



Ref: A085519-3

Date: 14th June 2017

Craig Hatton
Persimmon Homes Thames Valley
Persimmon House
Knoll Road
Camberley
Surrey
GU15 3TQ

Dear Craig,

RE: Dapper's Lane, Angmering – Great Crested Newt eDNA Results

Please find below the results from the great crested newt (GCN) eDNA water sampling carried out at Dapper's Lane, Angmering on 18th April 2017.

Scope of Works

WYG was commissioned by Persimmon Homes to complete GCN eDNA water sampling at Dapper's Lane, Angmering (the 'site'). The site is located to the north of the village of Angmering, immediately east of Dapper's Lane and is centred on Ordnance Survey National Grid Reference TQ 07098 05176. The site is approximately 3.7 ha in area and falls within Arun District Council Local Planning Authority (LPA). The area of land within the site includes a series of grazed grassland paddocks bound by hedgerows with trees, and occasional tall ruderal and scrub patches. Adjacent to the northern boundary is an area of broadleaved woodland, and a footpath bounds the western side of the site, with playing fields beyond. To the east is Dapper's Lane and agricultural land, and to the south lie houses in the village of Angmering.

Ecological Background and Development Proposals

WYG was commissioned by Persimmon Homes in August 2016 to complete an update a Preliminary Ecological Appraisal consisting of a Desk Study and an Extended Phase 1 Habitat Survey at the site (WYG Report Reference: A085519-3 Preliminary Ecological Appraisal, December 2016). A previous Phase 1 survey and report was completed in 2014 by WYG. Results from the update survey found that there are three waterbodies which have the potential to support GCN which scored 'average' or 'good' under a HSI (Habitat Suitability Index) Oldham et al. (2000). To ascertain whether GCN are present in these ponds, eDNA water sampling of ponds WB2, WB13 and WB14a and b was recommended (see Appendix A for water body locations).



Methodology

Environmental DNA (eDNA) water sampling was carried out on **WB2** (see Appendix A). The methodology followed Natural England's accepted protocol (WC1067 Appendix 5. Technical advice note for field and laboratory sampling of great crested newt environmental DNA). The sampling was carried out on 18th April 2017 by two great crested newt licenced ecologists, Senior Ecologist Vivienne Greenough (MCIEEM¹, MSc, BSc, GCN class licence 2015-16380-CLS-CLS) and Consultant Ecologist Rosie Pope (GCIEEM², Msc, BSc). Upon sampling, the water samples were sent by courier for analysis.

Limitations

The survey was carried out within the optimum time of year for GCN eDNA sampling (mid-April to end of June) and during optimal weather conditions.

Access was not granted for **WB13** and **WB14a and b** (see Figure 1, Appendix A), which are the ponds located adjacent to the northern site boundary within the grounds of Heron's Farm.

Survey Results

The grassland within the site is considered to be of **low** potential to support great crested newts during their terrestrial phases, though (if present), they could potentially disperse across this habitat. The hedgerows, ditch and scrub habitats around the boundary of the site have a higher value for GCN.

Results from the eDNA sampling were returned on Thursday 27th April 2017. WB2 was found to be **negative** for GCN DNA (see Appendix B) therefore it can be assumed that GCN are absent from this pond.

It isn't possible to definitively state that GCN are absent from WB13 and WB14a and b. However, the fact that GCN are absent from WB2, does potentially make it more likely that GCN would be absent from WB13 and WB14a and b.

Taking the above into account, GCN are considered likely to be absent from the local area.

¹ Full member of the Chartered Institute of Ecology and Environmental Management

² Graduate member of the Chartered Institute of Ecology and Environmental Management



Recommendations

GCN (including the habitat that this species uses) receive comprehensive protection under the Conservation of Habitats and Species Regulations 2010 (as amended), the Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way Act 2000.

Access was only permitted to one of the three water bodies recommended for GCN survey. The eDNA results for the one water body confirmed that GCN were absent.

Although it is considered unlikely that GCN would be present within WB13 and 14a and b, their presence within these ponds and within the site cannot be discounted entirely. As such, a precautionary method to habitat clearance is advised, to be completed under a non-licensed method statement, as detailed below.

Method Statement:

If any scrub, hedgerow or tall grass vegetation needs to be removed, the following should be adopted:

- ✧ Clearance of dense scrub / hedgerow / tall grassland overseen by a licensed great crested newt ecologist;
- ✧ The clearance of vegetation should be undertaken during the period when amphibians are active, from March to October inclusive; and
- ✧ Vegetation clearance should be carried out in two stages. Firstly, the vegetation should be cut down to no less than 30cm. After a 24 hr period, the remaining vegetation to be strimmed down to ground level or then removed via a toothed bucket, again under ecological supervision.

The grassland within the site is currently grazed by horses and is kept at a short sward height, making this habitat of low value to GCN. Providing the grassland is kept short (either by grazing or mowing), the clearance of the grassland can be done without ecological supervision.

In the unlikely event that a great crested newt is found during the habitat clearance, all works must stop immediately whilst the advice of Natural England or a suitably experienced and licensed ecologist has been sought. Any common amphibians encountered during clearance operations can be removed from the immediate vicinity of the works and placed in an area outside the development footprint where they will not be harmed. The most appropriate location to move amphibians to would be the woodland to the north of the site.



Please do not hesitate to contact me if you have any questions.

Yours sincerely,



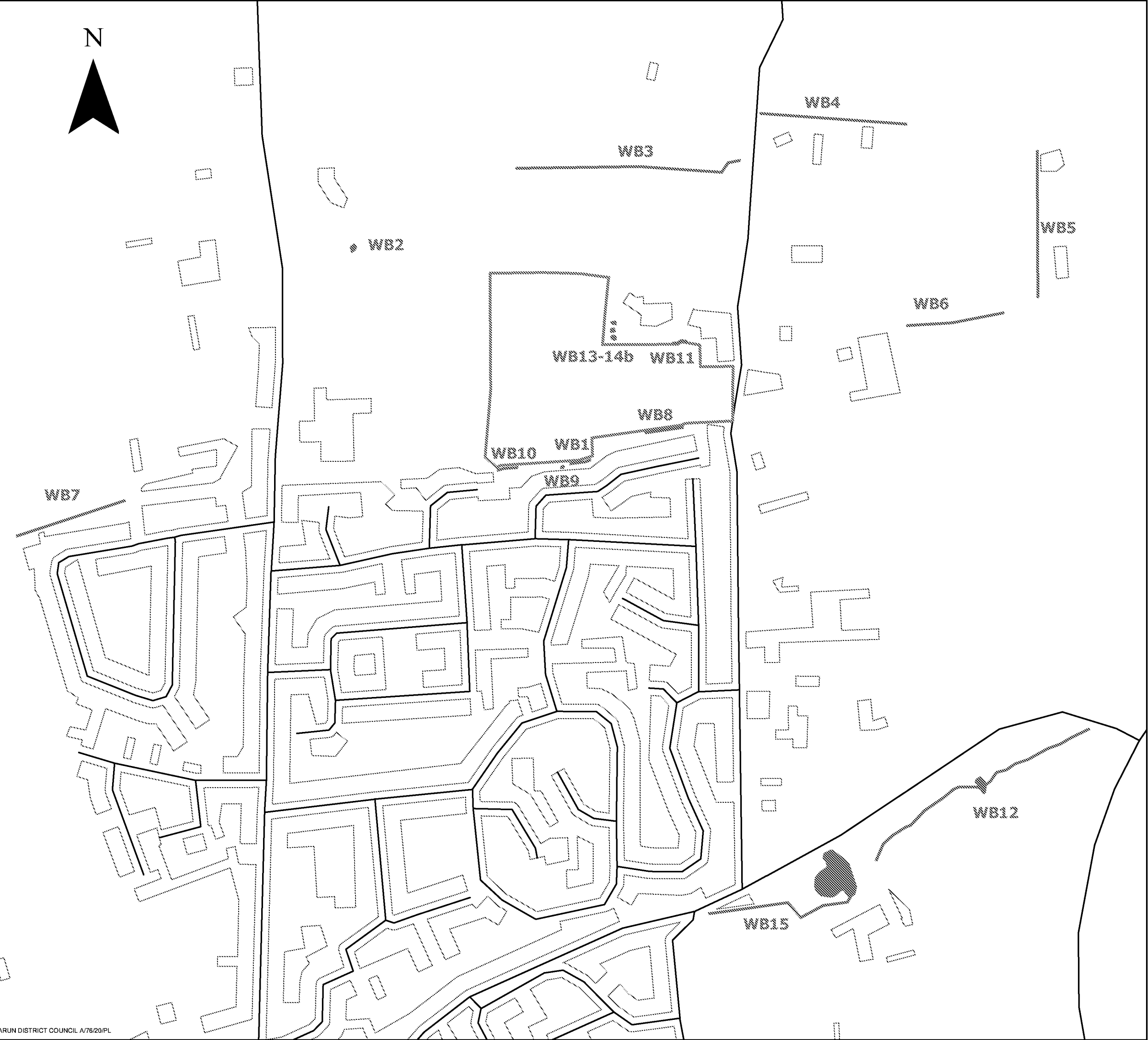
Vivienne Greenough MCIEEM
Senior Ecologist
for and behalf of WYG

Tamsin Clark MCIEEM
Associate Ecologist



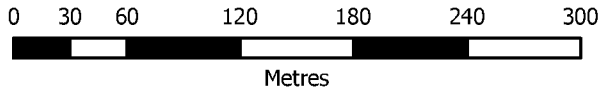
Appended: Appendix A: Waterbody Location Plan

Appendix B: eDNA GCN results



Legend

- Survey Area Boundary
- Waterbody



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Sheet Size: **A3** Scale of Original: **1:4,000**

Client:
Persimmon Homes

Project:
Dapper's Lane, Angmering

Title:
Waterbody Location Plan

Office: 4594	Project No: A085519-3	Figure No: 3
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DNA Analysis Report - Commercial in Confidence



Customer: WYG
Address: Arndale Court
Arndale Centre
Leeds
West Yorkshire
L26 2UJ
Contact: Vivienne Greenough
Email: vivienne.greenough@wyg.com
Tel: 01483 579098
Report date: 27-Apr-2017
Order Number: GCN17-0367
Samples: Pond Water
Analysis requested: Detection of Great Crested Newt eDNA from pond water.

Thank you for submitting your samples for analysis with the Fera eDNA testing service. The details of the analysis are as follows:

Method:

The method detects pond occupancy from great crested newts (GCN) using traces of DNA shed into the pond environment (eDNA). The detection of GCN eDNA is carried out using real time PCR to amplify part of the cytochrome 1 gene found in mitochondrial DNA. The method followed is detailed in Biggs J., et al, (2014). Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford.

The limits of this method are as follows: 1) the results are based on analyses of the samples supplied by the client and as received by the laboratory, 2) any variation between the characteristics of this sample and a batch will depend on the sampling procedure used. 3) the method is qualitative and therefore the levels given in the score are for information only, they do not constitute the quantification of GCN DNA against a calibration curve, 4) a 'not detected' result does not exclude presence at levels below the limit of detection.

The results are defined as follows:

- Positive:** DNA from the species was detected.
eDNA Score: Number of positive replicates from a series of twelve.
Negative: DNA from the species was not detected; in the case of negative samples the DNA extract is further tested for PCR inhibitors and degradation of the sample.
Inconclusive: Controls indicate degradation or inhibition of the sample, therefore the lack of detection of GCN DNA is not conclusive evidence for determining the absence of the species in the sample provided.

DNA Analysis Report - Commercial in Confidence



CustomerReference	Fera Reference	GCN Detection	GCN Score	Inhibition	Degradation
WB2 DAPPERS LANE, ANGMERING	S17-003850	Negative	0	No	No

The results indicate that eDNA for great crested newts was detected in three of the samples and in the remaining samples eDNA was not detected (as detailed in the table above). However, with samples S17-003832 and S17-003849 we detected degradation of the internal control. Therefore, due to the risk of any eDNA also being degraded resulting in a false negative, we have issued an inconclusive result. Analysis was conducted in the presence of the following controls: 1) Extraction blank, 2) appropriate positive and negative PCR controls for each of the TaqMan assays (GCN, Inhibition, and Degradation). All controls performed as expected.

This test procedure was developed using research funded by the Department of Environment, Food and Rural Affairs, and was performed under the conditions of licensing arrangements with Applied Biosystems and patent rights owned by F. Hoffman-La Roche Ltd.

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