



9.8 GREAT CRESTED NEWT



West Sussex County Council

A29 REALIGNMENT

Great crested newt survey report



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Great crested newt survey report

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EXECUTIVE SUMMARY

West Sussex County Council (WSCC) commissioned WSP to undertake an assessment to establish the presence or likely absence of great crested newt *Triturus cristatus* in relation to the realignment of the A29 in Arun District, West Sussex, in two distinct phases. This report considers Phase 1, which would see the construction of a new single carriageway to the south of Eastergate Lane, connecting the A29 Fontwell Avenue to the B2233 Barnham Road via a new junction.

A Preliminary Ecological Appraisal completed by WSP in 2018 identified suitable terrestrial and aquatic habitats for great crested newt within the Site. A Survey Area extending to a 500m radius from the Site boundary identified five water bodies. These five water bodies were subject to a Habitat Suitability Index assessment. Four water bodies were found to be suitable for breeding great crested newt. One water body appeared to remain dry throughout the great crested newt breeding season, making it unsuitable for great crested newt and this water body was therefore discounted from further survey.

A presence/likely absence survey in the form of eDNA sampling was completed at each of the four water bodies. eDNA samples were subsequently analysed and a negative result was returned, indicating that great crested newts are likely absent from all four water bodies.

It is concluded that great crested newts are likely absent from water bodies within the Survey Area and therefore, there are no known legal or planning constraints to development of the Site in relation to the species. No specific recommendations for avoidance, mitigation and enhancement measures are made in relation to great crested newt.

INTRODUCTION

1.1 PROJECT BACKGROUND

- 1.1.1. West Sussex County Council (WSCC) is seeking to undertake the realignment of the A29 in Arun District, West Sussex, in two distinct phases. Phase 1 would see the construction of a new single carriageway to the south of Eastergate Lane, connecting the A29 Fontwell Avenue to the B2233 Barnham Road via a new junction. The new carriageway will also feature a 3m wide cycleway and footpath, a 2.5m central island, four uncontrolled crossings and potential noise barriers. This report considers only the Phase 1 works described above, hereafter referred to as the 'Proposed Development'. The location of the Proposed Development, hereafter referred to as 'the Site', is shown on Figure 1 by a red line boundary.
- 1.1.2. It is understood that WSCC is aiming to submit a detailed planning application for the Proposed Development, supported by an Environmental Statement.
- 1.1.3. Phase 2 of the proposed A29 realignment, for land south of Barnham Road, is currently in the early stages of the design process and will be subject to a separate planning application.

1.2 ECOLOGICAL BACKGROUND

- 1.2.1. A Preliminary Ecological Appraisal (PEA) of the Proposed Development was completed in September 2018 (WSP, 2018). The PEA identified suitable terrestrial and aquatic habitats within or surrounding the Site. The PEA proposed that a Habitat Suitability Index (HSI) assessment should be undertaken, followed by a presence/likely absence survey of water bodies suitable for breeding great crested newt *Triturus cristatus*.

1.3 BRIEF AND OBJECTIVES

- 1.3.1. WSCC commissioned WSP to:
- undertake a HSI assessment of water bodies on the Site and within 500m of the Site boundary to assess their suitability as aquatic habitat for great crested newt and determine if further survey was required; and
 - complete an environmental DNA (eDNA) survey to determine the presence or likely absence of this species from water bodies providing suitable habitat on the Site and within 500m of the Site.
- 1.3.2. The results of this survey, and subsequent recommendations, are included within this report.

2 METHODS

2.1 DESK STUDY

- 2.1.1. An ecological desk study was completed as part of the PEA by WSP in 2018. The results of this desk study were considered valid at the time of writing as little time had passed between the PEA and the current survey, in alignment with best practice guidelines (CIEEM 2019). As such, no repeat desk study was undertaken to inform this report.
- 2.1.2. As part of the desk study, records of protected and noteworthy species, including great crested newt, were searched for within 2km of the centre of the Site, hereafter referred to as the 'Study Area'. Records of European Protected Species Mitigation Licence (EPSML) applications for great crested newt were searched for within the 2km Study Area using Natural England's MAGIC map application (Natural England 2019). Records were mapped and are shown on Figure 2. Only records from the last ten years were considered relevant.

2.2 HABITAT SUITABILITY INDEX (HSI) ASSESSMENT

- 2.2.1. All water bodies identified within the Site boundary and within a 500m radius of the Site boundary (hereafter referred to as the 'Survey Area') to which access was possible, were assessed for their suitability to support great crested newts, using the standard HSI assessment method (ARG UK, 2010, based on Oldham et al. (2000)). Strongly flowing water bodies such as streams or rivers were excluded from the assessment as these are typically unsuitable for great crested newt. Water bodies were identified using 1:25,000 OS mapping; this was also cross referenced against aerial photography.
- 2.2.2. Water bodies were assessed and scored on ten key variables which are known to influence breeding populations of great crested newts, in accordance with standard methods (ARG UK, 2010). These variables are:
- geographic location;
 - water body area;
 - water body permanence;
 - water quality;
 - water body shading;
 - impact of waterfowl;
 - fish stocks;
 - number of water bodies within 1km;
 - terrestrial habitat around the water body; and
 - macrophyte cover of the water body.
- 2.2.3. Scores for each of the above variables were used to calculate an overall HSI value for each water body. This was then cross referenced with the guidelines (ARG, 2010) to assign the pond to one of five suitability categories, poor, below average, average, good or excellent. Index calculation is not a failsafe method of identifying whether a water body supports great crested newts or not; therefore, professional judgement and availability of records of great crested newt in the locality has also been used to inform the requirement for further survey.

2.3 PRESENCE/LIKELY ABSENCE SURVEY

- 2.3.1. All water bodies found to provide suitable habitat for great crested newts from the HSI assessment, to which access was possible, were subject to further survey to determine the presence or likely absence of this species. Water body 5 (Figure 3) was not included within the presence/likely absence survey because it contained no water at the time of survey and is considered unsuitable for breeding great crested newt.
- 2.3.2. The presence/likely absence survey comprised a single visit to complete eDNA sampling. The method follows best practice methods as endorsed by DEFRA (Freshwater Habitats Trust 2015 and Biggs *et al.* 2014), and uses sterile equipment to obtain water samples which are then sent for subsequent analysis in a laboratory. The laboratory used for this project was:
- NatureMetrics Ltd, CABI site, Bakeham Lane, Egham, Surrey, TW20 9TY.
- 2.3.3. Samples were collected in satisfactory weather conditions. Periods of heavy rain were avoided as this would have increased the risk of cross-contamination. Samples of water were taken from twenty locations around the perimeter of each water body, evenly spaced where possible, ensuring that the sediment was not disturbed.

2.4 DATES OF SURVEY AND PERSONNEL

- 2.4.1. HSI assessment can be completed at any time of year. eDNA sampling was completed within the period accepted by Natural England for great crested newt mitigation licence applications (15 April to 30 June) and analysis of the samples was completed on 18 April 2019. The date for each survey visit is displayed in Table 2-1 below.

Table 2-1 – Survey dates and personnel

Survey type	Date
HSI assessment	04 April 2019
eDNA sampling	15 April 2019

- 2.4.2. eDNA sampling was led by an experienced and licenced surveyor (Natural England survey licence number: 2015-10300-CLS-CLS), with over seven years' experience of ecological survey, including extensive great crested newt survey experience.

2.5 EVALUATION

- 2.5.1. The importance of the Site for great crested newts was evaluated using the CIEEM guidance (CIEEM, 2018). This guidance recommends that the evaluation is made with reference to a geographical frame of reference as follows:

- International and European;
- National (England);
- Regional (South-East England);
- Metropolitan, County (West Sussex), vice county or other local authority-wide area;
- Local (Chichester); and
- Application Site (Survey Area).

- 2.5.2. To inform the assessment in this report the results of the presence/likely absence survey were considered in the context of the distribution and abundance of this species locally and nationally, the quality of aquatic and terrestrial habitat present, and the abundance of this species on other sites. Sites where great crested newt are considered likely to be absent, are considered to be of negligible importance for great crested newt.

2.6 NOTES AND LIMITATIONS

- 2.6.1. It was not possible to access the entire perimeter of all waterbodies during eDNA sampling to take water samples due to dense vegetation or steep banks. In these instances, 20 water samples were taken from areas which were accessible and samples were spaced as evenly around the perimeter as possible, in accordance with best practice guidance (Freshwater Habitats Trust, 2015). As all surveys were completed in accordance with best practice guidelines, restricted access to water level is not considered to place a constraint on the findings of this assessment.

3 RESULTS AND EVALUATION

3.1 DESK STUDY

- 3.1.1. The desk study returned three records of great crested newt within the Study Area, the closest of which is approximately 1.2km east of the Site boundary. Desk study records are displayed on Figure 2.
- 3.1.2. No records of granted great crested newt EPSMLs were returned within the Study Area.

3.2 HSI ASSESSMENT

- 3.2.1. Five waterbodies were identified within the Survey Area and were subject to HSI assessment. The HSI assessment indicated that waterbody 1 was of excellent suitability for great crested newts, waterbody 2 was of poor suitability and water bodies 3, 4 and 5 were of below average suitability, as shown in Table 3-1. Photographs of each water body are shown in Appendix A and HSI calculations are shown in Appendix B.
- 3.2.2. Water bodies 1 and 4 are located approximately 175m south of the Site boundary and the distance between the water bodies is approximately 42m. Water bodies 2 and 3 are located approximately 13m west of the Site boundary and the distance between these water bodies is approximately 48m. Water body 5 lies partially within the Site boundary and is over 250m away from the other water bodies surveyed. Water body locations and HSI results are shown in Figure 3.

Table 3-1 – HSI assessment results summary

Waterbody number	Location (Ordnance Survey grid reference at approximate centre)	HSI score	HSI suitability category	Waterbody Description
1	SU 95126 04914	0.82	Excellent	A linear water body located between an industrial area and arable fields with terrestrial habitat connectivity to water body 4. Shallow water level and dense aquatic vegetation present.
2	SU 94621 06048	0.3	Poor	A rectangular, lined pond within a residential garden. Limited marginal vegetation and presence of waterfowl observed. Terrestrial habitat connectivity to water body 3.
3	SU 94594 05994	0.5	Below Average	A small, circular, lined pond within a residential garden. Netting covering pond to protect fish present. Terrestrial habitat connectivity to water body 3.

Waterbody number	Location (Ordnance Survey grid reference at approximate centre)	HSI score	HSI suitability category	Waterbody Description
4	SU 94594 05994	0.58	Below Average	A linear water body at the edge of an arable field, with terrestrial habitat connectivity to water body 1
5	SU 95206 05354	0.52 ¹	Below Average	A linear, steep-sided, ditch adjacent to scrub and an area of semi-improved neutral grassland habitat. Trees noted growing in centre.

3.3 PRESENCE/LIKELY ABSENCE SURVEY

- 3.3.1. eDNA sampling was completed on waterbodies 1,2,3 and 4. Waterbody 5 was dry at the time of the HSI assessment and eDNA sampling visits. It is considered likely that waterbody 5 remains dry during the great crested newt breeding season and it is therefore concluded that great crested newts are absent from waterbody 5. eDNA data and results are shown in Appendix B.
- 3.3.2. Analysis of the eDNA samples produced a negative result for great crested newt DNA within all four water bodies. Therefore, it is concluded that great crested newts are likely absent from the Survey Area and no further surveys were undertaken.

3.4 EVALUATION OF THE SITE FOR GREAT CRESTED NEWTS

- 3.4.1. The negative eDNA analysis results indicate that great crested newts are absent from water bodies within the Survey Area. While the Site does contain suitable terrestrial habitats for great crested newt, it is considered unlikely that the species is present within these terrestrial habitats due to their likely absence from water bodies within 500m of the Site. It is therefore concluded that the Site is of negligible importance for great crested newt.

¹ Water body 5 contained no visible water at the time of survey and therefore certain factors influencing the HSI score, such as water quality, are taken as an estimate.

4 IMPLICATIONS FOR DEVELOPMENT

- 4.1.1. The survey results indicate that great crested newts are likely absent from the Site; therefore, there are no known legal or planning constraints in relation to this species. The legislation and national planning policy listed beneath is included for information only.

4.2 LEGAL COMPLIANCE

- 4.2.1. Great crested newts are afforded a high level of protection under the Conservation of Habitats and Species Regulations 2017 (as amended) (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.

- 4.2.2. 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.

- 4.2.3. Due to the high level of protection afforded to great crested newts and their habitat, mitigation for this species is governed by a strict licensing procedure administered by Natural England (normally, planning permission must be obtained before a licence can be sought).

- 4.2.4. The great crested newt is also listed as a Species of Principal Importance (SPI) for the Conservation of Biodiversity in England in accordance with Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Under Section 40 of the NERC Act (2006) public bodies (including local planning authorities) have a duty to have regard for the conservation of SPI when carrying out their functions, including determining planning applications.

4.3 PLANNING POLICY COMPLIANCE

- 4.3.1. At the national level the National Planning Policy Framework (2019) forms the basis for planning system decisions with respect to conserving and enhancing the natural environment, including great crested newts. The ODPM circular 06/2005 also provides supplementary guidance, including confirmation that '*the presence of a protected species is a material consideration when a planning authority is considering a development proposal*'.

- 4.3.2. 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:*

- ...recognising the wider benefits of ecosystem services; and

- *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...*

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

- *'- if significant harm resulting from a development cannot be avoided...adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
- *- ...opportunities to incorporate biodiversity in and around developments should be encouraged;*
- *- 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...'*

5 CONCLUSIONS AND RECOMMENDATIONS

- 5.1.1. Five water bodies were identified and subject to HSI assessment. One (waterbody 5) was found to be dry and unsuitable for breeding great crested newt. eDNA testing of the remaining four waterbodies returned negative results for great crested newt presence within the Survey Area. It is concluded that great crested newts are likely absent from the Site and therefore, there are no known legal or planning constraints to development of the Site in relation to the species. No specific recommendations for avoidance, mitigation and enhancement measures are made in relation to great crested newt.
- 5.1.2. In addition to the aquatic habitats surveyed, areas of suitable terrestrial habitat such as grassland, woodland, tall ruderal and scrub are present within the Survey Area and offer opportunities for great crested newt to forage, disperse and hibernate. Three desk study records were returned of great crested newt within 2km of the Site. It is therefore possible that great crested newt may colonise the Survey Area in the future. The results of this assessment are valid for approximately two years and a repeat assessment should be completed should works continue after this time.

6 REFERENCES

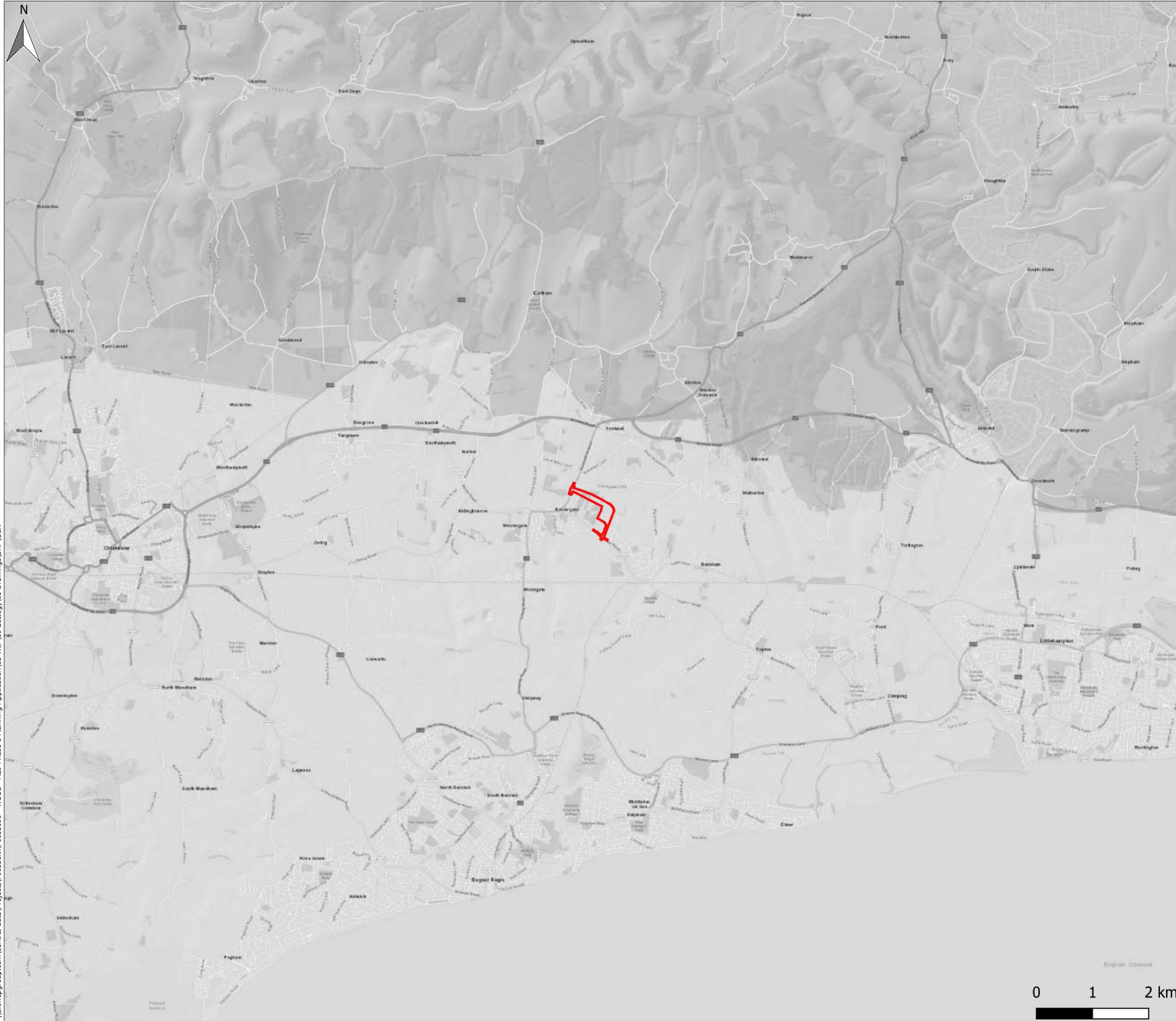
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7 FIGURES

Figure 1 - Site location

Figure 2 - Desk study records

Figure 3 - HSI results



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LEGEND:

 Site boundary

STATUS: **FINAL**



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PROJECT: **A29 Realignment**

TITLE: **Site location**

SCALE @A3: 1:100000	DRAWN: AP	APPROVED: VD
VERSION: 1.0	DATE: 20/11/19	DATE: 20/11/19
PROJECT No: 70055091	DRAWING No: Figure 1	





- LEGEND:**
- Site boundary
 - 2km Study Area
 - Great crested newt record

STATUS: **FINAL**



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CLIENT: **West Sussex County Council**

PROJECT: **A29 Realignment**

TITLE: **Desk study records**

SCALE @A3: 1:30000	DRAWN: AP	APPROVED: VD
VERSION: 1.0	DATE: 20/11/19	DATE: 20/11/19
PROJECT No: 70055091	DRAWING No: Figure 2	



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LEGEND:

- Site boundary
- 500m Survey Area

Waterbodies and HSI category:

- Below Average
- Excellent
- Poor

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TITLE:	HSI results	
SCALE @A3:	DRAWN:	APPROVED:
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VERSION:	DATE:	DATE:
1.0	20/11/19	20/11/19
PROJECT No:	DRAWING No:	
70055091	Figure 3: Page 1	

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LEGEND:

- Site boundary
- 500m Survey Area

Waterbodies and HSI category:

- Below Average
- Excellent
- Poor

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TITLE:	HSI results
SCALE @A3:	1:7013
VERSION:	1.0
PROJECT No:	70055091
DRAWN:	AP
DATE:	20/11/19
DRAWING No:	Figure 3: Page 2
APPROVED:	VD
DATE:	20/11/19

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Appendix A

WATER BODY PHOTOGRAPHS



Table A-1 – Water body photographs

Water body number	Photograph
1	
2	

Water body number	Photograph
3	
4	
5	No photograph available due to technical error

Appendix B

SURVEY DATA





Table B-1 – HSI calculation data

Pond Name:		WB1	WB2	WB3	WB4	WB5
Approximate Ordnance Survey Grid Reference at centre:		SU 95126 04914	SU 94621 06048	SU 94594 05994	SU 95206 04834	SU 95206 05354
HSI variables	HSI variable description	HSI score	HSI score	HSI score	HSI score	HSI score
1	Geographic location	1	1	1	1	1
2	Pond area	0.8	0.1	0.05	0.4	1
3	Pond permanence	0.5	0.9	0.9	0.9	0.1
4	Water quality	0.67	0.33	0.33	0.33	0.33
5	Shade	1	0.2	1	0.4	0.2
6	Water fowl effect	1	0.01	1	1	1
7	Fish presence	1	0.33	0.33	0.67	1
8	Pond Density	0.82	1	0.82	0.82	1
9	Terrestrial habitat	0.67	0.67	0.67	0.33	0.67
10	Macrophyte cover	0.9	0.4	0.4	0.5	0.3
HSI Score:		0.82	0.30	0.50	0.58	0.52
Pond suitability:		Excellent	Poor	Below Average	Below Average	Below Average



Table B-2 – eDNA data

Waterbody number	Approximate area of waterbody perimeter accessible (%)	Water turbidity (0-5 ²)	Vegetation cover (0-5 ³)	Number of inflows to water body	eDNA kit reference number	eDNA test result	Inhibition or degradation within samples affecting result? Yes/No
1	100%	2	4	1	19-0274	Negative	No – Result is conclusive
2	100%	5	0	1	19-0273	Negative	No – Result is conclusive
3	60%	2	0	1	19-0249	Negative	No – Result is conclusive
4	15%	3	5	1	19-0250	Negative	No – Result is conclusive

² 0= completely clear – 5 = very turbid

³ 0 = no vegetation obscuring survey – 5= water completely obscured by vegetation



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