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# **Land at Pollards Farm, Ditchling Common, West Sussex**

**Great Crested Newt Survey**

**March 2019**

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## Great Crested Newt Survey

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| <b>Client:</b>                                                                                                                                                                                                                                                                                                                    | Dim South Ltd                                                      |                                                                     |
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| The information, advice and opinions provided in this report are true and were prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's <a href="#">Code of Professional Conduct</a> . We confirm that the opinions expressed are our true and professional bona fide opinions. |                                                                    |                                                                     |

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# Abbreviations

|       |                                                    |
|-------|----------------------------------------------------|
| ECoW  | Ecological Clerk of Works                          |
| eDNA  | Environmental DNA                                  |
| EPS   | European Protected Species                         |
| EPSM  | European Protected Species Mitigation (Licence)    |
| GCN   | Great Crested Newt                                 |
| HSI   | Habitat Suitability Index                          |
| LNR   | Local Nature Reserve                               |
| LWS   | Local Wildlife Site                                |
| NE    | Natural England                                    |
| NERC  | Natural Environment and Rural Communities Act 2006 |
| NNR   | National Nature Reserve                            |
| NPPF  | National Planning Policy Framework                 |
| PEA   | Preliminary Ecological Appraisal                   |
| SAC   | Special Area of Conservation                       |
| SSSI  | Site of Special Scientific Interest                |
| SxBRC | Sussex Biodiversity Record Centre                  |
| TN    | Target Note                                        |
| WCA   | Wildlife & Countryside Act 1981 (as amended)       |

# 0 Executive Summary

## 0.1 Introduction

- 0.1.1 A great crested newt (GCN) *Triturus cristatus* survey was carried out for the site of a proposed residential redevelopment at Land at Pollards Farm, Ditchling Common, West Sussex (Grid Reference: 533212,118313).
- 0.1.2 The study was undertaken to establish the presence or likely absence of great crested newt at the site, identify and evaluate potential impacts of the development on great crested newt, and make recommendations accordingly. Four surveys were conducted by licensed herpetologists between 8 May and 5 June 2018 with reference current industry guidelines (English Nature, 2001). Three survey techniques were utilised on each survey visit; egg searching, bottle trapping and torchlight surveys.

## 0.2 Results

- 0.2.1 The desk study data search returned 17 records of great crested newt within the search zone during a date range of 1988 to 2016. The most recent records were over six separate dates in 2016 located c.530m north-west of the application site, with a maximum count of 11 individuals.
- 0.2.2 Overall, habitats within the application site boundary provide a range of features which could support a population of GCN during the terrestrial phase of their lifecycle. The area of dense scrub in the north of the site provides suitable foraging and shelter habitats, as do smaller areas of introduced shrub (planted borders) adjacent to the existing dwelling albeit to a lesser extent. Hedgerows at the northern and southern ends of the application site, and running down its east boundary, and the dry ditch at the west boundary, provide suitable dispersal routes for GCN moving through the landscape and when migrating between breeding and terrestrial habitats, while also providing shelter opportunities. The hedgerows and existing building foundations could potentially also be used for hibernation. However the improved grassland which dominates the application site is of limited suitability; it may occasionally be used for foraging but offers little shelter from predation risk.
- 0.2.3 There is one pond within the application site, and a further five within 250m were identified from Ordnance Survey maps during the desk study stage and could potentially provide breeding habitats for GCN. Pond P5 was inaccessible throughout the survey, lying behind a locked gate within a residential area c.235m south-west of the application site. Access permissions to survey P6 were not received until visit 3. Accessible ponds were assessed for their suitability to support breeding newts using field observations supported by a Habitat Suitability Index (HSI; Oldham *et al*, 2000); the results ranged between 0.33 (of poor quality for breeding GCN) and 0.89 (of excellent quality).

- 0.2.4 Great crested newts were recorded in P6 only. The results indicate that a “Small” population of great crested newts was present in P6 during the 2018 breeding season, which is located c.215m north of the application site boundary. However, it should be noted that six visits are required to confidently derive a population estimate, but only two visits could be undertaken for P6 due to access constraints. No GCN eggs or larvae were found in any of the ponds.

### **0.3 Evaluation**

- 0.3.1 The majority of great crested newts will remain within a core area of up to c.50–250m from the breeding pond if that area can fulfil their lifecycle requirements although, as with all amphibians, small numbers of individuals (often juveniles) will disperse as colonisers to distances of 1km or more (Langton *et al.*, 2001). The application site may occasionally be crossed by great crested newts dispersing between ponds in the wider area, but the improved grassland which dominates the site is unlikely to support high numbers of newts at any time and is unsuitable for shelter or hibernation. As a result the risk of great crested newts being present within the application site is low. Furthermore, proposals for the site focus on the footprint of the existing dwelling, and include removal of the conservatory and construction of a two-storey extension to the south-west elevation.
- 0.3.2 It is concluded that there is a low likelihood of incidental killing, injury or disturbance to individual GCN during the works. The proposed development is likely to generate low significance impacts resulting from temporary small-scale loss or disturbance of terrestrial habitat within 250m of a GCN pond (P6). No negative impact is predicted for the on-site pond or any aquatic habitats in the wider area. Long-term adverse effects on the conservation status of the local population of great crested newts are not predicted due to the low numbers of individuals recorded during the surveys and their distance from the application site.

### **0.4 Recommendations**

- 0.4.1 It will not be necessary to obtain a European Protected Species Mitigation Licence from Natural England prior to commencing the works. However, a mitigation strategy is required to ensure that the low risk of minor impacts can be managed in a reasonable way to avoid incidental killing, injury or disturbance during the works. Mitigation should be implemented in accordance with a Non-Licensed Method Statement agreed with the Local Planning Authority, which is likely to include the following:
- ▶ Appointment of a licenced Ecological Clerk of Works (ECoW) to oversee mitigation and construction works;
  - ▶ Timing the works to occur during the active season (February to October);
  - ▶ Provision of information and toolbox talks to guide site operatives;
  - ▶ Hand search and dismantling of refuges;
  - ▶ Destructive search, including progressive removal of vegetation, structures, top soil and sub-surface features;
  - ▶ Specified procedures should GCN be encountered during the works;

- ▶ Adjustments to be made to account for roosting bats and nesting birds, if necessary;
- ▶ Commencement of construction once the site is declared clear of GCN by the ECoW;
- ▶ Measures to prevent materials stored on site creating temporary resting places for GCN.

0.4.2 A range of ecological enhancements are also recommended to improve the overall value of the site to GCN and amphibians generally, following construction.

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# 1 Introduction

## 1.1 Background

- 1.1.1 A Preliminary Ecological Appraisal (PEA) was carried out in April 2018 for the site of a proposed residential redevelopment at Land at Pollards Farm, Ditchling Common, West Sussex (Grid Reference: 533212,118313). It was recommended that a great crested newt *Triturus cristatus* survey should be carried out due to the presence of favourable habitats on and near to the site.
- 1.1.1 The PEA identified a number of nearby ponds which offer potential breeding habitat for great crested newts (GCN), and it is hence possible that other habitats within the site (e.g. grassland, hedgerows and scrub) form part of the range of this species during its terrestrial phase. The proposed development could result in killing, injury or disturbance to GCN if present during construction, and loss of its habitats. The surveys were therefore required to inform the planning application and determine whether the proposals could negatively impact on GCN.

## 1.2 Objectives and Approach of the Study

- 1.2.1.1 The study was commissioned to fulfil the following objectives:
- ▶ To determine the presence or likely absence of great crested newts from ponds within 250m of the site boundary and, if present, to establish a population estimate;
  - ▶ To identify and evaluate potential impacts of the development on GCN;
  - ▶ To provide sufficient data to inform a European Protected Species Mitigation Licence application, if required;
  - ▶ To outline the measures required for avoiding and mitigating negative impacts, including compensation of habitat losses if necessary, and make recommendations for ecological enhancement; and
  - ▶ To record all other amphibian species observed using the ponds during the survey.
- 1.2.1.2 To meet these objectives the survey approach involved:
- ▶ A desk study involving a review of records of great crested newts from the local area (1km radius from the centre of the proposed development site);
  - ▶ Information from the Preliminary Ecological Appraisal regarding the habitats present within the site boundary and the wider area;
  - ▶ Habitat Suitability Indices (HSI) were calculated for each of the nearby ponds (subject to access). These give an indication of the value of a particular pond for breeding great crested newts; and

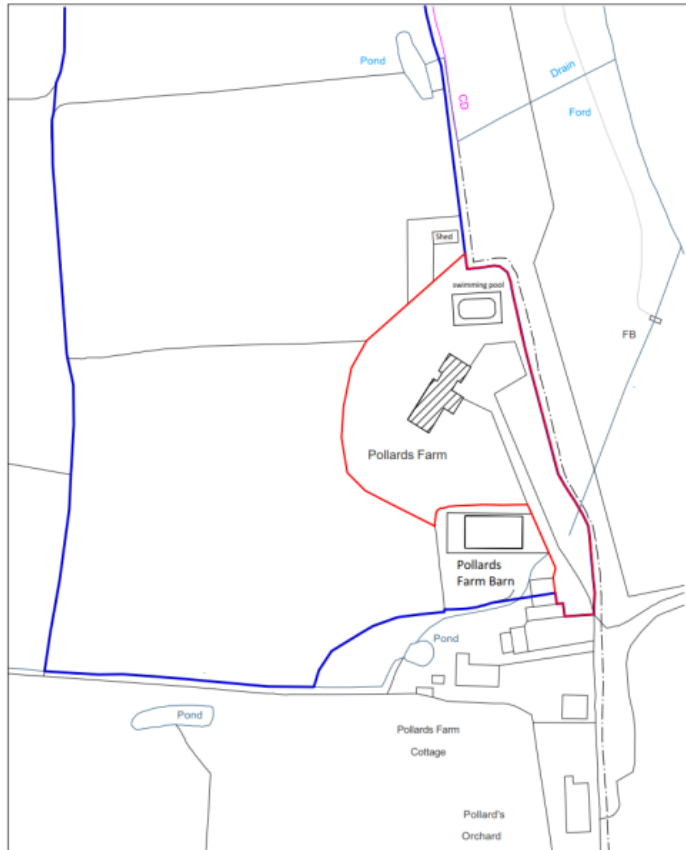
- ▶ A presence/absence survey of potential breeding ponds by a licensed herpetologist, comprising between four and six visits during suitable weather conditions following current industry guidelines.

### **1.3 Survey Area**

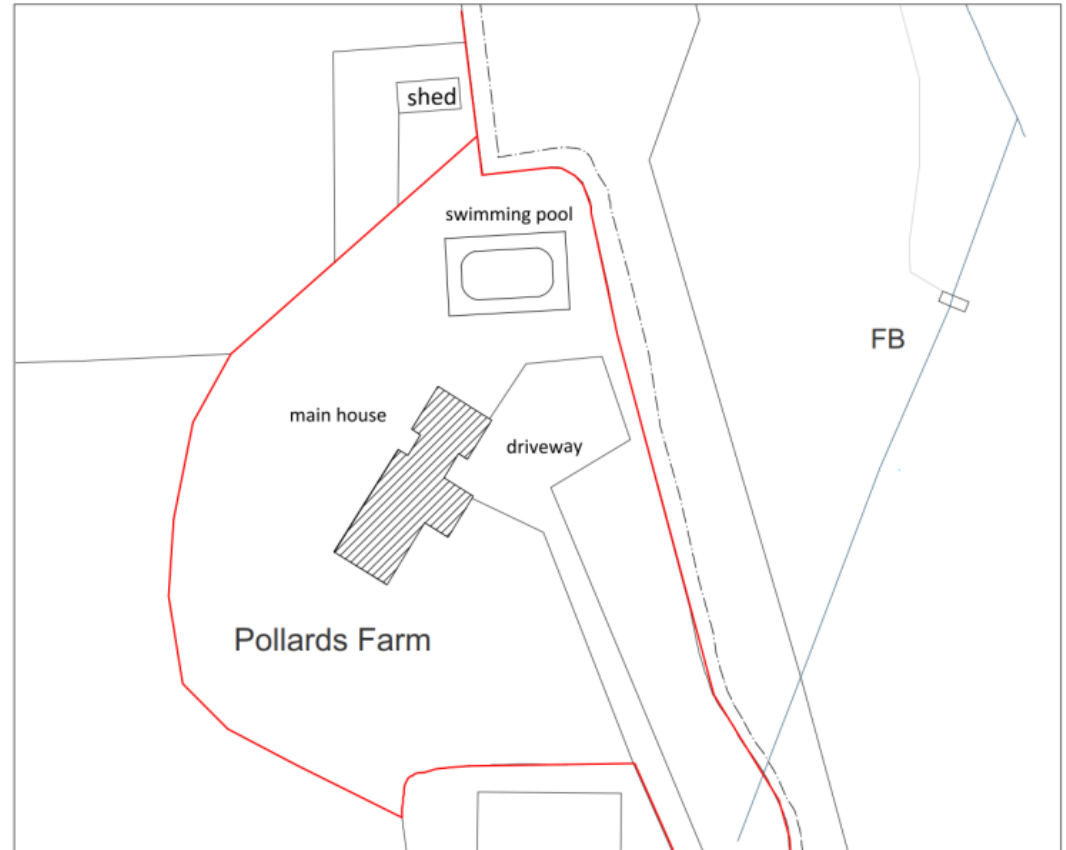
- 1.3.1 The application site lies to the east of the village of Burgess Hill in West Sussex. Brighton is the closest city, located approximately 13km to the south. The c.0.3ha site comprises a central farm house, associated gardens, pond and dilapidated swimming pool, with bordering mature hedgerow. The site is dominated by improved grassland. It is bounded to the north and west by arable fields and grazing pasture, to the south by a large wooden barn and further rural residential dwellings and associated gardens, and to the east by a mature treeline, common land and ditch system. The extent of the site is outlined in red on Figure 1.1.
- 1.3.2 The wider rural landscape is dominated by pasture, woodland and arable farmland, and the settlement of Burgess Hill. At least 13 ponds lie within 500m of the survey area.
- 1.3.3 The survey area encompasses all potentially suitable GCN breeding waterbodies within 250m of the site for which permission to survey could be gained; see Appendix I. The Phase 1 Habitats Map for the application site is included for reference at Appendix II.

### **1.4 Proposed Construction Activities**

- 1.4.1 Planning consent is being sought for demolition of an existing conservatory and garage, extension and renovation of the existing dwelling, construction of a new garage, and associated works. The proposed block plan is shown at Figure 1.2.



1 Scale: 1:1250  
Location Plan



2 Block Plan  
Scale: 1:500

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**Revisions:**

**Figure 1.1: Site location plan**

**Checked**

mj

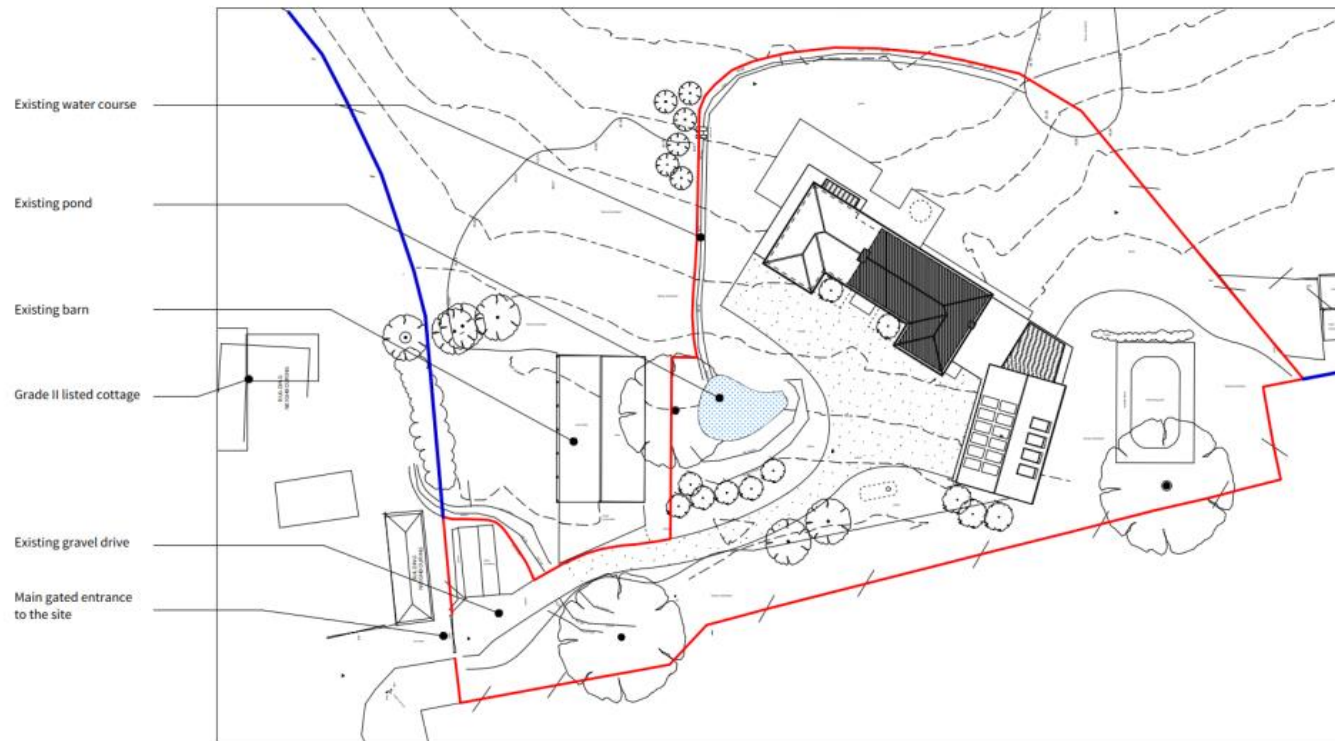


Dwg No. **17048-P-001**

Drawing Title Location Plan and Block Plan  
Address Pollards Farm, Ditchling Common  
Client Patagonia Properties  
Scale 1:1250 & 1:500@A3  
Stage Planning  
Drawn by JB  
Checked by NS

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**Proposed Block Plan**  
Scale: 1:500

**Figure 1.2: Proposed block plan**

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**Revisions:**

| Revisions: | Date       | Description         |
|------------|------------|---------------------|
| A          | 22/11/2018 | Planning submission |
|            | 02/01/2019 | Drawing updated     |

Checked

1:500 5m 10 20 30



Dwg No. 17048-P-005-A

**Drawing Title** Proposed Block Plan  
**Address** Pollards Farm  
**Client** R. Slabbert and CK. Batchelor  
**Scale** 1:500 @ A3  
**Stage** Planning  
**Drawn by** sd  
**Checked by** ns



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## 2 Great Crested Newt Distribution, Ecology and Status

### 2.1 Distribution

- 2.1.1 There are three native species of newt in the UK. These consist of; smooth newt *Lisotriton vulgaris*, palmate newt *Lisotriton helveticus* and great crested newt (GCN) *Triturus cristatus*.
- 2.1.2 The great crested newt has a widespread distribution in lowland England and Wales but is less frequent in the far south-west and Scotland, in upland areas, intensively farmed landscapes and heavily urbanised areas. It is absent from Ireland. GCN has specific habitat requirements, spending much of its life-cycle on dry land including areas of rough grassland, woodland and hedgerow, and returning to ponds for the breeding season.
- 2.1.3 Great crested newts and their habitats are protected because the species has undergone significant declines over recent decades, primarily due to the loss of suitable breeding ponds as a result of agricultural intensification. The loss of terrestrial and connective habitats due to development has also been detrimental to the species' population. Furthermore, the UK has an internationally important population of great crested newts which have suffered serious decline throughout Europe.

### 2.2 Ecology

- 2.2.1 The breeding season for great crested newts (which coincides with the survey season) occurs almost immediately after they emerge from their winter dormancy. GCN are nocturnal and tend to emerge on wet, mild nights when the temperature has risen above 5°C. This usually occurs between February and April, though this is staggered and some newts will not reach their breeding ponds until May.
- 2.2.2 Great crested newts display more specific habitat requirements than other widespread amphibian species. As a general rule, a good breeding pond will not be too shaded by overhanging trees and vegetation, will be located within a network of other ponds, will not contain ducks or fish and contain clean water and abundant aquatic vegetation. Plants such as water mint *Mentha aquatic*, water forget-me-not *Myosotis scorpioides* and water plantain *Alisma Plantago-aquatica* are particularly favoured for egg-laying.
- 2.2.3 Once breeding has taken place the female newts lay eggs individually on the leaves of aquatic or submerged plants. The leaf is then folded around the egg in order to protect it. The amount of time spent in the breeding ponds can vary enormously with some individuals only staying a few days before dispersing back onto land. The majority of great crested newts will remain within a core area of up to c.250m from the breeding pond if that area can fulfil their lifecycle

requirements although, as with all amphibians, small numbers of individuals (often juveniles) will disperse as colonisers to distances of 1km or more (Langton *et al.*, 2001).

- 2.2.4 During the terrestrial phase, great crested newts spend their time foraging and dispersing back to winter habitats. Once the temperature drops below 5°C newts will enter a period of dormancy. GCN will use a variety of hibernation sites, including beneath rubble or dead wood, rabbit burrows, cracks in buildings or even loose soil at the edge of their breeding habitat.

## **2.3 Status, Legislation and Policy**

- 2.3.1 Despite its widespread distribution there is a continuing decline in the great crested newt population. The great crested newt is fully protected under Schedule 5 of the Wildlife and Countryside Act (WCA) 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended), and is a European Protected Species. The legislation makes it an offence to:

- ▶ Intentionally kill, injure or capture/take a GCN.
- ▶ Intentionally or recklessly damage, destroy or obstruct access to any place that a GCN uses for shelter or protection.
- ▶ Intentionally or recklessly disturb a GCN while it is occupying a structure or place that it uses for shelter or protection.
- ▶ Sell, offer or expose for sale, or possess, or transport for the purpose of sale, any live or dead GCN, any part of a GCN, or anything derived from a GCN.

- 2.3.2 The law refers to all stages of a great crested newt's lifecycle, including eggs.

- 2.3.3 Both smooth and palmate newts are partially protected under Schedule 5 of the WCA which prohibits the sale or trade of either species.

- 2.3.4 Local Planning Authorities are obliged to take a wider view of biological conservation when undertaking their functions. Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 states that public authorities must have regard to the conservation of biodiversity. Section 41 of the Act requires the Secretary of State to maintain a list of Habitats and Species of Principal Importance in England; the list includes great crested newt.

- 2.3.5 Furthermore, Government policy is clear that planning decisions must promote protection and recovery of protected and priority species linked to both national and local targets (National Planning Policy Framework – Section 15: Conserving and enhancing the natural environment).

## 3 Methods

### 3.1 Guidance and Best Practice

3.1.1 The survey was carried out with reference to current industry guidelines as issued by English Nature (2001; now Natural England): *Great Crested Newt Mitigation Guidelines*. The following documents were used for reference:

- ▶ Biggs *et al.* (2014): *Analytical and methodological development for improved surveillance of the Great Crested Newt*.
- ▶ Froglife (2001): *Surveying for Great Crested Newt Conservation*. Advice Sheet 11.
- ▶ Gent T. and Gibson S. (2003): *Herpetofauna Workers' Manual*.
- ▶ Langton, T.E.S., Beckett, C.L., and Foster, J.P. (2001): *Great Crested Newt Conservation Handbook*.
- ▶ Oldham RS, Keeble J, Swan MJS & Jeffcote M (2000): Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal*, **10**(4), pp.143-155.
- ▶ Natural England (2015): [\*Great crested newts: surveys and mitigation for development\*](#).

### 3.2 Desk Study

3.2.1 Sussex Biological Records Centre (SxBRC) was consulted for records of amphibian species within a 1km search radius around grid reference 533212,118313. The desk-study data search was carried out as part of the Preliminary Ecological Appraisal.

### 3.3 Habitat Suitability Indices

3.3.1 The Habitat Suitability Index (Oldham *et al*, 2000) is a tool used to assess ponds on the basis of their suitability to support breeding great crested newts. The HSI incorporates ten suitability indices which are considered to affect GCN distribution. These are:

- ▶ Location (in Britain);
- ▶ Pond area;
- ▶ Desiccation rate (years out of ten that pond dries);
- ▶ Water quality (subjective assessment);
- ▶ Percentage of pond shaded (% of pond margin shaded 1m from the bank);
- ▶ Number of waterfowl;
- ▶ Fish population (subjective assessment);
- ▶ Density of ponds within 1km;
- ▶ Terrestrial habitat quality; and

- ▶ Percentage macrophyte cover.

3.3.2 The results of the HSI calculation can then be compared to categorised HSI scores used by the National Amphibian and Reptile Recording Scheme (Oldham *et al*, 2000) to identify the probability of a pond supporting great crested newts. The five categories are summarised in Table 3.1.

**Table 3.1: HSI categories**

| Habitat Quality | HSI Score  |
|-----------------|------------|
| Poor            | Below 0.5  |
| Below Average   | 0.5 – 0.59 |
| Average         | 0.6 – 0.69 |
| Good            | 0.7 – 0.79 |
| Exceptional     | Above 0.8  |

3.3.3 The HSI gives an indication of whether a pond is suitable for breeding great crested newts, however, it should be noted that a low score does not preclude the possibility that GCN are using the pond. A survey of ponds carried out to test the HSI (ARG UK, 2010) found that 20% of ponds which were scored as 'below average' still contained great crested newts, although this increased to an occupation rate of 93% for those ponds scored as 'excellent'. Another important consideration when using the HSI is that pond scores can vary at different times of year, for example, if emergent vegetation is not present (and therefore under recorded) at the time of the HSI assessment.

### 3.4 Field Surveys

3.4.1 The objective of the survey was to establish the presence or likely absence of great crested newts within potentially suitable breeding ponds, using conventional survey techniques. This requires a minimum of four survey visits to establish presence/absence, with a further two carried out to establish a population estimate if GCN are found.

3.4.2 Survey methodology adhered to standard techniques and designs as recommended by English Nature (2001) and Froglife (2001) as follows:

- ▶ **Egg searching:** for great crested newt eggs was conducted for approximately 20 minutes per water body whereby submerged vegetation was checked for folded leaves. Egg searches were undertaken during all survey visits, but halted once for each pond once eggs were found in that pond.
- ▶ **Bottle trapping:** whereby traps were placed around the pond edges at a density of approximately one trap per 2m of shoreline. Floating bottle traps were also used in lined ponds at the density stated for static bottle traps (2m spacing). Traps were set in the evenings and checked the following mornings for great crested newts. Bottle trapping was undertaken during all survey visits.

- ▶ **Torchlight surveys:** using one million candle-power torches were undertaken for approximately 20 minutes per water body on each occasion. Torchlight surveying was undertaken during all survey visits.
- ▶ **Netting:** using a long handled dip-net to sample the perimeter for approximately 15 minutes per 50m of shoreline. Netting is considered to be a less effective means of detecting adult GCN and was only carried out when one of the other techniques could not be utilised (e.g. for lined ponds).

3.4.3 Surveys were undertaken during suitable weather conditions (mild, with little or no rain and low winds). Surveys were carried out during the optimal survey season with at least 50% of the surveys being carried out during the peak great crested newt breeding season which runs from mid-April to mid-May (English Nature, 2001).

3.4.4 Other amphibian species observed during the surveys were also recorded (e.g. smooth and palmate newts, common toad *Bufo bufo* and common frog *Rana temporaria*).

### **Spatial scope**

3.4.5 The survey targeted ponds within 250m of the application site boundary in the first instance, this distance representing the estimated maximum routine migratory range of GCN (Cresswell & Whitworth, 2004). The template Method Statement for obtaining a European Protected Species (EPS) mitigation licence (Natural England, 2015) states a list of information requirements, including presence/absence survey data from ponds within 500m of a site boundary. The intention during this survey was to gather data from ponds between 250m and 500m from the site boundary using environmental DNA sampling techniques if the distribution and abundance of GCN in ponds within 250m indicated that an EPS mitigation licence would be required.

## **3.5 Evaluation of Results**

3.5.1 Criteria for establishing a population size class assessment are given in English Nature (2001), as follows:

- ▶ 'Small' for maximum counts up to 10;
- ▶ 'Medium' for maximum counts between 11 and 100; and
- ▶ 'Large' for maximum counts over 100.

3.5.2 The maximum count is calculated as the peak count by torch survey or bottle-trapping on any one night's survey. This is based on a spring survey of adult GCN numbers only, as egg, larval and juvenile counts can give a misleading indication of overall population size.

3.5.3 Evaluation of the potential impacts on GCN was undertaken with reference to Chapter 6 of English Nature (2001) and Natural England Standing Advice<sup>1</sup>, with predicted impacts to each feature noted as of 'Low', 'Medium' or 'High' significance.

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<sup>1</sup> Natural England (2015): *Great crested newts: surveys and mitigation for development projects*. Accessed online [7/7/17] at: <https://www.gov.uk/guidance/great-crested-newts-surveys-and-mitigation-for-development-projects>

### 3.6 Limitations

- 3.6.1 Six potentially suitable waterbodies were identified within 250m of the application site boundary, and a further seven within 250m to 500m (see Appendix I).
- 3.6.2 P1 is a small pond set within the site boundary. It was largely choked with vegetation which made torch light surveys difficult, but approximately 80% of the shoreline was viewable. It held water throughout the survey, although bottle trapping effort reduced as the survey progressed due to difficulties in setting the traps with the extensive vegetation growth.
- 3.6.3 P2 is a small concrete cast fish pond to the south of the site boundary. Its construction and covering with a bird net made bottle trapping and dip-netting impractical. Water levels remained the even throughout the survey, enabling a constant torchlight survey effort.
- 3.6.4 P3 is a shaded woodland pond to the south west of the site boundary. Water levels and survey effort remained constant throughout the survey, however, access was only granted for 50% of the ponds edge that was accessible from the site boundary.
- 3.6.5 P4 is a shaded woodland pond to the north of the site boundary, with steep sides and little submerged vegetation. Water levels and survey effort remained constant throughout the survey. No limitations applied to P4.
- 3.6.6 P5 is located to the south of the site boundary. It was set behind a fence and locked gate and access was not possible for the whole of the survey. It was therefore excluded from the survey.
- 3.6.7 P6 is a partially shaded pond located in the property to the north of the site boundary. It has some submerged vegetation and the water level remained constant throughout visits three and four. Access was not granted until the third visit.
- 3.6.8 P7 to P13 were excluded from the surveys currently being reported on for the reasons stated in paragraph 3.4.5.

### 3.7 Weather Conditions

- 3.7.1 Prevailing weather conditions at the time of arrival for the evening visit for each survey are summarised in Table 3.2.

**Table 3.2: Weather conditions**

| Date (2018) | Conditions                                                         |
|-------------|--------------------------------------------------------------------|
| 8-9 May     | Air temp.: 13°; Cloud cover: 30%; Wind: light; Precipitation: none |
| 13-14 May   | Air temp. 14°; Cloud cover: 0%; Wind: light; Precipitation: none   |
| 16-17 May   | Air temp. 17°; Cloud cover: 0%; Wind: light; Precipitation: none   |
| 4-5 June    | Air temp. 16°; Cloud cover 20%; Wind: fresh; Precipitation: none   |

### **3.8 Personnel**

- 3.8.1 The surveys were led by Nick Pincombe BA(Hons) MSc CEnv MIEMA MCIEEM, director of Urban Edge Environmental Consulting, who has over ten years' experience in leading survey and impact assessment teams for a wide range of ecology and environmental planning projects. Nick holds Natural England Class Licences to survey for bats (WML-CL18) and great crested newt (WML-CL08). Nick was assisted on site by Anna Douglas BSc(Hons) MSc GradCIEEM and Olly Edmonds BSc(Hons) MSc. Anna is an ecologist with over three years' experience in undertaking protected species surveys and holds a Natural England Class Licence to survey for great crested newt (WML-CL08). Olly is a field ecologist with over five years' experience in undertaking protected species surveys and ecological appraisals for a wide range of development projects. Olly holds Natural England Class Licences to survey for great crested newt (WML-CL08) and bats (WML-CL17).

## 4 Results

### 4.1 Desk Study

- 4.1.1 SxBRC returned 17 records of great crested newt from within the desk-study search zone, during a date range of 1988 to 2016. The most recent records were over six separate dates in 2016 located c.530m north-west of the application site, with a maximum count of 11 individuals.

### 4.2 Terrestrial Habitat Assessment

- 4.2.1 The survey area contains terrestrial habitats suitable for GCN, including scrub and introduced shrubs which provide foraging and shelter opportunities, hedgerow which could be used for shelter, hibernation and dispersal, and buildings and hard-standing which could potentially provide hibernation opportunities within the foundations.
- 4.2.2 The majority of the site is dominated by improved grassland; regularly mown the sward is generally uniform, at around c.10cm in length with occasional tussocky patches. Species that could be identified in the sward during the PEA included frequent perennial rye grass *Lolium perenne*, *Festuca* spp., Yorkshire fog *Holcus lanatus*, common daisy *Bellis perennis*, dandelion *Taraxacum officinale*, and occasional spear thistle *Cirsium vulgare*, *Trifolium* spp., broad leaved vetch *Vicia sativa*, creeping buttercup *Ranunculus repens*, selfheal *Prunella vulgaris*, and small timothy *Phleum bertolonii*. The grassland was generally sub-optimal, being too short and uniform in structure, but could provide foraging opportunities.
- 4.2.3 A dry ditch bordered the improved grassland to the west, species noted within it included soft rush *Juncus effuses*, hard rush *Juncus inflexus* and bramble *Rubus fruticosus* agg. Rough grassland present to the west of the ditch was more diverse and had not undergone the same management as the grassland on site. It was more species rich, and structurally more varied, but outside of the application site boundary.
- 4.2.4 The boundary to the north, east and south was predominantly made up of a mixture of woody species, mostly in the form of hedgerow habitat, but including a small amount of scrub, coppice and a mature tree line, species included blackthorn *Prunus spinosa*, beech *Fagus sylvatica*, hawthorn *Crataegus monogyna* and elder *Sambucus nigra*.

### 4.3 Aquatic Habitat Assessment

- 4.3.1 There was one pond within the application site, and five others within 250m were identified from Ordnance Survey maps during the desk study stage and could potentially provide breeding habitats for GCN (see Appendix I for a pond map).



Improved grassland which dominates the site



Copse of young blackthorn to the south west



Hedgerow and mature tree mix, south boundary



Coppice, to the south west

- 4.3.2 Accessible ponds were assessed for their suitability to support breeding newts using field observations supported by a Habitat Suitability Index (HSI; Oldham *et al*, 2000); the results ranged between 0.33 (of poor quality for breeding GCN) and 0.89 (of excellent quality). The results are summarised in Table 4.1, together with, where possible descriptions and photos of each accessible pond. Full HSI tables are given at Appendix III.
- 4.3.3 Although the HSI is a useful tool for assessing pond suitability it cannot rule out the presence of GCN, therefore all accessible ponds were included in the subsequent surveys, notwithstanding the limitations discussed in Section 3.5.3. It should also be noted that even where ponds in an area are not used for breeding they may still play a valuable role in newt dispersal, and that a network of ponds increases the overall value of an area for great crested newts.

**Table 4.1: Pond descriptions and summary HSI scores**

| #         | HSI                      | Distance       | Pond description and photos                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------|--------------------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>P1</b> | 0.58<br>Below<br>average | On site        |  <p>P1 is a small pond set within the site boundary and is largely choked with vegetation. It is likely that the pond rarely dries, as although the vegetation cover was extensive water levels remained fairly constant throughout the survey. Surrounding habitats included improved grassland, mature hedgerow and a grassy bank.</p> |
| <b>P2</b> | 0.33<br>Poor             | c.30m<br>south |  <p>A small concrete cast ornamental fish pond with a large population of koi carp. Readily filled by an inlet so it is unlikely that the pond ever dries. The pond was surrounded by a well-kept residential garden with associated shrubs and frequently mown lawn.</p>                                                              |

| #         | HSI                      | Distance                | Pond description and photos                                                                                                                                                                                                                                                                                                                                                           |
|-----------|--------------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>P3</b> | 0.61<br>Average          | c.80m<br>south-<br>west |  <p>P3 is a heavily shaded woodland pond, there is very little aquatic vegetation, although leaf litter abundant was within the pond. It is likely that the pond rarely dries out as is persisted throughout the survey period. The surrounding habitat was comprised of broad leaved woodland.</p> |
| <b>P4</b> | 0.45<br>Below<br>average | c.55m<br>north          |  <p>P4 is a heavily shaded woodland pond with steep sides and little vegetation. It is likely that the pond rarely dries out as is persisted throughout the survey period, showing no signs of drying. Surrounding habitats included steeply sloping banks, woodland, scrub and grassland.</p>    |

| #         | HSI               | Distance                 | Pond description and photos                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------|-------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>P5</b> | n/a               | c.235m<br>south-<br>west |  <p>P5 was located behind a locked fence, access was not granted for the survey but it appeared suitable for GCN.</p>                                                                                                                                                                                                                                                                            |
| <b>P6</b> | 0.89<br>Excellent | c.215m<br>north          |  <p>A partially shaded private pond holding water to approx. c.60cm depth in March. It is likely that the pond very rarely or never dries as it persisted throughout the survey. Aquatic vegetation was present throughout the pond, although dominated by reeds forming a small island at its centre. Surrounding habitats included scattered trees, lawn, scrub and unmanaged grassland.</p> |

#### 4.4 Field Survey

- 4.4.1 Great crested newts were recorded in P6 only. A summary of peak counts of amphibians is presented in Table 4.2; full tables of survey results are given at Appendix IV. The peak count is calculated as the maximum adult count for any one species, by torchlight survey or bottle-trapping, on one night's survey.
- 4.4.2 The results indicate that a "Small" population of great crested newts is present in P6. The maximum adult count of one female and one male was recorded by bottle trapping on visit 3 on 17 May 2018. However, it should be noted that six visits are required to confidently derive a population estimate, but only two visits could be undertaken for P6 due to access constraints. No GCN eggs or larvae were found in any of the ponds.

**Table 4.2: Summary of peak survey results**

| Pond | Great Crested Newts | Smooth/Palmate Newts              | Frogs/Toads |
|------|---------------------|-----------------------------------|-------------|
| 1    | 0                   | Smooth: 2 (1♂, 1♀)                | 0           |
| 2    | 0                   | 0                                 | 0           |
| 3    | 0                   | Smooth: 4 (2♂, 2♀)<br>Palmate: 1♂ | Tadpoles    |
| 4    | 0                   | 0                                 | 0           |
| 6    | 2 (1♂, 1♀)          | Smooth: 6 (3♂, 3♀)                | 0           |

## 5 Evaluation

### 5.1 Presence or Absence of Great Crested Newt

- 5.1.1 A "Small" population of great crested newt was recorded using P6 during the 2018 survey season, but P6 was not a confirmed breeding pond. GCN are likely to be absent within P1, P2, P3 and P4. The surveys were carried out during suitable weather conditions, with at least 50% of visits undertaken during the peak breeding season, and the results are considered to provide a good level of confidence in the presence or absence of GCN within each pond, with the exception that only two visits could be undertaken for P6 due to access constraints.

### 5.2 Evaluation

- 5.2.1 Overall, habitats within the application site boundary (area = c.2,980m<sup>2</sup>) provide a range of features which could support a population of GCN during the terrestrial phase of their lifecycle. The area of dense scrub in the north of the site provides suitable foraging and shelter habitats, as do smaller areas of introduced shrub (planted borders) adjacent to the existing dwelling albeit to a lesser extent. Hedgerows at the northern and southern ends of the application site, and running down its east boundary, and the dry ditch at the west boundary, provide suitable dispersal routes for GCN moving through the landscape and when migrating between breeding and terrestrial habitats, while also providing shelter opportunities. The hedgerows and existing building foundations could potentially also be used for hibernation. However the improved grassland which dominates the application site is of limited suitability; it may occasionally be used for foraging but offers little shelter from predation risk.
- 5.2.2 The application site is linked to much larger areas of good quality terrestrial habitat for GCN, in particular Ditchling Common Site of Special Scientific Interest adjacent to the east. This area comprises a relatively large extent of woodland and rough grassland habitats which are ideal for GCN providing ample foraging, shelter and hibernation opportunities. To the west of the site is a series of small fields of grazing pasture interlinked by extensive stretches of mature hedgerow; these areas are also likely to provide good quality terrestrial habitats.
- 5.2.3 P1 is located within the application site and surrounded by improved grassland but with an area of dense and scattered scrub and hedgerow nearby to its south. It is a small pond with abundant emergent vegetation and insolation, and no sign of fish. It was of below average suitability for breeding GCN and none were recorded during the surveys. Low numbers of smooth newts were recorded.
- 5.2.4 P2 is located c.30m south of the application site within an area of manicured lawns and residential gardens. It is a small ornamental pond with some emergent vegetation and good insolation, but is densely stocked with fish. It was of poor suitability for breeding GCN and none were recorded during the surveys.

- 5.2.5 P3 is located c.80m south-west of the application site within a small area of woodland forming the boundary between two fields. It is a small pond with very little emergent vegetation and low levels of insolation, and no sign of fish or wildfowl. It was of average suitability for breeding GCN and none were recorded during the surveys. Low numbers of smooth and palmate newts were recorded.
- 5.2.6 P4 is located c.55m north of the application site within an area of woodland. It is a small pond with very little emergent vegetation and low levels of insolation, and no sign of fish or wildfowl. It was of below average suitability for breeding GCN and none were recorded during the surveys.
- 5.2.7 P5 is located c.235m south-west of the application site within a residential area. Close inspection was not possible due to a fence and locked gate but it appeared suitable for breeding GCN, with ample emergent vegetation and good insolation. The presence of fish or wildfowl could not be ascertained. P5 was not surveyed.
- 5.2.8 P6 is located c.215m north of the application site within residential gardens but close to rough grassland and woodland. It is a medium sized pond with abundant emergent vegetation and insolation, and no sign of fish. It was of excellent suitability for breeding GCN and a maximum count of two great crested newts were recorded during the surveys. Breeding was not confirmed and no eggs or larvae were found. P6 also supported low numbers of smooth newts.
- 5.2.9 No major barriers separate the application site from any of the six ponds, intervening habitats being largely formed of rough grassland and a network of interconnecting mature hedgerows, ditches and woodland.

### 5.3 Impact Assessment

- 5.3.1 The majority of great crested newts will remain within a core area of up to c.50–250m from the breeding pond (250m being the estimated maximum routine migratory range; Cresswell & Whitworth, 2004) if that area can fulfil their lifecycle requirements although, as with all amphibians, small numbers of individuals (often juveniles) will disperse as colonisers to distances of 1km or more (Langton et al., 2001). Research on the efficiency of GCN capture techniques within a range of habitats at various distances from a breeding pond concluded that (Cresswell & Whitworth, 2004):

*“The most comprehensive mitigation, in relation to avoiding disturbance, killing or injury is appropriate within approximately 50m of a breeding pond. It will also almost always be necessary actively to capture newts 50-100m away. However, at distances greater than 100m, there should be careful consideration as to whether attempts to capture newts are necessary or the most effective option to avoid incidental mortality... At distances greater than 200-250m, capture operations with hardly ever be appropriate.”*

- 5.3.2 Appendix V presents an impact map for the occupied pond, where each GCN pond is buffered by 50m (pink shaded area), 100m (dotted red line) and 250m (dotted orange line) to illustrate the extent of potential terrestrial habitats within the application site which fall within these key distances from the pond. This shows that c.1,160m<sup>2</sup> of the application site falls within 250m of

P6, which is the only accessible pond within 250m of the site to support GCN in the 2018 breeding season. The application site may occasionally be crossed by great crested newts dispersing between ponds in the wider area, but the improved grassland which dominates the site is unlikely to support high numbers of newts at any time and is unsuitable for shelter or hibernation. As a result the risk of great crested newts being present within the application site is low. Furthermore, proposals for the site focus on the footprint of the existing dwelling, and include removal of the conservatory and construction of a two-storey extension to the south-west elevation.

- 5.3.3 A GCN Rapid Risk Assessment was undertaken to aid determination of the need to obtain a European Protected Species Mitigation (EPSM) licence. The Rapid Risk Assessment tool, which forms part of the Natural England licence method statement, assesses the risk of an offence being committed based on the size of the working area and distance from a breeding pond, but is a generic risk assessment that will over- or under-estimate some risks because it cannot take into account site specific details.

**Table 5.1: GCN Rapid Risk Assessment (Source: Natural England, 2017)**

| Component                                | Likely effect                         | Score* |
|------------------------------------------|---------------------------------------|--------|
| GCN breeding pond(s)                     | No effect                             | 0      |
| Land within 100m of any breeding pond(s) | No effect                             | 0      |
| Land 100-250m of any breeding pond(s)    | 0.1-0.5ha lost/damaged (n=0.12ha)     | 0.1    |
| Land >250m of any breeding pond(s)       | 0.1-0.5ha lost/damaged (n=0.29ha)     | 0.005  |
| Individual great crested newts           | No effect **                          | 0      |
| <b>Rapid risk assessment result</b>      | <b>GREEN: OFFENCE HIGHLY UNLIKELY</b> |        |

\* Notional offence probability score

\*\* Because great crested newts are likely to be absent within the site

- 5.3.4 It is concluded that there is a low likelihood of incidental killing, injury or disturbance to individual GCN during the works. The proposed development is likely to lead to the following impacts:

- ▶ Low significance impact resulting from temporary small-scale loss or disturbance of terrestrial habitat within 250m of a GCN pond (P6) due to removal of small areas of introduced shrub, scrub and improved grassland of limited suitability for GCN, demolition of the conservatory, ground works, and construction of the new two-storey extension.

- 5.3.5 No negative impact is predicted for the on-site pond or any aquatic habitats in the wider area. Long-term adverse effects on the conservation status of the local population of great crested newts are not predicted due to the low numbers of individuals recorded during the surveys and their distance from the application site.

## 5.4 Recommended Mitigation

- 5.4.1 It will not be necessary to obtain a Natural England European Protected Species Mitigation (EPSM) Licence to proceed with the works.

5.4.2 However, a mitigation strategy is required to ensure that the low risk of minor impacts can be managed in a reasonable way to avoid incidental killing, injury or disturbance during the works. Mitigation should be implemented in accordance with a Non-Licensed Method Statement agreed with the Local Planning Authority. The following recommendations provide an indicative outline of what is likely to be necessary as part of the Non-Licensed Method Statement:

- ▶ **Ecological Clerk of Works (ECoW):** An ECoW who is licenced by Natural England to handle great crested newts will be appointed to oversee mitigation and construction works.
- ▶ **Timing of Works:** Vegetation clearance and site preparation works will be carried out during the active season for great crested newts (normally between February and October) because areas of potentially suitable hibernation habitat (building foundations) are present, but will also need to take account of the presence of roosting bats in the farmhouse (see below).
- ▶ **Toolbox Talks:** All site operatives will receive a briefing from the ECoW. The briefing will include details of the legal protection of GCN, the precautionary methods outlined in the Non-Licensed Method Statement, tips on identifying GCN, and the procedure to be followed should a GCN be found at any stage during the works.
- ▶ **Hand search and dismantling of refuges:** Vegetation clearance, removal of potential refuge/hibernation habitats and site preparation works will be carried out under the supervision of the ECoW. Works should not commence until the construction zone has been searched for GCN by the ECoW. During the hand search any debris or refuges (e.g. log/rubble piles and paving stones) will be lifted, checked and removed from the working area, while areas of denser vegetation (e.g. tussocks) will be parted to look for GCN.
- ▶ **Destructive search:** Following the hand search and dismantling of refuges, a destructive search will be undertaken in a sequence of stages including progressive removal of vegetation, structures, top soil and sub-surface features as follows:
  - Vegetation will be strimmed down to 20cm above ground level, and arisings will be searched and removed by hand. The vegetation will then be strimmed to ground level, and again be searched and removed by hand;
  - Building foundations, patio paving and other structures to be removed will be carefully dismantled and lifted to allow a search for GCN sheltering beneath; and
  - Following this, the top soil will be carefully and systematically excavated and removed from site. Machinery to be used during this part of the work will be equipped with a toothed bucket. Clearance will be carried out slowly, methodically and progressively under the direction of the ECoW, starting with the first few centimetres of top soil to allow sub-surface crevices to be searched for GCN. Larger and deeper excavations can then be made if necessary and concentrating on areas which might afford shelter to GCN, such as tree stumps, rabbit warrens or buried rubble. Particular care will be taken when emptying the bucket in case any GCN are dug up with the soil.

- ▶ **Procedure if GCN are encountered:** If a GCN is found at any time during mitigation works the ECoW will capture and relocate it to a nearby pond or area of suitable refuge habitat away from the construction zone at the earliest opportunity. If a GCN is found at any time during construction, works in the vicinity should cease immediately while advice from the ECoW is sought.
- ▶ **Roosting bats:** A presence/absence survey for roosting bats within the existing dwelling recorded a total of eight common pipistrelle *Pipistrellus pipistrellus* emerging from or re-entering the building (UEEC, 2018). The method and timing of GCN mitigation and construction works may need to be adjusted to take account of mitigation requirements contained in the EPSM for bats, likely to include timing works to the building to occur between April and October.
- ▶ **Nesting birds:** As a result of the precautionary timing outlined above, it is possible that the work will be carried out during the nesting bird season which runs from early March to late August. If vegetation clearance or building demolition is required during the nesting season, a survey for active bird nests will be carried out by the ECoW immediately prior to the works. If an active nest is found, the nest must be cordoned off and works adjacent to this nest must be delayed until such time that the chicks have fledged.
- ▶ **Commencement of construction:** Once the working area is declared clear of GCN by the ECoW, construction works can commence (in accordance with the EPSM for bats).
- ▶ **Storage of Materials.** Materials stored on the site should be raised from the ground (e.g. on pallets) to avoid creating temporary resting places that could attract newts onto the site.

## 5.5 Recommended Ecological Enhancements

- 5.5.1 The following measures could be implemented alongside the proposed scheme and would contribute to maintaining or enhancing the local conservation status of GCN given the context of the site.

### **Pond restoration**

- 5.5.2 Ponds P1 and P4 are within the applicant's landownership and are good candidates for restoration work. P1 is heavily choked with vegetation which, along with its small size, is probably restricting its suitability as GCN breeding habitat. If left unaddressed the vegetation within P1 will eventually desiccate the pond and the habitat will develop into scrub. As stated by Langton et al. (2001,p10):

*"Great crested newts need both aquatic and terrestrial habitat. They prefer small to medium sized breeding ponds, around 50-250m<sup>2</sup>, with smaller ponds being used more successfully where they occur in clusters. Very small ponds (e.g. garden ponds, small bog ponds) and larger lakes are usually not used. Breeding ponds should support aquatic vegetation for egg-laying. It appears that great crested newts prefer extensively vegetated ponds with a submerged plant cover of about two thirds of the pond and*

*emergent/floating vegetation cover of one quarter to one half of a pond; in other words a well established, mid-succession pond. Ideally there should be open, less vegetated areas within the pond to allow adult males to display in clear view of females. Ponds that lack shade on the southern margin seem to be preferred.”*

5.5.3 The following measures are recommended for P1 to improve its suitability for GCN and other amphibians post-development:

- ▶ Submerged vegetation should be reduced to between a third and a half plant cover, and emergent vegetation reduced to one quarter, to allow for further succession in subsequent years. If necessary the pond should be re-profiled to maximise its suitability for newts and other amphibians. It is recommended that ponds should have gently sloping banks and a variety of water depths up to around 4m.
- ▶ A planting scheme could include plants suitable for damp margins, such as; amphibious bistort *Persicaria amphibian*, marsh marigold *Caltha palustris*, reed canary grass *Phalaris arundinacea*, brooklime *Veronica beccabunga*, wild angelica *Angelica sylvestris*, purple loosestrife *Lythrum salicaria*, greater bird's-foot trefoil *Lotus uliginosus*, and gypsywort *Lycopus europaeus*. Aquatic vegetation could include native species such as water crowfoot *Ranunculus aquatilis*, water mint *Mentha aquatic* and water forget-me-not *Myosotis scorpioides*, all of which can be used by newts for egg laying.

5.5.4 P4 is a woodland pond which is heavily shaded and suffers from a general lack of suitable egg-laying vegetation. The following measures are recommended for P4 to improve its suitability for GCN and other amphibians:

- ▶ Woodland management to reduce the level of shading and increase the amount of insolation received by the waterbody. This would improve conditions for larval development.
- ▶ Planting of aquatic vegetation which can be used as an egg-laying substrate, such as water crowfoot *Ranunculus aquatilis*, lesser spearwort *R. flammula*, water mint *Mentha aquatic*, water forget-me-not *Myosotis scorpioides* and branched bur-weed *Sparganium erectum*. Areas of open water should be provided for displaying.

### **Terrestrial habitats**

5.5.5 Great crested newts (and other amphibians) spend a large proportion of the year on land. It is recommended that the landscaping scheme for the development provides for these species by maintaining areas of suitable terrestrial habitats as follows:

- ▶ Buffers of less intensively managed vegetation (e.g. rough grassland or wildflower meadow planting) should be maintained within soft landscaped areas within the development, and at the edges of the site adjacent to boundary hedgerow and woodland. This will help to maintain ecological connectivity through the site for reptiles, amphibians and other wildlife.
- ▶ The creation of hibernacula within areas of retained rough grassland or marginal vegetation or at the edges of the site close to boundary hedgerow and woodland. Hibernacula are created by partially burying logs and stones in sheltered areas and

partially turfing the structure over. This would provide hibernation and shelter opportunities for a range of wildlife including reptiles and small mammals as well as amphibians.

## 6 Summary and Conclusions

### 6.1 Introduction

- 6.1.1 A great crested newt survey was carried out for the site of a proposed residential redevelopment at Land at Pollards Farm, Ditchling Common, West Sussex.
- 6.1.2 The study was undertaken to establish the presence or likely absence of great crested newt at the site, identify and evaluate potential impacts of the development on great crested newt, and make recommendations accordingly. Four surveys were conducted by licensed herpetologists between 8 May and 5 June 2018 with reference current industry guidelines (English Nature, 2001). Three survey techniques were utilised on each survey visit; egg searching, bottle trapping and torchlight surveys.

### 6.2 Results

- 6.2.1 The desk study data search returned 17 records of great crested newt within the search zone during a date range of 1988 to 2016. The most recent records were over six separate dates in 2016 located c.530m north-west of the application site, with a maximum count of 11 individuals.
- 6.2.2 Overall, habitats within the application site boundary provide a range of features which could support a population of GCN during the terrestrial phase of their lifecycle. The area of dense scrub in the north of the site provides suitable foraging and shelter habitats, as do smaller areas of introduced shrub (planted borders) adjacent to the existing dwelling albeit to a lesser extent. Hedgerows at the northern and southern ends of the application site, and running down its east boundary, and the dry ditch at the west boundary, provide suitable dispersal routes for GCN moving through the landscape and when migrating between breeding and terrestrial habitats, while also providing shelter opportunities. The hedgerows and existing building foundations could potentially also be used for hibernation. However the improved grassland which dominates the application site is of limited suitability; it may occasionally be used for foraging but offers little shelter from predation risk.
- 6.2.3 There is one pond within the application site, and a further five within 250m were identified from Ordnance Survey maps during the desk study stage and could potentially provide breeding habitats for GCN. Pond P5 was inaccessible throughout the survey, lying behind a locked gate within a residential area c.235m south-west of the application site. Access permissions to survey P6 were not received until visit 3. Accessible ponds were assessed for their suitability to support breeding newts using field observations supported by a Habitat Suitability Index (HSI; Oldham *et al*, 2000); the results ranged between 0.33 (of poor quality for breeding GCN) and 0.89 (of excellent quality).
- 6.2.4 Great crested newts were recorded in P6 only. The results indicate that a "Small" population of great crested newts was present in P6 during the 2018 breeding season, which is located

c.215m north of the application site boundary. However, it should be noted that six visits are required to confidently derive a population estimate, but only two visits could be undertaken for P6 due to access constraints. No GCN eggs or larvae were found in any of the ponds.

### **6.3 Evaluation**

- 6.3.1 The majority of great crested newts will remain within a core area of up to c.50–250m from the breeding pond if that area can fulfil their lifecycle requirements although, as with all amphibians, small numbers of individuals (often juveniles) will disperse as colonisers to distances of 1km or more (Langton *et al.*, 2001). The application site may occasionally be crossed by great crested newts dispersing between ponds in the wider area, but the improved grassland which dominates the site is unlikely to support high numbers of newts at any time and is unsuitable for shelter or hibernation. As a result the risk of great crested newts being present within the application site is low. Furthermore, proposals for the site focus on the footprint of the existing dwelling, and include removal of the conservatory and construction of a two-storey extension to the south-west elevation.
- 6.3.2 It is concluded that there is a low likelihood of incidental killing, injury or disturbance to individual GCN during the works. The proposed development is likely to generate low significance impacts resulting from temporary small-scale loss or disturbance of terrestrial habitat within 250m of a GCN pond (P6). No negative impact is predicted for the on-site pond or any aquatic habitats in the wider area. Long-term adverse effects on the conservation status of the local population of great crested newts are not predicted due to the low numbers of individuals recorded during the surveys and their distance from the application site.

### **6.4 Recommendations**

- 6.4.1 It will not be necessary to obtain a European Protected Species Mitigation Licence from Natural England prior to commencing the works. However, a mitigation strategy is required to ensure that the low risk of minor impacts can be managed in a reasonable way to avoid incidental killing, injury or disturbance during the works. Mitigation should be implemented in accordance with a Non-Licensed Method Statement agreed with the Local Planning Authority, which is likely to include the following:
- ▶ Appointment of a licenced ECoW to oversee mitigation and construction works;
  - ▶ Timing the works to occur during the active season (February to October);
  - ▶ Provision of information and toolbox talks to guide site operatives;
  - ▶ Hand search and dismantling of refuges;
  - ▶ Destructive search, including progressive removal of vegetation, structures, top soil and sub-surface features;
  - ▶ Specified procedures should GCN be encountered during the works;
  - ▶ Adjustments to be made to account for roosting bats and nesting birds, if necessary;
  - ▶ Commencement of construction once the site is declared clear of GCN by the ECoW;

- ▶ Measures to prevent materials stored on site creating temporary resting places for GCN.

6.4.2 A range of ecological enhancements are also recommended to improve the overall value of the site to GCN and amphibians generally, following construction.

## References and Bibliography

ARG UK (2010): *Advice Note 5: Great Crested Newt Habitat Suitability Index*. Adapted from Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000): Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal*, **10**(4), 143-155.

Baker J, Beebee T, Buckley J, Gent A & Orchard D (2011): *Amphibian Habitat Management Handbook*. Amphibian and Reptile Conservation, Bournemouth.

Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F (2014): *Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (Triturus cristatus) environmental DNA*. Freshwater Habitats Trust, Oxford.

British Standards Institution (BSI; 2013): *BS42020:2013 Biodiversity – Code of practice for planning and development*. BSI Standards Limited, London.

Chartered Institute of Ecology and Environmental Management (CIEEM, 2017): *Guidelines for Ecological Report Writing*. 2<sup>nd</sup> Edition, CIEEM, Winchester.

Cresswell W. & Whitworth R. (2004): *An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt Triturus cristatus*. English Nature Research Report No. 576. English Nature, Peterborough.

English Nature (2001): *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough.

Froglife (2001): *Surveying for Great Crested Newt Conservation*. Advice Sheet 11. Froglife, Halesworth.

Gent T. and Gibson S. (2003): *Herpetofauna Workers' Manual*. Joint Nature Conservation Committee, Peterborough.

Langton, T.E.S., Beckett, C.L., and Foster, J.P. (2001): *Great Crested Newt Conservation Handbook*. Froglife, Halesworth.

Natural England (2017): *Template for Method Statement to support application for licence under Regulation 53(2)(e) of The Conservation of Habitats and Species Regulations 2017 in respect of great crested newts Triturus cristatus: Form WML-A14-2 (Version November 2017)*.

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)*. *Herpetological Journal* **10**(4), 143-155.

Urban Edge Environmental Consulting (UEEC; 2019): *Land at Pollards Farm, Ditchling Common, West Sussex: Preliminary Ecological Appraisal*.

UEEC (2019): *Land at Pollards Farm, Ditchling Common, West Sussex: Bat Survey*.

## Appendix I: Pond Map

Please see following page.

# Pollards Farm, Ditchling Common

- Survey area 2
- Survey area 2 100m buffer
- Survey area 2 250m buffer
- Survey area 2 500m buffer
- Pond numbers



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|                                           |                   |
|-------------------------------------------|-------------------|
| Scale<br>1:5,500                          | Date<br>Jul2018   |
| Created by<br>NP                          | Reviewed by<br>NP |
| Drawing number<br>UE0263ECO-Ponds2_180713 |                   |



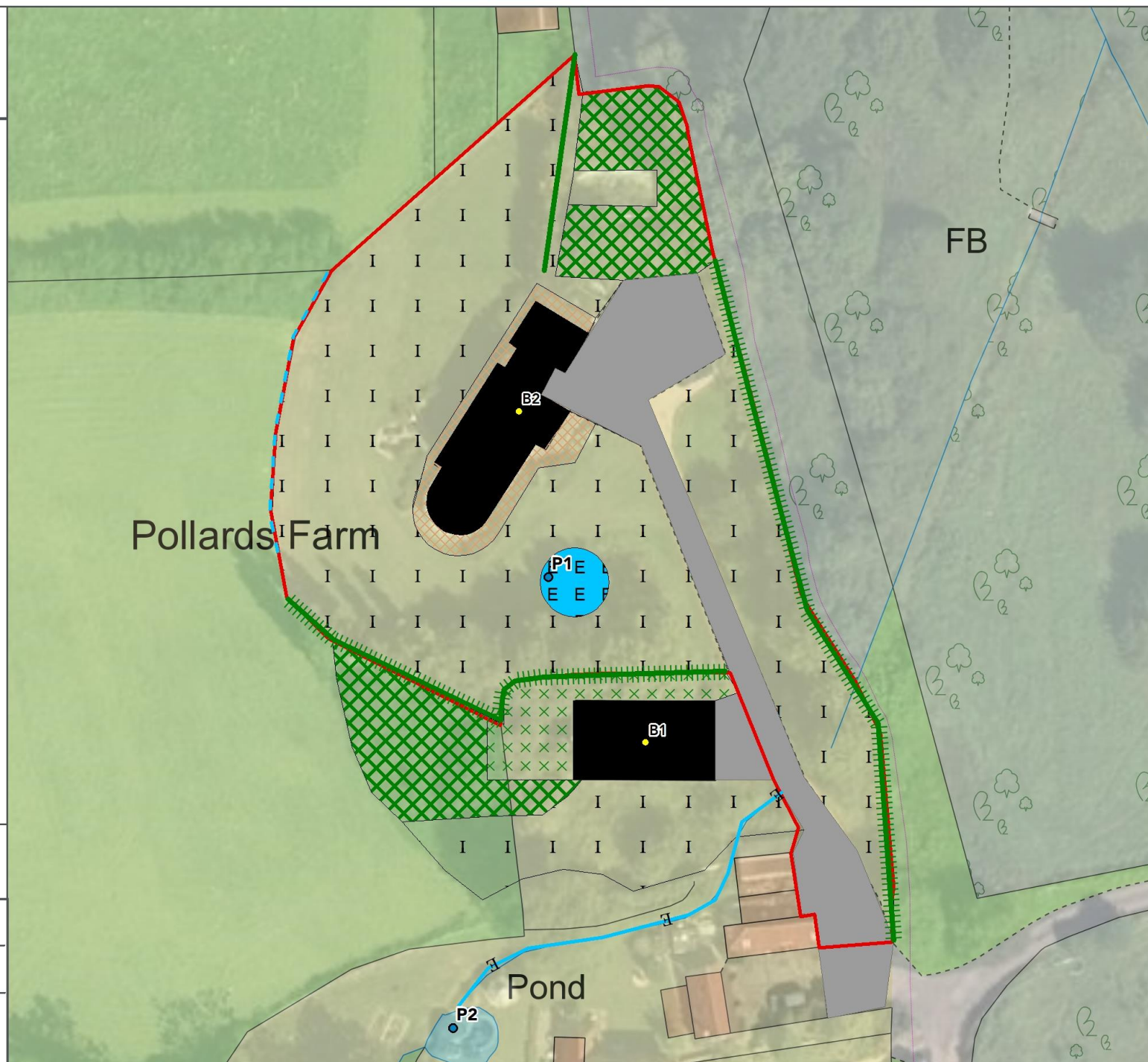
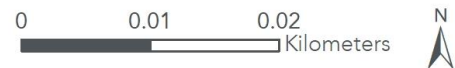
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, Contains OS data © Crown Copyright and database right 2017

## **Appendix II: Phase 1 Habitats Map**

Please see following page.

# Pollards Farm, Ditchling Common

-  Hard-standing
-  Dense scrub
-  Scattered scrub
-  Improved grassland
-  Eutrophic standing water
-  Introduced shrub
-  Building
-  Eutrophic running water
-  Spp-poor hedge
-  Spp-poor hedge w/ trees
-  Dry ditch
-  Survey area 2
-  Pond numbers
-  Building numbers



## Appendix III: Habitat Suitability Indices

The Habitat Suitability Index (HSI; Oldham *et al*, 2000) is a tool used to assess ponds on the basis of their suitability to support breeding great crested newts (GCN). The HSI incorporates ten suitability indices which are considered to affect GCN distribution. These are:

- ▶ Location (in Britain);
- ▶ Pond area;
- ▶ Desiccation rate (years out of ten that pond dries);
- ▶ Water quality (subjective assessment);
- ▶ Percentage of pond shaded (% of pond margin shaded 1m from the bank);
- ▶ Number of waterfowl;
- ▶ Fish population (subjective assessment);
- ▶ Number of ponds within 1km;
- ▶ Terrestrial habitat quality; and
- ▶ Percentage macrophyte cover.

The results of the HSI calculation can then be compared to categorised HSI scores used by the National Amphibian and Reptile Recording Scheme (Oldham *et al*, 2000) to identify the probability of a pond supporting great crested newts, as follows:

| Habitat Quality | HSI Score  |
|-----------------|------------|
| Poor            | Below 0.5  |
| Below Average   | 0.5 – 0.59 |
| Average         | 0.6 – 0.69 |
| Good            | 0.7 – 0.79 |
| Exceptional     | Above 0.8  |

The HSI gives an indication of whether a pond is suitable for breeding great crested newts, however, it should be noted that a low score does not preclude the possibility that GCN are using the pond. A survey of ponds carried out to test the HSI (ARG UK, 2010) found that 20% of ponds which were scored as 'below average' still contained great crested newts, although this increased to an occupation rate of 93% for those ponds scored as 'excellent'. Another important consideration when using the HSI is that pond scores can vary at different times of year, for example, if emergent vegetation is not present (and therefore under recorded) at the time of the HSI assessment.

HSI results for all accessible waterbodies potentially suitable for GCN within 250m of the site are shown below.

| Variable                                 | Field score          | SI value | Field score    | SI value | Field score    | SI value | Field score          | SI value | Field score      | SI value |
|------------------------------------------|----------------------|----------|----------------|----------|----------------|----------|----------------------|----------|------------------|----------|
|                                          | <i>Pond P1</i>       |          | <i>Pond P2</i> |          | <i>Pond P3</i> |          | <i>Pond P4</i>       |          | <i>Pond P6</i>   |          |
| <b>Location</b>                          | A                    | 1        | A              | 1        | A              | 1        | A                    | 1        | A                | 1        |
| <b>Pond area (m2)</b>                    | 30                   | 0.02     | 30             | 0.02     | 100            | 0.2      | 80                   | 0.1      | 285              | 0.55     |
| <b>Desiccation rate</b>                  | Sometimes            | 0.5      | Never          | 0.9      | Rarely         | 1        | Rarely               | 1        | Rarely           | 1        |
| <b>Water quality</b>                     | Moderate             | 0.67     | Poor           | 0.33     | Poor           | 0.33     | Poor                 | 0.33     | Good             | 1        |
| <b>% shaded 1m from bank</b>             | 20                   | 1        | 10             | 1        | 95             | 0.3      | 90                   | 0.4      | 40               | 1        |
| <b>Fowl</b>                              | Minor                | 0.67     | Absent         | 1        | Absent         | 1        | Absent               | 1        | Minor            | 0.67     |
| <b>Fish</b>                              | Absent               | 1        | Major          | 0.01     | Absent         | 1        | Absent               | 1        | Absent           | 1        |
| <b>Pond density (per km<sup>2</sup>)</b> | 11                   | 0.97     | 11             | 0.97     | 11             | 0.97     | 11                   | 0.97     | 11               | 0.97     |
| <b>Terrestrial habitat</b>               | Good                 | 1        | Moderate       | 0.67     | Good           | 1        | Good                 | 1        | Good             | 1        |
| <b>Macrophyte cover %</b>                | 80                   | 1        | 10             | 0.3      | 10             | 0.4      | 5                    | 0.35     | 60               | 0.9      |
| <b>HSI value</b>                         | 0.58                 |          | 0.33           |          | 0.61           |          | 0.45                 |          | 0.89             |          |
| <b>Suitability</b>                       | <b>Below average</b> |          | <b>Poor</b>    |          | <b>Average</b> |          | <b>Below average</b> |          | <b>Excellent</b> |          |

## Appendix IV: Full Survey Tables

Please see following pages.

| Pollards farm P1     | Water temp. °C |      | Surveyor: NP/OE |         | Peak  | Torch ** |   |   | Bottle trap |   |   | Net        |   |   | Eggs | Larvae | Other species        |
|----------------------|----------------|------|-----------------|---------|-------|----------|---|---|-------------|---|---|------------|---|---|------|--------|----------------------|
| Survey 1, 8-9/05/18  | PM:            | AM:  | Turb.: *        | Veg.: * | Count | M        | F | J | M           | F | J | M          | F | J | -    | -      |                      |
| No traps: 7          | 14.5           | 12   | 4               | 5       | 0     | 0        | 0 | 0 | 0           | 0 | 0 | Not netted | - | - | 0    | 0      | Bottle: Smooth 1F 1M |
| Survey 2, 13-14/5/18 | PM:            | AM:  | Turb.: *        | Veg.: * | Count | M        | F | J | M           | F | J | M          | F | J | -    | -      |                      |
| No traps: 5          | 14.8           | 13   | 4               | 5       | 0     | 0        | 0 | 0 | 0           | 0 | 0 | Not netted | - | - | 0    | 0      |                      |
| Survey 3, 16/17/5/18 | PM:            | AM:  | Turb.: *        | Veg.: * | Count | M        | F | J | M           | F | J | M          | F | J | -    | -      |                      |
| No traps: 5          | 13             | 11.8 | 4               | 5       | 0     | 0        | 0 | 0 | 0           | 0 | 0 | Not netted | - | - | 0    | 0      |                      |
| Survey 4, 4-5/6/18   | PM:            | AM:  | Turb.: *        | Veg.: * | Count | M        | F | J | M           | F | J | M          | F | J | -    | -      |                      |
| No traps: 3          | 15.1           | 14.2 | 2               | 5       | 0     | 0        | 0 | 0 | 0           | 0 | 0 | Not netted | - | - | 0    | 0      |                      |

| Pollards farm P2     | Water temp. °C |      | Surveyor: NP/OE |         | Peak  | Torch ** |   |   | Bottle trap |   |   | Net        |   |   | Eggs | Larvae | Other species |
|----------------------|----------------|------|-----------------|---------|-------|----------|---|---|-------------|---|---|------------|---|---|------|--------|---------------|
| Survey 1, 8-9/05/18  | PM:            | AM:  | Turb.: *        | Veg.: * | Count | M        | F | J | M           | F | J | M          | F | J | -    | -      |               |
| No traps: Lined      | 15.2           | 12.3 | 5               | 3       | 0     | 0        | 0 | 0 | Not trapped | - | - | Not netted | - | - | 0    | 0      | 0             |
| Survey 2, 13-14/5/18 | PM:            | AM:  | Turb.: *        | Veg.: * | Count | M        | F | J | M           | F | J | M          | F | J | -    | -      |               |
| No traps: Lined      | 14.6           | 12.2 | 3               | 3       | 0     | 0        | 0 | 0 | Not trapped | - | - | Not netted | - | - | 0    | 0      | 0             |
| Survey 3, 16/17/5/18 | PM:            | AM:  | Turb.: *        | Veg.: * | Count | M        | F | J | M           | F | J | M          | F | J | -    | -      | -             |
| No traps: Lined      | 15             | 13.1 | 3               | 3       | 0     | 0        | 0 | 0 | Not trapped | - | - | Not netted | - | - | 0    | 0      | 0             |
| Survey 4, 4-5/6/18   | PM:            | AM:  | Turb.: *        | Veg.: * | Count | M        | F | J | M           | F | J | M          | F | J | -    | -      | -             |
| No traps: Lined      | 16.1           | 13.1 | 1               | 3       | 0     | 0        | 0 | 0 | Not trapped | - | - | Not netted | - | - | 0    | 0      | 0             |

| Pollards farm P3     | Water temp. °C |      | Surveyor: NP/OE |         | Peak  | Torch ** |   |   | Bottle trap |   |   | Net        |   |   | Eggs | Larvae | Other species                                    |
|----------------------|----------------|------|-----------------|---------|-------|----------|---|---|-------------|---|---|------------|---|---|------|--------|--------------------------------------------------|
| Survey 1, 8-9/05/18  | PM:            | AM:  | Turb.: *        | Veg.: * | Count | M        | F | J | M           | F | J | M          | F | J | -    | -      |                                                  |
| No traps: 10         | 15.2           | 14.5 | 3               | 1       | 0     | 0        | 0 | 0 | 0           | 0 | 0 | Not netted | - | - | -    | -      | Torch: Smooth 1F Tadpoles Bottle: Smooth 1F      |
| Survey 2, 13-14/5/18 | PM:            | AM:  | Turb.: *        | Veg.: * | Count | M        | F | J | M           | F | J | M          | F | J | -    | -      |                                                  |
| No traps: 10         | 14             | 11   | 2               | 0       | 0     | 0        | 0 | 0 | 0           | 0 | 0 | Not netted | - | - | -    | -      | Torch: Smooth 1F Bottle: Smooth 1F 1M Palmate 1M |
| Survey 3, 16/17/5/18 | PM:            | AM:  | Turb.: *        | Veg.: * | Count | M        | F | J | M           | F | J | M          | F | J | -    | -      | -                                                |
| No traps: 10         | 14.1           | 10.5 | 1               | 1       | 0     | 0        | 0 | 0 | 0           | 0 | 0 | Not netted | - | - | -    | -      | Bottle: Smooth 2M 2F                             |
| Survey 4, 4-5/6/18   | PM:            | AM:  | Turb.: *        | Veg.: * | Count | M        | F | J | M           | F | J | M          | F | J | -    | -      | -                                                |
| No traps: 10         | 13.6           | 12.3 | 2               | 2       | 0     | 0        | 0 | 0 | 0           | 0 | 0 | Not netted | - | - | -    | -      | Torch: Smooth 1F                                 |

| Pollards farm P4     | Water temp. °C |      | Surveyor: NP/OE |         | Peak  | Torch ** |   |   | Bottle trap |   |   | Net        |   |   | Eggs | Larvae | Other species |
|----------------------|----------------|------|-----------------|---------|-------|----------|---|---|-------------|---|---|------------|---|---|------|--------|---------------|
| Survey 1, 8-9/05/18  | PM:            | AM:  | Turb.: *        | Veg.: * | Count | M        | F | J | M           | F | J | M          | F | J | -    | -      |               |
| No traps:10          | 14.7           | 13   | 4               | 0       | 0     | 0        | 0 | 0 | 0           | 0 | 0 | Not netted | - | - | -    | -      | -             |
| Survey 2, 13-14/5/18 | PM:            | AM:  | Turb.: *        | Veg.: * | Count | M        | F | J | M           | F | J | M          | F | J | -    | -      |               |
| Bottle traps:13      | 14             | 12   | 4               | 0       | 0     | 0        | 0 | 0 | 0           | 0 | 0 | Not netted | - | - | -    | -      | -             |
| Survey 3, 16/17/5/18 | PM:            | AM:  | Turb.: *        | Veg.: * | Count | M        | F | J | M           | F | J | M          | F | J | -    | -      | -             |
| Bottle traps:14      | 15.2           | 12.8 | 4               | 0       | 0     | 0        | 0 | 0 | 0           | 0 | 0 | Not netted | - | - | -    | -      | -             |
| Survey 4, 4-5/6/18   | PM:            | AM:  | Turb.: *        | Veg.: * | Count | M        | F | J | M           | F | J | M          | F | J | -    | -      | -             |
| Bottle traps: 14     | 13.8           | 13.1 | 4               | 1       | 0     | 0        | 0 | 0 | 0           | 0 | 0 | Not netted | - | - | -    | -      | -             |

| Pollards farm P6     | Water temp. °C |           | Surveyor: NP/OE |           | Peak      | Torch ** |   |   | Bottle trap |   | Net |            | Eggs |   |           | Larvae    | Other species        |
|----------------------|----------------|-----------|-----------------|-----------|-----------|----------|---|---|-------------|---|-----|------------|------|---|-----------|-----------|----------------------|
| Survey 1, 8-9/05/18  | PM:            | AM:       | Turb.: *        | Veg.: *   | Count     | M        | F | J | M           | F | J   | M          | F    | J | -         | -         |                      |
| NO ACCESS            | NO ACCESS      | NO ACCESS | NO ACCESS       | NO ACCESS | NO ACCESS | -        | - | - | NO ACCESS   | - | -   | NO ACCESS  | -    | - | NO ACCESS | NO ACCESS | NO ACCESS            |
| Survey 2, 13-14/5/18 | PM:            | AM:       | Turb.: *        | Veg.: *   | Count     | M        | F | J | M           | F | J   | M          | F    | J | -         | -         |                      |
| NO ACCESS            | NO ACCESS      | NO ACCESS | NO ACCESS       | NO ACCESS | NO ACCESS | -        | - | - | NO ACCESS   | - | -   | NO ACCESS  | -    | - | NO ACCESS | NO ACCESS | NO ACCESS            |
| Survey 3, 16/17/5/18 | PM:            | AM:       | Turb.: *        | Veg.: *   | Count     | M        | F | J | M           | F | J   | M          | F    | J | -         | -         | -                    |
| Bottle traps: 15     | 14.1           | 12.3      | 3               | 3         | 2         | 0        | 0 | 0 | 1           | 1 | 0   | Not netted | -    | - | -         | -         | -                    |
| Survey 4, 4-5/6/18   | PM:            | AM:       | Turb.: *        | Veg.: *   | Count     | M        | F | J | M           | F | J   | M          | F    | J | -         | -         | -                    |
| Bottle traps: 15     | 14.3           | 13.5      | 1               | 3         | 0         | 0        | 0 | 0 | 0           | 0 | 0   | Not netted | -    | - | -         | -         | Bottle: Smooth 3F 3M |

\* Turbidity and vegetation cover are noted on a scale of 1 to 5, where 5 denotes highly turbid conditions or a high proportion of vegetation cover.

\*\* Torch: Clulite CB2, 1million candle power.

M/F/J/U: Denotes male, female, juvenile or unsexed.

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## Appendix V: Impact Mapping

Please see following page.

-  Survey area 2
-  Pond numbers
-  GCN pond 50m buffer
-  GCN pond 100m buffer
-  GCN pond 250m buffer

- Pond numbers

 GCN pond 100m buffer GCN pond 250m buffer

Date  
Sep2018

Reviewed by  
NP

UE0263ECO-GCNimpacts180904



## Appendix VI: Legal and Technical Limitations

- This report has been prepared by Urban Edge Environmental Consulting Ltd (UEEC Ltd) with all reasonable skill, care and diligence within the terms of the contract made with the Client to undertake this work, and taking into account the information made available by the Client. No other warranty, expressed or implied, is made as to the professional advice included in this report or any other services provided by us.
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- Unless otherwise stated in this report, the assessments made assume that the sites and facilities that have been considered in this report will continue to be used for their current planned purpose without significant change.
- All work carried out in preparing this report has utilised and is based upon UEEC Ltd's current professional knowledge and understanding of current relevant UK standards and codes, technology and legislation. Changes in this legislation and guidance may occur at any time in the future and may cause any conclusions to become inappropriate or incorrect. UEEC Ltd does not accept responsibility for advising the Client or other interested parties of the facts or implications of any such changes;
- Where this report presents or relies upon the findings of ecological field surveys (including habitat, botanical or protected/notable species surveys), its conclusions should not be relied upon for longer than a maximum period of two years from the date of the original field surveys. Ecological change (e.g. colonisation of a site by a protected species) can occur rapidly and this limitation is not intended to imply that a likely absence of, for instance, a protected species will persist for any period of time;
- This report has been prepared using factual information contained in maps and documents prepared by others. No responsibility can be accepted by UEEC Ltd for the accuracy of such information;
- Every effort has been made to accurately represent the location of mapped features, however, the precise locations of features should not be relied upon;
- Populations of animals and plants are often transient in nature and a single survey visit can only provide a general indication of species present on site. Time of year when the survey was carried out, weather conditions and other variables will influence the results of an ecological survey (e.g. it is possible that some flowering plant species which flower at other times of the year were not observed). Every effort has been made to accurately note indicators of presence of protected, rare and notable species within and adjacent to the site but the possibility nonetheless exists for other species to be present which were not recorded or otherwise indicated by the survey;
- Any works undertaken as a consequence of the recommendations provided within this report should be subjected to the necessary health & safety checks and full risk assessments.

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