

**Great Crested Newt Survey for,
Mr. M. Chappell.
Buildings at,
Yoxall Lodge,
Scotch Hill,
Newchurch,
Hoar Cross,
BURTON UPON TRENT,
Staffordshire,
DE13 8RL.**

**Map Ref SK 1566 2205
20th July 2015.**

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Introduction

Surveys were conducted on behalf of Tamworth Properties Services in respect of great crested newts (GCN) by Craig Greenwell, licensed Newt Surveyor. This survey focused on the only water body within 500m of the site boundary comprising an e DNA sampling test on 31st May 2015.

Methodology for GCN

Habitat Suitability Index (HSI)

All water bodies within the surroundings were assessed for potential to support an amphibian population, including GCNs, using the Habitat Suitability Index (HSI). This assesses the ponds against ten pre-determined criteria, producing a score which indicates the degree of suitability for occupation by GCNs.

The Habitat Suitability Index provides a measure of the likely suitability that a water-body will support newts (Evaluating the suitability for the Great Crested Newt, Herpetological Journal 10(4); Oldham et al). In general, ponds with a higher score are more likely to support Great Crested Newts than those with a lower score and there is a positive correlation between HSI scores and ponds with newts recorded. Ten separate attributes are assessed for each pond:

- Geographic location
- Pond area
- Pond drying
- Water quality
- Shade
- Presence of water-fowl
- Presence of fish
- Number of linked ponds
- Terrestrial habitat
- Macrophytic coverage

A score is assigned according to the most appropriate criteria level set within each attribute and a total score calculated of between 0 and 1. Pond suitability is then determined according to the following scale.

Table 1 – HSI scores and pond suitability

HSI	Pond Suitability
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HSI	Pond Suitability
<0.5	Poor
0.5 - 0.59	Below average
0.6 – 0.69	Average
0.7 – 0.79	Good
>0.8	Excellent

Field Surveys

eDNA Sampling & Analysis

Environmental DNA (eDNA) sampling was undertaken to determine the presence / absence of GCN within the water obstacle. This was undertaken due to FPCR being commissioned outside of survey season (March to June), whereby three survey methods could not be undertaken due to the season restrictions. Therefore the only way to confirm the presence or absence of this species was to undertake a eDNA sample of the water obstacle, this followed the guidance set out in *Analytical and Methodological Development for Improved Surveillance of the Great Crested Newt, WC1067, Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (Triturus cristatus) environmental DNA*¹. This methodology has been approved by Natural England for the determination of GCN presence/ absence.

The survey involved taking 20 samples from the water obstacle on the 31st May 2015 during suitable weather conditions avoiding heavy rain. The 20 samples were then combined in the field and 6 test samples taken by pipette. Sampling was undertaken using kits obtained from SureScreen Scientifics Division. Subsequent eDNA analysis of the samples was then undertaken by this laboratory. All samples were stored in accordance with the protocols provided by the laboratory.

Results

A single waterbody was highlighted as being present within a 500m radius of the proposed site boundary (Figure 1). This was located approximately 95m south of the site boundary on the edge of a grazed field compartment that separates the site from the pond. The southern aspect of the pond adjoins a narrow woodland copse which leads to other nearby woodland blocks. Flowing water associated with Lin Brook feeds the pond from the east with a dam present on the western most-end of the waterbody with a fast waterflow discharging out into Lin Brook. The pond surface measured approximately 0.42ha in size.

The eDNA samples taken from the pond were returned as negative for the presence of GCN.

Habitat Suitability Index (HSI)

An HSI assessment was undertaken of the pond on site. Table 2 below presents a summary of the results of this assessment.

Table 2 – Summary of HSI Score of off-site Pond

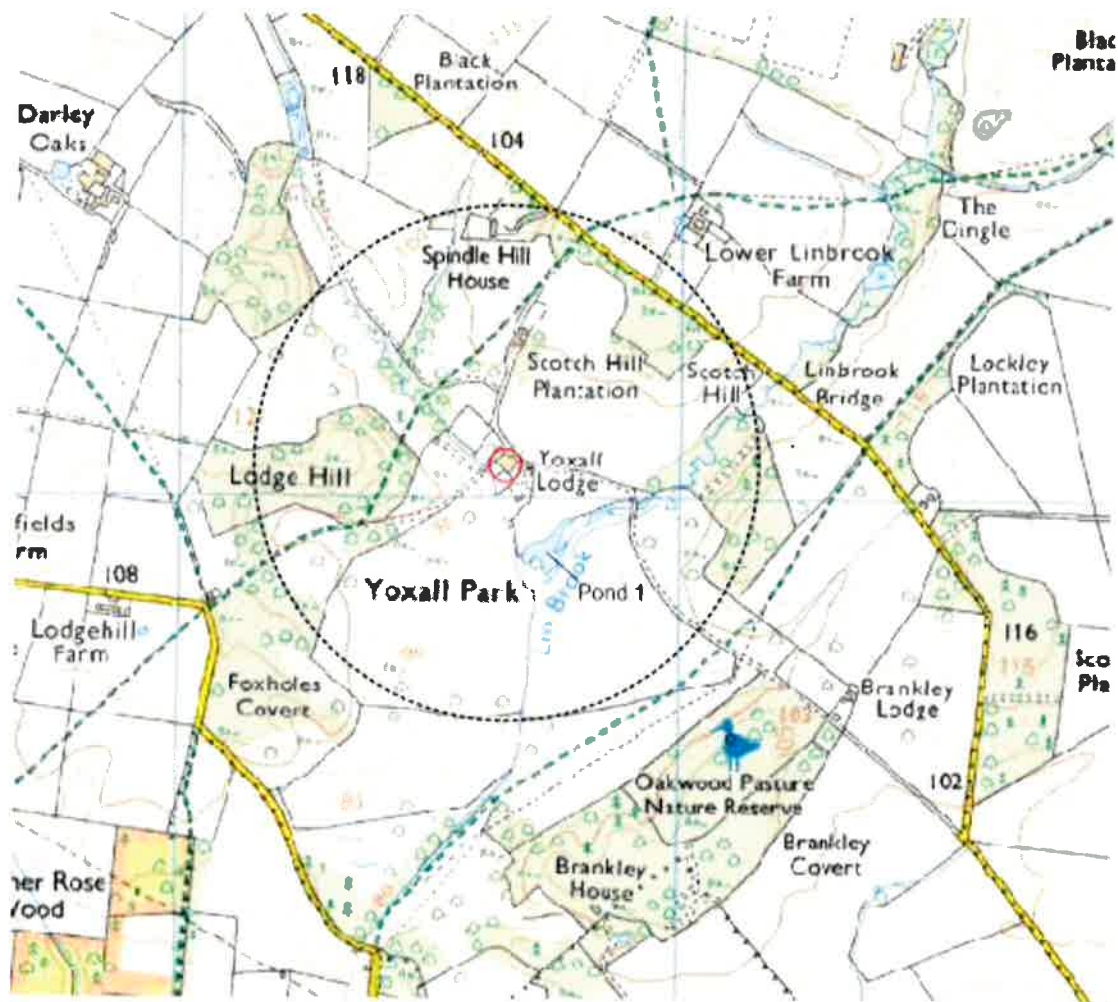
Water Body	Score	Suitability
P1	0.52	Below Average (<0.5 – 0.59)

The off-site pond had “Below Average” suitability due large pond area, presence of water fowl and possibility of fish.

DISCUSSION AND RECOMMENDATIONS

The HSI assessment conducted on the off-site pond gave a “below average” score for its potential to support GCNs. To confirm the likely presence/absence of GCN using the water body eDNA samples were extracted from the water body on the 31st May 2015. The results of the samples taken provided a negative result for the presence of GCN.

The proposed site work comprises the conversion of agricultural buildings into living accommodation. No terrestrial habitats are to be affected by the proposed works with all buildings affected by the works being based on hard-standing. No further ponds suitable to support GCN have been identified within a commutable distance of 500m of the site boundary thus isolating the pond from further GCN populations that may be present in the wider area. From this assessment and the level of survey work completed on the water body it has been concluded that the presence of GCN is not a statutory constraint to the proposed works.



----- 500m radius surrounding site boundary ——— Site Boundary

Figure 1 – Site and pond location

