SURVEY AND ASSESSMENT FOR GREAT CRESTED NEWT (*TRITURUS CRISTATUS*) AND OTHER AMPHIBIAN SPECIES

Land off Wakefield Road, Athersley, Barnsley

Harworth Group

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Field Investigations and Data

Where field investigations have been carried out these have been restricted to a level of detail required to achieving the stated objectives of the work. Where any data supplied by the client or from other sources have been used it has been assumed that the information is correct. No responsibility can be accepted by AES - Ltd for inaccuracies in the data supplied by any other party.

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1.0 INTRODUCTION

1.1 Applied Ecological Services Ltd (AES-LTD) were commissioned by the Harworth Group to undertake a great crested newt and amphibian survey at land at Athersley, Barnsley, South Yorkshire at grid reference SE34760872

1.2 Preliminary results from the Phase 1 Habitat Survey showed that there were features both within the site and within a 500m radius of the site boundary that could support great crested newts and other amphibian species and survey for these species was recommended.

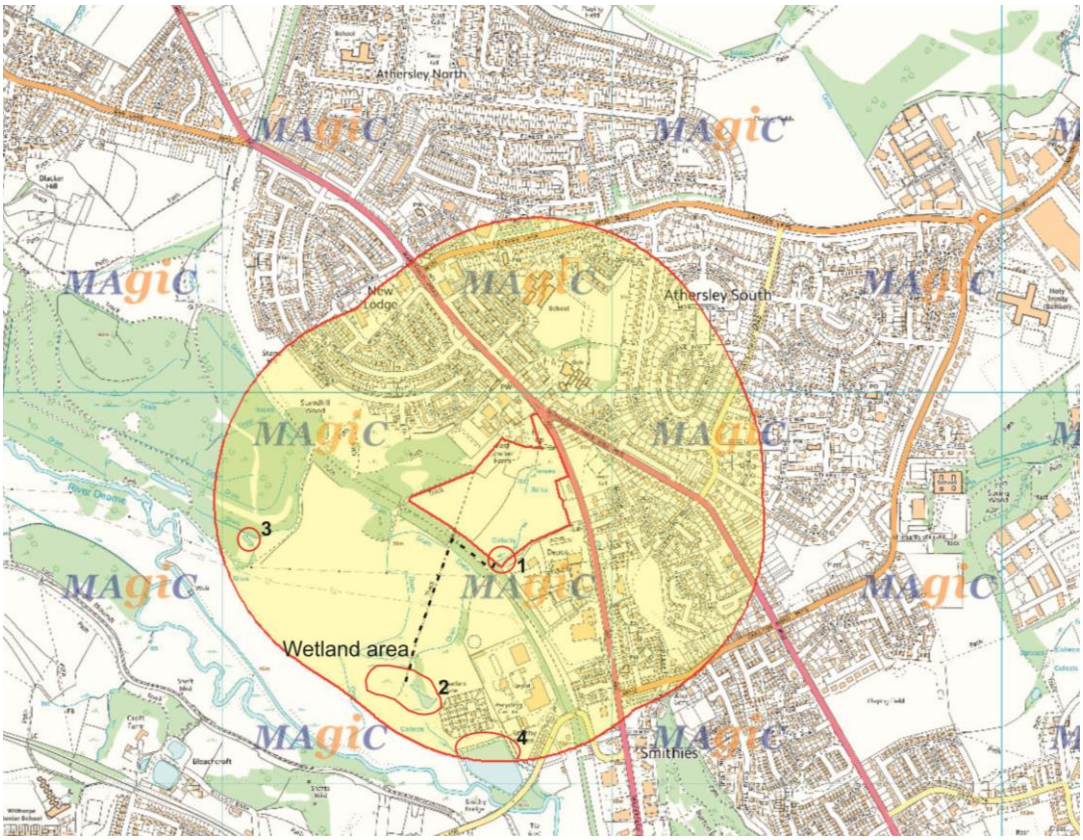

FIGURE 1: Map showing site location and locations of waterbodies within 500m of redline Site boundary

SURVEY AND SITE ASSESSMENT

DATA SEARCH

1.3 Sheffield Biological Records Centre (SBRC) were contacted for records within a 2km radius around the site. SBRC returned 11 records of GCN from around the same location at Barnsley Canal at Wilthorpe Local Wildlife Site. The records were approximately 0.89km to the south west of the site boundary. All the records of GCN are located on the opposite side of the River Dearne to the site, a considerable barrier to the movement of GCN.

1.4 Common toad, common frog and smooth newt are also recorded at the Barnsley Canal at Wilthorpe LWS and from ponds at Darton in the same area. Toad are UK BAP priority species.

LOCAL / REGIONAL STATUS

1.5 Great Crested Newt (*Triturus cristatus*) has had a massive historic decline. There are signs of recent improvements but they remain vulnerable. Good populations are found in Barnsley in at least eight different sites[1].

OBJECTIVES OF SURVEY

1.6 The objectives of the surveys undertaken in 2017 were to:

- Determine the presence of and identify amphibian species in ponds located in and adjacent to the site; and
- To undertake a population size class assessment if the presence of great crested newts was confirmed in or near the site.

SURVEY AREA

1.7 The survey area was the proposed development site (SE34760872, approximate central point) and suitable adjacent habitat within a 500m radius of the site with no major barriers to dispersal. One pond was located within the proposed development site (waterbody 1).

[1] *Barnsley Biodiversity Action Plan http://barnsleybiodiversity.org.uk/amphibians.html*

POND DESCRIPTIONS

1.8 **Waterbody 1**: Pond on site (SE34695 08575) – a triangular shaped medium sized pond in the southern corner of the site. The pond was bordered on its south eastern and south western sides by dense scrub (hawthorn, goat willow and bramble) – it was only accessible from the semi-improved grassland field. The southern half of the pond was covered by dense reedmace *Typha latifolia*. Evidence of poaching by horses evident. Aquatic vegetation included reedmace, curled dock *Rumex crispus*, gypsywort *Lycopus europaeus* and yellow flag iris *Iris pseudacorus*; while marginal vegetation recorded included gypsy wort, crisped dock, creeping buttercup *Ranunculus repens*, and creeping cinquefoil *Potentilla reptans*.

1.9 **Waterbody 2**: Wetland Area (SE 34460 08251) located approximately 388m to the south of the proposed development site – A large wetland complex across a wide area with established vegetation communities dominated by Reedmace and Hard Rush *Juncus inflexus*. The banksides show signs of tipping / dumping of rubbish including barbed wire.

1.10 **Waterbody 3:** Dry (SE 34057 08628) located approximately 465m to the south of the proposed development site. Heavily shaded by adjacent woodland / scrub.

1.11 **Waterbody 4:** A popular stocked fishing lake (Smithie Reservoir, SE 34689 08047) located approximately 462m to the south of the site.

1.12 There are a series of field drains / drainage channels on the OS plan – none of them contained any standing water at the time of survey. The issues within the proposed development site were polluted by effluent and again did not contain standing water.

2.0 METHODS

2.1 Waterbody 1 and waterbody 2 were surveyed for GCN and all other amphibian species. Waterbody 3 was not surveyed because it was dry throughout the survey period and Waterbody 4 was scoped out of the survey effort due to its high fish density. Due to its protected status the survey methodology detailed below concentrates on GCN. Other amphibian species including common toad (UK BAP species), common frog, smooth newt and palmate newt have limited legal protection, but these species were included within the survey results as they add to the biological diversity of a site.

2.2 Standard methodology for surveying for GCN as described in English Nature's *Great crested newt mitigation guidelines* (2001)[2] were followed and are detailed below. Surveys were undertaken in two stages, daytime surveys and evening / night time surveys. Ambient temperatures were recorded from a standard thermometer.

2.3 **Daytime surveys**: involved the visual and physical examination of ponds and adjacent habitat for the presence of suitable spawning areas, egg-laying plants, tadpoles, juveniles, sub-adults and adult amphibians of all species. Potential egg-laying plants were closely inspected for the presence of amphibian eggs. In addition to this, hand searches were made of other suitable areas situated in the survey area that may have been providing temporary refugia for terrestrial based amphibians; Including potential natural refugia. During the hand searching periods, stones, boulders, vegetation, and other materials such as occasional litter were visually inspected on their undersides for the presence of amphibian species. Ambient temperatures were recorded from a standard thermometer as detailed below.

2.5 **Evening surveys**: involved undertaking torchlight surveys at each survey location. The surveyor slowly walked around the water body shining a powerful (one million candle power) lamp through the water surface in a sweeping (side to side) motion. Using this torchlight survey method, amphibians are usually detected in the light beam. This method usually allows sufficient time for the species and often the sex of the individual to be identified. Bottle traps were installed in waterbody 1 (May visits) on the evening of each survey day. Bottle trapping involved setting bottle traps (made from clear 2-litre plastic

[2] English Nature (2001). *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough.

bottles) around each of the pond margins. Traps were laid at a density of one trap every two metres of accessible shoreline. Traps were set at dusk and were left set overnight. Traps were checked and removed before 08:00 hours the following morning.

TIMING

2.6 Surveys were undertaken on the 6th / 7th May, 12th / 13th May, 3rd June and the 23rd June 2017.

WEATHER CONDITIONS

2.7 Throughout the survey period ambient temperatures were recorded on each survey day.

Date	Temperature	Weather conditions
6th / 7th May 2017	10^{0}C	Cloudy, some light drizzle, light wind
12th / 13th May 2017	11^{0}C	Dry, broken cloud, light wind
3rd June 2017	13^{0}C	Clear, gentle breeze
23rd June 2017	18^{0}C	Warm dry, some cloud, breezy

PERSONNEL

2.8 All survey work was undertaken by Jonathan Pounder licensed amphibian worker (2015-18919-CLS-CLS) and David Pounder as support.

CONSTRAINTS

2.9 **Waterbody 1:** Dense scrub on the ponds south east and south western sides meant that access was only possible from the horse grazed semi-improved grassland field. The pond was dry by visit 3.

Waterbody 2: Dominated by typha and hard rush, water levels within the wetland were too shallow to bottle trap.

Waterbody 3: Dry throughout the survey period

Waterbody 4: Not surveyed. Scoped out of survey effort due to its high fish density

3.0 RESULTS

3.1 The table below gives the results of the survey.

Table 2: Presence / absence of amphibian species in ponds

Waterbody Identification	Presence / absence				
	Great crested newt	Smooth newt	Palmate newt	Frog	Toad
1	0	0	0	✓	0
2	0	0	0	✓	✓

✓* Species present; 0* Species unrecorded

3.2 **Pond 1** – Frog tadpoles were seen during the first visit and a small number of bottle traps could be placed in the water, however water levels dropped throughout the survey and the pond was dry by visit 3.

3.3 **Pond 2** – A number of frog and toad tadpoles and froglets / toadlets were found during visits 2 and 3 with a good range of invertebrates. Water levels dropped throughout the survey with access restricted by vegetation growth

4.0 DISCUSSION

PRESENCE / ABSENCE OF ALL AMPHIBIAN SPECIES

4.1 No GCN were recorded during the course of the survey, with only common frog tadpoles/ froglets and common toad tadpoles/ toadlets recorded.

SITE STATUS ASSESSMENT

4.2 From the results of the survey the area does not contain a population of Great Crested Newt. The ponds appear to be susceptible to drying out which could limit their potential to support amphibian populations. The dense vegetation of the wetland area could be hiding areas of surviving water.

RECOMMENDATIONS

4.3 The pond in the south of the site should be retained. Common toad were recorded which are a UK Biodiversity Action Plan priority species. The following management works are recommended:

- Waterbody 1: excavate to deepen the pond to hold water for longer, reduce Typha coverage, supplementary planting to improve species diversity.
- Waterbody 2: (not within ownership of the developer) Typha clearance within the water body, excavate open water areas.

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Appendix 1

Amphibian Species Record Sheet (raw data) **Overall**

Date	Temp (ºC)	Weather conditions	Methods (Tick methods used)						Species captured / observed & number (Indicate sex / life stage)				
			Hand search	Egg search	Torch	Net	Bottle trap	Pitfall trap	Great crested newt	Smooth newt	Palmate newt	Frog	Toad
6th /7th May 2017	10	Cloudy, some light drizzle, light wind	✓	✓	✓		✓		0	0	0	Tad	0
12th /13th May 2017	11	Dry, broken cloud, light wind	✓	✓	✓		✓		0	0	0	Tad	Tad
3rd June 2017	13	Clear, gentle breeze	✓	✓	✓				0	0	0	Tad, let	Tad, let
23rd June 2017	18	Warm dry, some cloud, breezy	✓	✓	✓				0	0	0	Let	Let

Key: A = adult; j = juvenile; m = male; f = female; 0 = not recorded

Amphibian Species Record Sheet (raw data) ***Waterbody 1***

Date	Temp (ºC)	Weather conditions	Methods (Tick methods used)						Species captured / observed & number (Indicate sex / life stage)				
			Hand search	Egg search	Torch	Net	Bottle trap	Pitfall trap	Great crested newt	Smooth newt	Palmate newt	Frog	Toad
6th /7th May 2017	10	Cloudy, some light drizzle, light wind	✓	✓	✓		✓		0	0	0	Tad	0
12th /13th May 2017	11	Dry, broken cloud, light wind	✓	✓	✓		✓		0	0	0	0	0
3rd June 2017	13	Clear, gentle breeze											
23rd June 2017	18	Warm dry, some cloud, breezy											

Key: A = adult; j = juvenile; m = male; f = female; 0 = not recorded

Amphibian Species Record Sheet (raw data) ***Waterbody 2***

Date	Temp (ºC)	Weather conditions	Methods (Tick methods used)						Species captured / observed & number (Indicate sex / life stage)				
			Hand search	Egg search	Torch	Net	Bottle trap	Pitfall trap	Great crested newt	Smooth newt	Palmate newt	Frog	Toad
6th /7th May 2017	10	Cloudy, some light drizzle, light wind	✓	✓	✓				0	0	0	0	0
12th /13th May 2017	11	Dry, broken cloud, light wind	✓	✓	✓				0	0	0	Tad	Tad
3rd June 2017	13	Clear, gentle breeze	✓	✓	✓				0	0	0	Tad, Lets	Tad, Lets
23rd June 2017	18	Warm dry, some cloud, breezy	✓	✓	✓				0	0	0	Lets	Lets

Key: A = adult; j = juvenile; m = male; f = female; 0 = not recorded