

PROJECT:	LD10361 – Appendix 7.2
SUBJECT:	Barnsley West GCN eDNA Survey
DATE:	12th October 2023
PREPARED BY:	Olivia Satur (Ecologist)
REVIEWED BY:	Tim Palmer (Technical Director)

1 INTRODUCTION

- 1.1 Wardell Armstrong LLP was commissioned by Strata Sterling Barnsley West Ltd to undertake great crested net (GCN) environmental DNA (eDNA) surveys in support of a mixed use development scheme, located west of Barnsley, with an approximate central Ordnance Survey (OS) Grid Reference of SE 31778 07075.
- 1.2 The aim of the survey was to update the previously established baseline of eDNA data recorded during surveys carried out by WYG (2021). In 2021, 6 ponds were identified within 500m of the Site’s boundary, of which 2 were accessible for survey (Ponds 1 and 4). In 2023, an additional 2 ponds were identified on Site (Ponds 7 and 8), which were surveyed in addition to Pond 1. Access was not possible for Pond 4 in 2023 due to its location within a residential garden. The location of all ponds is provided on Drawing LD10361/020.

2 METHODS

- 2.1 Suitably qualified ecologists attended Site on 12th May 2023 to carry out eDNA sampling on Pond 1, 7 and 8. Ponds 2 and 3 are linked hydrologically to Pond 1 and so were not separately surveyed. Ponds, 4, 5 and 6 are all located within residential gardens and therefore access for survey was not possible.
- 2.2 Twenty samples of water were taken from different locations around each waterbody, where access permitted. Where each sample was to be collected, a 30ml ladle was used to gently mix the water column before filling the ladle with water and emptying each sample into a collection bag.
- 2.3 Efforts were taken to avoid disturbing sediment whilst taking water samples and shallow water (5-10 cm) was not sampled. Where possible, water samples were collected from pond areas likely to be used by GCN, such as areas of vegetation or open areas used for displaying. Where access to the pond was limited or deemed

unsafe, e.g. due to dense scrub or steep banks, water samples were spread out evenly across the accessible parts of the pond.

- 2.4 The collection bag was then shaken thoroughly to mix the water and DNA contents. A sterile plastic pipette was used to fill six 50ml sample tubes, stirring the water contents between filling each pipette to homogenise the sample. Once filled, all six sample tubes were shaken thoroughly to mix the DNA and preservative, preventing DNA degradation. Water samples were then sent to an approved laboratory for DNA testing.
- 2.5 Following analysis from an approved laboratory, eDNA identifies the presence/likely absence of GCN, to inform whether populations size class assessment surveys are required.

3 RESULTS

- 3.1 Table 1 below provides a summary of the survey results.

Table 1: eDNA survey results

Waterbody Description	Photo	Survey Results 2021	Survey Results 2023
<p>Pond 1 Located within Craven Wood, on the northern half of the Site. At the time of survey, water levels were very low and restricted to the centre of the waterbody. The pond is functionally linked to a stream which runs south-north through the wood, and also links to Ponds 2 and 3 in the north east. The pond contains dense bullrush and willowherb, and is surrounded by dense nettles and bramble scrub.</p>		<p>eDNA: Negative</p>	<p>100% of the waterbody margins were sampled.</p> <p>HIS: 0.48 (poor)</p> <p>eDNA: Negative</p>
<p>Pond 7 Adjacent to the south western boundary of the Site and the M1 motorway. Pond is approximately 30x20m and is a depression in a sheep-grazed field. Waterfowl are present, water turbidity is high and there is no emergent/aquatic vegetation.</p>		<p>Not surveyed in 2021.</p>	<p>100% of the waterbody margins were sampled.</p> <p>HIS: 0.38 (poor)</p> <p>eDNA: Negative</p>

<p>Pond 8 Located directly to the north of a hawthorn hedgerow with a horse-grazed field. Water levels were very low at the time of survey with moderate turbidity. Dense vegetation includes willowherb, bullrush, meadow foxtail, creeping buttercup, bitter dock, cuckoo flower, and nettle. No waterfowl or fish present.</p>		<p>Not surveyed in 2021.</p>	<p>100 % of the waterbody margins were sampled.</p> <p>HSI: 0.48 (poor)</p> <p>eDNA: Negative</p>
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4 CONCLUSIONS

- 4.1 The update surveys confirm the likely absence of great crested newt from site. The lack of access to ponds 5 and 6 inclusive meant that no update surveys could be undertaken however, pond 4 was accessed by WYG in 2021 and the survey results were negative. Ponds 2 and 3 are linked by the stream flowing through Craven Wood, to Pond 1 and hence any GCN populations within any of these waterbodies would likely have been sampled by the survey of Pond 1.
- 4.2 As the survey results confirm the likely absence of this species from site, no further surveys or specific mitigation/licensing is required, although as a precaution it is recommended that the site Ecological Clerk of Works performs a pre-development check of grassland and refugia immediately prior to the onset of any works causing the loss or damage of such habitat. It is also recommended that presence/absence surveys are repeated should there be a delay of 2 years to the onset of habitat clearance works associated with the scheme.



KEY

- Site Boundary
- Waterbody

Watercourse

- Dry
- Wet

Notes:

Boundaries are indicative.

Aerial imagery shown for context purposes only.

	DETAILS	DATE	DRAWN	CHKD	APPRD
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CLIENT

STRATA STERLING BARNSELY WEST LTD

PROJECT

BARNSELY WEST

DRAWING TITLE

WATERBODY LOCATION PLAN

DRG No.	LD10361/020	REV	A
DRG SIZE	A3	SCALE	1:7,500
DRAWN BY	GER	DATE	12/10/2023
CHECKED BY	AD	APPROVED BY	TP

