

12th June 2019

Michael Bish, C/o Steve Keet
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West Sussex
PO18 0LA

Dear Michael

RE: Habitat Suitability Index and eDNA tests at Wings Nursery

The Ecology Consultancy Ltd. were commissioned by Gareth Giles acting on behalf of ADM architects to conduct Habitat Suitability Index (HSI) surveys on the four waterbodies within 500m of the site boundary of Wings Nursery, a proposed development in Woodgate, West Sussex, PO20 3SU in May 2019, to help inform a planning application. TEC were also commissioned to conduct eDNA surveys on the two ponds that returned the highest HSI scores, and therefore had the highest suitability to support great crested newts.

I am writing to summarise the status of the ecological works that took place at Wings Nursery on the 23rd May 2019.

Site Description

The site is located within the hamlet of Woodgate in West Sussex, approximately 4.8 km north of Bognor Regis and 5.9 km east of Chichester (Ordnance Survey Grid Reference for the centre of the site: SU 93718 04134). The site is approximately 2.4 ha in area and consists of areas of grassland, scrub and hardstanding with scattered trees on site and along the boundary as well as a large glasshouse building situated in the southeast section.

Four waterbodies are located within 500m of the site boundary, and these are detailed in Appendix 1 below.

Previous Surveys

A Preliminary Ecological Appraisal was carried out by Arbeco Ltd in September 2017 to inform the outline planning proposal for 50 new residential properties on site. This report concluded that the habitats on site had the potential to support several protected species including breeding birds, great crested newts, reptiles, and foraging bats. A desk based study was conducted using records from the Sussex Biological Records Centre and concluded that great crested newts had been recorded 470m north west of the site within a small reservoir.

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Habitat Suitability Index and eDNA surveys were undertaken by Rosanna Marston BSc (Hons) MSc and Perry Hockin BSc (Hons) FDSoc. Rosanna is a holder of a Class 1 licence to survey great crested newts (reference 2015-17855-CLS-CLS).

HSI Survey

An Ordnance Survey map search identified four significant water bodies within 500m of the site. An HSI assessment of these four ponds (Appendix 1, Figure 1) based on criteria developed by Oldham *et al.* (2000) was carried out on the 23rd May 2019.

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.

The results of the HSI assessment 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 in Table 1.

Table 1: Habitat Suitability Index categories

Probability of ponds supporting great crested newt	HSI score
Poor	Below 0.5

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Below average	0.5-0.59
Average	0.6-0.69
Good	0.7-0.79
Excellent	Above 0.8

Great crested Newts Environmental DNA Survey

An eDNA survey of Pond 1 was undertaken on 23rd May 2019 as it was deemed the most suitable to support GCN. The survey followed the methodology of Biggs et al. (2014), which is an appendix of the report published by Defra into the eDNA testing for great crested newts and is the only methodology accepted by Natural England for this technique. The eDNA surveys were carried out for these ponds and included the following sampling information:

- site name;
- nearest settlement;
- county;
- time between receipt of sampling kit and date of sampling;
- date of sampling;
- personnel collecting sample;
- Ordnance Survey grid reference (12 figures);
- percentage of pond perimeter accessible for survey;
- data on inflows (and whether these were wet or dry at time of survey);
- data on any great crested newts recorded on survey; and
- information on any difficulties experienced during sample collection.

In accordance with current guidance, the following sampling procedure for eDNA analysis was applied in the field:

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- At each pond, 20 samples of 30ml each were taken from around the pond, as equally spaced as possible. The locations of the samples were chosen to sample the entire margin of the pond, with areas targeted where there may be newt egg laying and/or displaying activities.
- The sample ladle was stirred gently in the pond before the sample was retrieved in order to mix the water column, with care being taken not to stir up the sediment.
- All 20 samples were emptied into a Whirl-Pack bag, which was then sealed and mixed for 10 seconds.
- Upon mixing, approximately 15ml of the sample was transferred from the Whirl-Pack bag into each of the six sterile tubes, which contained 35ml of ethanol to preserve the eDNA, using a sterile pipette. The sample was stirred between filling each tube to homogenize the water.
- Once filled to 50ml, each tube was mixed for 10 seconds to mix the sample and preservative.
- Samples were returned to the refrigerator and stored at 2-4°C.

The following precautions were adhered to, which ensured that no cross contamination of samples occurred:

- sterile gloves were worn by all surveyors at all times during the sampling process;
- gloves were replaced with a new pair of gloves between sample collection from the pond and pipetting into the sub-sampling tubes; and
- samples were collected without the surveyor entering the water (i.e. the surveyors stood on the pond bank or edge).

The samples were each analysed at a laboratory run by Naturemetrics. In accordance with Natural England's published protocol (Biggs et al., 2014).

Results

Pond 1 is a small reservoir located 470m north west of the site (Grid reference: SU 93315 04577). The reservoir is used as a water dump for a local plant nursery and was bordered on three sides by young willow and bramble, with surrounding terrestrial habitat quality considered to be of moderate suitability to support great crested newt. Surveyors conducted a HSI and eDNA survey of this waterbody, the results of which are detailed in table 2 below.

Pond 2 is a small drainage ditch located 220m north west of the site running east to west parallel to the Brighton to Littlehampton railway (Grid reference: SU 93790 04249). Surveyors were unable to access this waterbody to conduct an HSI or eDNA survey as access permission was declined at the last minute. The surveyors concluded that pond 2 was likely to be dry due to recent weather conditions, time of year, and lack of connectivity to other water sources.

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Pond 3 is a small drainage ditch directly north of the site running north to south parallel to the A29 Lidsey road (Grid reference: SU 93790 04249) and is contiguous with the site boundary at Wings Nursery. Surveyors were able to access this waterbody; however, it was dry due to weather conditions, time of year, and lack of connectivity to other water sources. An HSI survey was conducted, the results of which are detailed in table 1 below, although this is an estimated score due to water quality not being possible to establish.

Pond 4 is a small garden pond 300m to the east of the site (Grid reference: SU 94069 04259). Surveyors were unable to gain access to this pond and concluded that due to lack of connectivity with the site at Wings Nursery it is unlikely that any great crested newts present / likely absent in pond 4 will be affected by proposed works.

No evidence of amphibians was recorded at any of the waterbodies at the time of the surveys.

Table 2: Habitat Suitability Index scores and eDNA test results

Pond Number	HIS Score	Distance	Habitat Suitability	eDNA Result
1	0.78	470m	Good	Positive
2	No access	220m	-	-
3	0.61	0m	Moderate	-
4	No access	300m	-	-

Evaluation and recommendations

The recommendations for mitigation included within the Preliminary Ecological Appraisal report from Arbeco Ltd in 2017 are still applicable to Wings Nursery and should be followed.

An assessment has been made using the Natural England Rapid Risk Assessment tool (Natural England, 2019) with respect to great crested newts. The tool takes account of a number of factors to identify if a development is likely to cause an offence and therefore whether a licence is likely to be required by Natural England prior to the commencement of works. This assessment tool identifies results as either; Red: Offence Highly Likely, Amber: Offence Likely or Green: Offence Highly Unlikely.

As the works will only involve disturbance to 2.4ha of habitat that is more than 250m from a breeding pond, the Rapid Risk Assessment tool returned a green result meaning an offence is highly unlikely. A Natural England mitigation licence is therefore not considered necessary for this species. As great crested newts were confirmed present in Pond 1 however, it is recommended that a precautionary approach is followed regarding the vegetation clearance and demolition works at Wings Nursery, to avoid negative impacts in the unlikely event that individuals are present.

The precautionary approach to working should be as follows:

- All works should be carried out following the guidance laid out in a toolbox talk presented by a licensed and suitably experienced ecologist before works commence. The ecologist will remain on site until they are satisfied that works can proceed in accordance with the recommendations.

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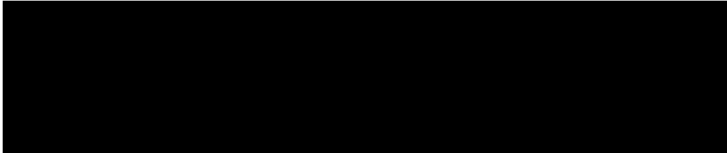
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- In the unlikely event that a great crested newt or any other protected species is found during the works, all activities must cease and The Ecology Consultancy called for advice immediately.
- Hand dismantling of any log or rubble piles on site, and a hand search of any suitable features by the ecologist attending site
- Directional strimming that is staged (i.e. cut to a height of 4 inches in a directional manner, raked, left for two hours to allow individuals to escape, and then cut to ground level). This will reduce the risk of injury to newts and other protected species using the terrestrial habitats on site;
- Special care should be taken when surface stripping and stacking arisings from the demolition of the buildings on site to avoid stacking materials on areas of vegetation where newts may be foraging;
- Vehicles should only be tracked along approved routes that have been cut to ground level and surface stripped;
- Special care should be taken to avoid spilling of environmentally hazardous substances such as diesel; all vehicles will carry a spill kit and workers will be trained in containment of spillages to reduce the risk of polluting nearby watercourses.

I trust that this is of some help, and please do not hesitate to give me a call if you wish to discuss anything further.

Kind regards



Perry Hockin

Assistant Ecologist

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References

Arbeco Ltd. (2017) *ARB995 Wings Nursery PEA Report* Arbeco Ltd.

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

Natural England (2015) *Great Crested newts: Surveys and Mitigation for Development Projects*. Natural England, Peterborough.

Natural England (2019) *GCN Method Statement WML-A14-2*

National Planning Policy Framework (2019) Ministry of Housing, Communities and Local Government, London.

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

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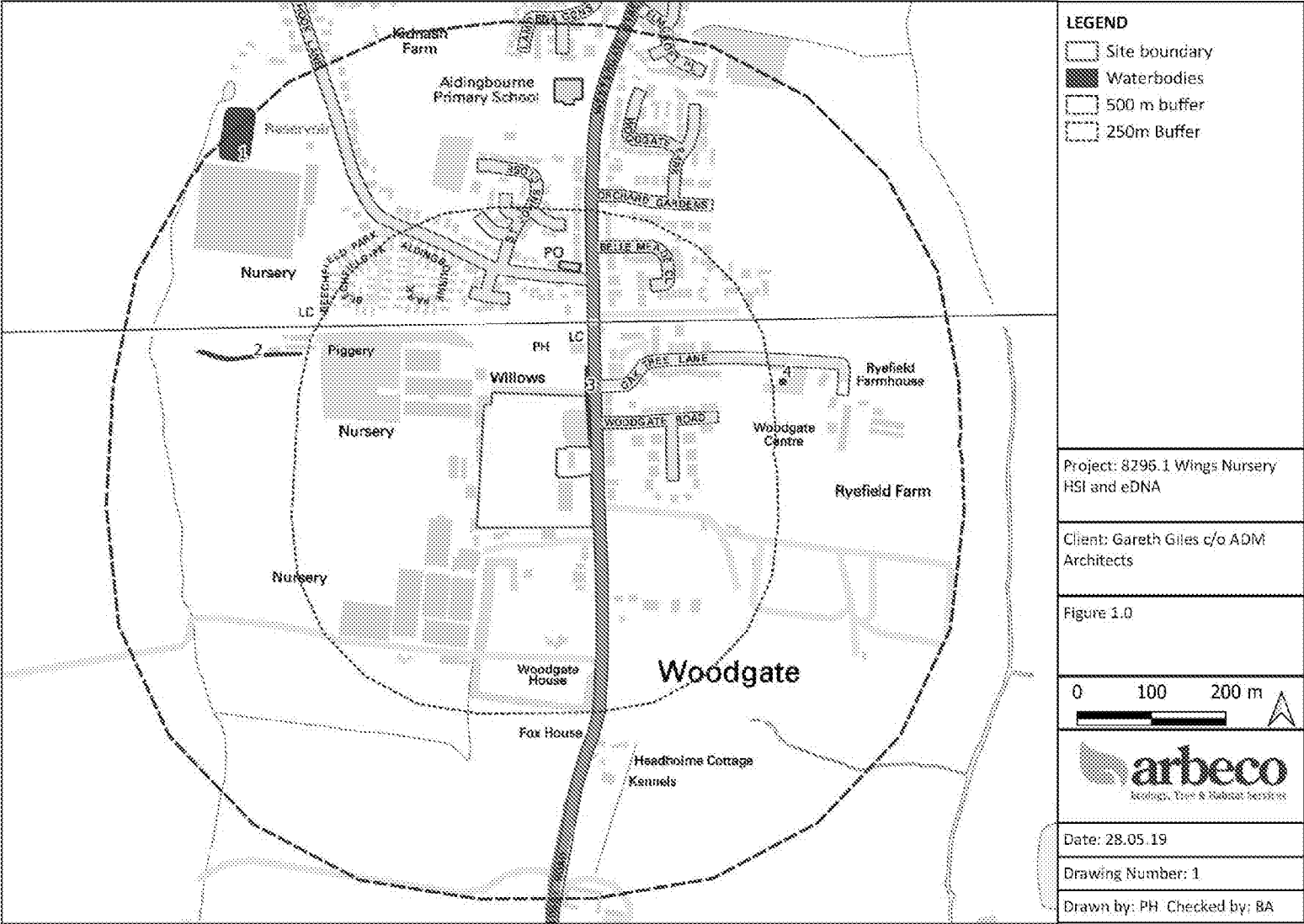
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Appendix 1: Maps



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