoid any impacts on the Bettisfield, Wem and Cadney Mosses SSSIs, RAMSAR, SAC and NNR sites.</p> |
| Non-statutory designations (on/near)                              | <p>A Public Records Search revealed three Non-Statutory Designated Sites being present within a 2km radius. These include the following three Local Wildlife Sites: Balmer Heath Lyneal, Lyneal Moss Hampton Bank and The Rookery.</p> <p>As above, run-off control measure should also account for potential impacts on the sites of Balmer Heath Lyneal and Lyneal Moss Hampton Bank, being directly adjacent downstream to the Shropshire Union Canal. The development is not expected to have any impacts on The Rookery.</p>                                                                                                                                                                                                                               |
| Target Note (TN) 1<br>(for location of TNs please see plan above) | <p><b>Target Note 1.</b> Two maturing goat willows, to the south-east of the site's main entrance. The proposed access road is scheduled to pass through this area, along the southern boundary, while still avoiding and retaining the two willows.</p> <p>The ground vegetation within the surrounding main entrance area is occupied by grasses typical of disturbed soils and garden escapes. Piles of brick and construction material are stored on top of wooden pallets further to the west of the trees.</p>                                                                                                                                                                                                                                            |
| Target Note (TN) 2<br>(for location of TNs please see plan above) | <p><b>Target Note 2.</b> A maturing elder, surrounded by dense stands of establishing saplings. Similarly dense patches of self-set saplings were present along raised, dry sections of the western boundary.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Target Note (TN) 3<br>(for location of TNs please see plan above) | <p><b>Target Note 3.</b> A small grid of deep ditches, likely associated with a constructed feature prior to the site's past clearance. The ditches are surrounded by several maturing and semi-mature willows and birches.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

## Preliminary Ecological Appraisal

| ITEM                                                              | OBSERVATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Target Note (TN) 4<br>(for location of TNs please see plan above) | <b>Target Note 4.</b> Much of the north-eastern portions of the site are waterlogged and marshy, dominated by a broad variety of rushes. This habitat provides a significant source of shelter and forage in the form of aquatic and wetland invertebrates to a range of species, particularly amphibians, reptiles and locally significant waders such as lapwing, curlew and oystercatcher. The area has been flagged during hydrological inspections of the site as requiring regrading. Note however that such important ecological habitat should not be destroyed: apply the avoid - mitigate - compensate hierarchy. Per the latest landscape plans, the whole of the western area is to be retained as is. |
| Target Note (TN) 5<br>(for location of TNs please see plan above) | <b>Target Note 5.</b> Three distinct mounds, likely formed during past clearance of the site, separate the more waterlogged wetland areas into two distinct basins. The relatively drier soil of the mounds themselves, while still occupied predominantly by tussocks of rushes, allows patches of grass, brambles and occasional maturing trees, such as willow and alder, to establish within.                                                                                                                                                                                                                                                                                                                  |
| Target Note (TN) 6<br>(for location of TNs please see plan above) | <b>Target Note 6.</b> The site's northern boundary is marked by a ditch and a line of overhanging native trees and shrubs.<br><br>Immediately adjacent to the north is a derelict brick cottage, which may serve as a potential roosting site for bats or birds within the area. This feature, however, was not within the site boundary and is not expected to be significantly affected by the development. Note that access into the property was not possible at the time of the survey.                                                                                                                                                                                                                       |
| Target Note (TN) 7<br>(for location of TNs please see plan above) | <b>Target Note 7.</b> An open pond area, clear of bulrushes and rushes occupies the eastern-most basin. The area is bordered to the east by a raised mound covered in a bramble patch and to the west by a central, rush-dominated mound. Fly-tipping of construction material was present along the southern portions of the feature, in the form of discarded furniture.                                                                                                                                                                                                                                                                                                                                         |
| Target Note (TN) 8<br>(for location of TNs please see plan above) | <b>Target Note 8.</b> The two fields are separated by a deep, water-filled ditch and a gappy section of native hedgerow. The proposed access track is expected to cross the southern section of this feature, with a culvert being constructed below the track for water to move through. As above, a full sustainable drainage plan is required for ecological review.                                                                                                                                                                                                                                                                                                                                            |
| Target Note (TN) 9<br>(for location of TNs please see plan above) | <b>Target Note 9.</b> A cluster of semi-mature and mature silver birches, blackthorn and pedunculate oak, located within an otherwise open patch of wet, marsh grassland within the north-western portion of the field. Several waterlogged furrows cross this section of the field, further contributing to the overall marshy character of the section of grassland in comparison to the drier areas of grassland to the south-east.                                                                                                                                                                                                                                                                             |

## Preliminary Ecological Appraisal

| ITEM                                                                         | OBSERVATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Target Note (TN) 10<br>(for location of TNs please see plan above)           | <b>Target Note 10.</b> A large, mature alder overhanging a small stream on the site's northern boundary. Much of the vegetation surrounding the tree is composed of dense bramble scrub, clearing only around the tree's base.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Target Note (TN) 11<br>(for location of TNs please see plan above)           | <b>Target Note 11.</b> A native hedgerow composed of hawthorn, dogwood, Leyland cypress and elder, marking the eastern and south-eastern boundaries of the site. Density of the feature is further enhanced through a significant cover of ivy spreading across the southern portions hedge, providing further sources of pollen and retaining its value as a significant source of shelter throughout the year. Two mammal paths were observed at the base of the feature, linking the site to an adjacent agricultural field to the south.                                                                                                                                                                                                   |
| Notable hedgerows, woodland or scrub                                         | <p>The site's native hedgerows and tree lines are all of good ecological value, providing a sheltered, extensive connectivity feature across the wider landscape. The relative density of woody species present and in-setting of trees provides a further source of both shelter and forage in the form of berries and nectar provided by these species.</p> <p>The extensive bramble scrub across the site is also a notable source of shelter, pollen and forage. While the quick establishment of the species over the site's habitats is to be managed, to avoid it from out-competing the wetland specialists and grassland species present, limited patches should be retained where possible to retain their value to local fauna.</p> |
| Ecologically notable trees (e.g. veteran, wildlife significant) <sup>6</sup> | No veteran trees were observed directly on site, although the mature alder is of considerable age and size and will likely develop into one over time. The other trees present on site are also all of good ecological value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Ponds/water courses                                                          | See Target Notes 3, 6, 7, 10.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Notable communities                                                          | None observed on site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Notable vascular plants                                                      | None present.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Notable bryophytes/algae                                                     | None observed on site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Notable lichens                                                              | None observed on site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Notable fungi                                                                | None observed on site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Other notable habitats/vegetation                                            | None observed on site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

<sup>6</sup> Please note that we do not check TPO status as this is a landscape/amenity planning classification.

## Preliminary Ecological Appraisal

| ITEM                                                                                                  | OBSERVATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Features that should be retained                                                                      | <p>The marshy basins, pond and surrounding mounds identified in TNs 4, 5 and 7 are all features of significant ecological value to both local flora and fauna. Any management efforts to be made should prioritize the western field's retention as a major local wetland feature in perpetuity, controlling the establishment of brambles, willows and garden escapes within the area to prevent it from drying out.</p> <p>The trees highlighted in TNs 9-10 are particularly mature and of good ecological value. While the mature alder is scheduled to be retained, the cluster of trees in TN9 is scheduled to be cleared as part of the development. These losses are to be remediated through appropriate replanting of trees across the site; these should be similar, water-tolerant native trees.</p> <p>Hedgerows and tree lines should all be retained, with large gaps being infilled with smaller shrubs to enhance their value as connectivity features. Ground vegetation present along the base of hedgerow and tree lines should also be retained and managed for biodiversity, to enhance their ecological value.</p> <p>Any clearance and trimming required must be minimised and done outside the bird-nesting season (usually taken as March to mid-August inclusive in this part of Britain). If this is unavoidable, a pre-clearance inspection by a suitably experienced ornithologist will be required to identify which nests are in use, and ensure appropriate action is taken.</p> <p>The tree trunks and root networks of all trees and shrubs to be retained must be protected by a suitably wide buffer strip during both clearance and construction activities. Nowhere within the buffer strips should be used for the storage of machinery or materials. A minimum, 1m to 2m permanent buffer strip should be maintained along all tree lines to conserve ground flora and protect biodiversity.</p> <p>The ditches and stream (TNs 6, 8 and 10) along the site's boundaries are also to be retained. Similar buffer strips should be put in place to minimise encroachment both within the basin and along the banks of these features, to mitigate any further impacts beyond those already expected by the construction of the access route. Per Biodiversity Metric 3.1 guidelines, buffer strips should extend to a minimum of 4-10m from stream and ditch banks to avoid major encroachment. Encroachment can be further mitigated by limiting development footprints to beyond 10m of these linear water features.</p> |
| <b><u>Mammals</u></b><br>(NB. Several species and their habitats have very strict protection in law.) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Badger                                                                                                | None observed and no signs of foraging were present,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Otter                                                                                                 | The wetland habitats across the site are not optimal foraging or breeding habitat for the species. However, the northern stream and general proximity to other suitable river features within the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

## Preliminary Ecological Appraisal

| ITEM                     | OBSERVATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          | landscape such as the Shropshire Union Canal may result in the species commuting across the fields on occasion. None observed and no field signs found.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Other mustelids          | No obvious signs noted but the site may be used by other mustelid species (e.g. stoat)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Bats                     | <p>The mature alder identified in Target Note 10 has two notable knotholes within its crown that would provide suitable bat roosting habitat. There are however no further characteristic potential roosting features, such as more prominent cracks fissures, within the tree, and none of the other trees within the area are sufficiently mature or possess the complexity of structure to support roosting bats. The tree is flagged as having a low potential to support bats.</p> <p>Accounting for the lack of further potential additional bat tree roosts within the area and the proposed retention of the alder, per the latest Bat Conservation Trust Guidelines (2016) no further bat surveys are required. Residence boundaries and gardens should reflect this feature as being within publicly accessible space for the successful monitoring and management of the tree in perpetuity, to avoid the risk of being in breach of environmental law protecting bat roosts from disturbance. Should proposed works require the removal or clearance of the tree's crown, these should be preceded by a bat emergence or re-entry survey during the optimal bat survey season (May to September inclusive).</p> <p>Any external lighting to be included as part of the new proposed structures should be appropriately cowled to reduce light spill and avoid disturbance to both bats as well as other nocturnal species present within the site's surroundings. Use of suitable low-impact UV lighting can similarly further minimize overall light disturbance within the property's surroundings. A lighting plan is required for review.</p> <p>Install three bat boxes on sufficiently mature trees on-site.</p> |
| Water vole               | None observed and no field signs found, but the northern portions of the site and banks provide suitable burrowing and foraging habitats for the species. May be present on site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Common or hazel dormouse | No suitable habitat present on site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Deer                     | None observed, but the site may be visited by various deer species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Hedgehog                 | None observed, and no field signs found but may well use the site. Permeability for hedgehogs across the landscape would have to be ensured through the provision of hedgehog gates at the base of proposed fencing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Shrews                   | None observed, and no field signs found but may well use the site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

## Preliminary Ecological Appraisal

| ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | OBSERVATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Others                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Fox droppings were observed across the site, particularly along the south-eastern hedgerow. Other common mammals may (e.g. rabbit, hare, grey squirrel, rats, mice, moles) utilize the site. Full pre-works checks would be required to move any found to safety.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Birds</b><br><i>(NB. With the exception of derogated pest or very common species (check current list as it changes), the Wildlife and Countryside Act (1981 and amendments) gives protection to all wild birds in Britain from killing, injuring or taking as well as taking, damaging or destroying nests in use or being built, and taking or destroying eggs. Many species are also protected by international statutes to which Britain is a signatory.<sup>7</sup>)</i> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Red list                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Lapwing, house sparrow, starling.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Amber list                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Wood pigeon.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Active nests                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | None observed on site (out of season).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Other                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | The following, green-listed avian species were seen and/or heard on/flying over the site: wren, pheasant, great tit, blue tit, redstart, blackbird, jackdaw, long-tailed tit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Comments on ornithology                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <p>The wetland and pond features on site constitute a declining habitat of national importance for several species of wader, which seasonally migrate to such inland areas over the course of the year. An example of this was observed during the survey in the form of a number of lapwings being present around the pond area.</p> <p>The boundary hedgerows and trees on site are also of good ecological value to birds, acting as sources of shelter and forage in the form of nectar, berries and nuts to smaller passerines. These include declining, red listed species such as sparrows and starlings, both of which were observed within the site's vegetation during the survey.</p> <p>It will be important to undertake any site clearance outside the bird nesting season (usually taken as March to mid-August inclusive in this part of Britain). A pre-clearance inspection by a suitably experienced ornithologist of all trees, shrubs and areas of scrub to be removed will be required to identify whether any nests are present, and ensure appropriate action is taken.</p> <p>The combination of wetland habitat and dry mounds must be retained across the western field. Install four bird boxes of mixed designs suitable for sparrows and starlings within the trees adjacent to the site's boundaries, on an eastern aspect.</p> |
| <b>Herpetofauna</b><br><i>(NB. The grass snake, slow-worm, viviparous (common) lizard and adder (viper) are all protected from intentional killing or injury under Schedule 5, Section 9(1), of the Wildlife and Countryside Act as amended/reinforced by the CROW Act 2000.</i>                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

<sup>7</sup> Please also see [www.rspb.org.uk/wildlife/birdguide/status\\_explained.aspx](http://www.rspb.org.uk/wildlife/birdguide/status_explained.aspx) and [www.bto.org/sites/default/files/u38/downloads/home-news/2011-11/SUKB%202011%20final.pdf](http://www.bto.org/sites/default/files/u38/downloads/home-news/2011-11/SUKB%202011%20final.pdf) for red and amber lists etc., and explanations.

## Preliminary Ecological Appraisal

| ITEM                                                                                                                                                                                                                                                                                                                             | OBSERVATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| They are also protected under Schedule 5, Section 9(5) which prohibits selling, offering for sale, possessing or transporting for the purpose of sale, or advertising for sale, any live or dead animal, or any part of, or anything derived from the species. Other rarer species and their habitats have stricter protection.) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Adder                                                                                                                                                                                                                                                                                                                            | No suitable habitat on-site and no signs observed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Grass snake                                                                                                                                                                                                                                                                                                                      | The combination of open grassland, wetland and dry soil mounds make the site potentially suitable for grass snakes. Note, however, that the site lacks extensive sloping habitats on a southern aspect, most likely to be exposed to significant amounts of sunlight throughout the day and therefore suitable for basking.                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Slow-worm                                                                                                                                                                                                                                                                                                                        | As above.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Common lizard                                                                                                                                                                                                                                                                                                                    | As above.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Rarer reptiles                                                                                                                                                                                                                                                                                                                   | None observed. Site and location not suitable for rarer reptile species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Great crested newt                                                                                                                                                                                                                                                                                                               | Two suitable water bodies were detected within a 500 m radius from the site during a desk-based search, both of which being features present on site. The stream to the north of the site contains running water, and while serving as a potential commuting feature is unlikely to support a great crested newt breeding population.<br><br>The first, the pond identified in TN7, was found to have a Habitat Suitability Index (HSI) score of 0.78, indicating it as being of Good to Excellent suitability for great crested newts. The second suitable water body was the ditch separating two fields, which was found to have an HSI score of 0.63, indicating an Average suitability. See HSI calculation appendix below for further details. |
| Natterjack toad                                                                                                                                                                                                                                                                                                                  | No suitable habitat. Not found in the area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Other amphibians                                                                                                                                                                                                                                                                                                                 | Common amphibian species are likely to be present on site. As above, any found during pre-works checks would be moved to safety.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b><u>Fish</u></b><br>(NB. Various levels of legal protection.)                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Significant fishery                                                                                                                                                                                                                                                                                                              | N/A. No suitable habitat.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Bullhead                                                                                                                                                                                                                                                                                                                         | None observed, and no signs found.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Shad                                                                                                                                                                                                                                                                                                                             | N/A. No suitable habitat.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Lampreys                                                                                                                                                                                                                                                                                                                         | N/A. No suitable habitat.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## Preliminary Ecological Appraisal

| ITEM               | OBSERVATIONS              |
|--------------------|---------------------------|
| Salmonids          | N/A. No suitable habitat. |
| Other notable fish | None observed.            |

### Macro-invertebrates

Historically, macro-invertebrates have received relatively sparse attention in habitat surveys. Recent alarming declines in insect and other invertebrate populations coupled with the realisation of the great ecological importance of these taxa mean more detailed appraisal is required<sup>8</sup>. Several species enjoy legal protection.

| Ref.                                                                                                                                           | Habitat                                                                                                                               | Designations A-E (list all) if habitat present on site* |
|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| 1                                                                                                                                              | Decaying wood (all types, standing and lying, snags, sap runs, brash, debris, etc.)                                                   | D (Minor)                                               |
| 2                                                                                                                                              | Rotational management (may be planned or incidental; for nature conservation or other reasons)                                        | E (Absent)                                              |
| 3                                                                                                                                              | Nectar/pollen resources (estimate from site's botany)                                                                                 | C (Moderate)                                            |
| 4                                                                                                                                              | Wet & mesic substrata (riparian, marsh, fen, bog, mud, flushes, springs, seasonally inundated, etc.)                                  | B (Good)                                                |
| 5                                                                                                                                              | Open water (rivers, lakes, streams, ponds, ditches, etc.)                                                                             | C (Moderate)                                            |
| 6                                                                                                                                              | Habitat mosaics and patchworks (include those on brownfield/formerly developed sites)                                                 | D (Minor)                                               |
| 7                                                                                                                                              | Still air with insolation (suntraps and still-air microclimates in open situations)                                                   | C (Moderate)                                            |
| 8                                                                                                                                              | Still humid air (humid still-air microclimates in sheltered and shaded situations)                                                    | C (Moderate)                                            |
| 9                                                                                                                                              | Connectivity/corridors (ecological connectivity between the site and external habitats - see also note below about adjacent habitats) | C (Moderate)                                            |
| 10                                                                                                                                             | Ecoclines (graded transition between two or more broad habitats)                                                                      | D (Minor)                                               |
| 11                                                                                                                                             | Bare Earth (unshaded bare/sparsely vegetated well-drained substratum, irrespective of soil type)                                      | D (Minor)                                               |
| Are there any examples of A, B or C adjacent to the survey site or near enough that they will require protection during and after development? |                                                                                                                                       | No                                                      |

### Species

|                            |                        |
|----------------------------|------------------------|
| Crayfish                   | None observed on site. |
| Roman snail                | As above.              |
| Other molluscs             | As above.              |
| Lesser silver water-beetle | As above.              |
| Stag beetle                | As above.              |

<sup>8</sup> Adapted from Dobson, J. & Fairclough, J. (2021). Rapid Assessments of the Potential Value of Invertebrate Habitats. *In Practice*, 112, pp 44-48.

## Preliminary Ecological Appraisal

|                                            |                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Other notable beetles                      | None observed.                                                                                                                                                                                                                                                                                                           |
| Butterflies/moths                          | None observed, out of season.                                                                                                                                                                                                                                                                                            |
| Bees, wasps, flies, <i>etc.</i>            | None observed, out of season.                                                                                                                                                                                                                                                                                            |
| Dragonflies/damselflies                    | None observed, out of season.                                                                                                                                                                                                                                                                                            |
| Other notable entomological spp or groups  | None observed, out of season.                                                                                                                                                                                                                                                                                            |
| Notable invertebrate habitat               | None observed.                                                                                                                                                                                                                                                                                                           |
| Overall assessment for macro-invertebrates | The areas on site are likely to support primarily marsh and wetland specialist macro-invertebrates of ecological interest, as well as more common and widespread 'generalist' species able to adapt to a wide variety of conditions. There are no nearby sites requiring special protection during or after development. |

|                                                                                                                                                                                                                                      |                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| <b>Invasive alien species (IAS)<sup>9</sup> and pathogens</b><br>(There are an increasing number of these being listed by authorities. More and more are becoming subject to regulatory control that carries significant sanctions.) |                                                                                    |
| IAS (plants) (Wildlife & Countryside Act Article14, Schedule 9.)                                                                                                                                                                     | None observed on site.                                                             |
| Weeds Act natives (common ragwort, creeping and spear thistles, curled and broad-leaved docks)                                                                                                                                       | Common ragwort, creeping thistle, broad-leaved dock.                               |
| Other exotic plants that may cause problems.                                                                                                                                                                                         | None observed.                                                                     |
| Invasive animals (signal crayfish, killer shrimp, oak processionary moth, harlequin ladybird, zebra mussel, grey squirrel, <i>etc.</i> )                                                                                             | Grey squirrels and harlequin ladybirds are highly likely to use the site at times. |

<sup>9</sup> Sometimes referred to as "non-native species".

## Preliminary Ecological Appraisal

---

|                                                                                                                      |                         |
|----------------------------------------------------------------------------------------------------------------------|-------------------------|
| <i>Phytophthora ramorum</i> and other serious plant diseases/pathogens (ash dieback, sudden oak death, <i>etc.</i> ) | No obvious signs noted. |
| <u>Policy</u> <sup>10</sup>                                                                                          |                         |
| Are there any known conflicts with local planning biodiversity policy (if so, please describe)?                      | No known conflicts.     |
| Are there any known conflicts with national planning biodiversity policy (if so, please describe)?                   | No known conflicts.     |
| Are there any known conflicts with international biodiversity policy (if so, please describe)?                       | No known conflicts.     |

---

<sup>10</sup> It is important that projects incorporate relevant elements of Green Infrastructure Planning (please see [www.naturalengland.org.uk/ourwork/planningdevelopment/greeninfrastructure/default.aspx](http://www.naturalengland.org.uk/ourwork/planningdevelopment/greeninfrastructure/default.aspx))  
 “Green Infrastructure (GI) is a strategically planned and delivered network of high quality green spaces and other environmental features. It should be designed and managed as a multifunctional resource capable of delivering a wide range of environmental and quality of life benefits for local communities. Green Infrastructure includes parks, open spaces, playing fields, woodlands, allotments and private gardens.”

## PUBLIC RECORDS SEARCH RESULTS

| PUBLIC RECORDS SEARCH                                                                                                           |                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SOURCE:<br>COFNOD Local Environmental Records Centre for North Wales<br>Telford & Wrekin Cooperative Council Biological Records |                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                 | Data/Response                                                                                                                                                                                                                                                 | Betts comment                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Bats                                                                                                                            | <p>The public records search revealed two records of two specifically identified species of bat within the 2km search area. Both are from 2013.</p> <p>1 <i>Myotis nattereri</i> Natterer's Bat<br/>1 <i>Pipistrellus pipistrellus</i> Common Pipistrelle</p> | The very low amount of historical bat records are likely to be more indicative of a lack of overall recordings than necessarily of low habitat suitability, given the rural environment and surrounding woodlands within the wider landscape.                                                                                                                                                                                     |
| European Badger                                                                                                                 | .                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Otters                                                                                                                          | The public records search revealed two records of otter <i>Lutra lutra</i> within the 2km search radius. The most recent was in 2011.                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Hedgehog                                                                                                                        | The public records search revealed one record of hedgehog <i>Erinaceus europaeus</i> within the 2km search radius from 2000.                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Water vole                                                                                                                      | The public records search revealed 167 records of water vole <i>Arvicola amphibius</i> within the 2km search radius. The most recent was in 2009.                                                                                                             | Much of the surrounding landscape to the north of the site is occupied by networks of streams and rivers areas, with records suggesting the presence of this species across these habitats. Records show evidence of the species being historically present within the site boundaries. The significant amount of forage present on-site and its connectivity to the wider stream network attest to its presence within the area. |
| Other mammals                                                                                                                   | There are eight records of brown hare <i>Lepus europaeus</i> in the search area. The most recent was in 2022.                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                   |

## Preliminary Ecological Appraisal

| PUBLIC RECORDS SEARCH<br>SOURCE:<br>COFNOD Local Environmental Records Centre for North Wales<br>Telford & Wrekin Cooperative Council Biological Records |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                          | Data/Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Betts comment                                                                                                                                                                                                                                                                                                                                                                         |
|                                                                                                                                                          | <p>There are six records of polecat <i>Mustela putorius</i>. The most recent was in 2015.</p> <p>There is one record of harvest mouse <i>Micromys minutus</i> from 2009.</p>                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                       |
| Reptiles                                                                                                                                                 | <p>There are seven records of adder <i>Vipera berus</i>. The most recent was in 2006.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                         | <p>While present within the wider landscape, the site does not provide particularly suitable habitat for adders. Note however that the significant amphibian presence, combination of scrub, grassland wetland and soil mounds suggest a habitat more suitable for other reptile species such as barred grass snake <i>Natrix helvetica</i> and slow worm <i>Anguis fragilis</i>.</p> |
| Amphibians                                                                                                                                               | <p>The public records search revealed sixteen records of common frog <i>Rana temporaria</i> and ten records of common toad <i>Bufo bufo</i>, the most recent for both being in 2021.</p> <p>There are four records of unidentified newts within the 2km search area, the most recent being in 2007.</p> <p>There are nine records of great crested newt <i>Triturus cristatus</i> within the 2km search area in 2020.</p> <p>There are two records of smooth newt <i>Lissotriton vulgaris</i>, the most recent being in 2015.</p> | <p>Of the nine great crested newt records, the most recent was immediately within the north-west portions of the site, confirming a historical presence of the species within the site area.</p>                                                                                                                                                                                      |

A public records search revealed five Statutory Designated Site within a 2km search area.  
A public records search revealed three Non-Statutory Designated Sites within a 2km search area.  
A search using [www.bto.org](http://www.bto.org) revealed the latest information regarding birds of conservation concern.

## GREAT CRESTED NEWT HABITAT SUITABILITY INDEX RESULTS

There are two suitable water bodies present within 500 metres of the development site, both of which are located on the site itself. These were assessed for suitability to support great crested newts according to the Habitat Suitability Index (*sensu* Oldham *et alii* 2000). The Habitat Suitability Index (HSI) incorporates ten suitability indices (SIs), all of which are factors believed to affect this species. It is a numerical score where 0 indicates unsuitable habitat and 1 represents optimal habitat.

Categorisation of HSI Scores<sup>11</sup>:

| <u>HSI</u> | <u>Pond Suitability</u> |
|------------|-------------------------|
| <0.5       | = poor                  |
| 0.5 - 0.59 | = below average         |
| 0.6 - 0.69 | = average               |
| 0.7 - 0.79 | = good                  |
| >0.8       | = excellent             |

**NOTE:**  $HSI = (SI_1 \times SI_2 \times SI_3 \times SI_4 \times SI_5 \times SI_6 \times SI_7 \times SI_8 \times SI_9 \times SI_{10})^{1/10}$

### Great Crested Newt Habitat Suitability Index

The Habitat Suitability Index (*sensu* Oldham *et al.* 2000) for great crested newts was calculated and is given below. The first water body, the pond present within the western field, resulted in a HSI for great crested newts of 0.78 (see Table 1), and as such is classified as a ‘good’ to ‘excellent’ index score. The second water body is an inundated ditch, separating the western and eastern fields. While the feature is linked to the northern stream, it is distinctly suitable as a potential newt breeding habitat due to its depth, lack of significant currents or water flow and amounts of emergent and bankside aquatic vegetation suitable for egg laying. This feature’s HSI score was 0.63(see Table 2), and is as such classified as an ‘average’ index score.

<sup>11</sup> Taken from: *Habitat Suitability Index - guidance note* - produced by National Amphibian and Reptile Recording Scheme (NARRS).

**Table 1:** Habitat Suitability Index for a pond within the western field.

| HSI Factor                     | Pond        | Notes                                                                  |
|--------------------------------|-------------|------------------------------------------------------------------------|
| SI 1 - Location                | 1           | The geographic location is optimal.                                    |
| SI 2 - Pond area               | 0.4         | 195 m <sup>2</sup> .                                                   |
| SI 3 - Pond drying             | 0.5         | Sometimes dries.                                                       |
| SI 4 - Water quality           | 0.67        | Moderate water quality, range of submerged aquatic vegetation present. |
| SI 5 - Shade (to 1m from edge) | 1           | <5% shade from surrounding trees and shrubs.                           |
| SI 6 - Fowl                    | 0.67        | Minor waterfowl presence, no signs of bankside damage.                 |
| SI 7 - Fish                    | 1           | No fish present.                                                       |
| SI 8 - Ponds                   | 0.65        | Four suitable water bodies within 1 km of the surveyed pond.           |
| SI 9 - Terrestrial habitat     | 1           | Located within a patchwork of marsh, rough grassland and scrub.        |
| SI 10 - Macrophytes            | 0.95        | 65% macrophyte cover.                                                  |
| HSI Score                      | <b>0.78</b> |                                                                        |
| Pond Suitability               | <b>Good</b> |                                                                        |

**Table 2:** Habitat Suitability Index for an inundated ditch separating the two fields.

| HSI Factor                     | Pond           | Notes                                                                                           |
|--------------------------------|----------------|-------------------------------------------------------------------------------------------------|
| SI 1 - Location                | 1              | The geographic location is optimal.                                                             |
| SI 2 - Pond area               | 0.08           | 70 m <sup>2</sup> . Measured from the segment distinct from the less suitable, northern stream. |
| SI 3 - Pond drying             | 0.5            | Sometimes dries.                                                                                |
| SI 4 - Water quality           | 0.67           | Moderate water quality, range of submerged aquatic vegetation present.                          |
| SI 5 - Shade (to 1m from edge) | 0.8            | 70% shade from surrounding trees and shrubs.                                                    |
| SI 6 - Fowl                    | 0.67           | Minor waterfowl presence, no signs of bankside damage.                                          |
| SI 7 - Fish                    | 0.67           | No evidence of fish found, may be present on occasion.                                          |
| SI 8 - Ponds                   | 0.65           | Four suitable water bodies within 1 km of the surveyed pond.                                    |
| SI 9 - Terrestrial habitat     | 1              | Located within a patchwork of marsh, rough grassland and scrub.                                 |
| SI 10 - Macrophytes            | 1              | 80% macrophyte cover.                                                                           |
| HSI Score                      | <b>0.63</b>    |                                                                                                 |
| Pond Suitability               | <b>Average</b> |                                                                                                 |

---

## CONCLUSION

---

The vegetation observed across the site was found to be of high ecological value, as an extensive, declining wetland habitat with a patchwork of drier grassland and scrub areas, suitable for a number of specialist bird, amphibian and invertebrate species. Due to these habitat mosaics in combination with the sub-optimal survey season, a full botanical survey during the late spring-early summer would have to be carried out to fully cover the overall range of plant species present across the site.

It is important to highlight that the proposed development would be strictly located within the relatively least ecologically significant areas of the overall site, occupying primarily the sloping dry grasslands within the eastern field. The proposal includes the planting of additional trees to remediate for the loss of the tree patch highlighted in **TN 9**, as well as an extension along the south-eastern boundaries of the ditch network. The western field area is to be retained outside the development footprint as any significant clearance would lead to significant disturbance and habitat and biodiversity losses to an area of high ecological value. The planting scheme has been reviewed by Betts Ecology to ensure that all tree/shrub species and grassland seed mixes were suitable for the location and no potentially invasive species would be introduced.

To reflect the scale of these potential losses to biodiversity and the extent of precautionary measures required to proceed safely with the development while still ensuring minimal impacts and overall Biodiversity Net Gain, the proposed development has been signalled with a **RED** warning indicator. The developer has made changes to the landscaping scheme in line with advice from ecologists, and is obtaining a mitigation licence for great crested newts to assure their protection as part of the development. These actions should result in this warning being able to be scaled down to an **AMBER** indicator, reflecting the legislative requirements of a development site within a habitat significantly suitable for several protected species, particularly birds and great crested newts. As indicated above, considering this high suitability in combination with this newts' historical presence on the site, an EPS licence will be applied for in order to proceed with works culverting the ditch separating the two ditches and securing a low-impact path into the work area for vehicles, avoiding the western marsh.

Mitigation measures taken to minimise impact, particularly outlining vehicle access routes, avoidance of run-off into the water network, material and chemical storage, must be summarised within a relevant Reasonable Avoidance Methods Statement (RAMS), to be integrated within the proposal's Construction Environmental Management Plan (CEMP) plus a Biodiversity Management Plan for the site should the Local Authority be minded to grant planning consent. Please note, however, that all of the above are subject to the findings of the additional surveys and reports provided in addition to this preliminary report.

It is essential that the ecological recommendations of this and any future ecological reports relating to this site are securely incorporated as formal Conditions within any planning consent the Local Authority is minded to grant, and that their implementation and ongoing care are verified and monitored by appropriately qualified persons in the Planning Authority or appointed by them.

#### **Notes**

Please note that there is complex and strict legislation protecting many species and habitats. Full details are available on the web sites of Defra and the various statutory authorities, some of which now have direct powers of enforcement. If you are in any doubt about the status of species or habitats on your site, please be sure to contact us before undertaking any site work. You should also make sure that you are aware of, and have allowed for, all national and local planning policies relating to wildlife and nature conservation before proceeding.

This PEA is not sufficient on its own for planning application purposes because notable habitats/species are present or potentially present. Necessary further studies have been indicated in the text.

---

## PHOTOGRAPHS

---

Photographs were taken on 2 February 2023



**Fig 1.** View of the site's south-western boundary. Note the two maturing willows to the left of the entrance into the site. Rubble and piles of construction material, such as the ones behind the two trees, can act as potential hibernacula for amphibians and reptiles during the winter.



**Fig 2.** Detail along the south-western boundary, highlighting one of the patches of dense, establishing saplings present within the western field.



**Fig 3.** Western view across the grid of ditches identified in TN3.



**Fig 4.** North-eastern detail of the small grid of ditches identified TN3.



**Fig 5.** View along the north-western boundary. Mounds such as the ones to the left were present across the northern and western site edges.



**Fig 6.** Eastern view across the site's western field. The picture was taken from a mound enclosing the westernmost of the two marshy basins, both of which are visible in the picture.



**Fig 7.** Northern view of the eastern basin and the open water body within its centre.



**Fig 8.** View of the small patch of trees within the eastern field, adjacent to the separating ditch.



**Fig 9.** Northern view along the ditch separating the site's two fields. Run-off avoidance and maintenance of the feature are essential in order for the development to ensure the lowest impact on the site's water features.



**Fig 10.** Eastern view across the eastern field, within which most of the development will take place. Note the boundary hedge to the right.



**Fig 11.** Western view across the eastern site. Shallow but long furrows, such as the one pictured, cut through the lower, northern portion of the site.



**Fig 12.** Northern view of the mature alder on the eastern field's northern boundary.



**Fig 13.** The northern boundary of both the eastern and western field is marked by a stream, pictured above. While not optimal newt breeding habitat, it constitutes an important habitat for other aquatic and riparian species and an ecological connectivity feature, being directly connected to the Shropshire Union Canal.



**Fig 14.** Crossing point in which the access road is to cross to link the proposed new properties. Not visible in this picture is the ditch highlighted in TN 8, extending from the fence-line to the right.

+++  
**IMPORTANT**

Please be aware that, because the natural environment is dynamic, ecological reports generally have a limited period of currency. Many statutory authorities now regard one year as the maximum time that should elapse before a report will need to be updated: occasionally it may be longer but it may also be less. Where a statutory wildlife licence is to be applied for, a walk-over of the site should be carried out within three months of an application being submitted to check that the habitats have not changed significantly since the survey was carried out.

Betts are a scientific practice. Any information relating to legal matters in this report is provided in good faith but does not purport in any way to give any advice on or interpretation of the law whatsoever. Professional legal advice should always be sought. Any designs, specifications, advice, suggestions, or comments written or verbal relating to construction or supervision of building-related work of any kind are provided for consideration only and under no circumstances are to be interpreted as provision of design, management or supervision *sensu* the Construction (Design and Management) Regulations 2007.

---

## CAPABILITY and QUALITY ASSURANCE

---

*Founded in 1985 to provide high quality professional services to meet an increasing market demand in applied environmental sciences, the Practice stems from the original Betts family business which was established in 1760 for the refining and recycling of high value industrial wastes and mineral ores. Betts thus offer an unusual blend of technological and practical expertise in a range of environmental disciplines, allied particularly to the biological conservation legislation and biodiversity policies of recent years. Contracts undertaken cover a wide spectrum of projects at local, national and international levels in the construction, extractive, agricultural, leisure, energy and general industrial sectors. Scientific staff belong to appropriate professional institutes by whose codes of practice they abide. Due consideration of the British Standards on Biodiversity is included in relevant work and applied where appropriate.*

### **Nicholas Valori BSc MSc — Ecologist**

Nicholas holds a Bachelor of Science degree in Zoology and a Masters in Ecological Consultancy from the Russell Group University of Newcastle-upon-Tyne. Modules encompassed Human-Wildlife Conflicts, Botany, Soil Surveys, use of Geographic Information Systems, Environmental Impact Assessment and Wildlife Legislation in theory and practice, plus a full range of other studies including Animal Behaviour, Applied Ecology, Biological Modelling, Ornithology, Entomology and small mammal trapping. Nicholas' field experience includes great crested newt surveying and trapping, bat surveys, habitat management and enhancement work, volunteer training and a variety of other UK, EU and international projects.

*NB. Whilst all due and reasonable care is taken in the preparation of reports, Betts accept no responsibility whatsoever for any consequences of the release of this report to third parties. Clients are reminded that all work carried out by Betts is subject to our Terms of Trading which may be viewed at any time on our web site at [www.bettsecology.com](http://www.bettsecology.com) or can be provided on request. Please again be aware that site surveys inevitably miss species not apparent on the date of visit(s) by reason of seasonality, mobility, habits or chance. Results are indicative and given in good faith but they are not a guarantee of presence or absence of any particular taxa.*

*Please note that this report is a Preliminary Ecological Appraisal of factors and features that may be significant for regulatory compliance and biodiversity policies relating to change of use or other disturbance. Such reports may not, on their own, contain sufficient information for a planning application and may require further more detailed study to assure compliance.*

**Betts Ecology Ltd**  
Bank House  
Martley  
Worcester WR6 6PB  
United Kingdom

T +44 (0)1886 888445  
E [nature@bettsecology.com](mailto:nature@bettsecology.com)  
And other offices

More information is available at [www.bettsecology.com](http://www.bettsecology.com)

**Professional service**  
**Sustainable land management**  
**Enhanced biodiversity**  
**Better planning results**

**Betts Environment Betts Estates Betts Expert Services**