# Poplars Meadow

# Ewyas Harlod, Herefordshire

## Preliminary Ecological Appraisal,

## July and September Updated Botanical Surveys

**November 2016**

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## REPORT CONTENTS



**PLANS**



**APPENDIX CONTENTS**

## Document Verification Table

| Poplars Meadow, Ewyas Harold<br>Preliminary Ecological Appraisal, July and September Updated Botanical Surveys | | | | |
|---|---|---|---|---|
| Revision | Date | Prepared by | Checked by | Verified by |
| 1.0 | 23 March 2016 | Rory Jones MCIEEM<br>Ecologist | Daniel Seaward<br>Ecologist | Paul Hudson MCIEEM<br>Principal Ecologist |
| 2.0 | 29 July 2016 | Hal Starkie<br>Ecologist | Rory Jones MCIEEM<br>Ecologist | Paul Hudson MCIEEM<br>Principal Ecologist |
| 3.0 | 2 November 2016 | Rory Jones MCIEEM<br>Senior Ecologist | Daniel Seaward<br>Ecologist | Paul Hudson MCIEEM<br>Principal Ecologist |

## Executive Summary

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| **Site Location** | Acer Ecology Ltd was commissioned by Gwent Planning Solutions to conduct a preliminary ecological appraisal of land owned by Mr Elliot at 'Poplars Meadow', Ewyas Harold, HR2 0HU, within the boundary of Herefordshire County Council (Ordnance Survey Grid Reference centred at: SO 39163 28467). |
| **Development Proposals** | The development proposal is to construct a singular residential property on the northern extent of the site, with a garage facility attached. The development will be situated alongside the B4347, coinciding with current residential properties adjacent to Poplars Meadow. An area of semi-improved grassland will be permanently lost to the development. No other habitats are proposed for removal. |
| **Statutory and Non-Statutory Nature Designations** | There are no statutory designated sites present within 2km of the proposed development site.<br><br>The site comprises Poplars Meadow SWS – a portion of which will be permanently lost to the proposed development (see plan 3). This site is designated as an unimproved hay meadow containing noteworthy botanical species (meadow saffron, pepper saxifrage and meadow cranes-bill). The grassland within the site has been assessed as being semi-improved, rather than unimproved (as per the 'Poplars Meadow' SWS citation), and one of the three botanical species identified in the citation was absent (pepper saxifrage). The Herefordshire Wildlife Trust do not currently have detailed published criteria for SWS selection criteria based on botanical indicator species (Andrew Nixon. *pers comm., 31.10.16*), and the selection criteria has not been updated since many of the sites were designated in the 70's and 80's. It is therefore difficult to assess the current ecological condition of the Poplars Meadow SWS. However, it appears as though the ecological condition of the SWS is unfavourable at present, and may indeed have progressively deteriorated since the site was historically designated. It is subsequently unclear whether it would still qualify if assessed in its current condition. The semi-improved grassland is nonetheless considered to be of at least high local (and potentially district) ecological value.<br><br>Based on the results of the updated botanical surveys, no direct impacts to meadow saffron or pepper saxifrage would be likely to arise, provided that appropriate precautionary measures are implemented, as set out in section 5.0. However, the proposed development works at the time of writing will result in the loss of the section of field where meadow crane's-bill is locally abundant (see Plan 2). Development proposals will therefore directly affect a feature for which the 'Poplars Meadow' SWS is designated, and may therefore adversely affect the nature conservation value of the SWS. The Herefordshire Unitary Development Plan (2007) states that development proposals which could directly or indirectly affect SWS's will not be permitted unless it can be demonstrated that there would be no harm to the substantive nature conservation value of the site, or that appropriate mitigation and compensatory measures can be taken in accordance with policy NC7. Under current development proposals, the loss of a portion of the locally abundant meadow crane's-bill cannot be avoided, and the loss of approximately 0.19ha in the northern portion of the semi-improved neutral grassland field would be of high magnitude with respect to the meadow crane's-bill within the site. However, as specified in section 1.3 (See Plan 2) the majority of the site (approximately 0.87ha) will be unaffected by development works. Furthermore, the ecological quality of |

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| | the grassland appears to have deteriorated since the site was designated as a SWS, and there is therefore considered to be scope to actually increase the favourable condition of the SWS by enhancing the grassland towards unimproved status. It is therefore considered that appropriate mitigation, compensatory and enhancement measures can be implemented to sufficiently minimise or offset the damage to the feature covered by policies NC2 to NC6, in line with policy NC7 of the Herefordshire Unitary Development Plan (2007). The implementation of these measures would help to ensure the ongoing<br><br>Ten other SWS's were recorded within the search area. However, the distance of these protected sites away from the proposed development site means that it is not envisaged that any such sites will be affected by the development works. |
| **Impacts to Habitats of Value** | Dulas Brook is likely to qualify as a 'Priority Habitat' of the UK BAP (Biodiversity Reporting & Information Group, 2007) or listed in Section 41 as 'habitats of principal importance for conservation of biological diversity in England (NERC Act, 2006). Furthermore, the Herefordshire LBAP highlights rivers and streams as being a priority habitat. The watercourse is relatively unmodified with reasonable bank side vegetation. Dulas Brook is known to support otter, white-clawed crayfish and breeding kingfisher, as well as a range of important fish species (Overstall. L, 2003), although no evidence of such was recorded during the survey or returned by the local records centre (HBRC, 2016). This running water habitat is assessed as being of district value to wildlife.<br><br>The semi-improved neutral grassland may qualify as 'Lowland Meadow' under the UK BAP (Biodiversity Reporting & Information Group, 2007), and would therefore be of district ecological value.<br><br>Some of the scattered broadleaved trees (T2, and T3) are considered to be of local value to wildlife, due to their potential value for nesting birds and roosting bats.<br><br>The intact species-poor hedgerows have some value for nesting birds and potentially foraging and commuting bats, reptiles and hedgehogs. However, they are common and widespread in the surrounding landscape and as such they are not considered to be of greater than site value. Nonetheless, they should be retained as important wildlife corridors (as is currently proposed).<br><br>Based on existing development proposals, the vast majority of site will be unaffected by the development (see plan 3). Indeed, impacts are only anticipated upon the northern and north-western portion of the site. Plan 3 displays that the proposed new dwelling will be located approximately 210m from Dulas Brook, which has been assessed as being of district value to wildlife. Likewise, the new dwelling will be located approximately 205m from T3, which has been assessed as being of moderate potential to support roosting bats. The intact species-poor hedgerows are all proposed for retention. |
| **Impacts to Protected and Notable Species** | The proposed development could potentially have adverse impacts in varying degrees on a range of legally protected species, including nesting birds and reptiles. It is therefore considered essential that appropriate mitigation measures are set in place to avoid or minimise impacts to these species (see section 5.0). |

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| **Invasive Non-native Species** | None recorded. |
| **Requirements for Additional Survey** | None required. |
| **Licensing Requirements** | None required. |
| **Required Actions** | Appropriate mitigation and compensatory measures are recommended including:<br><br>Mitigation measures;<br>Precautionary measures;<br>Enhancement measures; and<br>Monitoring.<br><br>Details of mitigation are outlined in detail in Section 5.0. |

# 1. Introduction

## 1.1. Brief

Acer Ecology Ltd was commissioned by Gwent Planning Solutions to conduct a preliminary ecological appraisal of land owned by Mr. Elliot at 'Poplars Meadow', Ewyas Harold, HR2 0HU, within the boundary of Herefordshire County Council (Ordnance Survey Grid Reference centred at: SO 39163 28467).

Updated botanical surveys of the field were recommended in the initial preliminary ecological appraisal. They were subsequently carried out by Acer Ecology Ltd on the 1st July and the 29th September 2016. The results of the updated surveys are included within this report.

## 1.2. Site Description

The site proposed for development comprises a 1.06ha plot of land named Poplars Meadow, situated in the rural village of Ewyas Harold, Herefordshire. The plot is listed as a non-statutory designated Special Wildlife Site (SWS) that is cited as being of value as an 'unimproved hay meadow with botanical interest'. It comprises an elongated rectangle, measuring approximately 45m wide and 245m long. The field is enclosed by a combination of hedgerows, scrub, scattered broadleaved trees and fencing. Running immediately north of the site is the B4347, which is lined with detached residential housing. The north-western hedgerow lies adjacent to a neighbouring residential plot of land, while agricultural fields line the south-eastern hedgerow of the site. Dulas Brook borders the southern extent of the plot. It comprises a small tree lined stream running in a south-easterly direction towards Pontrilas.

## 1.3. Landscape Context

The site proposed for development lies approximately 1.2km north-west of small village of Pontrilas, which is the closest village to Ewyas Harold in this rural area of southern Herefordshire. The wider rural landscape is a mosaic of arable and pastoral fields bordered by mature hedgerows, deciduous woodland and several villages.

## 1.4. Proposed Works

The development proposal is to construct a singular residential property on the northern extent of the site, with a garage facility attached. The development will be situated alongside the B4347, coinciding with current residential properties adjacent to Poplars Meadow. An area of species-poor semi-improved grassland will be permanently lost to the development. No other habitats are proposed for removal. The anticipated development footprint is included in plan 3.

### 1.5. Scope of the Study

The study comprised the following:

- A desk study to identify existing information on statutory and non-statutory sites of nature conservation interest, and records of notable or protected habitats or species within the site and its environs;
- A Phase 1 Habitat Survey of the site, extended to search for evidence of, and potential for, protected fauna;
- Two update habitat and botanical surveys; and
- Identification of potential ecological constraints to the proposed works at the site and assessments of impacts including appropriate mitigation measures where necessary.

### 1.6. Reporting

This report aims to:

- Outline the methodology used during the survey;
- Present the results of the survey;
- Provide an ecological evaluation of on-site habitats, including an assessment of the potential for protected species;
- Provide an assessment of the potential impacts of the development proposals on ecological receptors identified through the desk and field study;
- Provide an assessment of the potential ecological constraints to the proposals; and
- Provide recommendations for further survey, avoidance, mitigation and enhancement where appropriate.

## 2. Methods

The survey was undertaken following standard methods as described in the Chartered Institute of Ecology and Environmental Management (CIEEM) Preliminary Ecological Appraisal 2012 guidelines and the Phase 1 Habitat Survey methodology (Joint Nature Conservation Committee, 2010). The methodology utilised for the survey work comprised a desk study, a habitat survey, a survey of protected and notable species and two update habitat and botanical surveys.

### 2.1. Desk Study

Protected Sites, Habitats and Species

Information on statutory nature conservation designated sites and protected species was obtained from the following sources:

| Source | Data | Radius of Search |
|---|---|---|
| Herefordshire Biological Records Centre. | Statutory and non-statutory nature conservation designated sites | SSSI / SAC / SPA / Ramsar – 2km.<br>SAC (designated for bats) - 10km.<br>SWS - 1km |
| | Historic Phase 1 Habitat Survey Data JNCC (1992 - 96) | Phase 1 data - site boundary |
| | Protected species records | 2km |
| Natural England's interactive web-based Multi-Agency Geographic Information for the Countryside (MAGIC) database | Statutory nature conservation designated sites | SSSI / SAC / SPA / Ramsar – 2km[1].<br>SACs (designated for bats) – 10km. |
| | Ancient semi-natural Woodland (ASNW) | ASNW - 2km. |

Landscape Context

The site and wider landscape was assessed and characterised through the use of aerial images, Ordnance Survey maps and Herefordshire Biological Records Centre habitat/protected sites maps. The

[1] The citations of all of the SSSIs within 2km of the site were consulted to determine if any of them had features or species which could be affected by the development proposals

presence of off-site features and habitats which add to the ecological value within the wider area, for example; ponds within 500m of the site, were identified. Where appropriate, such features were scoped into the detailed assessment of impacts presented in Section 4.0 below.

Planning Authority

The Herefordshire Council Planning Portal was consulted to determine if any previous survey information was available for the site or the immediate surroundings.

An internet based search of Herefordshire Local Biodiversity Action Plan was undertaken.

Site History

A request was submitted to Herefordshire Biological Records Centre for access to the data collected from the Phase 1 habitat survey of England which was undertaken by the former Nature Conservancy Council (NCC) during the period 1992-96. This information was reviewed to identify any change in habitat or management of the site and the surrounding area.

## 2.2. Field Study

### 2.2.1. Personnel

The initial field survey was undertaken in good weather on 3rd March 2016 by Rory Jones[2] MCIEEM and Jessica Ware[3]. Updated botanical surveys were undertaken on the 1st July 2016 by Hal Starkie[4] and Sander Aldershof[5], and on the 29th September 2016 by Rory Jones MCIEEM.

### 2.2.2. Vegetation and Habitats

The vegetation and habitat types present within the site were categorised and mapped in accordance with the standard Phase 1 Habitat assessment methodology (Joint Nature Conservation Committee, 2010). Dominant and conspicuous plant species were recorded for each habitat. Target notes were used to record information on features of ecological interest, such as evidence of, or habitats with potential to support protected species. Following the completion of the survey, a colour coded habitat plan was

[2] Rory is employed with Acer Ecology and is experienced in undertaking preliminary ecological appraisals. He graduated with a degree in Environmental Geoscience and has 3 years' postgraduate experience. He has undertaken extensive training in protected species assessment, phase 1 habitat surveys and botanical surveying. He holds Natural Resources Wales and/ or Natural England licences for bats, great crested newt and barn owl. Further details of his experience and qualifications can be found at http://http://bit.ly/1KSDv5l.

[3] Jess is employed with Acer Ecology Ltd. and has experience undertaking ornithological and protected species surveys. She graduated with 1st Class Hons. in BSc Environmental Science from Manchester University and MSc Environmental Biology: Conservation and Resource Management from Swansea University.

[4] Hal graduated from the Manchester Metropolitan University with a 1st Class Hons. BSc. Wildlife Biology degree and is employed as an ecologist with Acer Ecology Ltd. He is an experienced botanical and protected species ecologist and has undertaken extensive training in protected species assessment, phase 1 habitat surveys and botanical surveying. He holds both English (Natural England) and Welsh bat licences (Natural Resources Wales).

[5] Sander is a final year ecology student from the CAH Vilentum University for Applied Sciences, located in The Netherlands. Prior to attending university Sander worked as an ecology fieldworker. He is an accomplished botanist and has undertaken numerous surveys of bats, plants, dragonflies, butterflies, moths and reptiles, and is active at his local bird ringing station. Further details of her qualifications and experience can be found at http://bit.ly/1YRuCAt.

digitised using Corel Draw 12 to show the extent and distribution of the different habitat types present within the site (Plan 2).

Hedgerows within the site were formally assessed against the definitions within the Hedgerow Regulations 1997.

The presence of invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act (1981), as amended, such as Himalayan balsam (*Impatiens glandulifera*) and Japanese knotweed (*Fallopia japonica*) was also noted during the survey, if present.

### 2.2.3. Protected and Notable Species

During the survey, emphasis was placed on searching for evidence of, and habitats with, potential to support protected or notable species, especially species meeting any of the following criteria:

- Listed under the Conservation of Habitats and Species Regulations 2010 (as amended), the Wildlife and Countryside Act 1981 (as amended);
- Listed under the Natural Environment and Rural Communities (NERC) Act 2006 Section 41 Habitats or Species of Principle Importance for Conservation of Biological Diversity in England;
- UK BAP priority species or Local BAP (LBAP) priority species;
- Nationally rare or nationally scarce species; and
- Species of Conservation Concern (e.g. JNCC Red List, RSPB/BTO Red or Amber Lists).

It should be noted that only those species with potential to be present on site are mentioned within this report. The range of methods used were as follows:

#### Birds

Any birds observed during the field survey were recorded, in addition to features capable of supporting nesting birds (e.g. trees, hedgerows, buildings, bramble, ruderal vegetation and rough grassland etc). The site was also assessed for its actual and potential suitability to support Wildlife and Countryside Act 1981 (as amended) Schedule 1 species.

A comprehensive bird survey such as a breeding bird survey was not undertaken as this was beyond the scope of the assessment.

#### Bats – Preliminary Ground Level Roost Assessment

A preliminary ground-level roost assessment of the trees was undertaken to look for features that bats could use for roosting (Potential Roost Features [PRF][6]) and evidence of bats (i.e. droppings in around or below a PRF; odour emanating from a PRF; audible squeaking at dusk or in warm weather; or staining

[6] Potential Roost Features that bats may use include: woodpecker holes; rot holes; hazard beams; other vertical or horizontal cracks and splits in stems or branches; partially detached flaking bark; knot holes; man-made holes; cankers; other hollows or cavities; double leaders with included bark and potential cavities; gaps between overlapping stems or branches; partially detatched ivy with stem diameters in excess of 50mm; and bat, bird or dormouse boxes.

below the PRF). The inspection was carried out systematically around all aspects of the tree, and from both close to the trunk and further away.

The trees were subsequently assessed for their suitability to support roosting and hibernating bats in accordance with table 4.1 of the Bat Conservation Bat Surreys for Professional Ecologists: Good Practice Guidelines (Collins, 2016) (see Appendix 3). A high powered torch (Clulite) and a ladder were used as appropriate during the survey. They were assigned to the following categories:

- Known or Confirmed Roost - signs of bats (droppings, feeding remains, urine staining, and scratch marks) or actual bats recorded; or previous records of bats in tree;
- High (Category 1*) – tree with multiple, highly suitable features capable of supporting large roosts;
- Medium (Category 1) – tree with definite bat potential; fewer features than category 1* or potential for single bats;
- Low (Category 2) – No obvious potential, although tree of size and age that elevated surveys may result in cracks/crevices being found; or tree has some features which have limited potential to support bats; or
- Nil (Category 3) – no potential to support bats.

There are no buildings present within the survey area, therefore a building assessment was not carried out.

**Hazel Dormouse**

The hedgerows and scrub were assessed for their suitability to support dormice (*Muscardinus avellanarius*) with reference to guidance such as The Dormouse Conservation Handbook (Bright, Morris & Mitchell-Jones, 2006). The structure and composition of the hedgerow and scrub habitats within the site were assessed with respect to the presence of flower, fruit or nut-bearing food-plants such as hazel (*Corylus avellana*), (a favoured food-plant of dormice) honeysuckle (*Lonicera periclymenum)*, common hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), bramble (*Rubus fruticosus* agg.) and sycamore (*Acer pseudoplatanus*). In addition, connectivity to other areas of suitable habitat in the wider landscape, such as hedgerows and woodland, were also assessed.

A search for hazelnuts which had been opened by dormouse was undertaken to aid determination of their presence.

A full nest tube/box survey was not undertaken as this was beyond the scope of the assessment.

**Great Crested Newts**

There do not appear to be any ponds on site or present within 500m of the site. Dulas Brook which forms the south-western boundary of the site is considered to be too fast flowing to support breeding great crested newts.

**Otters**

A preliminary assessment for signs of otter (*Lutra lutra*) was undertaken following the advice provided by Strachan & Jefferies (1996) and Chanin (2003). The watercourse and its banks were searched for evidence of otter activity within 10m of the bank. Field signs of otter were recorded if present including spraints (faeces showing food remains), footprints, feeding remains, couches (above ground resting sites normally in thick vegetation cover), as well as potential or actual breeding sites and resting places (i.e. holts) which are usually found under roots of bank side trees or in rock piles. A full otter survey was not undertaken.

**Water Voles**

An assessment of waterbodies within and adjacent to the site was undertaken to determine their suitability to support water voles following methods set out in the Water Vole Conservation Handbook (Strachan & Moorhouse, 2006). In addition, a search for evidence of activity was undertaken, including droppings, latrines, burrows, footprints and feeding lawns, of any areas considered suitable. A full water vole survey was not undertaken as this was beyond the scope of this assessment.

**White-Clawed Crayfish**

A section of Dulas Brook was searched for white-clawed crayfish.

**Badgers**

The site and a 30m buffer adjacent to the site was searched for features likely to contain badger (*Meles meles*) setts (e.g. earth embankments, wooded copses etc.). All hedgerows bordering and within the site interior of the site were searched (i.e. on both sides) for evidence of badgers. Where present the location of badger signs such as runs, dung pits, prints, hair and foraging snuffle holes were recorded.

**Reptiles**

An assessment of the suitability of on-site habitats to support reptiles was made based upon the presence of suitable habitats. Reptiles require a diverse range of habitats to meet their needs, such as, hedgerows, scrub, rough grassland, wood piles, rubble, banks and compost heaps. The potential of the site to provide hibernation opportunities and spring/summer/autumn habitat was also assessed with reference to guidance provided in the Herpetofauna Workers' Manual (Joint Nature Conservation Committee, 2003), the Reptile Management Handbook (Edgar, Foster & Baker, 2011) and the Reptile Mitigation Guidelines Technical Note TIN 102 (Natural England, 2013) taking into account the following factors: vegetation type and structure; insolation (sun exposure); slope aspect; topography; surface geology; habitat connectivity; habitat size; prey abundance; refuge opportunity; hibernation opportunity; egg-laying potential (grass snakes [*Natrix natrix*]); public pressure; % shade; levels of disturbance and management regime.

A targeted presence/ absence reptile survey was not undertaken as this was beyond the scope of the assessment.

**Other Species**

General habitat suitability and incidental sightings of other animal species were also noted.

## 2.3. Assessment of Ecological Value

The value of the habitats and features of the site have been provisionally evaluated and graded in accordance with a geographical frame of reference as detailed in *Guidelines for Ecological Impact Assessment in the United Kingdom* and Ireland (IEEM, 2016). The level of value of specific ecological receptors is assigned using a geographic frame of reference, i.e. international value being most important, then national, regional, county, district, local and lastly, within the immediate zone of influence of the site only. Brief descriptions of how Acer Ecology interprets these categories are set out in appendix 2.

## 2.4. Constraints and Limitations

General temporal constraints

Any ecological survey can only identify what was present on site at the time it was conducted. Habitat usage by species can change over time, and if development works do not begin within two years of the date of this report, an update survey is likely to be required in accordance with guidance from BS 42020:2013[7], to determine if conditions have changed compared to those described in the current report.

[7] As set out in Section 6.2.1, point 7 which states that ecological information should not normally be more than two/three years old, or as stipulated in good practice guidance).

# 3. Results

## 3.1. Desk Study

### 3.1.1. Statutory Nature Conservation Designated Sites

Statutory Sites Notified for Bats (Sites of Special Scientific Interest (SSSIs) or Special Areas of Conservation (SACs)) within 10km

The protected species plan provided by HBRC and Natural England's interactive, web-based Multi Agency Geographic Information for the Countryside (MAGIC) database shows that the proposed development site does not lie within 10km of Special Areas of Conservation that have been specifically designated for bats.

Other Protected Sites

The site also does not contain or lie adjacent to any statutory designated conservation sites such as Special Areas of Conservation (SAC), Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) or Local Nature Reserves (LNRs).

The nearest Site of Special Scientific Interest (SSSI) is Wormbridge Common which lies approximately 4.5km north-east of the site. It comprises an area of botanically rich acidic marshy grassland.

### 3.1.2. Non-statutory Nature Conservation Designated Sites

The site comprises 'Poplars Meadow' SWS. The citation states that it is an unimproved hay meadow with a rich flora, which includes meadow crane's-bill (*Geranium pratense*), meadow saffron (*Colchicum autumnale*) and pepper saxifrage (*Silaum silaus*).

Several other SWS's were recorded within the 1km search area. These include:

- The River Monnow, comprising a fast flowing river, with a rocky stream bed, large boulders, small islands, shingle beds and sandy banks. The citation also states the good margin of broadleaved woodland along the banks, and the presence of numerous herbaceous species, birds and invertebrates;
- Cwm Woods, comprising a mixed woodland with a good variety of species, including ash, birch, lime, spindle and very large wild service trees;
- Pike's Wood and Adjoining Woods (Cae Newydd, Birches and Lakes Wood), which comprise an area of ancient woodland with some conifer planting;
- Ewyas Harold Common, comprising an area of acid grassland with some scrub and bracken invasion. The flora includes harebell, wild thyme and wild basil;
- The Disused Pontrilas to Ewyas Harold Railway line, which runs close tot eh River Dore. Species present include Oxford ragwort, lesser spearwort and spear mint;

- Callow Hill Wood, comprising mostly mixed ancient coppice with some conifer planting;
- Dulas Brook, including a good variety of surrounding bryophytes and a thick wooded margin with field maple, wild service tree, cherry and lime. The citation also mentions that it provides good habitat for birds and mammals;
- The River Dore, which has a stony substrate, gravel pits and some steep pools. Otter is also mentioned in the citation;
- Gilbert's Hill Wood, comprising an ancient woodland with conifer planting in irregular blocks; and
- Woodlands around Gwern-Grounsel, which comprise Meadows Wood, Bernarth Dingle, Folly Oaks Wood, Farm Wood, Cobblers Grove, Gwern-y-Cae Wood, Wilds Wood and Mill Wood. The citation states that all of these woods are ancient, although some have been replanted with conifer.

All of the citations are dated from 1990.

### 3.1.3. Ancient Woodland

There are seven areas of Ancient Semi-Natural Woodland (ASNW) located within 1km of the site, with a further two areas of Ancient Replanted Woodland (ARW) within the same search radius. These are identified and described below:

- Callow Hill Wood, approximately 240m south-east of the surveyed site;
- Big Wood, approximately 280m south-west;
- Pikes Wood, approximately 550m west;
- Cae-Newydd Wood, approximately 690m south-west; and
- Four unnamed areas of woodland, the nearest of which lies approximately 0.4km north-west.

The small proposed development footprint and distance of the development site form the nearest area of woodland (approximately 240m) means that the proposed works are not anticipated to directly impact the surrounding areas of ancient woodland.

### 3.1.4. Site History

Data was obtained from the Phase 1 habitat survey of the county, which was undertaken by the former Nature Conservancy Council (NCC) during the period 1992-96.

The site proposed for development was previously mapped as two different habitats. The north-eastern half of the site was mapped as improved grassland, while the south-western half was mapped as species-poor semi-improved grassland. This assessment broadly correlates to the findings of the current site survey (species-poor semi-improved grassland). However, this contradicts the citation for the 'Poplars Meadow' SWS, which describes the site as an unimproved hay meadow.

### 3.2. Habitats and Vegetation

The results of the general survey of the habitats and vegetation are shown on Plan 2. A botanical species list is given in Appendix 1.

#### 3.2.1. Summary of Habitats Present Within the Site

The site consists of seven elements which are described in detail below. These comprise:

- Scattered broadleaved trees;
- Dense scrub;
- Scattered scrub;
- Semi-improved neutral grassland;
- Tall ruderal;
- Intact hedgerow; and
- Stream

#### 3.2.2. Notable Plant Species

Data Trawl Results

HBRC returned no records of protected or rare plants from within the site itself, despite the fact that the site comprises the Poplars Meadow SWS, which states that meadow crane's-bill, meadow saffron and pepper saxifrage are present within it.

Numerous other noteworthy plant species were recorded from within the 2km search radius, including knot grass (*Acronicta rumicis*), bee orchid (*Ophrys apifera*), bluebell (*Hyacinthoides non-scripta*), common spotted-orchid (*Dactylorhiza fuchsia*), common twayblade (*Neottia ovata*), mistletoe (*Viscum album*), early-purple orchid (*Orchis mascula*), broad-leaved helleborine (*Epipactis helleborine*), blacl poplar (*Populus nigra subsp. betulifolia*), Autumn-Lady's Tresses (*Spiranthes spiralis*), great butterfly-orchid (*Platanthera chlorantha*), pyramid orchid (*Anacamptis pyramidali*), sun spurge (*Euphorbia helioscopia*), wild service tree (*Sorbus torminalis*), spreading bellflower (*Campanula patula*) and frog orchid (*Coeloglossum viride*).

#### 3.2.3. Scattered broadleaved trees

Two mature common alder (*Alnus glutinosa*) and a singular, mature oak species (*Quercus sp.*) are present on the southern extent of the site. The alder are situated within the dense scrub and the oak lies adjacent to the south-eastern hedgerow.

Detailed descriptions of the trees are given in section 3.3.2.

#### 3.2.4. Dense scrub

Dense scrub forms the southern boundary of the site and largely consists of hazel, bramble and ivy (*Hedera helix*).

### 3.2.5. Scattered scrub

The majority of the scattered scrub present on site forms part of the species poor hedgerow and is located on the south-western boundary; with a few individuals located to the south-east, adjacent to Dulas Brook. Some of the scattered scrub extends approximately 140m north of Dulas Brook, as part of the south-eastern hedgerow. The scattered scrub was entirely composed of hazel.

### 3.2.6. Semi-improved neutral grassland

Semi-improved grassland constitutes the majority of the site. It is largely dominated by Yorkshire fog (*Holcus lanatus*) and perennial rye-grass (*Lolium perenne*) with numerous other abundant or frequent species including: common bent (*Agrostis capillaris*), sweet vernal-grass (*Anthoxanthum odoratum*), false oat-grass (*Arrhenatherum elatius*), crested dog's-tail (*Cynosurus cristatus*), cock's-foot (*Dactylis glomerata*), red fescue (*Festuca rubra*), annual meadow-grass (*Poa annua*), yarrow (*Achillea millefolium*), daisy (*Bellis perennis*), common mouse-ear (*Cerastium fontanum*), common cat's ear (*Hypochaeris radicata*), dandelion (*Taraxacum officinale agg*), lesser trefoil (*Trifolium dubium*), red clover (*Trifolium pratense*), white clover (*Trifolium repens*), wavy bitter-cress (*Cardamine flexuosa*), ribwort plantain (*Plantago lanceolata*), greater plantain (*Plantago major*), creeping cinquefoil (*Potentilla reptans*), creeping thistle (*Cirsium arvense*), self-heal (*Prunella vulgaris*), creeping buttercup (*Ranunculus repens*), common sorrel (*Rumex acetosa*) and curled dock (*Rumex crispus*).

Less frequently encountered species comprised rough meadow-grass (*Poa trivialis*), meadow foxtail (*Alopecurus pratensis*), large timothy (*Phleum pratense*), soft brome (*Bromus hordeaceus*), scarlet pimpernel (*Anagallis arvensis*), lesser burdock (*Arctium minus*), shepherd's purse (*Capsella bursa-pastoris*), common knapweed (*Centaurea nigra*), soft rush (*Juncus effusus*), smooth hawk's-beard (*Crepis capillaris*), rough hawkbit (*Leontodon hispidus*), ploughman's spikenard (*Inula conyzae*), common valerian (*Valeriana officinalis*), common vetch (*Vicia sativa*), spring sedge (*Carex caryophyllea*), spear thistle (*Cirsium vulgare*), meadowsweet (*Filipendula ulmaria*), snowdrop (*Galanthus nivalis*), cleavers (*Galium aparine*), cut-leaved crane's-bill (*Geranium dissectum*), dove's-foot crane's-bill (*Geranium molle*), herb-Robert (*Geranium robertianum*), ground-ivy (*Glechoma hederacea*), hogweed (*Heracleum sphondylium*), meadow vetchling (*Lathyrus pratensis*), autumn hawkbit (*Scorzoneroides autumnalis (Leontodon autumnalis)*), greater bird's-foot-trefoil (*Lotus pedunculatus*), black medick (*Medicago lupulina*), meadow buttercup (*Ranunculus acris*), lesser celandine (*Ficaria verna*), yellow rattle (*Rhinanthus minor*), broad-leaved dock (*Rumex obtusifolius*), prickly sow-thistle (*Sonchus asper*), scentless mayweed (*Tripleurospermum inodorum*), common nettle (*Urtica dioica*), thyme-leaved speedwell (*Veronica serpyllifolia*) and hairy tare (*Vicia hirsuta*).

Several species were recorded at the interfaces between the field and the hedgerows/ tall ruderal vegetation, including ground-elder (*Aegopodium podagraria*), lords-and-ladies (*Arum maculatum*), cow parsley (*Anthriscus sylvestris*), bush vetch (*Vicia sepium*), wild carrot (*Daucus carota*), foxglove (*Digitalis purpurea*), wood avens (*Geum urbanum*), ivy, wood-sorrel (*Oxalis acetosella*), green alkanet (*Pentaglottis sempervirens*), hedge woundwort (*Stachys sylvatica*), lesser stitchwort (*Stellaria graminea*),

Meadow crane's-bill was locally abundant at the north-east of the field (TN 5). Meadow saffron was rare at the centre of the field (TN 6).

It should be noted that the grassland is subject to frequent grazing.

North-eastern end of field, facing west (March 2016)

North-eastern end of field, facing south-west (July 2016)

North-eastern end of field, facing south-west (September 2016)

Area of field within development footprint (north-east corner), showing abundant meadow crane's-bill

Meadow crane's-bill (TN 5)

Meadow saffron (TN 6)

### 3.2.7. Tall ruderal

Tall ruderal vegetation has established on the south-western boundary of the site and is dominated by great willowherb (*Epilobium hirsutum*), marsh willowherb (*Epilobium palustre*), square-stalked willowherb (*Epilobium tetragonum*).

### 3.2.8. Species-poor intact hedgerow

The species-poor intact hedgerow borders the majority of the site, excluding the southern extent that is demarcated by Dulas Brook and dense scrub. The hedgerow is dominated by dogwood (*Cornus sanguinea*) and common hawthorn (*Crataegus monogyna*), with bramble and hedge bindweed (*Calystegia sepium ssp roseata*) intersecting occasionally. The understory vegetation consists of lords-and -ladies, lesser celandine, ground-ivy, ivy, cow parsley, common nettle, cleavers, foxglove, wood sorrel (*Oxalis acetosella*) and false oat grass.

Intact species-poor hedgerow, facing north

### 3.2.9. Stream

Dulas Brook, the tree-lined stream on the southern boundary of the site, runs in a south-easterly direction towards Pontrilas, where it converges to form part of the River Dore. It is relatively fast flowing with a small bridge present to the south of Poplars meadow, adjoining the site with a neighbouring field. No aquatic vegetation was recorded within the brook.

Dulas Brook

### 3.3. Protected and Notable Species

#### 3.3.1. Birds

Data trawl results

HBRC provided numerous records for birds within 2km of the site. The following table shows nesting birds associated with habitats present on site and their conservation status:

| Species | Schedule 1 | NERC S41 | UK BAP | LBAP | Red list[8] | Amber list[9] |
|---|---|---|---|---|---|---|
| Barn owl (*Tyto albo*) | Yes | | | Yes | | |
| Bullfinch (*Pyrrhula pyrrhula*) | | Yes | Yes | Yes | | |
| Cuckoo (*Cuculus canorus*) | | Yes | Yes | Yes | Yes | |
| Curlew (*Numenius arquata*) | | Yes | Yes | Yes | | Yes |
| Dipper (*Cinclus cinclus*) | | | | Yes | | |
| Dunnock (*Prunella modularis*) | | Yes | Yes | | | Yes |
| Fieldfare (*Turdus pilaris*) | Yes | | | | Yes | |
| Green woodpecker (*Picus viridis*) | | | | Yes | | Yes |
| Grey wagtail (*Motacilla cinerea*) | | | | Yes | | Yes |
| Goshawk (*Accipiter gentilis*) | Yes | | | Yes | | |
| Hobby (*Falco subbuteo*) | Yes | | | Yes | | |
| House sparrow (*Passer domesticus*) | | Yes | Yes | Yes | Yes | |
| House martin (*Delichon urbicum*) | Yes | | Yes | | Yes | |
| Kestrel (*Falco tinnunculus*) | | Yes | | Yes | | |
| Kingfisher (*Alcedo atthis*) | Yes | | | Yes | | |
| Lapwing (*Vanellus vanellus*) | | Yes | | Yes | Yes | |
| Lesser redpoll (*Acanthis cabaret*) | | | Yes | | Yes | |
| Linnet (*Linaria cannabina*) | | | Yes | | Yes | |
| Little owl (Athene noctua) | | | | Yes | | |
| Marsh tit (*Poecile palustris*) | | | | Yes | Yes | |
| Meadow pipit (*Anthus pratensis*) | | | | Yes | | Yes |
| Peregrine (*Falco peregrinus*) | Yes | | | Yes | | |

[8] Bird species of high conservation, such as those whose population or range is rapidly declining, recently or historically, and those of global conservation concern.

[9] Bird species of medium conservation concern, such as those whose population is in moderate decline, rare breeders, internationally important and localised species and those of unfavourable conservation status in Europe.

| | | | | | | |
|---|---|---|---|---|---|---|
| Red kite (*Milvus milvus*) | Yes | | | | | |
| Redstart (*Phoenicurus phoenicurus*) | | | | Yes | | Yes |
| Skylark (*Alauda arvensis* | | | Yes | Yes | Yes | |
| Song thrush (*Turdus philomelos*) | | Yes | Yes | Yes | Yes | |
| Spotted flycatcher (*Muscicapa striata*) | | Yes | Yes | Yes | Yes | |
| Starling (*Sturnus vulgaris* | | Yes | Yes | Yes | Yes | |
| Swallow (*Hirundo rustica*) | | | | | | Yes |
| Turtle dove (*Streptopelia turtur*) | | Yes | Yes | Yes | Yes | |
| Yellowhammer (*Emberiza citronella*) | | Yes | Yes | Yes | Yes | |
| Wheatear (*Oenanthe oenanthe*) | | | | Yes | | Yes |
| Woodcock (*Scolopax rusticola*) | | | | Yes | | Yes |

Field Survey Results

A modest number of bird species were recorded on site during the survey, comprising a flock of approximately 20 house sparrow, song thrush, robin (*Erithacus rubercula*), great spotted woodpecker (*Dendrocopos major*), dunnock, goldcrest (*Regulus regulus*), wood pigeon (*Columba palumbus*), buzzard (*Buteo buteo*) and red kite.

A defunct thrush nest [TN1] and defunct dunnock nest [TN2] were recorded within section of the intact species-poor hedgerow.

Defunct dunnock nest

### 3.3.2. Bats

Data Trawl Results

HBRC did not return any published records of bat roosts from within the site itself. However, numerous records were returned from 2km of the site, comprising:

- 13 roosts of long-eared bat (*Plecotus sp.,*);
- Four records of common pipistrelle (*Pipistrellus pipistrellus*), the most recent of which was published in 2013;
- A single record of soprano pipistrelle (*Pipistrellus pygmaeus*), published in 2010;
- Thirteen records of lesser horseshoe (*Rhinolophus hipposideros*) roosts, the most recent of which was published in 2010;
- A single noctule (*Nyctalus noctula*) roost, published most recently in 2013;

- Five records of unspecified bat species roosts.

The data search also provided numerous incidental records of bats from within the same search radius.

Field Survey Results

**Trees**

An assessment was made of the potential of the mature and semi-mature broadleaved trees within the survey area for use by roosting bats. They are described briefly in the table below, together with any evidence of bat occupation observed, and an assessment of their likely use by roosting bats. The trees are shown on Plan 3.

| No. | Description | Evidence of Bats | Potential for Bats |
|---|---|---|---|
| T1 | Mature alder. Single-stemmed with DBH of approximately 40cm. Approximately 11m tall. An absence of any features that could be utilised by roosting bats, although some small areas were obscured by ivy. | Nil | Low(2) |
| T2 | Mature alder. Dual-stemmed with a DBH's of approximately 50cm. Approximately 12m tall. One large split at northern elevation and a smaller storm damaged broken branch at north-west elevation. Moderate accumulation of ivy with stems greater than 5cm diameter[10]. | Nil | Medium (1) |
| T3 | Mature oak. Single stemmed growth of approximately 1.4m DBH. Approximately 10m tall. One broken branch wound at south-east elevation. Moderate ivy accumulation but newly established with stems less than 5cm thick. | Nil | Low (2) |
| DBH – Diameter at Breast Height | | | |

- Known or Confirmed Roost - signs of bats (droppings, feeding remains, urine staining, and scratch marks) or actual bats recorded; or previous records of bats in tree;
- High (Category 1*) – tree with multiple, highly suitable features capable of supporting large roosts;
- Medium (Category 1) – tree with definite bat potential; fewer features than category 1* or potential for single bats;
- Low (Category 2) – No obvious potential, although tree of size and age that elevated surveys may result in cracks/crevices being found; or tree has some features which have limited potential to support bats; or
- Nil (Category 3) – no potential to support bats.

[10] For ivy to provide an environment suitable for occupation by roosting bats it has to have attained significant age. Typically the stems should be a minimum of 50 mm diameter (ideally some even larger) and have sections that have formed pockets into which bats sidle into or crawl up and under to rest against the bark of the mature tree (G Billington 2011, *pers comm.*, quoted in Andrews 2013).

T1

T2

T3

**Foraging/ Commuting**

The semi-improved grassland that constitutes the majority of the site is likely to be of moderate value for foraging bats. The intact species-poor hedgerows and area of dense scrub and scattered broadleaved trees surrounding the site are considered to provide good foraging habitat. Furthermore, the hedgerows and stream corridor are likely to form important linear features for commuting bats into the wider landscape.

### 3.3.3. Dormouse

Data Trawl Results

HBRC did not return any published records of dormouse from within 2km of the site.

Field Survey Results

No signs or evidence of dormice were recorded on site.

The central reaches of the site lack the vegetation to provide dormice with protective cover or foraging opportunities and are considered to be wholly unsuitable for dormice. The hedgerows at the north-west, north-east and south-east boundaries of the site are structurally suitable for dormice and are connected

to the wooded Dulas Brook stream corridor along the site's south-western boundary. The dense scrub along the bank of the wooded stream corridor is also considered to provide (albeit sub-optimal) habitat for dormouse foraging and commuting. A small amount of hazel (a favoured foodplant of dormice) was also recorded within the scattered scrub in this area. However, the hedgerows are species-poor, comprising dogwood and hawthorn, with patches of bramble. Hawthorn and bramble are the only other species listed in the dormouse conservation handbook (English nature, 2006) as of value to dormice within the hedgerows.

None of the habitat features of value to dormice present within the site are proposed for removal and therefore no impacts to any resident dormice are anticipated. Dormice are therefore not mentioned further in this report.

### 3.3.4. Great crested newt and other amphibians

Data Trawl Results

HBRC returned a total of two great crested newt records within 2km of the site, the nearest of which was published approximately 550m north of the proposed development site. This water body lies on the other side of the B4547, which is considered to form a barrier to great crested newt dispersal.

Field Survey Results

No direct observation or evidence of great crested newt was recorded on site, although a targeted survey was not undertaken for this species.

There are no water bodies that are considered to be suitable for use by breeding newts within the site or within 500m of it. Dulas Brook forms the site's south-western boundary, but this water course is relatively turbulent and fast flowing, which is considered to act as a barrier to great crested newt migration, and therefore their presence within it is considered to be very unlikely. Consequently, a Habitat Suitability Index assessment (Oldham *et al.,* 2000) was not applied to the brook.

Some of the terrestrial habitats on site (dense scrub and hedgerows) provide superficially suitable habitat for active terrestrial-phase great crested newts. However, there are no records of great crested newt within 500m of the site and no potential breeding sites lie within 500m of it. As a general rule, suitable habitats within 250m of a breeding pond are likely to be used most frequently by great crested newts (English Nature 2001). Therefore, when combined with the lack of records, the lack of direct evidence, and the fact the peripheral hedgerows and scrub will be retained, the likelihood of great crested newt being present on site and adversely affected by the development is considered to be very low. This species is not discussed further in this report.

### 3.3.5. Reptiles

Data Trawl Results

HBRC returned a total of 48 records of reptiles within 2km of the site, comprising:

- 34 records of adder (*Vipera berus*);
- Eight records of grass snake (*Natrix natrix*);
- Four records of slow-worm (*Anguis fragilis*); and
- Two records of common lizard (*Zootoca vivipara*).

None of the records originate from the proposed development site itself.

Field Survey Results

No reptiles were incidentally recorded during the Phase 1 habitat survey, although a targeted reptile survey was not undertaken at that time. No evidence of reptiles such as sloughed skins was recorded.

The grazed species-poor semi-improved grassland that constitutes the centre of the site is considered to be largely unsuitable for most common reptile species due to the paucity of cover vegetation or other suitable refuges. However, the grassland/ dense scrub/ hedgerow vegetation interfaces around the perimeter of the site have potential to support common reptiles and are well connected to the surrounding landscape.

### 3.3.6. Otter

Data Trawl Results

HBRC did not return any records of otter from within 2km of the site. Furthermore the citation for Dulas Brook SWS makes no mention of otter.

Field Survey Results

Dulas Brook that borders the south-western elevation of the site provides potential foraging/ commuting habitat for otter, although no such evidence has been published in the vicinity of the site (HBRC, 2016). However, no evidence of otter was found on site or along the banks of the brook during the current survey. The section of brook adjoining the surveyed site lacks suitable areas of dense vegetation or cavities amongst tree roots that would typically be used by holting otter. Furthermore, the actual development footprint lies at the opposite end of the site from the brook (approximately 210m north-east). Therefore, although otter presence has been recorded in the brook, this activity is restricted to commuting and feeding – no holts or resting places have been recorded within 2km of the surveyed site (HBRC, 2016). The probability of otter holting within 30m the surveyed site and the subsequent likelihood of direct impacts to otter within the actual development footprint is considered to be very low. However, precautionary measures must still be implemented to ensure that indirect impacts to foraging or commuting individuals in the brook do not occur (see section 5.0).

### 3.3.7. Water Vole

Data Trawl Results

HBRC did not return any records of water vole from within 2km of the site. Furthermore the citation for Duals Brook SWS makes no mention of water vole.

Field Survey Results

No water voles, or signs of water vole were recorded along the banks of the stretch of the brook that was surveyed. The banks appeared to be unsuitable for this species due to the large amount of bare ground and absence of marginal grasses that would provide food and shelter for water voles. Furthermore, there are no records of water vole in the wider area. Due to lack of evidence of water vole and the distance of the anticipated zone of influence and the brook (approximately 210m), the proposed development is highly unlikely to have a significant effect on water vole provided that precautionary measures are implemented to ensure that indirect impacts do not occur (see section 5.0). This species is not discussed further in this report.

### 3.3.8. White-Clawed Crayfish

Data Trawl Results

HBRC did not return any records of white-clawed crayfish from within 2km of the site. Furthermore the citation for Duals Brook SWS makes no mention of white-clawed crayfish. However, the Ewyas Harold Village Design Statement (Overstall. L, 2003) states that Dulas Brook is one of the last locations in England for this species.

Field Survey Results

No white-clawed crayfish were recorded within the brook. However, it has some features favoured by white clawed crayfish. The large cobbles and sections of ballast on the bed offer potentially suitable refuges and the surveyed section of brook appears to have good water quality.

### 3.3.9. Badgers

Data Trawl Results

HBRC returned a total of two badger records within 2km of the site.

Field Survey Results

No setts were recoded on site. [redacted] However, dog walking is common across the field, and so correct identification was difficult and cannot be certain.

The site provides suitable foraging habitat for badger.

Potential evidence of foraging

### 3.3.10. Other Mammals

Data Trawl Results

HBRC returned records of several other mammal species within 2km of the site, comprising:

- Five records of common hedgehog (*Erinaceus europaeus*);
- One record of polecat (*Mustela putorius*); and
- One record of pine marten (*Martes martes*).

Field Survey Results

It is likely that a range of common small mammals are present on the site, including shrews, voles, mice, hedgehog, fox (*Vulpes vulpes*) and mole (*Talpa europaea*) etc, occurring either as resident species or whilst foraging and/ or commuting.

The peripheral hedgerow understoreys and the dense scrub are considered to provide valuable foraging habitat for hedgehog. Hedgehogs are afforded partial protection under the Wildlife and Countryside Act (1981) and are now a priority species under the UK and Herefordshire Biodiversity Action Plans in light of dramatic population declines.

# 4. Ecological Evaluation, Legislation and Impact Assessment

The ecological value of the in-situ habitats and the potential/actual presence of protected species are discussed in this section, along with a summary of relevant legislation and planning policies relating to habitats and species. Potential impacts arising from the proposed development upon protected sites, *in-situ* habitats and protected or notable species are identified including both direct and indirect impacts, and those associated with construction and operational stages.

## 4.1. Statutory and Non-statutory Sites

Legislation and Policy Relating to SWS's

SWS's are one of a class of nature conservation designations collectively referred to as 'Wildlife Sites'. Wildlife Sites are so-called 'third tier' sites, generally ranked below sites which are of international (first tier) or national (second tier) biodiversity significance, but which are considered to have substantive nature conservation value at the regional or district level. They are usually designated at the county or county borough level by the relevant local planning authority, and are recognised as a planning constraint in the relevant statutory development plan.

The framework for the identification and designation of 'Wildlife Sites' is set out in various Government documents, and is referred to in the Planning Policy Statement Guidance note nine: Biodiversity and Geological Conservation.

The Herefordshire Unitary Development Plan (2007) states that development proposals which could directly or indirectly affect SWS's will not be permitted unless it can be demonstrated that there would be no harm to the substantive nature conservation value of the site, or that appropriate mitigation and compensatory measures can be taken in accordance with policy NC7, or that the reasons for the development clearly outweigh the need to safeguard the nature conservation value of the site.

The details of policy NC7 state that 'where development is permitted, the use of conditions and/ or planning obligations will be considered in order to provide appropriate mitigation and compensatory measures to avoid, minimise or offset the loss of or damage to any biodiversity feature covered by policies NC2 to NC6. Such measures will be at least proportionate to the scale of the loss or impact".

Assessment of Development Impacts on SWS's

The site comprises Poplars Meadow SWS – a portion of which will be permanently lost to the proposed development (see plan 3). This site is designated as an unimproved hay meadow containing noteworthy botanical species (meadow saffron, pepper saxifrage and meadow cranes-bill). The field was assessed as containing species-poor semi-improved grassland during the initial preliminary ecological appraisal undertaken in March 2016. This coincides with the mapping of the site as improved grassland and species-poor semi-improved grassland by the former NCC (1992-96). However, following completion of the updated botanical surveys (July and September 2016), the field was re-assessed as semi-improved

neutral grassland. A total of 77 species were recorded within the whole field over the duration of the surveys. However, the most abundant species within the sward were agricultural species (particularly Yorkshire fog and perennial rye grass) that are not indicative of priority habitats. Therefore, although the field contains a relatively high species diversity, with a good number of abundant herbaceous species, the dominance of agricultural graminoid species means that it is not considered to be unimproved.

The Herefordshire Wildlife Trust do not currently have detailed published criteria for SWS selection criteria based on botanical indicator species (Andrew Nixon, Herefordshire Wildlife Trust Conservation Manager. *pers comm., 31.10.16*), and the selection criteria has not been updated since many of the sites were designated in the 70's and 80's. It is therefore difficult to assess the current ecological condition of the Poplars Meadow SWS. When using the Wales Biodiversity partnership (2008) guidelines as a comparison, a total of 10 species indicative of Lowland Meadow (common knapweed, common cat's-ear, meadow vetchling, rough hawk-bit, yellow rattle, lesser stitchwort, red clover, spring sedge, meadow crane's-bill and meadow saffron), and six species indicative of Calcareous Grassland (common knapweed, wild carrot, ploughman's-spikenard, rough hawkbit, black medick and spring sedge) were recorded within the semi-improved neutral grassland (see Appendix 1).

Typically, eight such neutral or calcareous indicator species are considered sufficient to warrant a site's consideration as a Site of Importance for Nature Conservation (the Welsh equivalent of SWS) (see Appendix 1) in Wales. Therefore, although this total was spread across a relatively large area of grassland (approximately 8100m$^2$), it would be considered suitable for consideration as a SINC (SWS) were in it Wales. As previously stated, there is currently no detailed botanical selection criteria in Herefordshire, so it is not possible to conclude upon whether the semi-improved neutral grassland in its current condition would still qualify as a SWS. Meadow crane's bill was locally abundant in the far north-east of the field (within the development footprint) during the July and September surveys (see Plan 2, TN 5). It was absent from the remainder of the site. Meadow saffron was recorded rarely at the centre of the field during the September survey field (approximately 60m south-west of the development footprint [see Plan 2, TN 6]). Pepper saxifrage was not recorded during any of the surveys. To conclude, the grassland within the site has been assessed as being semi-improved, rather than unimproved (as per the 'Poplars Meadow' SWS citation), and one of the three botanical species identified in the citation was absent. It therefore appears as though the ecological condition of the SWS is unfavourable at present, and may indeed have progressively deteriorated since the site was historically designated. It is subsequently unclear whether it still qualify if assessed in its current condition. The semi-improved grassland is nonetheless considered to be of at least high local (and potentially district under Welsh guidance) ecological value.

Based on the results of the updated botanical surveys, no direct impacts to meadow saffron or pepper saxifrage would be likely to arise, provided that appropriate precautionary measures are implemented, as set out in section 5.0. However, the proposed development works at the time of writing will result in the loss of the section of field where meadow crane's-bill is locally abundant (see Plan 2). Development proposals will therefore directly affect a feature for which the 'Poplars Meadow' SWS is designated, and

may therefore adversely affect the nature conservation value of the SWS. The Herefordshire Unitary Development Plan (2007) states that development proposals which could directly or indirectly affect SWS's will not be permitted unless it can be demonstrated that there would be no harm to the substantive nature conservation value of the site, or that appropriate mitigation and compensatory measures can be taken in accordance with policy NC7. Under current development proposals, the loss of a portion of the locally abundant meadow crane's-bill cannot be avoided, and the loss of approximately 0.19ha in the north-eastern portion of the semi-improved neutral grassland field would be of high magnitude with respect to the meadow crane's-bill within the site. However, as specified in section 1.3 (See Plan 2) the majority of the site (approximately 0.87ha) will be unaffected by development works. Furthermore, the ecological quality of the grassland appears to have deteriorated, presumably due to agricultural practices since the site was designated as a SWS in the 1970's/80's, and there is therefore considered to be scope to actually increase the favourable condition of the SWS by enhancing the grassland towards unimproved status. It is therefore considered that appropriate mitigation, compensatory and enhancement measures can be implemented to sufficiently minimise or offset the damage to the feature covered by policies NC2 to NC6, in line with policy NC7 of the Herefordshire Unitary Development Plan (2007). The implementation of these measures would help to ensure the ongoing

### 4.2. Assessment of Ecological Value of On-site Habitats

Assessment of Ecological Value

The habitats, features and species of the site have been provisionally evaluated and graded in accordance with the categories set out in Appendix 2.

The semi-improved neutral grassland may qualify as 'Lowland Meadow' under the UK BAP (Biodiversity Reporting & Information Group, 2007), and would therefore be of district ecological value.

Dulas Brook is likely to qualify as a 'Priority Habitat' of the UK BAP (Biodiversity Reporting & Information Group, 2007) or listed in Section 41 as 'habitats of principal importance for conservation of biological diversity in England (NERC Act, 2006). Furthermore, the Herefordshire LBAP highlights rivers and streams as being a priority habitat. The watercourse is relatively unmodified with reasonable bank side vegetation. Dulas Brook is known to support otter, white-clawed crayfish and breeding kingfisher, as well as a range of important fish species (Overstall. L, 2003), although no evidence of such was recorded during the survey or returned by the local records centre (HBRC, 2016). This running water habitat is assessed as being of district value to wildlife.

Some of the scattered broadleaved trees (T2, and T3) are considered to be of local value to wildlife, due to their potential value for nesting birds and roosting bats.

The intact species-poor hedgerows have some value for nesting birds and potentially foraging and commuting bats, reptiles and hedgehogs. However, they are common and widespread in the surrounding

landscape and as such they are not considered to be of greater than site value. Nonetheless, they should be retained as important wildlife corridors (as is currently proposed).

Assessment of Potential Development Impacts

Based on existing development proposals, the vast majority of site will be unaffected by the development (see plan 3). Indeed, impacts are only anticipated upon the north-eastern portion of the site.

Approximately 0.19ha of the semi-improved will be permanently lost to development. However, approximately 0.87ha will be unaffected by development works. The loss of this area of grassland of district value would be of high magnitude with respect to the meadow crane's-bill within the site.

Plan 3 displays that the proposed new dwelling will be located approximately 210m from Dulas Brook, which has been assessed as being of district value to wildlife. Likewise, the new dwelling will be located approximately 205m from T3, which has been assessed as being of moderate potential to support roosting bats. The intact species-poor hedgerows are all proposed for retention.

The remaining habitats within the site will be retained.

## 4.3. Protected and Notable Species

### 4.3.1. Birds

Assessment of Ecological Value of Site for Birds

The peripheral hedgerows, the dense scrub, the scattered broadleaved trees and the running water provide nesting and foraging opportunities for birds. Two defunct birds nests were recorded within the intact species-poor hedgerows at the north-east of the site.

The remaining habitats of the site offer little in the way of foraging and nesting value.

As a whole, the majority of the site is considered to be of only local value to birds. It contains individual features that provide moderate foraging and nesting habitats for a range of species, but all of these features are widespread and common in the surrounding landscape. However, Dulas Brook is known to support breeding Schedule 1 kingfisher (Overstall. L, 2003) and it is also likely to be of value to dipper and grey wagtail. It is therefore considered to be of high local value.

Legislation

All wild British birds (while nesting, building nests and sitting on eggs), their nests and eggs (with certain limited exceptions) are protected by law under Section 1 of the Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way Act 2000. Included in this protection are all nests (at whatever stage of construction or use) and all dependent young until such time as the nest is abandoned and the young have fledged and become independent. Particularly rare species such as barn owls are listed on Schedule 1, which gives them extra levels of protection to include protection from disturbance

whilst nest building; or near a nest with eggs or young, or disturbing the dependant young of such a bird. Following recent revisions, 59 species are listed on the UK BAP.

Impact Assessment of Proposed Development on Birds

A good number of tree and scrub nesting priority species have been recorded in proximity to the site (HBRC, 2016). However, no sections of hedgerow are anticipated to be cleared and therefore no loss of foraging and potential nesting habitat for a range of scrub and ground nesting species will take place.

Dulas Brook is considered to be of high local value to birds, and stretches of it are known to support breeding kingfisher. However, due to the small scale of the development proposals and the distance of the brook from the proposed development footprint, direct impacts to breeding birds along the watercourse are considered to be very unlikely. Indirect impacts can be adequately avoided via the implementation of the recommendations set out in section 5.0.

### 4.3.2. Bats

Assessment of Ecological Value of Site for Bats

Potential Tree Roosts

T3 has been assessed as having moderate potential to support roosting bats, while T2 has been assessed as having low potential for such use. T3 lies approximately 205m south-west of the proposed development footprint.

The remaining scattered broadleaved trees were assessed as having negligible potential for roosting bats.

Potential Foraging and Commuting Habitat

The entirety of the site is considered to be suitable for use by foraging/ commuting bats to some degree. However, the peripheral hedgerows, the dense scrub, the scattered broadleaved trees and the flowing water course are considered to be of high value to foraging bats. They are likely to support healthy invertebrate populations which in turn provide ample foraging opportunities for bats. Furthermore, the hedgerows and vegetated stream corridor contribute to linear habitat features that which could be used by commuting bats. The improved grassland fields are considered to be of only site value as this widespread habitat offers little in the way of invertebrate populations.

Legislation

All species of bats and their roosting sites are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation (Natural Habitats etc.) Regulations 1994, updated and consolidated by the Conservation of Habitats and Species Regulations 2012. All species of UK bats are designated as 'European protected species'. Some species, such as pipistrelle bats (*Pipistrellus* spp.) remain relatively common and widespread in the UK, while others, such as greater horseshoe bats (*Rhinolophus ferrumequinum*), have an extremely restricted distribution. Seven of the UK species of bat (soprano

pipistrelle, barbastelle (*Barbastella barbastellus*), Bechstein's (*Myotis bechsteinii*), noctule, brown long-eared, lesser horseshoe and greater horseshoe bats) have been listed on the UK BAP (2007) as conservation priorities.

Impact Assessment of Proposed Development on bats

T3 has been assessed as having moderate (category 1) potential for roosting bats, while T2 has been assessed as having low (category 2) potential for such use. However, all of these trees will be retained under existing development proposals and therefore no direct impacts to roosting bats are anticipated. Furthermore, the proposed development footprint lies at the opposite end of the site from both trees (approximately 205m away). Therefore indirect impacts to any roosting bats such as increases in disturbance and lighting are also anticipated to be minimal, although precautionary measures should be taken to further reduce the risk, as set out in section 5.0.

The peripheral hedgerows and wooded stream corridor of the site are considered to provide good commuting features for bats. The proposed development works will be restricted to the northern portion of the site and no linear features will be removed as part of the development works. Direct adverse impacts are therefore not anticipated, although indirect impacts could feasibly occur through increases in artificial lighting at night. However, residential properties already exist in the adjacent plots and therefore lighting at night in the northern portion of the site is already present. Nonetheless, a lighting plan should be implemented in order to prevent increases in artificial lighting along the linear features that demarcate the site (see section 5.0).

### 4.3.3. Reptiles

Assessment of Ecological Value of Site for Reptiles

The proposed development footprint (comprising grazed species-poor semi-improved grassland) is considered to be of low value to reptiles. Indeed, the majority of the wider site is considered to be largely unsuitable for reptiles due to the lack of suitable refuges and structural diversity of the vegetation. However, the interfaces between the peripheral hedgerows and the grassland are considered to be of greater value, as the varying sward heights within the vegetation could potentially offer refuge and basking opportunities. It is the physical structure and thermal properties that are significant factors in determining a site's suitability to reptiles (Edgar et al., 2011). Furthermore, these areas extend over moderate lengths and could therefore feasibly support viable reptile populations.

Legislation

Reptiles are protected under the Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way Act 2000. They are given so called 'partial protection', which prohibits the deliberate killing or injury of individuals. The habitats of common reptiles are not specifically protected. These species are listed as priority species in the UK BAP and as species of principal importance for the

conservation of biological diversity in Wales under Section 74 of the Countryside and Rights of Way (CRoW) Act 2000.

Impact Assessment of Proposed Development on Reptiles

Works within the area of grazed species-poor semi-improved grassland at the north of the site are not anticipated to pose adverse impacts to reptiles, and the peripheral hedgerow understoreys which provide greater value for reptiles are proposed for retention. However, the interfaces of the hedgerows to the north-west and north of the proposed development works will be subject to increased disturbance and potentially some clearance during construction works. Adverse impacts to reptiles may therefore occur in these areas during vegetation clearance. However, such impacts can be adequately mitigated via the implementation of the precautionary measures outlined in section 5.0.

### 4.3.4. Otter

Assessment of Ecological Value of Site for Otters

No evidence of otters was recorded during the survey and no records of their presence within Dulas Brook were returned by HBRC (2016). They have, however, been mentioned within the Ewyas Harold Village Design Statement (Overstall. L, 2003). Therefore, although no direct evidence of otter was recorded during the site survey, they obviously pass near to the site on occasion. However, it is considered very unlikely that otter would venture far from the wooded stream channel, as the wider surveyed site is sub-optimal for otter foraging and is used heavily by dog walkers.

Legislation

Otter are fully protected under the Wildlife and Countryside Act 1981, the Conservation (Natural Habitats &c.) Regulations 1994 and the Countryside and Rights of Way Act 2000. Works affecting otter are subject to licensing procedures by the English Government.

Impact Assessment of Proposed Development on Otters

There is considered to be a very low risk that construction works could result in direct impacts to foraging and/ or commuting otters during both the construction and post construction phases of the development. Otters are very sensitive to disturbance and otter natal dens require a 150m buffer protection zone, while holt's require a 30m buffer. The proposed development footprint lies approximately 210m from Dulas Brook. There is, however, a remote risk that construction works could result in increased sedimentation and/ or water inputs into the brook, which would indirectly affect otters. The precautionary measures outlined in sections 5.0 should therefore be implemented to ensure that no such inputs into the brook occur.

### 4.3.5. White-Clawed Crayfish

Assessment of ecological value of site for White-Clawed Crayfish

Although no direct evidence was recorded ruing the site survey and no records of such were returned by HBRC (2016), white-clawed crayfish are know to be present within the Dulas Brook (Overstall. L, 2003). The remaining habitats of the site are of negligible value to this species.

Legislation

White-clawed crayfish are a European Protected Species and are fully protected under the Wildlife and Countryside Act 1981. Works affecting otter are subject to licensing procedures by the English Government. White-clawed crayfish are also listed as a priority species of the Herefordshire Local Biodiversity Action Plan.

Impact Assessment of Proposed Development on White-Clawed Crayfish

The proposed development works are not anticipated to impact the Dulas Brook, provided that appropriate pollution and sedimentation management is implemented as set out in section 5.0. Therefore, provided that the aforementioned measures are implemented, no adverse impacts to white-clawed crayfish are anticipated.

### 4.3.6. Badgers

Assessment of ecological value of site for badgers

[redacted] No setts or territorial marks were recorded within the site.

Legislation

Badgers are protected in England under the Protection of Badgers Act 1992. Protection applies both to the animal itself and to its nesting burrows (setts), and current interpretation of the Act also confers some protection to key foraging areas. Badgers remain comparatively widespread and common throughout Herefordshire.

Impact Assessment of Proposed Development on Badgers

The likelihood of encountering resident badgers on site is considered highly unlikely as badgers are nocturnal and the works will take place during daylight hours.

### 4.3.7. Hedgehog

Assessment of Ecological Value of Site for Hedgehogs

Hedgehogs are considered likely to forage within the site, and could potentially nest and hibernate within the hedgerows. Hedgehogs are afforded partial protection under the Wildlife and Countryside Act (1981) and are now a priority species under the UK BAP in light of dramatic population declines.

Legislation

Hedgehogs are afforded partial protection under the Wildlife and Countryside Act (1981) and are now a priority species under the UK Biodiversity Action Plan in light of dramatic population declines. The legislation afforded to hedgehogs in the Countryside and Rights of Way (CRoW) Act 2000 means that every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity. In effect, 'conserving biodiversity' includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat.

The Guidance for Local Authorities on Implementing the Biodiversity Duty, DEFRA 2007, state that the important aspects of enforcing this duty is to ensure:

- Fulfilling statutory obligations for the protection and enhancement of biodiversity within the forward planning and development control processes;
- Participation in local BAP) within relevant local authority services; and
- Protecting and enhancing biodiversity on the local authority estate.

Impact Assessment of Proposed Development on Hedgehogs

The impact to potential hedgehog habitat on site is considered to be low, comprising loss of sub-optimal foraging habitat. Mitigation measures are recommended in section 5.0 to enable the requirements of the local planning authority to be met, namely the restoration or enhancement of hedgehog habitat.

# 5. Required Actions

The following recommendations are made to avoid or minimise adverse impacts to wildlife features and protected species:

## 5.1. Precautionary Measures

### 5.1.1. Timing of Vegetation Clearance for Birds, Reptiles and UK BAP Mammals

Hedgehogs may feasibly be present within the hedgerow understoreys. This species is protected under section 42 of the NERC Act 2006.

Measures to prevent the direct harm of this species should concentrate primarily on minimising the risk of causing the death and injury of individuals during any hedgerow clearance to facilitate site access. This should be achieved through the use of 'species deterrence' measures in the run-up to the commencement of works on-site, possibly coupled with 'destructive searching' of any potential refugia that may be present at the time of site clearance.

If any interfaces between the intact species-poor hedgerow and the grassland are required for clearance to facilitate construction works, the clearance of the hedgerow scrub layer should be undertaken by strimming or brush cutting to a height of approximately 300mm during April to August, to make the area less suitable for reptiles and hedgehogs. Arisings should be removed immediately from site. This will be left for at least 48 hours and then cut down to near ground level and left for another 48 hours prior to works commencing. This should make the areas more unattractive to reptiles and hedgehogs prior to development and thus encourage them to leave the area. Mechanical clearance methods (e.g. gang-mowing, flail-cutting etc) will not be used.

These clearance works will fall within the bird nesting season (April to September inclusive) and therefore the hedgerows should be subject to a check for nesting birds by a suitably qualified ecologist immediately prior to removal of such habitats. If any active nests are found, these should be protected, along with an appropriate buffer zone, until the nesting is complete and the young have fledged.

The hedgerow understoreys will not be subject to ground disturbance during the reptile hibernation period, which runs approximately from October to February inclusive, so as to reduce the risk of encountering (and potentially injuring or killing) any hibernating individuals.

Features that could be utilised as refuges or hibernacula (e.g. log piles, earth mounds) should be destructed by hand.

Any excavations associated with development should either be closed at night or fitted with escape ramps to help animals escape.

### 5.1.2. Pollution of Watercourse

Care should be taken to protect the water quality of the brook, both during construction and post construction phase. Current Environment Agency best practice guidance should be observed. It is recommended that surface water/ pollutant run-off is avoided during site preparation and construction phases and the measures recommended for achieving this outlined in the Environment Agencies guidance document *Working at construction and demolition sites: PPG6 Pollution Prevention Guidelines* are implemented. These include the following measures:

Works Compounds

Works compounds should not be sited near to Dulas Brook at the south-west of the site.

Contingency Measures

Contingency measures for unforeseen incidents such as spillages should be set in place prior to commencement of construction works. Such procedures and measures will cover atmospheric, aquatic or land pollution and procedures in the event of fire. Contingencies to control and contain hydrocarbon spillages from e.g. parked vehicles once the area is developed should also be implemented.

Deliveries

Deliveries to site can be a common cause of pollution. Vehicles can cause water, noise and dust pollution as they enter and exit site, for example by spreading mud or contaminated material on neighbouring roads. Pollution can also be cause at the point of delivery, especially with fuels, oils and hazardous materials; for example, a fuel hose not correctly connected and leaking or when the area is unsuitable for storing that material. Measures to prevent pollution cause by deliveries include:

- Identify an area where all deliveries will be completed, and communicate the requirements to suppliers and those working on site. This is likely to be at the north-eastern corner of the site, at the existing field entrance;
- Ensure all deliveries are made as far away from watercourses and drains as possible;
- Define times for deliveries to site and communicate these to suppliers and those working on site. Make sure these delivery times are suitable for neighbours, i.e. after 9am;
- Ensure any tanks, drums or containers coming to site are in a satisfactory condition – check for damage or leaks;
- Make sure that deliveries of polluting materials are delivered directly to a safe storage area (in the north-east of the site), and not left anywhere else on site; a safe storage area may need secondary containment depending on the material to be stored e.g. oil and hazardous chemicals;
- Ensure that all material deliveries will be supervised, especially hazardous materials;

- Prepare tool box talks to site workers on deliveries and preventing pollution.

Fuel Storage

- Ensure fuel storage areas are secured and protected from vandals;
- Locate fuel storage areas away from sensitive receptors such as drains or waterways;
- Remove interconnecting hoses at night or protect hoses further by using a scaffold tube with kee clamp fittings; and
- Ensure that fuel storage is bunded in accordance with the British Standard.

Silt Run-off Prevention

Poor management of silt and silty water is a major cause of serious pollution incidents from construction sites. Silt for these purposes is a fine inert sediment derived from soil and rocks. Silt pollution can:

- Damage and kill aquatic life by smothering and suffocating;
- Reduce water quality; and
- Cause flooding by blocking culverts and channels.

Many construction processes produce silty water: movement and maintenance of plant and vehicles on site, rain water run-off from exposed ground, trenches or foundations and even from plant, wheel and boot wash facilities. The following measures should be implemented on site to prevent the creation of silty water and silt run-off of silt in to the watercourse:

- The banks of Dulas Brook should be lined with straw bales wrapped in terram lining;
- A silt fence should also be erected around the banks of Dulas Brook, the fence should be of wooden frame construction with terram lining;
- Plant, wheel and boot washing:
- Run-off should be collected in a sump,
- These facilities must be correctly installed, routinely maintained and inspected to ensure they're working efficiently.

Spill Response

If an accidental spill does occur on site. A quick response is needed to contain the spilled material (e.g. fuel, hazardous material etc.). Spill kits and a staff induction should be provided prior to the start of work so that a quick response by staff on site in ensured if a spill occurs.

### 5.1.3. Lighting Plan

A sensitive lighting strategy must form part of the development both during construction and operation phases. This will mitigate against any light disturbance to foraging/ commuting bats using the hedgerows that demarcate the site. Where practicable, this will involve no external lighting being installed upon the external elevations of the new building on the south-west, south and south-east elevations (residential properties adjacent to the site at the west and north-east already illuminate these areas at night). This will create a 'dark corridor', allowing bats to continue to forage and commute along these linear features. In addition, no works will be undertaken at night. As suggested 'dark corridor' is present in plan 4

## 5.2. Compensation and Enhancement Measures

### 5.2.1. Translocation of Meadow Crane's-Bill to Retained Area of Semi-Improved Grassland

The locally abundant meadow crane's-bill at the north of the site (see Plan 2, TN5) should be translocated to the 0.87ha of semi-improved grassland will be retained and unaffected by development works. Details on how to undertaken this work is provided in Appendix 4. A suitably qualified ecologist should supervise the translocation.

### 5.2.2. Enhancement and Monitoring of Retained Semi-Improved Grassland

As discussed in Section 4.1, the floristic composition of the semi-improved grassland is currently the defining component of the SWS, although it is not clear whether it would still qualify if assessed in its current condition. The Herefordshire Unitary Development Plan (2007) states that development proposals which could directly or indirectly affect a SWS will not be permitted unless it can be demonstrated that appropriate mitigation and compensatory measures can be taken in accordance with policy NC7 – specifically to avoid, minimise or offset the loss of or damage to any biodiversity feature.

Therefore, in order to compensate for the loss of approximately 0.19ha of semi-improved grassland containing locally abundant meadow crane's-bill, the remaining 0.87ha of semi-improved grassland will be botanically enhanced in order to restore its unimproved status. This will be achieved by maintaining optimal soil fertility and pH levels to encourage floristic diversity of the neutral grassland. The use of herbicides, pesticides and artificial fertilisers on site should generally be avoided, although pernicious weeds may need to be spot-treated with herbicide. In addition, attempts should be made to re-establish suitable native habitats in areas that may have been damaged during the construction phase; for example, heavy vehicles at the north of the site. Existing soils should be conserved and re-spread on any in-filled areas, and then left to re-vegetate naturally. These areas should not be re-seeded and the importation of topsoil to these areas should be avoided as far as possible. However, consideration could be given to specifically sowing yellow rattle, which is an indicator species of unimproved neutral grassland. It is semi-parasitic and will reduce the vigour of agricultural grasses within the sward if its abundance increases from existing levels, thus benefiting other herb species.

New tree planting should not occur in the semi-improved neutral grassland habitats.

The grassland sward should ideally be managed through a combination of light sheep grazing and cutting, as set out in the table below:

| | |
|---|---|
| January-February | Light grazing on any new growth (optional) |
| Early March | Remove grazing animals; this allows plants to grow and flower |
| August/September | Cut hay cut once the wildflowers have seeded; cut meadow slowly to a height of 15cm and allow opportunities for animals and birds to escape |
| Late September to end of December | Main grazing period with light grazing down to a short sward height (5cm) |

A stocking density of between 4 – 8 animals is recommended between late September and February, given the size of the grassland. This is a typical stocking density for conservation grazing. Higher densities are likely to have a detrimental effect upon the quality of the grassland. Where larger breeds of sheep are used for grazing, consideration will be given to lowering stocking density.

Any mowing will take place in late winter or autumn, as this timing allows plants to flower and set seed, which will not only increase the floristic diversity of the site, but will also benefit invertebrates that require nectar sources and roosting locations during the spring and summer. Ideally, the sward should be cut to a height of about 6 to 7cm. Adopting wildlife friendly mowing practices, such as mowing from one side of the grassland to the other, may benefit late ground nesting birds.

**Monitoring**

Monitoring will be carried out during the optimal survey season (May to July) by an experienced ecologist to assess the ecological development of the grassland sward within the site in years 1, 3 and 5. It will focus on the floristic diversity, specifically the presence of meadow crane's-bill, meadow saffron and pepper saxifrage, and the number of Lowland Meadow indicator species. The monitoring will ensure that the semi-improved grassland is restored towards unimproved status, with increased floristic diversity over time. It will also give an early-warning of any injurious weeds or vegetation failure that may occur. A brief monitoring report will be supplied to the Local Planning Authority upon completion of each monitoring visit.

The Herefordshire County Ecologist should be consulted on the scope of mitigation and/ or enhancement measures required.

### 5.2.3. Bird Boxes

In order to enhance bird nesting opportunities, artificial bird boxes should be erected on suitable features within the site. A variety of durable, woodcrete bird boxes, including maintenance free boxes suitable for trees, are available from Schwegler.

Two bird boxes should be fitted to retained trees within the site boundary, or upon the residential dwelling itself. They should be located in secluded positions, ideally within dense cover and at a minimum height of 3 metres from ground level.

Specialised boxes that cater for specific bird species:

- Open fronted – Open fronted nest boxes cater for a range of bird species, including robin, dunnock (*Prunella modularis*), wren (*Troglodytidae*), pied wagtail (*Motacilla alba*), redstart *(Phoenicurus phoenicurus)* and flycatcher. Due to the more exposed nature of these nest boxes, it is especially important to ensure that they are located in dense cover in order to avoid the attention of potential predators. Suitable locations could be within ivy coverage of the broadleaved trees, or within dense areas of hedgerow; and
- Standard nest boxes – An entrance hole of 32mm will attract species such as great, blue and coal tits (*Periparus ater*), along with nuthatch *(Sitta europaea),* flycatchers and sparrows. These nest boxes can be sited in a wide range of locations throughout the site.

### 5.2.4. Hedgehog Habitat Management

The following hedgehog friendly features could be considered for incorporation into the final design of the development. It should be noted that these are enhancement recommendations and are not obligatory:

- "Wild corners", patches of long, natural vegetation could be left;
- Log piles to provide a secure site for use by breeding and hibernating hedgehogs. These should be cited in longer vegetation;
- The use of hedgerows instead of fences;
- If solid fences are created on site, these will have holes of at least a 15cm diameter at the base to allow hedgehogs to move across the site and into neighbouring habitats; and
- The use of pesticides including slug pellets, herbicides and insecticides should be avoided.

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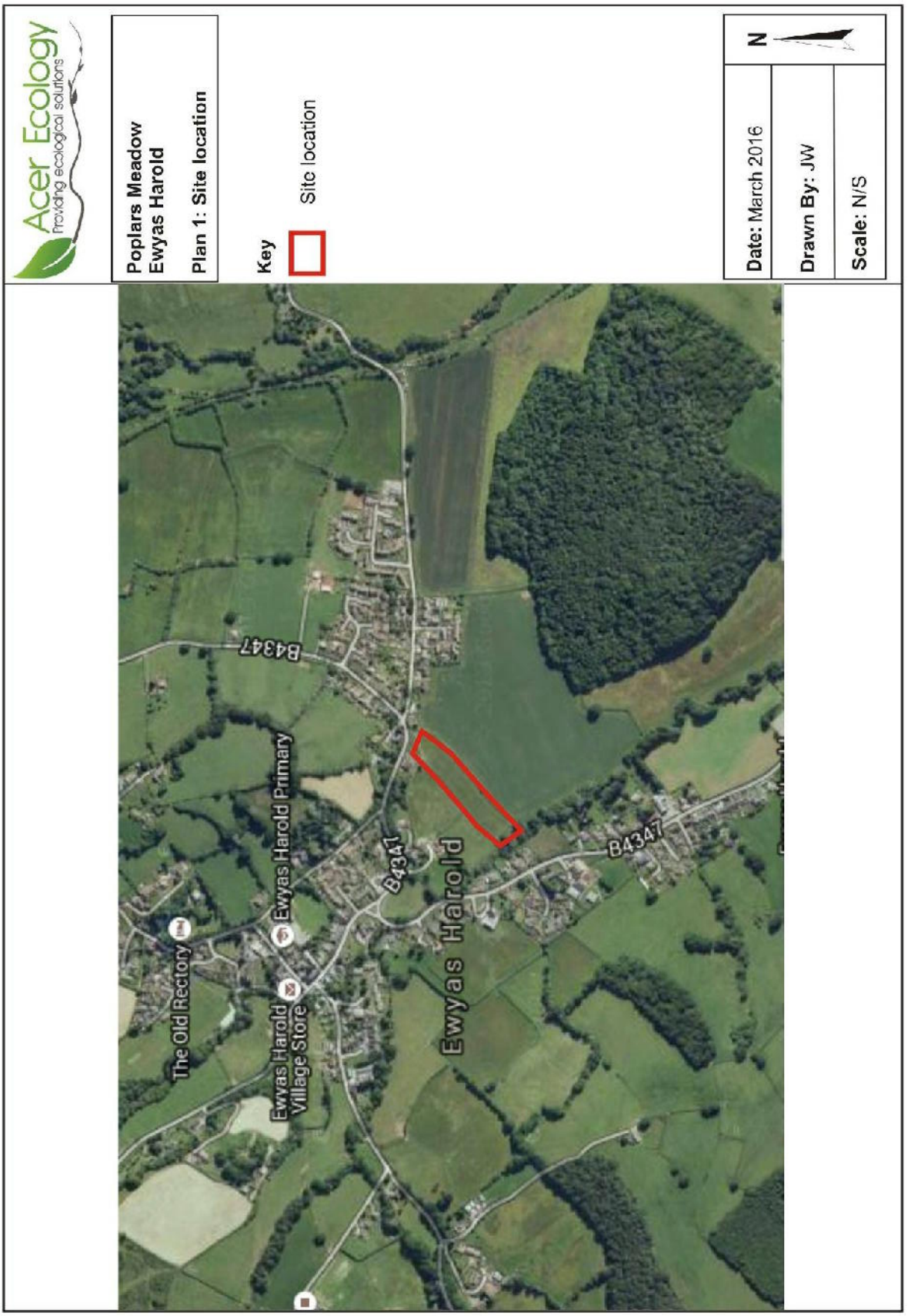
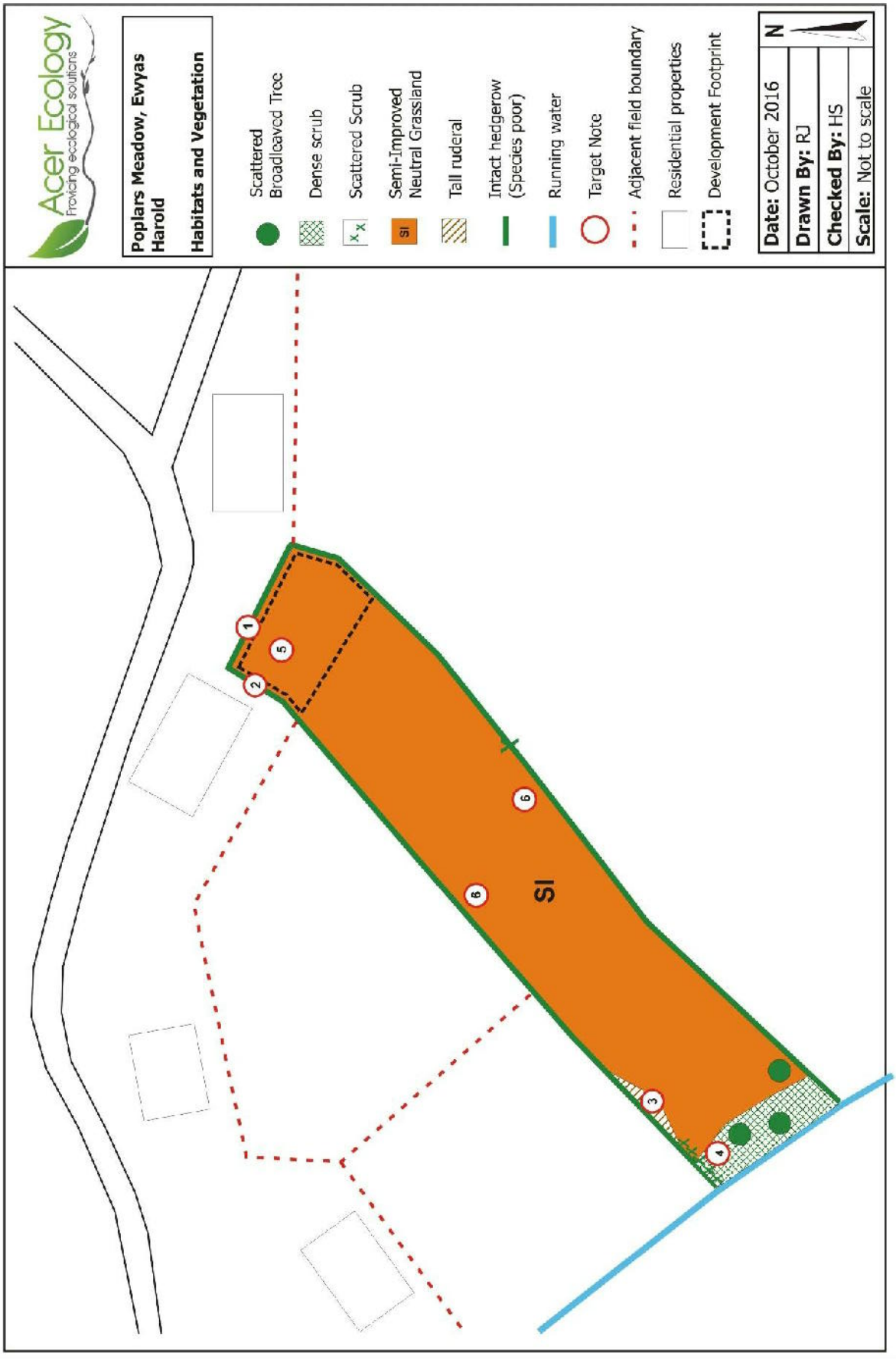
*https://www.herefordshire.gov.uk/media/5789137/ewyas_harold_village_design_statement.pdf*

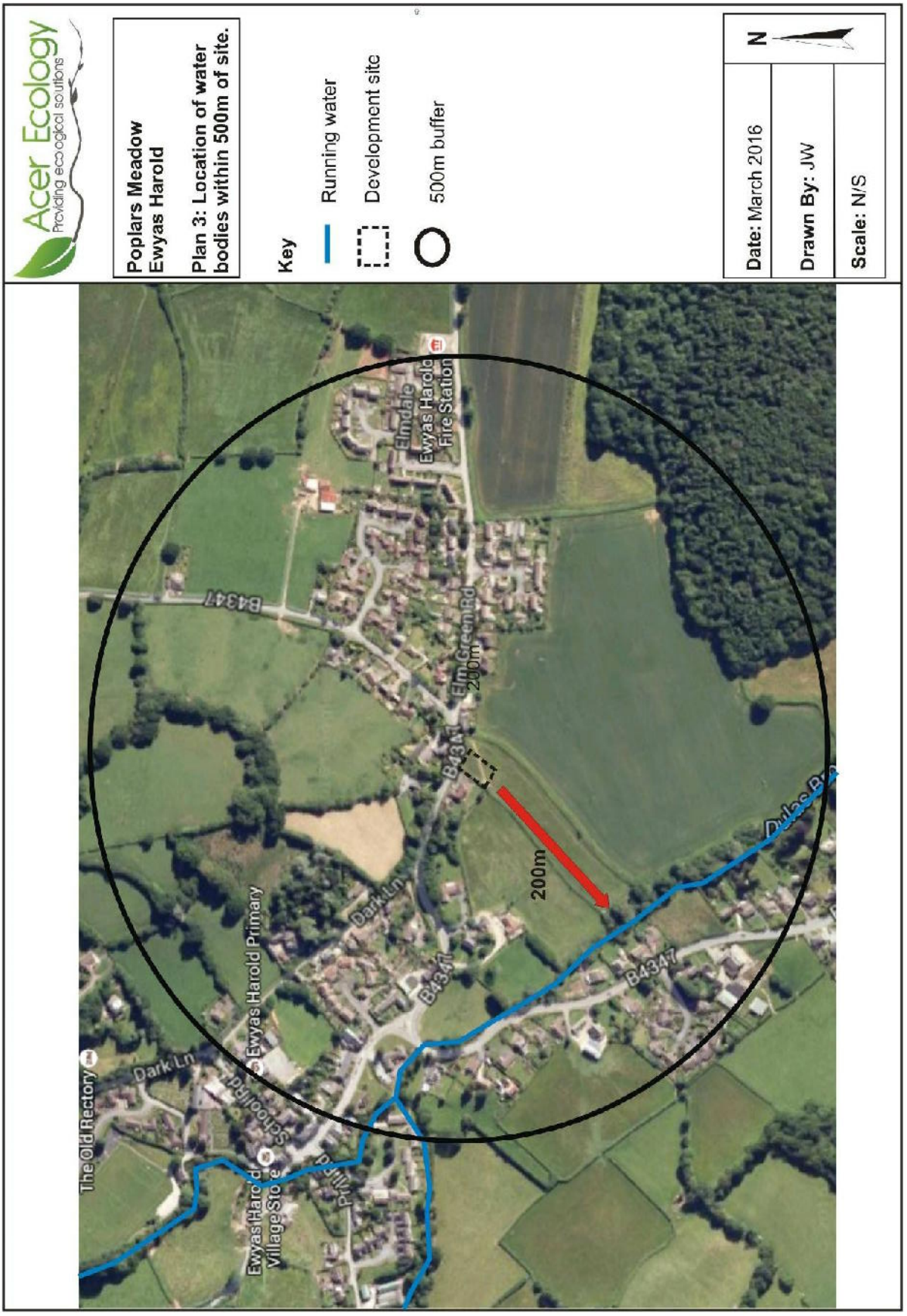
## Plan 1: Location Plan



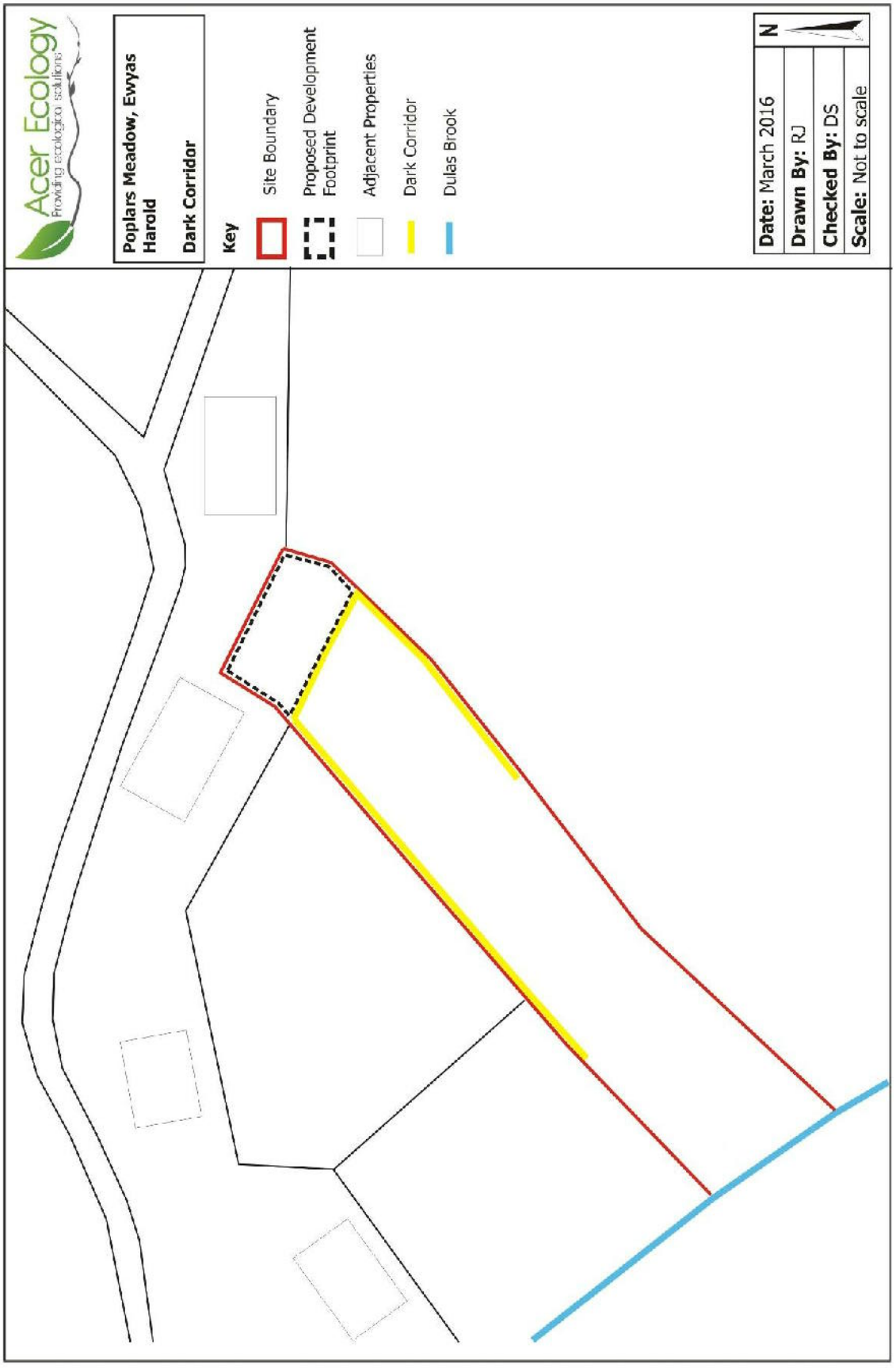
## Plan 2: Habitats and Vegetation



## Plan 3: Location of Water Bodies Within 500m of Site



## Plan 4: Dark Corridor



## Appendix 1: Species Recorded

All species recorded by Acer Ecology, 2016

| Species | Common name | W | LM | CG | LDA | PMR | PIL | TF | Status |
|---|---|---|---|---|---|---|---|---|---|
| **Trees and Shrubs** | | | | | | | | | |
| *Acer pseudoplatanus* | Sycamore | | | | | | | | Alien |
| *Alnus glutinosa* | Common alder | | | | | | | | |
| *Clematis vitalba* | Traveller's-joy | | | | | | | | |
| *Cornus sanguinea* | Dogwood | | | | | | | | |
| *Corylus avellana* | Hazel | | | | | | | | |
| *Fraxinus excelsior* | Ash | | | | | | | | |
| *Prunus spinosa* | Blackthorn | | | | | | | | |
| *Quercus robur* | Pedunculate oak | | | | | | | | |
| *Rosa canina agg* | Dog-rose | | | | | | | | |
| *Rubus fruticosus agg* | Bramble | | | | | | | | |
| *Salix fragilis* | Crack willow | | | | | | | | |
| *Sambucus nigra* | Elder | | | | | | | | |
| **Herbaceous Plants** | | | | | | | | | |
| *Achillea millefolium* | Yarrow | | | | | | | | |
| *Aegopodium podagraria* | Ground-elder | | | | | | | | Alien |
| *Agrostis capillaris* | Common bent | | | | | | | | |
| *Alopecurus pratensis* | Meadow foxtail | | | | | | | | |
| *Anagallis arvensis* | Scarlet pimpernel | | | | | | | | |
| *Anthoxanthum odoratum* | Sweet vernal-grass | | | | | | | | |
| *Anthriscus sylvestris* | Cow parsley | | | | | | | | |
| *Arctium minus* | Lesser burdock | | | | | | PIL | | |
| *Arrhenatherum elatius* | False oat-grass | | | | | | | | |
| *Arum maculatum* | Lords-and-ladies | | | | | | | | |
| *Bellis perennis* | Daisy | | | | | | | | |
| *Bromus hordeaceus* | Soft brome | | | | | | | | |
| *Calystegia sepium ssp roseata* | Hedge bindweed | | | | | | | | Monmouthshi sap |
| *Capsella bursa-pastoris* | Shepherd's purse | | | | | | | | |
| *Cardamine flexuosa* | Wavy bitter-cress | | | | | | | | |
| *Carex caryophyllea* | Spring sedge | | LM | CG | LDA | | | | |
| *Carex sp* | Sedge species | | | | | | | | |
| *Centaurea nigra* | Common knapweed | | LM | CG | | | | | Rct sap |
| *Cerastium fontanum* | Common mouse-ear | | | | | | | | |
| *Cirsium arvense* | Creeping thistle | | | | | | | | |
| *Cirsium vulgare* | Spear thistle | | | | | | | | |
| *Colchicum autumnale* | Meadow saffron | | LM | | | | | | Ps, rdb-nt |
| *Crepis capillaris* | Smooth hawk's-beard | | | | | | PIL | | |
| *Cynosurus cristatus* | Crested dog's-tail | | | | | | | | |
| *Dactylis glomerata* | Cock's-foot | | | | | | | | |

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|---|---|---|---|---|---|---|
| *Daucus carota* | Wild carrot | | | CG | | |
| *Digitalis purpurea* | Foxglove | | | | | |
| *Epilobium hirsutum* | Great willowherb | | | | | |
| *Epilobium palustre* | Marsh willowherb | | | | | |
| *Epilobium tetragonum* | Square-stalked willowherb | | | | | |
| *Festuca rubra* | Red fescue | | | | | |
| *Filipendula ulmaria* | Meadowsweet | | | | PMR | |
| *Galanthus nivalis* | Snowdrop | | | | | |
| *Galium aparine* | Cleavers | | | | | |
| *Geranium dissectum* | Cut-leaved crane's-bill | | | | | |
| *Geranium molle* | Dove's-foot crane's-bill | | | | | CS |
| *Geranium pratense* | Meadow crane's-bill | | LM | | | |
| *Geranium robertianum* | Herb-robert | | | | | |
| *Geum urbanum* | Wood avens | | | | | |
| *Glechoma hederacea* | Ground-ivy | | | | | |
| *Hedera helix* | Ivy | | | | | |
| *Heracleum sphondylium* | Hogweed | | | | | |
| *Holcus lanatus* | Yorkshire fog | | | | | |
| *Hypochaeris radicata* | Common cat's-ear | | LM | | | |
| *Inula conyzae* | Ploughman's-spikenard | | | CG | | |
| *Juncus effusus* | Soft rush | | | | | |
| *Lathyrus pratensis* | Meadow vetchling | | LM | | | |
| *Scorzoneroides autumnalis (Leontodon autumnalis)* | Autumn hawkbit | | | | | |
| *Leontodon hispidus* | Rough hawkbit | | LM | CG | | |
| *Lolium perenne* | Perennial rye-grass | | | | | |
| *Lotus pedunculatus* | Greater bird's-foot-trefoil | | | | PMR | |
| *Medicago lupulina* | Black medick | | | CG | | |
| *Oxalis acetosella* | Wood-sorrel | W | | | | |
| *Pentaglottis sempervirens* | Green alkanet | | | | | |
| *Phleum pratense* | Timothy grass | | | | | |
| *Plantago lanceolata* | Ribwort plantain | | | | | |
| *Plantago major* | Greater plantain | | | | | |
| *Poa annua* | Annual meadow-grass | | | | | |
| *Poa trivialis* | Rough meadow-grass | | | | | |
| *Potentilla reptans* | Creeping cinquefoil | | | | | |
| *Prunella vulgaris* | Self-heal | | | | | |
| *Ranunculus acris* | Meadow buttercup | | | | | |
| *Ficaria verna* | Lesser celandine | | | | | |
| *Ranunculus repens* | Creeping buttercup | | | | | |
| *Rhinanthus minor* | Yellow rattle | | LM | | | Old hay-meadows and pastures, fieldbanks and grassy |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | roadsides, limestone grassland and fixed dunes. |
| *Rumex acetosa* | Common sorrel | | | | | PIL | |
| *Rumex crispus* | Curled dock | | | | | | |
| *Rumex obtusifolius* | Broad-leaved dock | | | | | | |
| *Sonchus asper* | Prickly sow-thistle | | | | | | |
| *Stachys sylvatica* | Hedge woundwort | | | | | | |
| *Stellaria graminea* | Lesser stitchwort | | LM | | | | |
| *Taraxacum officinale agg* | Dandelion | | | | | | |
| *Trifolium dubium* | Lesser trefoil | | | | | | |
| *Trifolium pratense* | Red clover | | LM | | | | |
| *Trifolium repens* | White clover | | | | | | |
| *Tripleurospermum inodorum* | Scentless mayweed | | | | | | |
| *Urtica dioica* | Common nettle | | | | | | |
| *Valeriana officinalis* | Common valerian | | | | PMR | | |
| *Veronica serpyllifolia* | Thyme-leaved speedwell | | | | | | |
| *Vicia hirsuta* | Hairy tare | | | | | | |
| *Vicia sativa* | Common vetch | | | | | | |
| *Vicia sepium* | Bush vetch | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **WBP 2008 'indicator species' totals** | 1 | 10 | 6 | 1 | 3 | 3 | 0 |
| | **W** | **LM** | **CG** | **LDA** | **PMR** | **PIL** | **TF** |

**Key to indicator species (WBP 2008)**

W - Woodland, LM – Lowland meadow, CG - Calcareous Grassland, LDA – Lowland Dry Acid Grassland, PMR Purple moor-grass and rush pasture, PIL – Post Industrial Land, TF Species-rich Tillage Fields and Margins

**SINC selection**

Sites which support 1 primary species or 5 contributory species or habitats which support 8 neutral grassland, 8 calcareous grassland, 7 acid grassland, 12 marshy grassland or 8 tillage field and margins indicator species should be considered for selection as a SINC. Post Industrial sites which support 20 or more indicator species from the combined post industrial land, acid, neutral, calcareous and marshy grassland lists should also be considered for selection.

## Appendix 2: Definitions of Site Value

**International Value**

Internationally designated or proposed sites such as Ramsar Sites, Special Protection Areas, Biosphere Reserves and Special Areas of Conservation, or non-designated sites meeting criteria for international designation. Sites supporting populations of internationally important species or habitats.

**National Value**

Nationally designated sites such as Sites of Special Scientific Interest (SSSIs), or non-designated sites meeting SSSI selection criteria (NCC 1989), National Nature Reserves (NNRs) or Nature Conservancy Review (NCR) Grade 1 sites, viable areas of key habitats within the UK Biodiversity Action Plan. Sites supporting viable breeding populations of Red Data Book (RDB) species (excluding scarce species), or supplying critical elements of their habitat requirements.

**Regional Value**

Sites containing viable areas of threatened habitats listed in a regional Biodiversity Action Plan, comfortably exceeding Special Wildlife Site (SWS) criteria, but not meeting SSSI selection criteria. Sites supporting viable populations of Nationally Scarce species or those included in the Regional Biodiversity Action Plan on account of their rarity, or supplying critical elements of their habitat requirements.

**District Value**

Site identified as a Special Wildlife Site (SWS) at the district level; meeting published designation criteria, but falling short of SSSI designation criteria, whether designated as a SWS or not. Large or strong populations or communities of nationally rare or protected species (other than badger), or of species which are rare in the county and uncommon nationally.

**High Local Value**

Habitats which just fail to meet Regional value criteria, but which appreciably enrich the ecological resource of the locality. Sites supporting species which are notable or uncommon in the county; or species which are uncommon, local or habitat-restricted nationally, and which might not otherwise be present in the area.

**Local Value**

Undesignated sites or features which appreciably enrich the habitat resource in the context of their immediate surroundings, parish or neighbourhood (e.g. a species-rich hedgerow). Rare or uncommon species may occur but are not restricted to the site or critically dependant upon it for their survival in the area.

**Site value (within the immediate zone of influence)**

Low-grade and widespread habitats.

**Negligible**

No apparent value.

## Appendix 3: Bat Survey Protocol for Trees Affected by Arboricultural Work

The trees were assigned to the following categories:

| Suitability | Description of Roosting Habitat | Commuting and Foraging Habitat |
|---|---|---|
| Negligible | Negligible habitat features on site likely to be used by roosting bats | Negligible habitat features on site likely to be used by commuting and foraging bats. |
| Low | A tree of sufficient size and age to contain PRFs but with none seen from the ground[11]. | Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub. |
| Moderate | A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only) the assessments in this table are made irrespective of conservation status, which is established after presence is confirmed. | Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water. |
| High | A tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. | Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts. |

[11] This system of categorisation aligns with BS 8596:2015 Surveying for bats in trees and woodland (BSI, 2015).

# APPENDIX 4: GUIDELINES FOR THE TRANSLOCATION OF MEADOW CRANE'S-BILL

***Key issues***

The timing of the translocation is critical. The donor material should ideally be stripped between September and the end of February, and ideally immediately placed at the receptor site/ if possible. If immediate transfer is not possible, then it should be stored in a suitable manner (see below) and then placed in the receptor site no later than March 1st of the following year.

It is essential that the translocation material is not tracked over or disturbed in any way before or after translocation, as this could potentially cause irreparable damage to the soil structure. Temporary fencing may therefore be required in order to protect the area from the public footpath that traverses the site.

**Selection of receptor sites**

The retained semi-improved grassland within the site will provide an optimal donor site for the meadow crane's-bill, as it is both close to the donor site and of an identical habitat type. The presence of features such as hedgerows and the wooded stream corridor to the south of the survey area will also help to provide shelter for the young plants as they emerge, creating optimum conditions for their survival.

An important factor affecting translocation success will be to avoid double-handling of material. If the translocation is only carried out once the receptor site is available, this will lead to a higher success rate.

The receptor sites will need to have a similar pH and nutrient status to the donor site to optimise the chances of success.

**Extraction of donor plants**

Initial site investigation should be carried out to give an indication of the depth of topsoil and approximate position of plant tubers and rhizomes within the soil profile. It is envisaged that an excavation of approximately 250mm will optimise the number of plants, seeds, tubers and rhizomes translocated, without generating an excessive amount of material. However, this will have to be assessed prior to topsoil extraction.

The translocation of the plants should be undertaken using hand tools, so as to avoid excess disturbance to adjacent areas of the semi-improved grassland.

The vegetation should be cropped as closely to the ground as possible and removed, thus reducing the bulk of vegetative material from the topsoil. Otherwise this material would rot over time and reduce the viability of the seed bank and the soil.

Translocation should not be carried out during or after periods of heavy rain. The water level should be at or below field capacity. Excessive amounts of water will lead to a deterioration of the soil structure.

**Storage of donor topsoil (if required)**

The topsoil should be stored on top of Teram at an approved location. It should not be mixed with any other topsoil, and should preferably be kept in separate piles for each area. The Teram should be laid in a manner that allows for drainage of the topsoil during periods of heavy rain.

Topsoil should not be stored to a depth of over 1m.

Consideration should be given to the possible construction of a retaining structure, such as wooden battening around the edges of the soil mound.

**Spreading of donor plants at receptor site**

The translocated topsoil should be loosely tipped directly on to the prepared subsoil, and spread to a depth of between 150mm and 300mm.

The surface of the topsoil should not be mixed with the subsoil, compacted or smeared during spreading.