



**AQUIND Limited**

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# **AQUIND INTERCONNECTOR**

## **Environmental Statement – Volume 3 – Appendix 16.9 – Great Crested Newt Survey Report**

The Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations  
2009 – Regulation 5(2)(a)

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

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Environmental Statement – Volume 3 –  
Appendix 16.9 – Great Crested Newt Survey  
Report

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## EXECUTIVE SUMMARY

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This report has been prepared on behalf of AQUIND Limited (the ‘Applicant’) to support an application (the ‘Application’) for a Development Consent Order (‘DCO’). AQUIND Interconnector is a proposed electricity Interconnector between France and the UK. The Application for the DCO is made in respect of the UK elements of AQUIND Interconnector (referred to as the ‘Proposed Development’).

WSP was commissioned by AQUIND Ltd. to undertake great crested newt surveys.

Previous ecological survey work for the Proposed Development undertaken by WSP in 2017 and 2018 identified waterbodies providing potentially suitable great crested newt breeding habitat within 250 m of the Proposed Development (the ‘Survey Area’).

In 2019 pond scoping assessments were carried out on all waterbodies within the Study Area. Scoping surveys involved a desk study and, where appropriate, field surveys to assess:

- Waterbody location in relation to the Proposed Development;
- Presence of suitable terrestrial habitat for newts between the waterbody and the Proposed Development; and
- The overall suitability of the waterbody for breeding great crested newts.

The suitability of selected waterbodies was further assessed by Habitat Suitability Index (‘HSI’) surveys. The results of the pond scoping and HSI surveys were used to identify the ponds to be surveyed for the presence of great crested newts.

Environmental DNA (‘eDNA’) surveys were used to determine the presence or absence of great crested newts. Waterbodies which tested positive for great crested newt DNA from eDNA surveys were subject to further full presence/absence surveys. If great crested newts were recorded during presence/absence surveys, this would trigger additional survey visits to assess newt populations.

Desk study data indicated the presence of great crested newts within the local area, but all records were outside the Survey Area, the closest being 300 m from the Order Limits. The 2019 great crested newt presence/absence surveys did not identify evidence of great crested newts using ponds. While great crested newts are therefore likely to be present within the wider local area, they are not likely to occur within habitats which will be impacted by the Proposed Development. As a result, this species does not present a constraint to the Proposed Development.

# APPENDIX 16.9 GREAT CRESTED NEWT REPORT

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## 1.1. INTRODUCTION

### 1.1.1. PROJECT BACKGROUND

1.1.1.1. This report has been prepared on behalf of AQUIND Limited (the ‘Applicant’) to support an application (the ‘Application’) for a Development Consent Order (‘DCO’). AQUIND Interconnector is a proposed electricity Interconnector between France and the UK. The Application for the DCO is made in respect of the UK elements of AQUIND Interconnector (referred to as the ‘Proposed Development’).

1.1.1.2. The Proposed Development is described in detail in Chapter 3 (Description of the Proposed Development) of the Environmental Statement (‘ES’) Volume 1 (document reference 6.1.3).

1.1.1.3. WSP was commissioned by AQUIND Ltd. (‘the Applicant’) to undertake great crested newt *Triturus cristatus* surveys.

### 1.1.2. ECOLOGICAL BACKGROUND

1.1.2.1. A Phase 1 habitat survey (carried out in April 2017 and April 2018) and subsequent Preliminary Ecological Appraisal (‘PEA’) (Appendix 16.2 (PEA/Phase 1 Habitat Survey) of the ES Volume 3 (document reference 6.3.16.2)) of the Proposed Development and updated in June 2019 identified great crested newts as a possible ecological constraint to the Proposed Development.

1.1.2.2. Surveys for great crested newt were therefore recommended to inform the baseline of the Proposed Development and the Ecological Impact Assessment (‘EclA’). Surveys to support the assessment for great crested newts were completed in 2017, 2018 and 2019. This report details the findings of those relevant to the Proposed Development design.

### 1.1.3. SCOPE OF WORK

1.1.3.1. To inform the assessment of ecological impacts on great crested newts, the following tasks were completed:

- Undertake a desk study to identify records of great crested newt within 2 km of the Order Limits;
- Undertake a scoping assessment to identify potentially suitable waterbodies for great crested newt within 250 m of the Order Limits;

- Complete Habitat Suitability Index ('HSI') surveys of waterbodies identified from the scoping assessment to assess habitat suitability; and
- Assess the presence or absence of great crested newts using Environmental DNA ('eDNA') and presence/absence survey techniques, followed by population surveys of newts where present.

## 2. LEGAL AND PLANNING POLICY CONTEXT

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### 2.1. LEGISLATION

#### 2.1.1. THE CONSERVATION OF HABITATS AND SPECIES REGULATIONS 2017

2.1.1.1. Great crested newts are afforded a high level of protection under the Conservation of Habitats and Species Regulations 2017 (the 'Habitat Regulations'), the legislation means that it is an offence to:

- Deliberately capture, injure or kill a wild great crested newt;
- Deliberately disturb wild great crested newts; 'disturbance of animals includes in particular any disturbance which is likely:
  - (a) to impair their ability —
  - (i) to survive, to breed or reproduce, or to rear or nurture their young; or
  - (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
  - (b) to affect significantly the local distribution or abundance of the species to which they belong.'
- Damage or destroy a breeding site or resting place used by this species.

2.1.1.2. Protection is also afforded under the Wildlife and Countryside Act 1981 (as amended) with respect to disturbance of animals when using places of shelter, and obstruction of access to places of shelter.

#### 2.1.2. NATIONAL POLICY STATEMENT FOR OVERARCHING ENERGY (EN-1)

2.1.2.1. National Policy Statements ('NPS') comprise the government's objectives for the development of nationally significant infrastructure in a particular sector. EN-1 representing energy infrastructure includes the following statements regarding protected species (paragraphs 5.3.16 and 5.3.17):

- *“Many individual wildlife species receive statutory protection under a range of legislative provisions’*
- *‘Other species and habitats have been identified as being of principal importance for the conservation of biodiversity in England and Wales and thereby requiring conservation action. The IPC1 should ensure that these species and habitats are protected from the adverse effects of development by using requirements or planning obligations. The IPC should refuse consent where harm to the habitats or species and their habitats would result, unless the benefits (including need) of the development outweigh that harm. In this context the IPC should give substantial weight to any such harm to the detriment of biodiversity features of national or regional importance which it considers may result from a proposed development.’*”

2.1.2.2. With regards to mitigation EN-1 details in paragraph 5.3.18 that the Applicant should include appropriate mitigation measures as an integral part of the Proposed Development. In particular, the applicant should demonstrate that:

- *“during construction, they will seek to ensure that activities will be confined to the minimum areas required for the works;*
- *during construction and operation best practice will be followed to ensure that risk of disturbance or damage to species or habitats is minimised, including as a consequence of transport access arrangements;*
- *habitats will, where practicable, be restored after construction works have finished; and*
- *opportunities will be taken to enhance existing habitats and, where practicable, to create new habitats of value within the site landscaping proposals.’*”

### 2.1.3. NATIONAL PLANNING POLICY FRAMEWORK

2.1.3.1. At a national context, planning policy is driven by the National Planning Policy Framework (‘NPPF’) (2019). The NPPF sets out, amongst other points, how at an overview level the

*“planning system should contribute to and enhance the national and local environment by:*

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<sup>1</sup> The NPS were compiled in 2011. The Infrastructure Planning Commission was abolished the Governments Localism Act 2011 which transferred its decision making powers in all cases to the relevant Secretary of State.

- *...recognising the wider benefits of ecosystem services;*
- *minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures...*

2.1.3.2. The NPPF states that this should be achieved through local planning development frameworks and gives recommendations for criteria based policies which recognise the hierarchy of designated sites which range from internationally important habitat, to Survey Areas of importance at a local level and ensure that protection is

*“commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks.”*

2.1.3.3. A list of principles which local planning authorities should follow when determining planning applications is included in the NPPF which includes the following:

- *“if significant harm resulting from a development cannot be avoided...adequately mitigated, or, as last resort, compensated for, then planning permission should be refused;*
- *...opportunities to incorporate biodiversity in and around developments should be encouraged; and*
- *planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland...unless the need for, and benefits of, the development in that location clearly outweigh the loss...”*

## 3. METHODS

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### 3.1. 2017 AND 2018 STUDY

3.1.1.1. In 2017 and 2018 a desk study, HSI surveys, and great crested newt eDNA surveys were carried out using the methods outlined below within the indicative Order Limits of the Proposed Development at that time.

3.1.1.2. Where appropriate, the results of these studies have been used and incorporated into this study. Where eDNA surveys from 2017 and 2018 recorded likely presence of great crested newts, these ponds were selected for great crested newt presence/absence surveys in 2019. The 'Order Limits' hereafter refers to indicative Order Limits of the Proposed Development at that time of this study.

### 3.2. DESK STUDY

3.2.1.1. To support the Preliminary Ecological Appraisal for the Proposed Development (Appendix 16.2 (PEA/ Phase 1 Habitat Survey)) a desk study was conducted. Records of great crested newts were obtained within 2 km of the Proposed Development (the 'Study Area'). The following sources were consulted to obtain great crested newt records within the Study Area:

- The MAGIC website list of European Protected Species licence applications; and
- Hampshire Biological Information Centre ('HBIC').

### 3.3. POND SCOPING ASSESSMENT

#### 3.3.1. INITIAL SCOPING

3.3.1.1. Newts use ponds for breeding but spend a large amount of time on land in suitable terrestrial habitat. A review of Ordnance Survey mapping and aerial photography was undertaken to identify potentially suitable great crested newt breeding habitat, waterbodies such as ponds and ditches within the Survey Area.

3.3.1.2. For waterbodies within the Survey Area but outside of the Order Limits, and where there were significant barriers to newt dispersal, such as motorways, major roads or an estuary, these waterbodies were scoped out of further assessment.

#### 3.3.2. FIELD SURVEYS

3.3.2.1. Following the desk based review outlined above, field visits were undertaken to complete the scoping assessment. Waterbodies identified during the desk review were visited to confirm that they were present. Waterbodies that were unsuitable newt breeding habitat, such as ditches with fast flowing water or artificial ponds with high densities of fish were scoped out of further assessment.



### **3.4. HABITAT SUITABILITY INDEX SURVEYS**

3.4.1.1. Waterbodies identified following completion of the scoping assessment were subject to HSI surveys to assess their suitability to support breeding great crested newts. The HSI survey, developed by Oldham *et al.* (2000), and summarised in Amphibian and Reptile Groups of the United Kingdom Advice Note 10: Reptile Survey and Mitigation Guidance for Peatland Habitats (2010), is a method of evaluating habitat quality for great crested newts and provides an indication of the likelihood of breeding great crested newts being present at a pond. The HSI method takes into account a variety of habitat variables which are known to influence the suitability of waterbodies for breeding great crested newts. Variables considered include water body size, regional location, quality of surrounding terrestrial habitat, presence of water fowl and fish, and presence of aquatic vegetation used for egg laying.

3.4.1.2. The results of an HSI survey give a numerical index of between 0 and 1, with 0 indicating unsuitable habitat, and 1 indicating optimal habitat. HSI scores are grouped into 5 categories to give an indication of the pond suitability, as shown below.

- <0.5 - poor
- 0.5 – 0.59 - below average
- 0.6 – 0.69 - average
- 0.7 – 0.79 - good
- > 0.8 - excellent

3.4.1.3. The HSI score was used to support the selection process of ponds to survey for great crested newts. Other factors were also taken into consideration when evaluating the need of further surveys, for example the presence of suitable connecting terrestrial habitat from the pond to the Order Limits, the type and sensitivity of habitat to be impacted within 250 m of a pond, and the closest desk study record of great crested newts to the pond. Ponds within the Order Limits, and where suitable terrestrial newt habitat (such as grassland, scrub and woodland) would be affected by works, were taken through to the next stage of the assessment.

3.4.1.4. Where it was not possible to visit ponds for scoping and HSI surveys due to land access restrictions, these ponds were taken through to the next stage of the assessment on the precautionary principle.

### **3.5. PRESENCE/ABSENCE AND POPULATION SURVEYS**

3.5.1.1. Waterbodies selected following completion of the scoping assessment and HSI surveys were subject to great crested newt presence/absence, and if found to be present, additional population surveys.

- 3.5.1.2. Presence/absence surveys were undertaken at all accessible ponds in April, May and June 2019. The surveys were carried out with due regard for guidance provided in English Nature (2001) and Froglife (2001). Surveys were completed during the great crested newt breeding season, an optimal survey time for this species.
- 3.5.1.3. Ponds were surveyed on at least four separate occasions, under suitable weather conditions and by experienced surveyors who hold a Natural England Science and Education great crested newt survey licence. If great crested newts were found within the four visits, population surveys were employed by undertaking an additional two surveys visits. If ponds within the Survey Area support great crested newts, population data is important to inform the impact assessment for this species, and is used as part of an application for a Natural England development mitigation licence, if required.
- 3.5.1.4. Surveys used three main methods: searches for newts by torchlight at night, bottle trapping and egg searches. Where it was not possible to complete egg searches, for example where it was unsafe to do so, a refugia search method was implemented. Descriptions of these methods are detailed within Table 1 below. Newts found during the surveys were identified by species and sex.

**Table 1 - Summary of great crested newt survey methods used**

<b>Survey Method</b>	<b>Description</b>
<b>Torching</b>	<p>Searching a pond for the presence of great crested newts by shining a high-powered torch (1 million candle power) at night around the margins of a waterbody and counting the individual animals observed below the water's surface.</p> <p>The pond margin is slowly walked once, as far as is possible and the numbers and species are recorded. This method was undertaken during suitable weather conditions, with air temperatures above 5°C, and with little wind and no rain.</p>
<b>Bottle Trapping</b>	<p>Setting traps made from plastic drinks bottles at 2 metre intervals around the accessible pond margin. Traps are set before dusk and checked for animals the following morning shortly after dawn.</p> <p>Bottle trapping can be used to catch adult newts during the breeding season and larvae during summer.</p>

Survey Method	Description
<b>Egg Search</b>	<p>Searching aquatic and marginal vegetation within the pond (both living and dead) for great crested newt eggs. Egg searching is particularly powerful at detecting presence of great crested newt and also shows the pond is used for breeding.</p> <p>Surveyors search riparian vegetation and leaf litter around the pond's margin for great crested newt eggs, stopping when one is found to avoid damage to any remaining eggs.</p>
<b>Refugia Search</b>	<p>This method involves searching areas of terrestrial habitat in areas suitable for sheltering newts. Surveyors search along hedgerows, beneath debris piles, and under logs or large stones, where newts can be found taking refuge during the day.</p> <p>Refugia searches are completed in terrestrial habitat surrounding the pond and up to 50m from it.</p>

### 3.6. ENVIRONMENTAL DNA SURVEYS

- 3.6.1.1. The detection of great crested newts by sampling ponds for their eDNA is a relatively new technique, and can be used to determine the presence or absence of great crested newts.
- 3.6.1.2. This technique was used in 2017 and 2018, the results of which were used to inform the requirement of further full presence/absence and population assessment surveys in 2019. This technique was also used in June 2019 on five ponds, where access to these ponds had not been available to complete the full presence/absence surveys.
- 3.6.1.3. eDNA surveys require a single visit to each pond to collect water samples which are then sent to a laboratory for analysis to confirm the presence or absence of great crested newt DNA. Samples were collected by experienced ecologists within the recommended time of year for testing, mid-April to end of June.
- 3.6.1.4. Nature Metrics© eDNA kits were used during the survey. Surveyors followed the sampling method provided, which is compliant with the specifications defined by DEFRA who developed the technique. 20 water samples were taken from different locations around the perimeter of each pond, ensuring pond sediment was not disturbed. After collection, the 20 samples taken from each pond were mixed together and then divided in sterile tubes with a preservative liquid. After the field survey, the samples were sent back to the supplier for lab analysis.

### 3.7. LIMITATIONS

- 3.7.1.1. The Order Limits of the Proposed Development have been updated since this study was undertaken. In most cases, changes to the Order Limits have reduced its size, however some Order Limits areas have extended outside of the original Order Limits assessed during this study. Following a desk based review using aerial and OS mapping of extended Order Limits areas and 250m from them, one pond (located at SU 68037 14133) was identified north of the existing Converter Station, 210m from the Order Limits. The section of Order Limits within 250m of this pond covers a hedgerow where landscaping enhancements will be undertaken. Landscaping work in this area is unlikely to affect or harm newts, should they be present within the pond. Revisions to the Order Limits are therefore not a limitation to this study.
- 3.7.1.2. Land access for the 2019 full presence/absence surveys was not available at five ponds, and as a result these were instead assessed through eDNA surveys in June 2019 as detailed above. These eDNA surveys were successfully completed and the results of the samples collected indicated a high degree of confidence in the results. Land access restrictions to these ponds is therefore not considered to have significantly limited this assessment.
- 3.7.1.3. All surveys were completed at an appropriate time of year for each survey technique, and overall in suitable weather conditions. Light rain was recorded on two survey nights whilst surveying ponds 8, 10, 11, 12, 13, 14, 15, 16 and 25, however this did not affect the ability for surveyors to see into the pond when carrying out the torching surveys.
- 3.7.1.4. The spring of 2019 was very dry and as a result some ponds dried up during the presence/absence surveys, and some were dry before surveys began. Three ponds (ponds 1 (section 3), 18 (section 4) and 24(section 8)) were dry throughout the 2019 full presence/absence surveys and as such could not be surveyed. Four ponds (10 (section 4), 11 (section 4), 19 (section 5) and 20 (section 7)) were too shallow to complete bottle trapping on at least one of the four survey visits. One pond (19) was completely dry on the fourth presence/absence survey visit and no assessment could be completed. To minimise these limitations, ponds most at risk of drying (shallow, unlined ponds) were prioritised to be surveyed earlier in the season. Additionally, dry ponds were re-visited on multiple occasions to check if water levels had risen enough for them to be surveyed, however in each case ponds were still dry. Where possible, additional survey methods, such as refugia searches, were implemented within the vicinity of the pond.
- 3.7.1.5. Considering the locations of great crested newt records within the Survey Area, and the locations of nearby ponds successfully surveyed as part of this study, and in which great crested newts were found to be absent, it is considered that the conclusions of this study are robust.

## 4. RESULTS

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### 4.1. DESK STUDY

- 4.1.1.1. A review of MAGIC identified two granted European Protected Species applications for great crested newt within the Study Area. These records were for 2015 and 2017 and are located approximately 800m from the Order Limits, and south of the village of Denmead.
- 4.1.1.2. The desk study returned nine records of great crested newts from HBIC within the Study Area, the closest being 315 m from the Order Limits. The locations of desk study results are shown in the Great crested newt survey map in Appendix 4.

### 4.2. POND SCOPING ASSESSMENT

- 4.2.1.1. A total of 61 waterbodies identified from the desk assessment were subsequently visited as part of the field based scoping surveys. These waterbodies included farmland drainage ditches, garden ponds, highways ditches and attenuation ponds.
- 4.2.1.2. The field surveys identified 28 of these ponds to be unsuitable, and as a result 33 ponds were taken through for further HSI surveys. The results of the pond scoping surveys are presented in Appendix 2.

### 4.3. HABITAT SUITABILITY INDEX SURVEYS

- 4.3.1.1. The results of the habitat suitability assessments found 21 waterbodies to have average to excellent suitability for breeding great crested newts. The HSI surveys and overall scoping assessment resulted in a total of 24 ponds being identified for surveys.
- 4.3.1.2. The results of the pond scoping and HSI surveys are presented in Appendix 2 and 3 of this report, and the location of waterbodies is shown in the great crested newt survey map in Appendix 4.

### 4.4. PRESENCE/ABSENCE AND POPULATION SURVEYS

- 4.4.1.1. Of the 24 ponds identified for further surveys, presence/absence surveys were completed on 19 ponds (three of which were dry throughout the survey period). Five of the 24 ponds could not be accessed for full surveys and were subsequently surveyed through eDNA.
- 4.4.1.2. No great crested newts or great crested newt eggs were recorded during the any of the pond surveys. Smooth newt *Lissotriton vulgaris* and palmate newt *Lissotriton helveticus*, which are common and widespread species, were recorded in many of the water bodies surveyed.

- 4.4.1.3. As no great crested newts were recorded across the survey period, presence/absence surveys did not progress to additional population surveys and a total of up to four survey visits were completed on each pond.
- 4.4.1.4. A summary of the survey results is provided below in Table 2. Further detailed results are provided in Appendix 2. Within the Table 2 'peak count' refers to the highest number of newts recorded in a single visit from all methods used.

**Table 2 – Great crested newt presence/absence survey results**

<b>Pond No.</b>	<b>Grid reference and Proposed Development Section</b>	<b>Survey dates</b>	<b>Waterbody type</b>	<b>Survey Methods used</b>	<b>Great crested newt Result</b>	<b>Other Species Recorded (Peak counts)</b>
<b>1</b>	SU6675511765  Section 3	25/04/2019 02/05/2019 13/05/2019	Pond	Pond dry  <i>Egg and refugia search attempted</i>	Pond dry.  No evidence of great crested newts	N/A
<b>7</b>	SU6683411194  Section 3	01/05/2019 02/05/2019 08/05/2019 15/05/2019	Pond	Egg search, Torching, Bottle trapping.	Absent	Small fish
<b>8</b>	SU6650311006  Section 3	08/05/2019 13/05/2019 14/05/2019 16/05/2019	Ditch	Egg search, Torching, Bottle trapping.	Absent	1 smooth newt, frog tadpoles, adult frog, numerous fish recorded.
<b>9</b>	SU6660810910	15/05/2019 16/05/2019 20/05/2019	Large Pond	Egg search, Torching, Bottle trapping.	Absent	13 female and 10 male smooth newts, 6

Pond No.	Grid reference and Proposed Development Section	Survey dates	Waterbody type	Survey Methods used	Great crested newt Result	Other Species Recorded (Peak counts)
	Section 3/4	21/05/2019				female/juv. smooth newts, 2 female and 3 male palmate newts.
<b>10</b>	SU6691110727  Section 4	07/05/2019 08/05/2019 09/05/2019 14/05/2019 16/05/2019	Large Pond	Egg search, Torching.	Absent	1 female smooth newt  1 male smooth newt
<b>11</b>	SU6698310677  Section 4	07/05/2019 08/05/2019 09/05/2019 13/05/2019 16/05/2019	Pond	Egg search, Torching, Bottle trapping.	Absent	1 male smooth newt,  2 female smooth newts.



Pond No.	Grid reference and Proposed Development Section	Survey dates	Waterbody type	Survey Methods used	Great crested newt Result	Other Species Recorded (Peak counts)
13	SU6764209635  Section 4	07/05/2019 08/05/2019 09/05/2019 22/05/2019	Pond	Egg search, Torching, Bottle trapping.	Absent	4 female and 5 male smooth newt, 4 female & 5 male palmate.
14	SU6771009536  Section 4	07/05/2019 08/05/2019 09/05/2019 22/05/2019	Pond	Egg search, Torching, Bottle trapping.	Absent	10 female & 28 male smooth newts, 4 female palmate newts.
15	SU6771209473  Section 4	07/05/2019 08/05/2019 09/05/2019 22/05/2019	Pond	Egg search, Torching, Bottle trapping.	Absent	3 female & 15 male smooth newts, 1 female palmate newt.
16	SU6772309437	07/05/2019 08/05/2019	Pond	Egg search, Torching, Bottle trapping.	Absent	8 female and 19 male smooth. 3 female & 3 male, 1

Pond No.	Grid reference and Proposed Development Section	Survey dates	Waterbody type	Survey Methods used	Great crested newt Result	Other Species Recorded (Peak counts)
	Section 4	09/05/2019 22/05/2019				juvenile palmate newts.
<b>18</b>	SU6733607771  Section 4	27/03/2019 22/05/2019	Pond	Pond dry.  <i>Refugia search attempted</i>	Pond dry.  No evidence of great crested newts.	N/A
<b>19</b>	SU6776705836  Section 5	21/05/2019 22/05/2019 23/05/2019 <i>[6/6/2019-dry]</i>	Lined Pond	Egg search, Torching, Bottle trapping.	Absent	Frog tadpoles, 1 juv. smooth newt

Pond No.	Grid reference and Proposed Development Section	Survey dates	Waterbody type	Survey Methods used	Great crested newt Result	Other Species Recorded (Peak counts)
20	SU6756204728  Section 7	25/04/2019 29/04/2019 30/04/2019 13/05/2019	Drainage Ditch	Egg search, Torching, Bottle trapping, Refuge search.	Absent	N/A
21	SU6794704923  Section 7	25/04/2019 29/04/2019 30/04/2019 20/05/2019	Drainage Ditch	Torching, Bottle trapping, Refuge search.	Absent	Fish
22	SU6770304460  Section 7	25/04/2019 29/04/2019 30/04/2019 20/05/2019	Attenuation Pond	Torching, Bottle trapping, Refuge search.	Absent	1 female smooth newt, 2 male smooth newts.
23	SU6756102848	14/05/2019 15/05/2019	Pond	Egg search, Torching, Bottle trapping.	Absent	Tadpoles and adult frog

Pond No.	Grid reference and Proposed Development Section	Survey dates	Waterbody type	Survey Methods used	Great crested newt Result	Other Species Recorded (Peak counts)
	Section 7	16/05/2019 20/05/2019				
<b>24</b>	SU6723302553  Section 8	Visited on: 01/05/2019 14/05/2019	Pond	Pond dry	Pond dry.	N/A
<b>25</b>	SU6721902381  Section 8	01/05/2019 02/05/2019 14/05/2019 16/05/2019	Pond	Egg search, Torching, Bottle trapping.	Absent	13 female and 19 male smooth newt, 2 palmate/smooth juveniles.
<b>26</b>	SU6745001334  Section 8	30/04/2019 01/05/2019 02/05/2019 23/05/2019	Pond	Egg search, Torch, Bottle trap.	Absent	20 female and 17 male smooth newts,  14 female & 1 male palmate newt.

Pond No.	Grid reference and Proposed Development Section	Survey dates	Waterbody type	Survey Methods used	Great crested newt Result	Other Species Recorded (Peak counts)
						5 non-GCN newt eggs

## 4.5. ENVIRONMENTAL DNA SURVEYS

4.5.1.1. Lab analysis of the eDNA samples collected in June 2019 showed all five ponds to contain no evidence of great crested newt DNA. This indicates the absence of this species from these ponds. These results are shown in Table 3 below.

**Table 3 - Great crested newt eDNA survey results**

Pond number	Pond Grid reference	eDNA Survey date	Date sample arrived at lab	eDNA lab results
2	SU6697311551	05.06.19	11.06.19	Negative
3	SU6703311552	06.06.19	11.06.19	Negative
4	SU6704411551	06.06.19	11.06.19	Negative
5	SU6704511535	06.06.19	11.06.19	Negative
6	SU6702911521	06.06.19	11.06.19	Negative

## 5. DISCUSSION AND CONCLUSION

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### 5.1. ANALYSIS OF RESULTS

- 5.1.1.1. Desk study data revealed the presence of great crested newts within the Study Area, but all records were outside the Survey Area, the closest record being 315 m from the Order Limits.
- 5.1.1.2. The results of the 2019 eDNA surveys and the presence absence surveys showed great crested newts to be absent from the ponds surveyed.
- 5.1.1.3. As previously discussed, the spring of 2019 was particularly dry and as a result some ponds were dry before surveys commenced or dried up during the presence/absence surveys. This resulted in three ponds not being surveyed, and a further four not having all survey visits completed or all preferable survey methods (use of bottle trapping) used. This has meant that, when considered individually, these ponds could not be fully assessed for great crested newts. The remaining ponds were successfully surveyed, 12 of which were found to support other species of newt.
- 5.1.1.4. It is considered that the conclusions of this study are reliable and that great crested newts are absent from the Survey Area.
- 5.1.1.5. Great crested newts are therefore known to be present within the wider local area, but have not been found to occur within habitats which will be impacted by the Proposed Development. As a result, this species does not present a constraint to the Proposed Development.

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UK Government Guidance for Great crested newts: surveys and mitigation for development projects: <https://www.gov.uk/guidance/great-crested-newts-surveys-and-mitigation-for-development-projects>



# Appendix 1 – Photographs

# PHOTOGRAPHS

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Photo 1. Male smooth newt, pond 25



Photo 2. Juvenile smooth newt



Photo 3. Smooth newt egg, found in pond 26.



Photo 4. Fish recorded in waterbody (ditch) 8.



Photo 5. Pond 23



Photo 6. Pond 18, dry throughout surveys.



Photo 7. Pond 1, found to be too dry to survey on 25 April 2019.

Photo 8. Pond 7

# Appendix 2 – Pond Scoping and HIS Results



## POND SCOPING AND HABITAT SUITABILITY INDEX RESULTS

**Table 1 – Pond Scoping and Habitat Suitability Index Results**

Scoping Ref.	Pond no.	Grid reference	Scoping & HSI survey date	Waterbody type	Habitat Suitability Index Score	Habitat connectivity to Order Limits?	Within Order Limits?	2017/2018 eDNA survey?	Scoping Outcome	Justification
A.1	3	SU6704411534	20.03.19	Lined Pond	0.61	Yes	No	No previous eDNA survey	Further survey required	Suitable habitat
A.2	4	SU6704411534	20.03.19	Lined Pond	0.64	Yes	No	No previous eDNA survey	Further survey required	Suitable habitat
A.3	5	SU6704411534	20.03.19	Lined Pond	0.69	Yes	No	No previous eDNA survey	Further survey required	Suitable habitat
A.4	N/A	SU6704411534	20.03.19	Lined Pond	N/A	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
A.5	6	SU6704411534	20.03.19	Pond	0.63	Yes	No	No previous eDNA survey	Further survey required	Suitable habitat
A1	20	SU6756204728	27.03.19	Drainage Ditch	0.5	N/A	Yes	No previous eDNA survey	Further survey required	Suitable habitat
A2	8	SU6650311006	29.03.19	Stream	0.72	N/A	Yes	No previous eDNA survey	Further survey required	Suitable habitat
B	7	SU6683411194	20.03.19	Pond	0.65	Yes	No	No previous eDNA survey	Further survey required	Suitable habitat
B1	N/A	SU6787604934	27.03.19	Drainage Ditch	N/A	Yes	Yes	No previous eDNA survey	Scoped out	Unsuitable

Scoping Ref.	Pond no.	Grid reference	Scoping & HSI survey date	Waterbody type	Habitat Suitability Index Score	Habitat connectivity to Order Limits?	Within Order Limits?	2017/2018 eDNA survey?	Scoping Outcome	Justification
B2	13	SU6764209635	29.03.19	Pond	0.59	Yes	No	No previous eDNA survey	Further survey required	Suitable habitat
C	N/A	SU6660211384	20.03.19	Agricultural Field ditch	N/A	Yes	Yes	No previous eDNA survey	Scoped out	Unsuitable
C1	21	SU6794704923	27.03.19	Drainage Ditch	0.62	N/A	Yes	No previous eDNA survey	Further survey required	Suitable habitat
C2	N/A	SU6786509345	29.03.19	Drainage Ditch	N/A	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
D	N/A	SU6654512683	20.03.19	Dry Pit	N/A	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
D1	N/A	SU6789604514	27.03.19	Drainage	N/A	Yes	Yes	No previous eDNA survey	Scoped out	Unsuitable
D2	N/A	SU6772109226	29.03.19	Dry ditch	N/A	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
E	N/A	SU6656312535	20.03.19	Dry Pit	N/A	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
E1	22	SU6770304460	27.03.19	Attenuation Pond	0.8	N/A	No	Positive	Further survey required	Suitable habitat
E2	N/A	SU6771809052	29.03.19	Semi-dry ditch	N/A	Limited	No	No previous eDNA survey	Scoped out	Unsuitable

Scoping Ref.	Pond no.	Grid reference	Scoping & HSI survey date	Waterbody type	Habitat Suitability Index Score	Habitat connectivity to Order Limits?	Within Order Limits?	2017/2018 eDNA survey?	Scoping Outcome	Justification
F	N/A	SU6686812363	20.03.19	Dry Pit	N/A	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
F1	N/A	SU6660506340	27.03.19	Dry pit	N/A	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
F2	N/A	SU6796808845	29.03.19	Dry drainage ditch	N/A	Limited	No	No previous eDNA survey	Scoped out	Unsuitable
G	1	SU6675511765	20.03.19	Pond	0.65	Yes	Yes	No previous eDNA survey	Further survey required	Suitable habitat
G1	N/A	SU6690106324	27.03.19	No pond	N/A	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
G2	2	SU6696011560	29.03.19	Pond	No access	Yes	No	No previous eDNA survey	Further survey required	Not accessed, survey on precautionary principal
H	N/A	SU6704211170	20.03.19	Pond	N/A	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
H1	N/A	SU6752607865	27.03.19	No pond	N/A	Limited	N/A	No previous eDNA survey	Scoped out	Unsuitable
I	11	SU6698310677	20.03.19	Marshy grassland/pond	0.61	Yes	No	No previous eDNA survey	Further survey required	Suitable habitat
I1	18	SU6733607771	27.03.19	Pond	0.82	Yes	No	No previous eDNA survey	Further survey required	Suitable habitat

Scoping Ref.	Pond no.	Grid reference	Scoping & HSI survey date	Waterbody type	Habitat Suitability Index Score	Habitat connectivity to Order Limits?	Within Order Limits?	2017/2018 eDNA survey?	Scoping Outcome	Justification
J	10	SU6691110727	20.03.19	Large Pond	0.65	Yes	No	No previous eDNA survey	Further survey required	Suitable habitat
J1	N/A	SU6732208438	27.03.19	Attenuation Pond	N/A	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
K	N/A	SU6728310453	20.03.19	Drainage	N/A	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
K1	N/A	SU6731908457	27.03.19	Attenuation Pond	N/A	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
L1	N/A	SU6733708306	27.03.19	Attenuation Pond	N/A	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
M	N/A	SZ6771599368	21.03.19	Rock pool	N/A	Limited	No	No previous eDNA survey	Scoped out	Unsuitable
M1	N/A	SU6716908628	27.03.19	Sustainable drainage system	N/A	Limited	No	No previous eDNA survey	Scoped out	Unsuitable
N	N/A	SU6654600841	21.03.19	Pond	0.68	Limited	No	No previous eDNA survey	Scoped out	Limited habitat connectivity
<b>N/A No access for scoping</b>	9	SU6660810910	15.05.19	Pond	N/A	Yes	No	No previous eDNA survey	Further survey required	Not accessed, survey on precautionary principal
N1	N/A	SU6831409156	27.03.19	Drainage Ditch	N/A	Limited	No	No previous eDNA survey	Scoped out	Limited habitat connectivity



Scoping Ref.	Pond no.	Grid reference	Scoping & HSI survey date	Waterbody type	Habitat Suitability Index Score	Habitat connectivity to Order Limits?	Within Order Limits?	2017/2018 eDNA survey?	Scoping Outcome	Justification
O	N/A	SU6765400638	21.03.19	Lake	0.2	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
O1	N/A	SU6781109633	27.03.19	Dry pond	N/A	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
P	N/A	SU6756200901	21.03.19	Lake	0.3	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
P1	14	SU6771009536	27.03.19	Wet Pond	0.61	Yes	No	No previous eDNA survey	Further survey required	Suitable habitat
Q	N/A	SU6751001112	21.03.19	Lake	0.2	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
Q1	15	SU6771209473	27.03.19	Wet Pond	0.62	Yes	No	No previous eDNA survey	Further survey required	Suitable habitat
R	N/A	SU6735601423	21.03.19	Pond	N/A	Yes	No	Positive	Scoped out	Lined pond with fish - Unsuitable
R1	16	SU6772309437	27.03.19	Wet Pond	0.62	Yes	No	No previous eDNA survey	Further survey required	Suitable habitat
S	26	SU6745001334	21.03.19	Pond	0.49	Yes	No	Positive	Further survey required	Positive eDNA
S1	N/A	SZ6803399027	29.03.19	Pond	0.38	Yes	No	No previous eDNA survey	Scoped out	Unsuitable

Scoping Ref.	Pond no.	Grid reference	Scoping & HSI survey date	Waterbody type	Habitat Suitability Index Score	Habitat connectivity to Order Limits?	Within Order Limits?	2017/2018 eDNA survey?	Scoping Outcome	Justification
T	N/A	SU6656901279	21.03.19	Lake	N/A	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
T1	23	SU6756102848	29.03.19	Pond	0.48	Yes	No	No previous eDNA survey	Further survey required	Suitable habitat
U	19	SU6776705836	21.03.19	Lined Pond	0.45	Yes	Yes	Positive	Further survey required	Positive eDNA
U1	N/A	SU6705407686	29.03.19	Ditch	0.44	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
V	24	SU6723302553	21.03.19	Pond	0.69	Yes	No	Positive	Further survey required	Positive eDNA
V1	N/A	SU6669710837	29.03.19	Pond	0.42	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
W	25	SU6721902381	21.03.19	Linear Pond	0.74	Yes	No	Positive	Further survey required	Positive eDNA
W1	N/A	SU6669710837	29.03.19	Shallow ditch	N/A	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
X	N/A	SU6722602018	21.03.19	Large Lake	0.27	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
X1	N/A	SU6646911152	29.03.19	Deep filled ditch	0.37	Yes	Yes	No previous eDNA survey	Scoped out	Unsuitable
Y	N/A	SU6737103404	27.03.19	Attenuation Pond	0.5	Yes	No	No previous eDNA survey	Scoped out	Unsuitable

Scoping Ref.	Pond no.	Grid reference	Scoping & HSI survey date	Waterbody type	Habitat Suitability Index Score	Habitat connectivity to Order Limits?	Within Order Limits?	2017/2018 eDNA survey?	Scoping Outcome	Justification
Y1	N/A	SU6640111062	29.03.19	Ditch	0.49	Yes	No	No previous eDNA survey	Scoped out	Unsuitable
Z	N/A	SU6720202842	27.03.19	Drainage	N/A	Limited	No	No previous eDNA survey	Scoped out	Unsuitable
Z1	N/A	SU6638810884	29.03.19	Dry ditch	N/A	Yes	No	No previous eDNA survey	Scoped out	Unsuitable

# Appendix 3 – Presence/absence Survey Results

# PRESENCE/ABSENCE SURVEY RESULTS

**Table 1 – Presence/absence Survey Results**

Pond No.	Grid reference	Survey date	Waterbody type	Survey Methods	Minimum Overnight temperature	Great crested newt result	Other Species recorded
1	SU6675511765	13/05/2019	Pond	Low water level. Egg and refugia search attempted.	9 °C	Absent	N/A
7	SU6683411194	01/05/2019	Pond	Egg search, Torch, Bottle trap.	8 °C	Absent	N/A
7	SU6683411194	02/05/2019	Pond	Egg search, Torch, Bottle trap.	6 °C	Absent	N/A
7	SU6683411194	08/05/2019	Pond	Egg search, Torch, Bottle trap.	6 °C	Absent	small fish seen during torching
7	SU6683411194	15/05/2019	Pond	Egg search, Torch, Bottle trap.	9 °C	Absent	small fish seen during torching
8	SU6650311006	08/05/2019	Ditch	Egg search, Torch, Bottle trap.	6 °C	Absent	N/A

Pond No.	Grid reference	Survey date	Waterbody type	Survey Methods	Minimum Overnight temperature	Great crested newt result	Other Species recorded
8	SU6650311006	13/05/2019	Ditch	Egg search, Torch, Bottle trap.	9 °C	Absent	1 x smooth newt, 3 x small stickleback fish
8	SU6650311006	14/05/2019	Ditch	Egg search, Torch, Bottle trap.	9 °C	Absent	small fish seen during torching
8	SU6650311006	16/05/2019	Ditch	Egg search, Torch, Bottle trap.	9 °C	Absent	Numerous frog tadpoles, adult frog, numerous fish recorded.
9	SU6660810910	15/05/2019	Large Pond	Egg search, Torch, Bottle trap.	9 °C	Absent	7 x female smooth newt, 13 male smooth newts
9	SU6660810910	16/05/2019	Large Pond	Egg search, Torch, Bottle trap.	9 °C	Absent	13 x female smooth newt, 10 male smooth newts
9	SU6660810910	20/05/2019	Large Pond	Egg search, Torch, Bottle trap.	7 °C	Absent	2 x male smooth newts, 6 x female/juv

Pond No.	Grid reference	Survey date	Waterbody type	Survey Methods	Minimum Overnight temperature	Great crested newt result	Other Species recorded
							newt, 1 x male palmate.
9	SU6660810910	21/05/2019	Large Pond	Egg search, Torch, Bottle trap.	7 °C	Absent	8 x female/ juv newt, 3 x male smooth newt, 2 x female palmate, 3 x male palmate.
10	SU6691110727	07/05/2019	Large Pond	Egg search, Torch.	9 °C	Absent	N/A
10	SU6691110727	08/05/2019	Large Pond	Egg search, Torch.	6 °C	Absent	N/A
10	SU6691110727	09/05/2019	Large Pond	Egg search, Torch.	6 °C	Absent	1 x female smooth/ juv.
10	SU6691110727	14/05/2019	Large Pond	Egg search (limited veg), Torch, Refuge Search.	9 °C	Absent	1 x smooth male
10	SU6691110727	16/05/2019	Large Pond	Egg search/ material removal	9 °C	Absent	N/A

Pond No.	Grid reference	Survey date	Waterbody type	Survey Methods	Minimum Overnight temperature	Great crested newt result	Other Species recorded
11	SU6698310677	07/05/2019	Pond	Egg search, Torch, Bottle trap.	9 °C	Absent	1 x male smooth newt
11	SU6698310677	08/05/2019	Pond	Egg search, Torch, Bottle trap.	6 °C	Absent	N/A
11	SU6698310677	09/05/2019	Pond	Egg search, Torch, Bottle trap.	6 °C	Absent	N/A
11	SU6698310677	13/05/2019	Pond	Egg search/ material added	9 °C	Absent	2 x small newts.
11	SU6698310677	16/05/2019	Marshy grassland/pond	Egg search/ material removal	9 °C	Absent	N/A
13	SU6764209635	07/05/2019	Pond	Egg search, Torch, Bottle trap.	9 °C	Absent	1 x male smooth newt, 2 x female & 1 x male palmate.
13	SU6764209635	08/05/2019	Pond	Egg search, Torch, Bottle trap.	6 °C	Absent	4 x female & 5 x male smooth newt, 3 x



Pond No.	Grid reference	Survey date	Waterbody type	Survey Methods	Minimum Overnight temperature	Great crested newt result	Other Species recorded
							female & 2 x male palmate. 1 x smooth newt egg.
13	SU67642096 35	09/05/2019	Pond	Egg search, Torch, Bottle trap.	6 °C	Absent	2 x female & 1 x male smooth newt, 4 x female & 3 x male palmate.
13	SU67642096 35	22/05/2019	Pond	Egg search, Torch, Bottle trap.	5 °C	Absent	2 x female & 2 x male smooth newt, 5 x male palmate. 10 + smooth newt eggs found
14	SU67710095 36	07/05/2019	Pond	Egg search, Torch, Bottle trap.	9 °C	Absent	3 x female & 28 x male smooth newts, 4 x female palmate.

Pond No.	Grid reference	Survey date	Waterbody type	Survey Methods	Minimum Overnight temperature	Great crested newt result	Other Species recorded
14	SU67710095 36	08/05/2019	Pond	Egg search, Torch, Bottle trap.	6 °C	Absent	10 x female & 17 x male smooth newts, 2 x female palmate.
14	SU67710095 36	09/05/2019	Pond	Egg search, Torch, Bottle trap.	6 °C	Absent	7 x female & 10 x male smooth newts.
14	SU67710095 36	22/05/2019	Pond	Egg search, Torch, Bottle trap.	5 °C	Absent	3 x female & 11 x male smooth newts, 1 x female palmate.
15	SU67712094 73	07/05/2019	Pond	Egg search, Torch, Bottle trap.	9 °C	Absent	3 x female & 3 x male smooth newts, 1 x female palmate.
15	SU67712094 73	08/05/2019	Pond	Egg search, Torch, Bottle trap.	6 °C	Absent	2 x female & 15 x male smooth newts,

Pond No.	Grid reference	Survey date	Waterbody type	Survey Methods	Minimum Overnight temperature	Great crested newt result	Other Species recorded
							1 x female palmate.
15	SU67712094 73	09/05/2019	Pond	Egg search, Torch, Bottle trap.	6 °C	Absent	1 x female & 1 x male smooth newts.
15	SU67712094 73	22/05/2019	Pond	Egg search, Torch, Bottle trap.	5 °C	Absent	2 x female & 2 x male smooth newts, 1 x female palmate.
16	SU67723094 37	07/05/2019	Pond	Egg search, Torch, Bottle trap.	9 °C	Absent	7 x female & 14 x male smooth newts, 3 x female palmate newts.
16	SU67723094 37	08/05/2019	Pond	Egg search, Torch, Bottle trap.	6 °C	Absent	4 x female smooth newt, 4 x male newt, 2 x male & 3 x female

Pond No.	Grid reference	Survey date	Waterbody type	Survey Methods	Minimum Overnight temperature	Great crested newt result	Other Species recorded
							palmate newts. 1x imm.
16	SU67723094 37	09/05/2019	Pond	Egg search, Torch, Bottle trap.	6 °C	Absent	6 x female & 5 x male smooth, 3 x male palmate newts.
16	SU67723094 37	22/05/2019	Pond	Egg search, Torch, Bottle trap.	5 °C	Absent	8 x female & 19 x male smooth newts, 3 x female & 1 x male palmate.
18	SU67336077 71	27/03/2019	Pond	Pond dry.	N/A	Absent	N/A
19	SU67767058 36	21/05/2019	Lined Pond	Egg search, Torch, Bottle trap.	7 °C	Absent	Frog tadpoles, leeches
19	SU67767058 36	22/05/2019	Lined Pond	Egg search, Torch, Bottle trap.	5 °C	Absent	1 x Juv. Smooth newt

Pond No.	Grid reference	Survey date	Waterbody type	Survey Methods	Minimum Overnight temperature	Great crested newt result	Other Species recorded
19	SU67767058 36	23/05/2019	Lined Pond	Egg search, Torch, Bottle trap.	11 °C	Absent	1 x Juv. Smooth newt
19	SU67767058 36	06/06/2019	Lined Pond	Pond dry.	8 °C	Absent	N/A
20	SU67562047 28	25/04/2019	Drainage Ditch	Torch, Bottle trap, Refuge search.	5 °C	Absent	N/A
20	SU67562047 28	29/04/2019	Drainage Ditch	Torch, Bottle trap, Refuge search.	5 °C	Absent	N/A
20	SU67562047 28	30/04/2019	Drainage Ditch	Torch, Bottle trap, Refuge search.	8 °C	Absent	N/A
20	SU67562047 28	13/05/2019	Drainage Ditch	Egg search, Refuge search, Torch.	9 °C	Absent	N/A
21	SU67947049 23	25/04/2019	Drainage Ditch	Torch, Bottle trap, Refuge search.	5 °C	Absent	N/A
21	SU67947049 23	29/04/2019	Drainage Ditch	Torch, Bottle trap, Refuge search.	5 °C	Absent	N/A

Pond No.	Grid reference	Survey date	Waterbody type	Survey Methods	Minimum Overnight temperature	Great crested newt result	Other Species recorded
21	SU67947049 23	30/04/2019	Drainage Ditch	Torch, Bottle trap, Refuge search.	8 °C	Absent	Fish found in traps.
21	SU67947049 23	20/05/2019	Drainage Ditch	Torch, Bottle trap, Refuge search.	7 °C	Absent	N/A
22	SU67703044 60	25/04/2019	Attenuation Pond	Torch, Bottle trap, Refuge search.	5 °C	Absent	N/A
22	SU67703044 60	29/04/2019	Attenuation Pond	Torch, Bottle trap, Refuge search.	5 °C	Absent	N/A
22	SU67703044 60	30/04/2019	Attenuation Pond	Torch, Bottle trap, Refuge search.	8 °C	Absent	1 x female smooth newt.
22	SU67703044 60	20/05/2019	Attenuation Pond	Torch, Bottle trap, Refuge search.	7 °C	Absent	1 x female smooth newt, 2 x male smooth newts.
23	SU67561028 48	14/05/2019	Pond	Egg search (material added), Torch, Bottle trap.	9 °C	Absent	N/A

Pond No.	Grid reference	Survey date	Waterbody type	Survey Methods	Minimum Overnight temperature	Great crested newt result	Other Species recorded
23	SU67561028 48	15/05/2019	Pond	Egg search, Torch, Bottle trap.	9 °C	Absent	Tadpoles and adult frog
23	SU67561028 48	16/05/2019	Pond	Egg search, Torch, Bottle trap.	9 °C	Absent	Frog tadpoles
23	SU67561028 48	20/05/2019	Pond	Egg search, Torch, Bottle trap.	7 °C	Absent	N/A
24	SU67233025 53	30/04/2019	Pond	Pond dry.	N/A	Absent	N/A
24	SU67233025 53	14/05/2019	Pond	Pond dry.	9 °C	Absent	N/A
25	SU67219023 81	01/05/2019	Pond	Egg search, Torch, Bottle trap.	6 °C	Absent	8 x female smooth, 19 x male newt, 2 x palmate/smooth juv.
25	SU67219023 81	02/05/2019	Pond	Egg search, Torch, Bottle trap.	6 °C	Absent	6 x female smooth newt,

Pond No.	Grid reference	Survey date	Waterbody type	Survey Methods	Minimum Overnight temperature	Great crested newt result	Other Species recorded
							1 x male smooth newt.
25	SU67219023 81	14/05/2019	Pond	Egg search, Torch, Bottle trap.	9 °C	Absent	10 x male smooth newts, 13 female smooth newts.
25	SU67219023 81	16/05/2019	Pond	Egg search, Torch, Bottle trap.	9 °C	Absent	13 x male smooth newts, 9 female smooth newts.
26	SU67450013 34	30/04/2019	Pond	Egg search, Torch, Bottle trap.	8 °C	Absent	13 x female smooth, 12 x male smooth, 1 x male palmate.
26	SU67450013 34	01/05/2019	Pond	Egg search, Torch, Bottle trap.	6 °C	Absent	18 x female smooth newts, 17 x smooth males.



Pond No.	Grid reference	Survey date	Waterbody type	Survey Methods	Minimum Overnight temperature	Great crested newt result	Other Species recorded
26	SU67450013 34	02/05/2019	Pond	Egg search, Torch, Bottle trap.	6 °C	Absent	5 x small newt eggs, 20 x female smooth newt, 10 x male smooth newt
26	SU67450013 34	23/05/2019	Pond	Egg search, Torch, Bottle trap.	11 °C	Absent	1 x female smooth newt, 3 x male smooth newt, 14 x female palmate, 1 x male palmate

# Appendix 4 – Great Crested Newt Survey Map





**Legend**

- Survey Area
- GCN Desk Study Records
- GCN Granted EPS Licence Application Records
- Scoped Out Waterbodies
- Waterbodies Surveyed for eDNA
- Waterbodies Surveyed for Presence/Absence

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 – Regulation 5(2)(a)

REV	DATE	BY	DESCRIPTION	CHK	APP
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TITLE: **Figure 1:  
GCN Survey Results  
Page 1**

SCALE AT A3: <b>1:7942</b>	CHECKED: <b>LW</b>	APPROVED: <b>IE</b>
PROJECT NO: <b>62100616</b>	DESIGNED: <b>MG</b>	DRAWN: <b>AP</b>
DRAWING NO: <b>EN020022-ES-APP-16.9-1</b>		REV NO. <b>02</b>

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**Figure 1:  
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Page 2**

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PROJECT NO: <b>62100616</b>	DESIGNED: <b>MG</b>	DRAWN: <b>AP</b>
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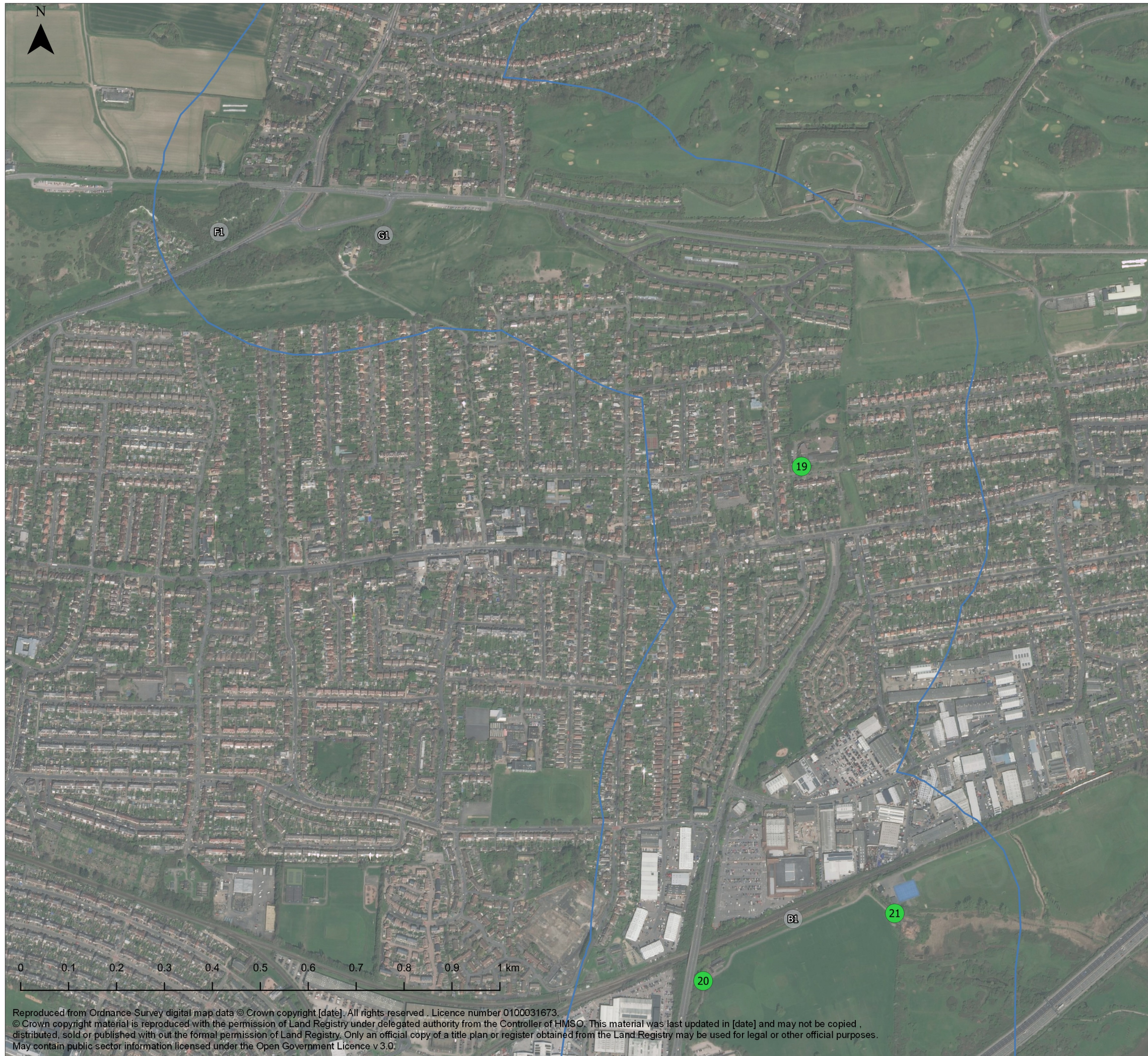
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**Figure 1:  
GCN Survey Results  
Page 3**

SCALE AT A3: <b>1:7942</b>	CHECKED: <b>LW</b>	APPROVED: <b>IE</b>
PROJECT NO: <b>62100616</b>	DESIGNED: <b>MG</b>	DRAWN: <b>AP</b>
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**Figure 1:  
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Page 4**

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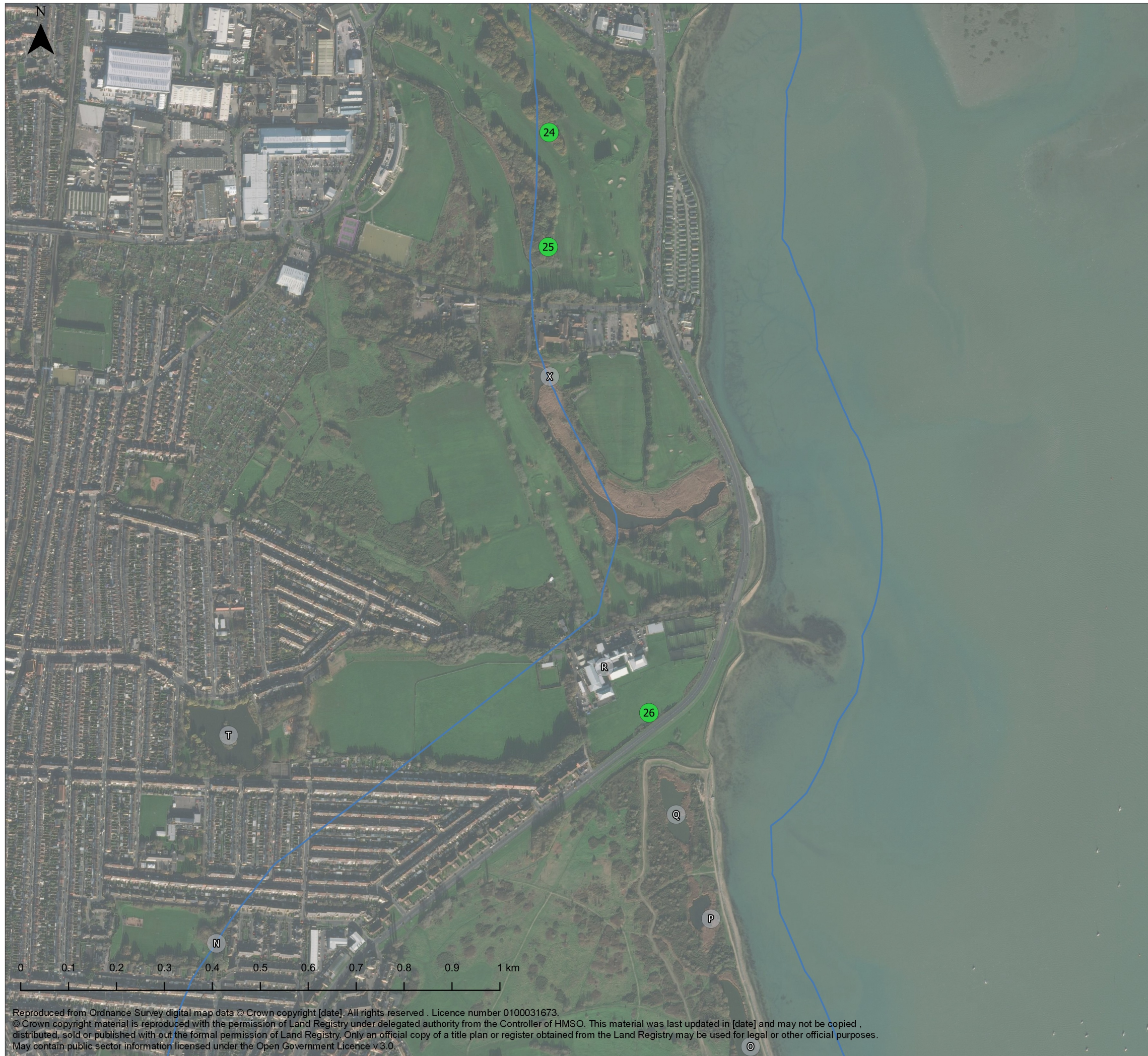
**Figure 1:  
GCN Survey Results  
Page 5**

SCALE AT A3: <b>1:7942</b>	CHECKED: <b>LW</b>	APPROVED: <b>IE</b>
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**Figure 1:  
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