



**Great Crested Newt eDNA  
Survey Report**

Land at A28 Sturry Link Road

June 2023

# Great Crested Newt eDNA Survey Report

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# 1. Introduction

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## Background

- 1.1 Phlorum Ltd has been commissioned by Project Centre, on behalf of Kent County Council, to undertake an environmental DNA (eDNA) survey to assess the presence/likely absence of great crested newt (*Triturus cristatus*) within land associated with the A28 Sturry Link Road planning application (Planning ref: CA/21/01854).
- 1.2 The Client, Kent County Council, have planning permission to construct the north-south alignment of Sturry Link Road between 2024 and 2026 from the A28 Sturry Road south of the Great Stour River close to the Southern Water Canterbury Wastewater Treatment Works in the southwest up to the roundabout within the Land at Sturry site, north of the Canterbury to Ramsgate railway line.
- 1.3 All mapped ponds and drainage ditches within 500m, the typical maximum distance a great crested newt will travel from a breeding pond, of the Site Area were identified and considered for the survey.
- 1.4 The great crested newt survey follows on from a Preliminary Ecological Appraisal (Phlorum, 2023) which identified potentially suitable terrestrial and aquatic habitat for this species within the Site Area.

## Site Area Description

- 1.5 The Site Area for the proposed A28 Sturry Link Road scheme comprised three separate areas of land. These areas of land will be the responsibility of the A28 Sturry Link Road Scheme developers. See the areas highlighted in red in Figure 1 in Appendix A for the location of the three separate areas of land. The majority of the Site Area lies between the A28 Sturry Road, where the Site Area runs adjacent to Sturry Road Community Park, and the Canterbury to Ramsgate railway line. Part of a field to the north of the Canterbury to Ramsgate railway line covering the location of the proposed rail bridge is included. The Site Area also includes a section of the field to the west, providing a link road to Broad Oak Road, and a short section of Broad Oak Road and Shalloak Road immediately north of the Canterbury to Ramsgate railway line. A small area of road to the east of the main Site Area, comprising the A291 Herne Bay Road/Sturry Hill and A28 Island Road junction, also resides within the Site Area.

- 1.6 The Site Area comprised buildings, hardstanding, amenity grassland, agricultural land, improved grassland, semi-improved neutral grassland, marshy grassland, ruderal vegetation, continuous scrub, broad-leaved semi-natural woodland, water bodies, reedbed, individual trees, and hedgerow and trees.
- 1.7 The National Grid Reference for the centre of the Site Area is TR 16942 60093. The Site Area extends over approximately 7.7 hectares (ha).
- 1.8 Phlorum have considered a larger 'Survey Area' in other ecological reports, including the Preliminary Ecological Appraisal. The Survey Area covered 14.7ha and included land associated with the Greenfield Shooting Grounds and the rest of the land within the Land at Sturry Application Site. However, for the purposes of the eDNA survey, only the Site Area and waterbodies within 500m of this were considered.

## 2. Methodology

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### Data Search

- 2.1 Records for great crested newts from within a 2km radius of the Survey Area were requested from Kent and Medway Biodiversity Records Centre (KMBRC, 2022) as part of the Preliminary Ecological Appraisal.











### Selection of Waterbodies

- 2.2 All ponds and drainage ditches within 500m of the Site Area were initially identified and considered for the eDNA survey, excluding those that were within 500m of the Environmental Mitigation Area only. The Environmental Mitigation Area, which comprises a 1.5ha parcel of land immediately to the north of the Great Stour within the land of Junior King's School, is to remain undeveloped and therefore it is considered that there is no risk to great crested newts within this area.
- 2.3 Potentially suitable waterbodies for breeding great crested newts, which require standing water with aquatic vegetation, were identified using Multi-Agency Geographical Information for the Countryside (MAGIC, 2023) and aerial photography.
- 2.4 A total of 13 ponds and 24 drainage ditches were initially identified within 500m of the Site Area, excluding those within 500m of the Environmental Mitigation Area only. These are shown in Figure 1 in Appendix B.
- 2.5 The eastern-most parcel of land within the Site Area is the A291 Herne Bay Road/Sturry Hill and A28 Island Road junction. This part of the Site Area is composed entirely of hardstanding, a habitat of negligible value to great crested newts. Regardless of whether or not there are breeding ponds within 500m, it is highly unlikely that great crested newts would be found within this area and the development is not expected to have any impact on this species in this area. Therefore, all ponds and drainage ditches that are within 500m of this part of the Site Area only were excluded from the eDNA survey. This included two ponds and five drainage ditches.
- 2.6 It was considered that the A28 Sturry Road, which runs to the south of the Site Area, is a significant dispersal barrier to great crested newts. Great crested newts utilising breeding ponds to the south of the A28 Sturry Road would be highly unlikely to travel between these ponds and habitats within the Site Area. Therefore, all ponds and drainage ditches to the south of the A28 Sturry Road were excluded from the eDNA survey. This included five ponds and seven drainage ditches, in addition to those mentioned above that fell within 500m of the A291 Herne Bay Road/Sturry Hill and A28 Island Road junction only.

2.7 With these exclusions, the eDNA survey focused on a total of six ponds and 13 drainage ditches. These are all located less than 500m from suitable terrestrial habitat for newts within the Site Area and are not separated from the Site Area by any significant dispersal barriers. As such, it is possible that any great crested newts using these waterbodies for breeding could also use terrestrial habitats within the Site Area. The locations of these 19 mapped waterbodies are shown in Figure 2 in Appendix B, with associated waterbody reference numbers.

## Habitat Suitability Index (HSI) Assessment

2.8 Phlorum undertook a HSI Assessment of each waterbody that was sampled as part of the eDNA survey. The assessment was carried out by a suitably qualified ecologist using the methodology provided by the National Amphibian and Reptile Recording Scheme (Oldham et al. 2000). The HSI assessment uses ten key habitat criteria and is based on the assumption that habitat quality determines great crested newt population size (Oldham et al, 2000). The criteria are as follows:

-  SI1 = geographic location;
-  SI2 = pond area;
-  SI3 = pond permanence;
-  SI4 = water quality;
-  SI5 = pond shading;
-  SI6 = number of waterfowl;
-  SI7 = occurrence of fish;
-  SI8 = pond density;
-  SI9 = proportion of 'newt friendly' terrestrial habitat; and
-  SI10 = macrophyte (aquatic plant) content.

2.9 The results of the HSI assessment calculation have been 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 the table below.

**Table 2.1: HSI Assessment Categories**

Probability of Pond Supporting Great Crested Newts	HSI Score
Poor	< 0.5
Below Average	0.5 - 0.59
Average	0.6 - 0.69
Good	0.7 - 0.79
Excellent	> 0.8

(Extracted from Oldham et al., 2000)

- 2.10 It was not possible to carry out a HSI Assessment for dry waterbodies, or those that could not be accessed.

## Environmental DNA Analysis

- 2.11 Environmental DNA (eDNA) analysis is a method of detecting great crested newt occupancy by testing for the presence of DNA from pond or drainage ditch water within a laboratory.
- 2.12 Sampling was undertaken at the identified waterbodies on the 16<sup>th</sup> May 2023 by experienced Phlorum ecologists. The survey was led by Natalie Arscott, who holds a Great Crested Newt Level 1 Class Licence (Registration Number 2023-11194-CL08-GCN), and assisted by Livia Dry, who is an accredited agent under Richard Schofield's licence (Registration Number 2019-39894-CLS-CLS).
- 2.13 In accordance with the specified methodology, the field surveys followed a strict protocol to prevent contamination of the samples; this entailed:
- A separate set of sterile sampling equipment was used for each waterbody. Sterile gloves were worn at all times during the sampling process.
  - Samples were collected without entering the water, i.e. the surveyor stood only on the waterbody bank or muddy waterbody edges. This prevented disturbance of the substrate to limit cross-contamination.
- 2.14 The field sampling protocol consisted of the following steps:



- 🌿 A total of 20 sub-samples were taken from each waterbody, using a ladle. The location of sub-samples were spaced as evenly as possible around the waterbody margin. Sub-samples targeted both areas with potential egg laying substrate (e.g. vegetation) and open water areas which newts may be using for displaying. Prior to sampling the water column was mixed by gently using the ladle to stir through the entire water column, whilst avoiding disturbing the sediment on the bed of the waterbody. Sampling of very shallow water (less than 5-10cm deep) was avoided where possible.
- 🌿 Once 20 samples had been taken, the sample bag was closed securely and shaken vigorously for 10 seconds. This mixed any DNA across the whole water sample.
- 🌿 Using a clear plastic pipette, c15mL of water was taken from the bag and pipetted into a sterile tube containing 35mL of ethanol to preserve the eDNA sample (i.e. the tube was filled to the 50 mL mark). The tube was then shaken vigorously for 10 seconds to mix the sample and preservative, which prevents DNA degradation. This process was repeated until all six conical tubes provided with each sampling kit had been filled and shaken.
- 🌿 The boxes of preserved sub-samples were then returned to the laboratory (ADAS) for the eDNA analysis to be completed.

## Constraints

### Data Search Constraints

- 2.15 It is important to note that, even where data is held, a lack of records for a defined geographical area does not necessarily mean that there is a lack of ecological interest; the area may be simply under-recorded.

### eDNA Survey Constraints

- 2.16 The presence of dense vegetation or other physical barriers around a waterbody can limit access for water samples to be taken. This may reduce the sampling area to a small portion of the waterbody margin or may prevent access for sampling altogether.
- 2.17 It is only possible to sample waterbodies that are holding water of a minimum depth of 5-10cm at the time of the survey. Dry waterbodies are therefore excluded from the survey, even though they may hold water at other times of year.
- 2.18 Indeterminate eDNA results can be returned if there is:
- 🌿 too much silt in the samples;
  - 🌿 excess algae in the samples; and /or

- there is the formation of a white precipitate in the samples, which results from a chemical reaction between the water sample and preservative solution. This can occur for several reasons, including the waterbody having been treated with chemicals, being located in chalk or limestone areas, or being subject to contaminated runoff.

## 3. Results

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### Data Search

- 3.1 The data search returned 60 records for great crested newt within 2km of the Survey Area, which was covered by the Preliminary Ecological Appraisal, within the past 15 years.
- 3.2 The closest records were from approximately 590m to the west of the Site Area.

### Waterbody Assessments and eDNA Results

- 3.3 Below is a summary of the findings from the eDNA survey. A map showing the waterbody locations and reference numbers can be found in Figure 2 in Appendix B, and photographs are provided in Appendix C.

#### Waterbody 1

- 3.4 Waterbody 1 was a small pond within land belonging to Valencia Waste Management, located approximately 440m to the northwest of the Site Area at their closest points. Historic aerial imagery indicates that the pond was created between 2008 and 2011.
- 3.5 The HSI score for the pond was calculated at 0.82. This indicates that the pond has an 'excellent' probability of supporting great crested newts.
- 3.6 The eDNA result for the waterbody was **indeterminate**, due to the formation of white precipitate in the samples. It is suspected that this may have been caused by the pond being subject to runoff from the surrounding landfill.

#### Waterbody 2

- 3.7 Waterbody 2 was mapped as a drainage ditch within land belonging to Valencia Waste Management, located approximately 160m to the northwest of the Site Area at their closest points.
- 3.8 Valencia Waste Management confirmed prior to the survey that there was no wet ditch in this location. The location was walked through during the eDNA survey, and no water was seen.
- 3.9 It was therefore concluded that waterbody 2 was a dry ditch, and no HSI assessment or eDNA sampling were undertaken.

#### Waterbody 3

- 3.10 Waterbody 3 was mapped as a drainage ditch within land belonging to Valencia Waste Management, located approximately 240m to the northwest of the Site Area at their closest points.

- 3.11 Valencia Waste Management confirmed prior to the survey that there was no wet ditch in this location. The location was walked through during the eDNA survey, and no water was seen.
- 3.12 It was therefore concluded that waterbody 3 was a dry ditch, and no HSI assessment or eDNA sampling were undertaken.

#### **Waterbody 4**

- 3.13 Waterbody 4 was mapped as a drainage ditch within land belonging to Valencia Waste Management, located approximately 250m to the northwest of the Site Area at their closest points.
- 3.14 Valencia Waste Management confirmed prior to the survey that there was no wet ditch in this location. The location was walked through during the eDNA survey, and no water was seen.
- 3.15 It was therefore concluded that waterbody 4 was a dry ditch, and no HSI assessment or eDNA sampling were undertaken.

#### **Waterbody 5**

- 3.16 Waterbody 5 was mapped as a drainage ditch within land belonging to Valencia Waste Management, located approximately 90m to the west of the Site Area at their closest points.
- 3.17 Valencia Waste Management confirmed prior to the survey that there was no wet ditch in this location. The location was walked through during the eDNA survey, and no water was seen.
- 3.18 It was therefore concluded that waterbody 5 was a dry ditch, and no HSI assessment or eDNA sampling were undertaken.

#### **Waterbody 6**

- 3.19 Waterbody 6 was a small pond within land belonging to Valencia Waste Management, located approximately 25m to the north of the Site Area at their closest points. The pond was shallow and starting to dry at the time of the survey.
- 3.20 The HSI score for the pond was calculated at 0.66. This indicates that the pond has an 'average' probability of supporting great crested newts.
- 3.21 The eDNA result for the waterbody was **negative** for great crested newt. It is therefore likely that great crested newts are absent from waterbody 6.

#### **Waterbody 7**

- 3.22 Waterbody 7 was a small pond within land belonging to Valencia Waste Management, located approximately 70m to the west of the Site Area at their closest points. Historic aerial imagery indicates that this area was cleared, and the pond recreated between 2021 and 2022. It was noted during the eDNA survey that the pond was surrounded by very little vegetation, and there was an almost complete absence of aquatic vegetation.

- 3.23 The HSI score for the pond was calculated at 0.51. This indicates that the pond has a 'below average' probability of supporting great crested newts.
- 3.24 The eDNA result for the waterbody was **indeterminate**, due to the formation of white precipitate in the samples. It is suspected that this may have been caused by the pond being subject to runoff from the surrounding landfill.

#### **Waterbody 8**

- 3.25 Waterbody 8 was mapped as a drainage ditch within land belonging to Southern Water Canterbury Wastewater Treatment Works, located approximately 130m to the south of the Site Area at their closest points.
- 3.26 The eDNA survey revealed that this waterbody was a fast-flowing concrete-sided gully, which led to the Great Stour. It was therefore considered completely unsuitable for great crested newts.
- 3.27 Due to the waterbody's clear unsuitability for great crested newts, no HSI assessment or eDNA sampling were undertaken.

#### **Waterbody 9**

- 3.28 Waterbody 9 was a pond within land belonging to Southern Water Canterbury Wastewater Treatment Works, located approximately 150m to the south of the Site Area at their closest points.
- 3.29 The HSI score for the pond was calculated at 0.63. This indicates that the pond has an 'average' probability of supporting great crested newts.
- 3.30 The eDNA result for the waterbody was **positive** for great crested newt. It is therefore likely that great crested newts have been present in waterbody 9 during Spring 2023.

#### **Waterbody 10**

- 3.31 Waterbody 10 was mapped as a drainage ditch within Den Grove Wood, located approximately 360m to the north of the Site Area at their closest points.
- 3.32 The eDNA survey revealed that the drainage ditch was completely dry, and there was no evidence that it had recently held water.
- 3.33 It was therefore concluded that waterbody 10 was a dry ditch, and no HSI assessment or eDNA sampling were undertaken.

#### **Waterbody 11**

- 3.34 Waterbody 11 was mapped as a drainage ditch within Den Grove Wood, located approximately 275m to the northeast of the Site Area at their closest points.
- 3.35 The eDNA survey revealed that the drainage ditch was completely dry, and there was no evidence that it had recently held water.
- 3.36 It was therefore concluded that waterbody 11 was a dry ditch, and no HSI assessment or eDNA sampling were undertaken.

### **Waterbody 12**

- 3.37 Waterbody 12 was mapped as a drainage ditch within the northern tree line of the large arable field that makes up a portion of the Site Area, located approximately 190m to the northeast of the Site Area at their closest points.
- 3.38 The eDNA survey revealed that the drainage ditch was completely dry, and there was no evidence that it had recently held water.
- 3.39 It was therefore concluded that waterbody 12 was a dry ditch, and no HSI assessment or eDNA sampling were undertaken.

### **Waterbody 13**

- 3.40 Waterbody 13 was mapped as a drainage ditch along the eastern boundary of the large arable field that makes up a portion of the Site Area, located approximately 100m to the northeast of the Site Area at their closest points.
- 3.41 The eDNA survey revealed that the drainage ditch was completely dry, and there was no evidence that it had recently held water.
- 3.42 It was therefore concluded that waterbody 13 was a dry ditch, and no HSI assessment or eDNA sampling were undertaken.

### **Waterbody 14**

- 3.43 Waterbody 14 was mapped as a pond within the Environmental Mitigation Area that is within the Site Area, between the Canterbury to Ramsgate railway line and the Great Stour.
- 3.44 During the eDNA survey, no pond was found in this location. There was however wet mud and marshland vegetation within this part of the field, therefore a pond likely forms during wetter periods. Historic aerial imagery shows the presence of a small pond in a minority of the aerial images.
- 3.45 It was therefore concluded that waterbody 14 was a pond that dries out seasonally, and was dry at the time of the survey, so no HSI assessment or eDNA sampling were undertaken.

### **Waterbody 15**

- 3.46 Waterbody 15 was mapped as a drainage ditch, located within the Environmental Mitigation Area that is within the Site Area, between the Canterbury to Ramsgate railway line and the Great Stour.
- 3.47 The eDNA survey revealed that the drainage ditch was completely dry. It was however associated with marshland vegetation and had been noted to hold water during previous site visits.
- 3.48 It was therefore concluded that waterbody 15 was a dry ditch at the time of the survey, although it holds water during wetter periods, and no HSI assessment or eDNA sampling were undertaken.

### **Waterbody 16**

- 3.49 Waterbody 16 was mapped as a pond within a small block of woodland to the northeast of White Mill Bridge on the A28 Sturry Road, located approximately 80m to the east of the Site Area at their closest points.
- 3.50 During the eDNA survey, dense stands of nettle (*Urtica dioica*) and bramble (*Rubus fruticosus* agg.) throughout the woodland physically prevented access to the pond for an HSI assessment or eDNA sampling.
- 3.51 It is noted that the pond's location, being fully surrounded by dispersal barriers, would make it unlikely that great crested newts would use this pond. Waterbody 16 is situated in an area between two forks of the Great Stour, and therefore is fully enclosed by the river, which great crested newts are unlikely to cross. It is the only waterbody within this enclosed parcel of land. In addition, the block of woodland within which the pond is situated is bordered by the Great Stour to the north and east, the A28 Sturry Road to the south, and a car park to the west, all of which pose a potential dispersal barrier.

### **Waterbody 17**

- 3.52 Waterbody 17 was mapped as a drainage ditch along the eastern boundary of Southern Water Canterbury Wastewater Treatment Works, and therefore runs along the western boundary of the southern-most portion of the Site Area.
- 3.53 The eDNA survey revealed that the drainage ditch was completely dry, and there was no evidence that it had recently held water.
- 3.54 It was therefore concluded that waterbody 17 was a dry ditch, and no HSI assessment or eDNA sampling were undertaken.

### **Waterbody 18**

- 3.55 Waterbody 18 was mapped as a drainage ditch along the southern boundary of the Site Area, adjacent to the A28 Sturry Road.
- 3.56 The eDNA survey revealed that the drainage ditch was dry, however wet mud was seen and the ditch had been noted to hold water during previous site visits.
- 3.57 It was therefore concluded that waterbody 18 was a dry ditch at the time of the survey, although it holds water during wetter periods, and no HSI assessment or eDNA sampling were undertaken.

### **Waterbody 19**

- 3.58 Waterbody 19 was mapped as a drainage ditch adjacent to the A28 Sturry Road, located approximately 40m to the east of the Site Area at their closest points.
- 3.59 The eDNA survey revealed that the drainage ditch was completely dry. It had however been noted to hold water during previous site visits.

3.60 It was therefore concluded that waterbody 19 was a dry ditch at the time of the survey, although it holds water during wetter periods, and no HSI assessment or eDNA sampling were undertaken.

## Habitat Suitability Index (HSI) Assessment

3.61 The results of the HSI assessment are shown below in Table 3.1.

**Table 3.1: Summary HSI assessment scores**

Waterbody Number	Distance from Site (metres)	HSI Score	Waterbody Suitability
1	440m	0.82	Excellent
2	160m	N/A (dry ditch)	Unsuitable
3	240m	N/A (dry ditch)	Unsuitable
4	250m	N/A (dry ditch)	Unsuitable
5	90m	N/A (dry ditch)	Unsuitable
6	25m	0.66	Average
7	70m	0.51	Below Average
8	130m	N/A (flowing gully)	Unsuitable
9	150m	0.63	Average
10	360m	N/A (dry ditch)	Unsuitable
11	275m	N/A (dry ditch)	Unsuitable



Waterbody Number	Distance from Site (metres)	HSI Score	Waterbody Suitability
12			
13	100m	N/A (dry ditch)	Unsuitable
14	Onsite	N/A (dry pond)	Unsuitable
15	Onsite	N/A (dry ditch)	Unsuitable
16	80m	N/A (no access)	Unknown
17	Onsite	N/A (dry ditch)	Unsuitable
18	Onsite	N/A (dry ditch)	Unsuitable
19	40m	N/A (dry ditch)	Unsuitable

## Environmental DNA Survey

3.62 The results of the eDNA analysis are detailed below in Table 3.2. Only four waterbodies were included in the eDNA analysis. The other mapped waterbodies were not sampled because they were either dry, unsuitable for newts, or could not be accessed.

**Table 3.2 Summary results of eDNA analysis.**

Sample ID	Waterbody Number	Waterbody grid reference	Detection of <i>Triturus cristatus</i>	Date of Analysis
ADAS-5358	1	TR 16409 60502	Indeterminate	25/05/2023
ADAS-5361	6	TR 16583 60132	Negative	25/05/2023

ADAS-1649	7	TR 16472 60052	Indeterminate	25/05/2023
ADAS-1649	9	TR 16715 59855	<b>Positive</b>	25/05/2023

3.63 The results show that great crested newts were present at waterbody 9, which is the pond within Southern Water Canterbury Wastewater Treatment Works. The pond is approximately 150m from the Site Area at their closest points and is closest to the field where the site compound is proposed.

## 4. Discussion and Recommendations

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### Discussion

- 4.1 The survey was carried out during the peak period for eDNA testing for great crested newts. A total of 19 mapped waterbodies were considered relevant and included in the eDNA survey.
- 4.2 The analysis has confirmed the presence of great crested newt in at least one waterbody within 500m of the Site Area. This is waterbody 9, a pond located approximately 150m to the west of the Site Area, within Southern Water Canterbury Wastewater Treatment Works.
- 4.3 A second pond, waterbody 6, returned a negative eDNA result for great crested newt.
- 4.4 Two further ponds, waterbodies 1 and 7, were sampled but returned 'indeterminate' eDNA results. This was due to the formation of white precipitate within the sample. It is considered that this may have been due to the ponds being subject to runoff from the surrounding landfill. Due to the indeterminate results, it cannot be ruled out that great crested newts could be present in these ponds. Waterbody 1, located 440m from the Site Area, was assessed to have 'excellent' suitability for great crested newts. Waterbody 7, located 70m from the Site Area, was assessed to have 'below average' suitability for great crested newts, and would therefore be less likely to support this species.
- 4.5 One pond, waterbody 16, could not be accessed for the survey due to dense vegetation. Whilst neither an HSI assessment nor eDNA sampling could be carried out, it is considered that the location of this pond would make it unlikely to support great crested newts, due to being surrounded by dispersal barriers.
- 4.6 The remaining 14 mapped waterbodies were either dry or could otherwise be ruled out as unsuitable for great crested newts, and were therefore not subject to an HSI assessment or eDNA sampling.
- 4.7 It is noted that the Site Area is intercepted by the Great Stour, which poses a dispersal barrier to great crested newts. Assuming this species are present at waterbody 9 only, the portion of the Site Area that could support commuting, foraging and/or hibernating great crested newts may be limited to habitats to the south of the Great Stour.

## Recommendations

- 4.8 Due to the confirmed presence of great crested newts within a pond 150m from the Site Area, together with the suitability of on-site terrestrial habitat for commuting, foraging and hibernating, great crested newts may be impacted by the proposed development activities.
- 4.9 There is a risk of an offence being committed under current legislation, therefore a licence regarding great crested newts will be required for the development works. There is an option of either carrying out further surveys in 2024 and applying for a European Protected Species Mitigation licence, or applying for a District Level Licence. Both options are detailed below.

### European Protected Species Mitigation Licence Route

- 4.10 In order to obtain a European Protected Species Mitigation (EPSM) licence for the development works, a series of waterbody surveys would first need to be carried out. Since we are now outside of the great crested newt survey season, these would need to be carried out in Spring 2024.
- 4.11 Where possible, all potentially suitable waterbodies within 500m of the Site Area should be included in the survey. The survey protocol should follow that set out in the Great Crested Newt Mitigation Guidelines (English Nature, 2001). An initial four surveys are required to demonstrate presence or likely absence, and these must be carried out between mid-March and mid-June with two of those visits taking place within the peak survey time between mid-April and mid-May.
- 4.12 If great crested newts are found to be present, an additional two survey visits will then be required for these waterbodies to allow a population size class assessment to be made, with at least one of these visits being undertaken within the peak survey time between mid-April and mid-May.
- 4.13 The surveys could be combined with eDNA sampling. Any waterbodies that returned a negative result for great crested newt could subsequently be excluded from the surveys. Samples can be taken for eDNA analysis between the 15<sup>th</sup> April and 30<sup>th</sup> June.
- 4.14 Following completion of the surveys, a licence application can be submitted to Natural England. This can take up to 30 working days to be processed.
- 4.15 As part of the licence application, a Method Statement will need to be submitted to guide works in relation to this species. It will likely be necessary to undertake a formal translocation for any parts of the working area within close proximity to a waterbody supporting great crested newts, to ensure individuals are not present within the development footprint. This process will involve fencing the development area and trapping and relocating newts over a number of weeks. It is understood that fencing and trapping will be undertaken for reptiles, therefore it may be possible to combine these tasks.

- 4.16 Detailed recommendations for the Method Statement, receptor site, and any post-development monitoring can be provided following completion of the waterbody surveys, once a population size class assessment has been made.

#### District Level Licence Route

- 4.17 An alternative approach for the development is District Level Licensing (DLL). With this approach, no further survey work is required. Whilst this approach is usually quicker and more straightforward, it can be more expensive than the EPSM Licence route. The cost of a DLL goes towards funding great crested newt projects in the district and county.
- 4.18 In Kent, Natural England operate a DLL scheme. There are five stages to the DLL application process:
- 🌿 **Stage 1 – DLL Enquiry:** This is the initial enquiry to Natural England (NE), to find out what charges/conditions would be involved for the site. NE charge for reviewing this enquiry and require some initial details and maps of the site. NE will then assess the enquiry to determine the conditions and payment requirements for the site. The enquiry includes completing an application form, providing GIS polygon shapefiles for the red line boundary and all ponds within 250m of the Site Area, and providing any survey information.
  - 🌿 **Stage 2 – Provisional Certificate Issued:** Once NE have assessed the enquiry, they will issue an Impact Assessment and Conservation Payment Certificate documents, which are the agreement documents. These will explain the conditions and the fees involved. At this point the client will know all the costs/conditions involved and can decide whether they are continuing with the DLL. If the client is going ahead with the DLL, then they need to sign the provisional certificate and send it back to NE.
  - 🌿 **Stage 3 – Countersigned Certificate Issued:** On receiving the provisional certificate signed by the client, which agrees to the costs and conditions, NE will countersign it and send it back. If the conservation payment fee has been split into two stages, the first stage fee must be paid to NE before they will countersign the certificate.
  - 🌿 **Stage 4 – DLL Application Submitted:** Stage 4 can only be carried out once planning permission has been approved. The DLL application is submitted to NE. This will include submission of a Reasoned Statement, but no Method Statement is required.
  - 🌿 **Stage 5 – DLL Granted:** NE will issue the DLL once all payments have been made, and NE or other bodies have put into place all measures to replace the necessary ponds, if required. Once the licence is received, works can start on site in accordance with its stated conditions.
- 4.19 Payments required to NE for the DLL scheme will be for the enquiry fee, the conservation fee (which may be split into stages), and the licence payment.

- 4.20 Once issued the DLL is valid for two years. If the project extends over two years, a renewal licence must be obtained within two months of the expiry date. There will be additional fees for the licence renewal.

### **Site Enhancement**

#### Landscape Planting

- 4.21 Planting should include a high proportion of native species and include a mix of shrubs, trees, and grassland wherever possible. This helps to provide corridors for a range of species in the landscape, including amphibians.

#### Log Piles

- 4.22 Log piles could also be installed within suitable habitat within the Site Area. These should be oriented so as to maximise their daily exposure to the sun, with the longest side facing south. The log piles should be made from neatly stacked wood, locally sourced where possible, and stacked approximately 1m in height, either in a pyramidal or cuboid shape (bound with wire to prevent it breaking apart over time) or stacked against mature trees.
- 4.23 Log piles are ideal environments for amphibians; used for hibernation and as a refuge from predators. The dead wood also supports a diverse invertebrate fauna; a food source for a range of species including amphibians, reptiles and birds.

#### Hibernacula

- 4.24 Hibernacula are normally under-ground chambers that amphibians and reptiles can hibernate in over winter. These can be made sunken into the ground, or as raised mound in areas where digging into the ground is not possible, or the ground conditions are impermeable. They are made from a variety of times such as wood, logs, dead wood, rocks, hardcore and other suitable types of rubble. Soil is then cover over the area and a gap provided at the base to enable amphibians and reptiles to enter.

## 5. Conclusions

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- 5.1 Phlorum Ltd was commissioned by Project Centre, on behalf of Kent County Council, to carry out a great crested newt eDNA survey for the A28 Sturry Link Road Scheme. The eDNA survey covered mapped waterbodies within 500m of the Site Area, where there is a potential risk to great crested newts within the working area and where a waterbody is not separated from the Site Area by a dispersal barrier.
- 5.2 The Client, Kent County Council, have planning permission to construct the north-south alignment of Sturry Link Road between 2024 and 2026 from the A28 Sturry Road south of the Great Stour River close to the Southern Water Canterbury Wastewater Treatment Works in the southwest up to the roundabout within the Land at Sturry site, north of the Canterbury to Ramsgate railway line.
- 5.3 The eDNA survey confirmed the presence of great crested newts within at least one waterbody within 500m of the Site Area.
- 5.4 Great crested newts may therefore be affected by the development works through the destruction of suitable terrestrial habitat.
- 5.5 Due to the risk of an offence being committed under current legislation, a licence regarding great crested newts will be required for the development works. There is an option of either carrying out further surveys in 2024 and applying for a EPSM licence, or joining Natural England's DLL scheme.



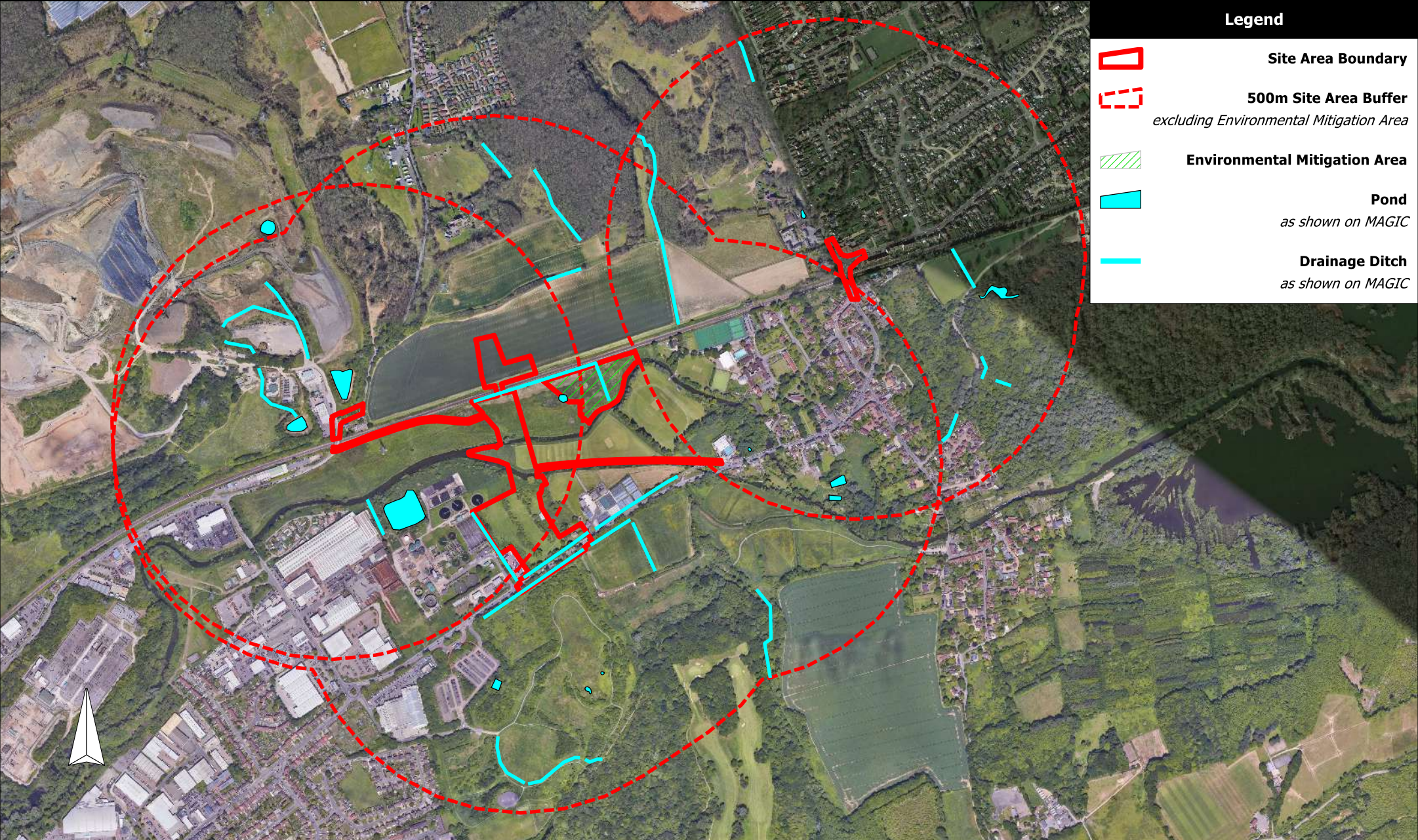
## Appendix A Site Area












## Appendix B Survey Maps



**Legend**

-  **Site Area Boundary**
-  **500m Site Area Buffer**  
*excluding Environmental Mitigation Area*
-  **Environmental Mitigation Area**
-  **Pond**  
*as shown on MAGIC*
-  **Drainage Ditch**  
*as shown on MAGIC*

**Figure 1: Waterbodies Potentially Suitable for GCN Mapped Within 500m of Site Area (excluding Environmental Mitigation Area)**

Drawn by: NA  
 On the: 19/06/2023  
 Not to Scale  
 Ref: 11112



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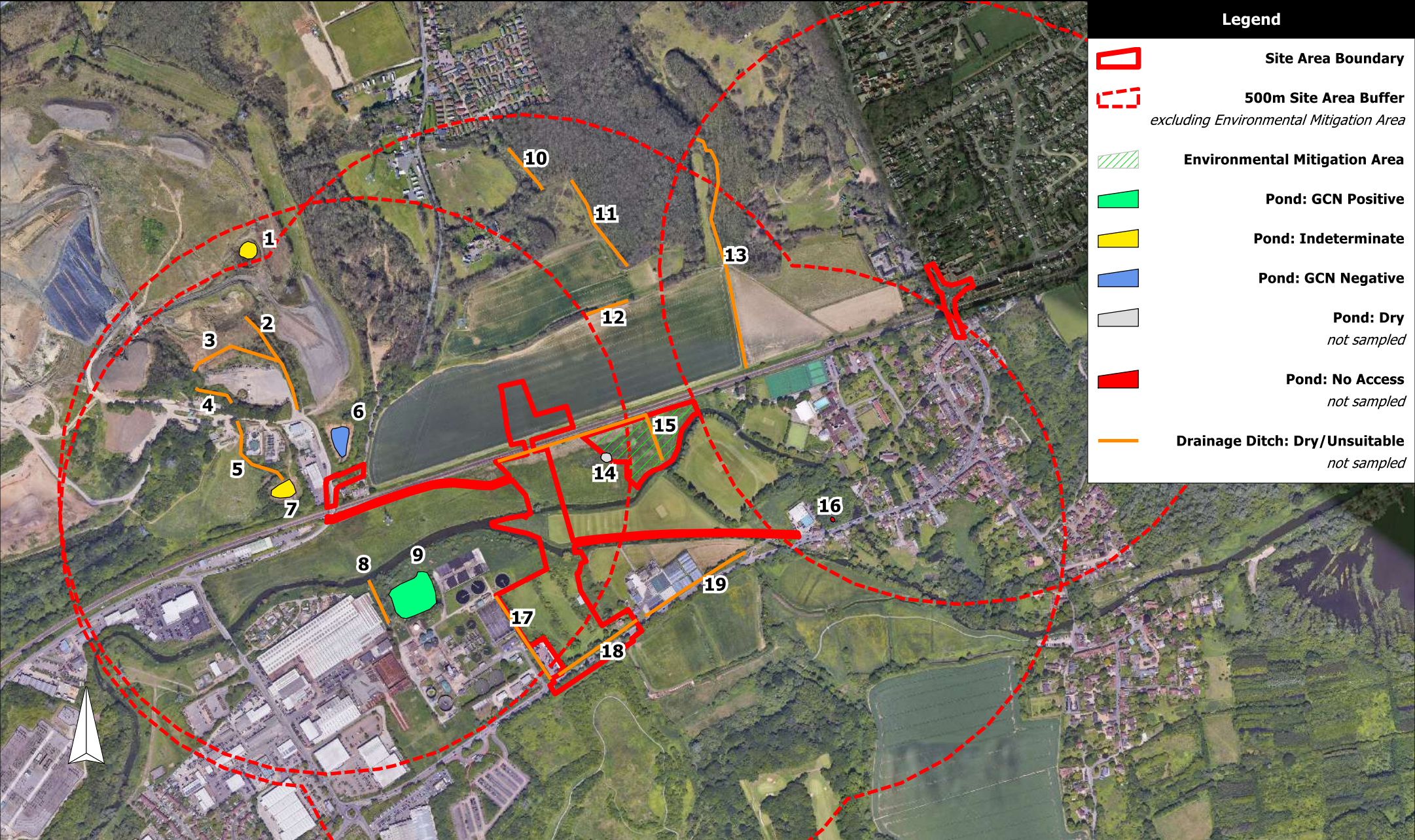


Figure 2: eDNA Survey Map



Drawn by: NA  
 On the: 19/06/2023  
 Not to Scale  
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## Appendix C Photographs

# Photographs


Photo No.	Feature	Photograph of Feature
	Waterbody 1 – indeterminate eDNA result returned.	 <p>16/05/2023 15:25 51.30265742N 1.10313512E Kent</p>
2	eDNA result returned.	 <p>16/05/2023 14:52 51.29907221N 1.10525448E Kent</p>

Waterbody 7 –  
indeterminate eDNA  
result returned.





4 Waterbody 8 – fast-  
flowing gully considered  
unsuitable for newts.



	<p>Waterbody 9 – positive eDNA result returned.</p>	
<p>6</p>		
<p>7</p>	<p>Waterbody 11 – dry ditch.</p>	



<p>8</p>	<p>Waterbody 12 - dry ditch.</p>	 <p>16/05/2023 12:07 51.30132021N -1.11297335E Kent</p>
	<p>Waterbody 13 - dry ditch.</p>	 <p>16/05/2023 12:00 51.30188959N -1.11595851E Kent</p>
<p>10</p>	<p>Waterbody 14 - dry pond.</p>	 <p>16/05/2023 10:34 51.29934636N -1.11315299E Kent</p>

	<p>Waterbody 15 - dry ditch.</p>	
<p>12</p>		
<p>13</p>	<p>Waterbody 18 - dry ditch.</p>	

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## Appendix D Legislation

# Legislation

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This section contains information pertaining to the legislation and planning policy applicable in Britain. This information is not applicable to Northern Ireland, the Republic of Ireland the Isle of Man or the Channel Islands. Information contained in the following appendix is provided for guidance only.






## Species

The objective of the EC Habitats Directive<sup>1</sup> is to conserve plants and animals which are considered to be rare across Europe. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2010 (as amended) (formerly The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) and The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended).

The Wildlife and Countryside Act 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and also implements the obligations set out for species protection from the Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.




Various amendments have been made since the Wildlife & Countryside Act came into force in 1981. Further details pertaining to alterations of the Act can be found on the following website: [www.opsi.gov.uk](http://www.opsi.gov.uk). Key amendments have been made through the Countryside and Rights of Way (CRoW) Act (2000) and Nature Conservation (Scotland) Act 2004.

There are a number of other legislative Acts affording protection to species and habitats. These include:

-  Countryside and Rights of Way (CRoW) Act 2000;
-  Deer Act 1991;
-  Natural Environment & Rural Communities (NERC) Act 2006;
-  Protection of Badgers Act 1992; and
-  Wild Mammals (Protection) Act 1996.

### Herpetofauna (Reptiles and Amphibians)

The following species receive full protection under the Conservation of Habitats and Species Regulations 2010 (as amended) through their inclusion on Schedule 2.

-  sand lizard (*Lacerta agilis*);
-  smooth snake (*Coronella austriaca*);
-  natterjack toad (*Epidalea calamita*);

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<sup>1</sup> Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora.

- great crested newt (*Triturus cristatus*); and
- pool frog (*Pelophylax lessonae*).

Under this legislation, Regulation 41 prohibits:

- deliberate killing, injuring or capturing of species listed on Schedule 2;
- deliberate disturbance of any Schedule 2 species as to impair their ability:
  - to survive, breed, or reproduce, or to rear or nurture young; and
  - to hibernate or migrate.
- deliberate disturbance of any Schedule 2 species as to affect significantly the local distribution or abundance of the species;
- deliberate taking or destroying of the eggs of a Schedule 2 species;
- damage or destruction of a breeding site or resting place; and
- keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part of a species.

With the exception of the pool frog, these species are also currently listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this Act, they are additionally protected from:

- intentional or reckless disturbance (at any level);
- intentional or reckless obstruction of access to any place of shelter or protection; and
- selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of herpetofauna are protected solely under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). These species include:

- adder (*Vipera berus*);
- grass snake (*Natrix natrix*);
- common lizard (*Zootoca vivipara*); and
- slow-worm (*Anguis fragilis*).

Under this legislation, for these species it is prohibited under Section 9(1) & (5) to:

- intentionally (or recklessly in Scotland) kill or injure these species; and
- sell, offer or expose for sale, possess or transport for purpose of sale these species, or any part thereof.

The following species are listed in respect to Section 9(5) of Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) which only affords them protection against sale, offering or exposing for sale, possession or transport for the purpose of sale:

- common frog (*Rana temporaria*);
- common toad (*Bufo bufo*);
- smooth newt (*Lissotriton vulgaris*); and

 palmate newt (*L. helveticus*).

## Appendix E

### Habitat Suitability Index (HSI) Assessment



<b>Habitat Suitability Index (Waterbody 1)</b>				
				<b>SI value</b>
SI1.	Map location	<b>A/B/C</b>	A	1.00
SI2.	Surface area	<b>lengthxwidth</b>	ellipse	
			510	1.00
SI3.	Dessication rate	<b>never/rarely/sometimes/frequently</b>	rarely	1.00
SI4.	Water quality	<b>good/moderate/poor/bad</b>	moderate	0.67
SI5.	Shade	% of margin shaded 1m from bank	20	1.00
SI6.	Waterfowl	<b>absent/minor/major</b>	minor	0.67
SI7.	Fish population	<b>absent/possible/minor/major</b>	possible	0.67
SI8.	Pond density	number of ponds within 1km	9	1.00
SI9.	Terrestrial habitat	<b>good/moderate/poor/isolated</b>	moderate	0.67
SI10.	Macrophyte cover	%	40	0.71
<b>Note : Guidance in undertaking the HSI is available at</b>			<b>HSI score =</b>	<b>0.82</b>
<i>HSI calculation formulae adapted from Rob Oldham</i>			<b>Pond suitability =</b>	<b>excellent</b>
<i>Rev 0.1</i>				

<b>Habitat Suitability Index (Waterbody 6)</b>				
				<b>SI value</b>
SI1.	Map location	<b>A/B/C</b>	A	1.00
SI2.	Surface area	<b>lengthxwidth</b>	ellipse	
			1,100	0.93
SI3.	Dessication rate	<b>never/rarely/sometimes/frequently</b>	frequently	0.10
SI4.	Water quality	<b>good/moderate/poor/bad</b>	poor	0.33
SI5.	Shade	% of margin shaded 1m from bank	0	1.00
SI6.	Waterfowl	<b>absent/minor/major</b>	absent	1.00
SI7.	Fish population	<b>absent/possible/minor/major</b>	absent	1.00
SI8.	Pond density	number of ponds within 1km	12	1.00
SI9.	Terrestrial habitat	<b>good/moderate/poor/isolated</b>	moderate	0.67
SI10.	Macrophyte cover	%	40	0.71
<b>Note : Guidance in undertaking the HSI is available at</b>			<b>HSI score =</b>	<b>0.66</b>
<i>HSI calculation formulae adapted from Rob Oldham</i>			<b>Pond suitability =</b>	<b>average</b>
<i>Rev 0.1</i>				

<b>Habitat Suitability Index (Waterbody 7)</b>					
					<b>SI value</b>
SI1.	Map location	<b>A/B/C</b>		A	1.00
SI2.	Surface area	<b>lengthxwidth</b>		ellipse	
				480	0.96
SI3.	Dessication rate	<b>never/rarely/sometimes/frequently</b>		sometimes	0.50
SI4.	Water quality	<b>good/moderate/poor/bad</b>		bad	0.01
SI5.	Shade	% of margin shaded 1m from bank		0	1.00
SI6.	Waterfowl	<b>absent/minor/major</b>		absent	1.00
SI7.	Fish population	<b>absent/possible/minor/major</b>		absent	1.00
SI8.	Pond density	number of ponds within 1km		12	1.00
SI9.	Terrestrial habitat	<b>good/moderate/poor/isolated</b>		moderate	0.67
SI10.	Macrophyte cover	%		5	0.36
<b>Note : Guidance in undertaking the HSI is available at</b>				<b>HSI score =</b>	<b>0.51</b>
<i>HSI calculation formulae adapted from Rob Oldham</i>				<b>Pond suitability =</b>	<b>below average</b>
<i>Rev 0.1</i>					

<b>Habitat Suitability Index (Waterbody 9)</b>					
					<b>SI value</b>
SI1.	Map location	<b>A/B/C</b>		A	1.00
SI2.	Surface area	<b>lengthxwidth</b>		ellipse	
				5,600	0.21
SI3.	Dessication rate	<b>never/rarely/sometimes/frequently</b>		never	0.90
SI4.	Water quality	<b>good/moderate/poor/bad</b>		moderate	0.67
SI5.	Shade	% of margin shaded 1m from bank		30	1.00
SI6.	Waterfowl	<b>absent/minor/major</b>		minor	0.67
SI7.	Fish population	<b>absent/possible/minor/major</b>		minor	0.33
SI8.	Pond density	number of ponds within 1km		10	1.00
SI9.	Terrestrial habitat	<b>good/moderate/poor/isolated</b>		moderate	0.67
SI10.	Macrophyte cover	%		20	0.51
<b>Note : Guidance in undertaking the HSI is available at</b>				<b>HSI score =</b>	<b>0.63</b>
<i>HSI calculation formulae adapted from Rob Oldham</i>				<b>Pond suitability =</b>	<b>average</b>
<i>Rev 0.1</i>					



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