

LAND AND PARTNERS

GREAT CRESTED NEWT SURVEYS

LAND NORTH OF LONG COPSE LANE

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1 Introduction

In 2016, Prime Environment Limited (Prime Environment) was instructed by Land and Partners (the Client) to undertake great crested newt *Triturus cristatus* surveys of an area of land north of Long Copse Lane, Emsworth (Ordnance Survey (OS) grid Reference SU 747 079) (The Study Area).

The surveys were undertaken across the whole land parcel; however, the planning applications are likely to be split into two. One application will be for the development of a small area in the south-west corner of this land parcel which is 1.7 hectares and comprises two grassland fields bordered by woodland, a dry ditch, a tree line and an access road. Another application will be to develop part of the land currently known as Hollybank Farm. This comprises horse paddocks, ménage, spoil heaps, small woodland copses and a residential property with a garden.

1.1 Aims and Objectives

The aims of the study were to:

- Establish the presence or likely absence of great crested newts at the Study Area

Ecological information for the assessment was provided by a great crested newt surveys.

Information regarding habitats present within the Study Area and discussions and recommendations are presented in a separate Ecological Impact Assessment (EclA).

3 Method

Great crested newt surveys were undertaken by Matthew Clarke, a licensed and experienced great crested newt surveyor (class 2 survey licence, reference: 2425).

3.1 Great Crested Newts

3.1.1 Pond Selection

All ponds within 500 m of the Study Area were identified using a combination of Ordnance Survey maps and aerial photography (Google Earth). Additional ponds were also located through discussions with the client and local land owners.

3.1.2 Habitat Suitability Index

A Habitat Suitability Index¹ (HSI) was calculated for all the ponds within 500 m of the Study Area prior to the commencement of the full breeding pond survey. The HSI is based on scoring various environmental parameters of the pond, such as the presence of fish, regularity of drying out and the surrounding habitat (see Table 2). The HSI result is a score of 0 to 1, which is used to classify the suitability of the pond for great crested newts (see Table 1).

Where it was necessary to estimate some values used in calculating the HSI (e.g. how often the pond dries), the higher (i.e. better for great crested newts) score was used.

Table 1
HSI scores and suitability of ponds for great crested newt.

HSI Score	Classification
<0.5	Poor
0.5 – 0.59	Below average
0.6 – 0.69	Average
0.7 – 0.79	Good
> 0.8	Excellent

¹ Oldham *et al.* (2000) *Evaluating the suitability of habitat for the Great Crested Newt Triturus cristatus* *Herpetological Journal* 10 (4), 143-155

Table 2
Suitability index criteria and scoring

Suitability Index (SI)	Field score	SI score
SI1 Location	A (optimal) B (marginal) C (unsuitable)	Read from map 1.0 0.5 0.01
SI2 Pond area	Measure pond surface area (m ²) and round to nearest 50 m ²	Read off graph.
SI3 Pond drying	Never Rarely (no more than two in ten years or in drought) Sometimes (three in ten years to annually) Annually	0.9 1.0 0.5 0.1
SI4 Water quality	Good (abundant and diverse invertebrate community) Moderate (moderate invertebrate diversity) Poor (low invertebrate diversity, few submerged plants) Bad (clearly polluted, only tolerant inverts. No submerged plants.)	1.0 0.67 0.33 0.01
SI5 Shade	Estimate percentage perimeter shaded to a least 1 m from shore.	Read off graph.
SI6 Fowl	Absent (no evidence of water fowl bar moorhen) Minor (waterfowl present, but little sign of impacts) Major (severe impact of waterfowl)	1.0 0.67 0.01
SI7 Fish	Absent (no records of fish stocking + none revealed during survey.) Possible (no evidence of fish, but may be present.) Minor (small numbers of fish known to be present) Major (dense populations of fish known to be present).	1.0 0.67 0.33 0.01
SI8 Pond count	Using OS maps count the number of ponds within 1 km of the survey pond (not separated by major barriers) and divide by 3.14.	Read off graph
SI9 Terrestrial habitat	Good (most semi-natural habitats - more than 75% of area.) Moderate (habitat may not be extensive (25-75%) of area) Poor (habitat with poor structure/ less than 25% of area) None (no suitable habitat around pond)	1 0.67 0.33 0.01
SI10 Macrophytes	Estimate the percentage of the pond surface area occupied by macrophyte cover (between May and the end of September)	Read off graph.

Five ponds were identified during the desk study, four of these ponds hold water and one had dried out when inspected during the Phase 1 Habitat survey. Of the ponds holding water, one is in the woodland copse within the Study Area, two are located 250 m north within Sawmill's farm and one is located within Spencer's forest approximately 430 m south west of the Site. At the beginning of the pond survey, all four of these ponds held water and presence absence surveys for newts were attempted. The four ponds surveyed are presented in Plate 1.

Plate 1- Ponds Surveyed for GCN



3.1.3 Pond Surveys

Following best practice², a combination of the survey techniques described below were employed between mid-March and mid-June to confirm the presence or likely absence of great crested newts at the accessible ponds in the survey area.

Where great crested newts are confirmed, an additional two visits were undertaken to provide a 'population size class estimate'. Survey dates were staggered where access to some ponds became available partway through the season.

During each presence/absence survey session, where possible, three different survey methods were used from: torch surveying, bottle trapping, egg searching and sweep netting. Once great crested newt presence is confirmed it is only necessary to continue bottle trapping or torch surveys, as only these methods are suitable for obtaining peak newt counts for a population size class estimate.

3.1.4 Torchlight Counts

Torch surveys involve surveyors walking slowly around the perimeter of each pond after dark, scanning the water with a high powered torch. The species observed and, where possible, their sex and age are recorded.

² English Nature (2001) *Great Crested Newt Mitigation Guidelines*.

3.1.5 Bottle Trapping

Bottle trapping involves fixing plastic funnel traps attached to canes around the perimeter of the pond. Each trap is set at an angle of 45° protruding just above the water's surface to maintain an air pocket (to avoid suffocating trapped newts). Traps are then checked for newts the following morning. Bottle traps are ideally set at one per 2 metres, although in practice they may be bunched into areas of suitable bank, for example where access is restricted around the shore.

3.1.6 Netting

Net surveys are undertaken using dip nets to sweep submerged vegetation and leaf litter along the margins of each pond. Netting effort is standardised by carrying out work in accordance with best practise guidelines of 15 minutes per 50 m of shore line. Netting at this site was only undertaken where other methods could not be used. Where great crested newts were confirmed as present by other methods, netting was not undertaken due to potential risk of injury to newts.

3.1.7 Egg Searching

During each survey session the leaves of water plants are checked for newt eggs. Leaves with newt eggs can be identified as egg-laying involves a female newt folding a leaf (or other egg-laying material) over each egg for protection, resulting in the leaf having a pleated or concertina appearance. Great crested newt eggs are distinguished from the eggs of other newt species by their size and colour. No further egg counts were undertaken where great crested eggs were found, as this method generally leaves eggs unprotected once the folded leaves are opened up.

3.2 Constraints

Any ecology assessment must be considered as a 'snapshot' of the site conditions at the time of the survey; ecological constraints will change over time and therefore the findings of this report are considered to be valid for a period of one year from the survey, after which the survey should be repeated to ensure the baseline conditions have not changed.

The pond within the forest to the south west of the Study Area (Pond 4) dried up after the second survey visit and therefore no further surveys could be carried out, although the condition of the pond was checked on every survey.

4 Results

4.1 Great Crested Newts

All of the surveys were undertaken in conditions considered suitable for great crested newt activity and in compliance with best practice guidelines. Table 1 below provides a summary of the weather conditions and pond conditions on each survey visit.

Table 3 – Survey Conditions

	Visit 1				Visit 2				Visit 3				Visit 4			
Date	07/05/16				10/05/2016				15/05/16				23/05/16			
Temperature	15°C				11°C				14°C				12°C			
Weather	Dry, cloud 80%, still				Dry, cloud 90%, still				Dry, cloud 0%, still				Dry, cloud 50%, wind BF2			
Pond Number	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Turbidity	2/5	4/5	4	4	2/4	4/5	4/5	Dry	2/5	4/5	4	Dry	2/5	3/5	3/5	Dry
Vegetation Cover (%)	85	90	0	0	85	90	0	0	80	90	0	0	80	60	0	0

Full HSI and pond survey results are presented in Appendix 1. A summary of the data is presented in Table 4.

No great crested newts were found to be present within any of the ponds surveyed.

Palmate newts *Lissotriton helveticus* and common frog *Rana temporaria* were recorded in ponds 1, 2 and 3.

**Table 4
Summary Survey Results**

Pond Reference	HSI Index	Pond suitability	Great crested newts present
P1	0.73	Good	No
P2	0.84	Excellent	No
P3	0.58	Below average	No
P4	0.60	Average	No

5 Conclusion

Presence and likely absence surveys were completed at all the ponds within 500 m of the Site during the optimum period of the season. Great crested newts were not recorded in any of the ponds during the surveys and so we can conclude a likely absence of this species. Great crested newts are not considered to be a constraint to the proposed development.

Appendix 1 – Raw Data – Great Crested Newt Surveys

Pond Ref	Description	Photographs
1	A oval shaped pond within the garden of Sawmill Farm. Very little emergent vegetation and shade from one tree growing on the bank. Pond is approximately 18m². This pond is located approximately 250 m north of the Study Area.	
2	A second oval shaped pond in Sawmill Farm approximately 10 m from Pond 1. Some emergent vegetation comprised of soft rush. Duck weed also dominates the pond flora. This pond is located approximately 250 m north of the Study Area.	
3	Pond within the woodland copse within the south of the Study Area bordering Long Copse Lane. Fairly shaded by surrounding trees. Water very turbid and likely poor quality.	
4	Ponded water within Spencer's forest. Heavily shaded by trees and shallow. Likely to dry up regularly. Located approximately 430 m south west	

Appendices

Table 5 – HSI Scores

Pond Ref	SI1 Location	SI2 Pond Area	SI3 Pond Drying	SI4 Water Quality	SI5 Shade	SI6 Fowl	SI7 Fish	SI8 Ponds	SI9 Terrestrial Habitats	SI10 Macrophytes	HSI Score
P1	1	0.29	0.9	1	1	0.67	0.67	1.00	1	0.36	0.73
P2	1	0.35	0.9	1	1	0.67	1	1.00	1	0.81	0.84
P3	1	0.50	0.1	0.33	0.8	1	1	1.00	1	0.31	0.58
P4	1	0.51	0.1	0.67	0.6	1	1	1.00	1	0.31	0.60

**Table 6
GCN survey results 2016**

Pond Reference	Visit 1			
	1	2	3	4
Techniques used	Torch Bottle trapping Egg Search	Torch Bottle trapping Egg Search	Torch Egg Search Netting	Torch Egg Search Netting
Great Crested Newt	0	0	0	0
Smooth newt	0	0	0	0
Palmate newt	Torch: 8 x male 5 x female Bottle trap: 1 x male	Torch: 1 x male Bottle trap: 0	Torch: 1 x male	0
Other	Tadpoles	2 x unidentified small female newt Tadpoles		0

Appendices

Visit 2				
Pond Reference	1	2	3	4
Techniques used	Torch Bottle trapping Egg Search	Torch Bottle trapping Egg Search	Torch Egg Search Netting	Dry
Great Crested Newt	0	0	0	0
Smooth newt	0	Bottle: 1 x female	0	0
Palmate newt	Torch: 3 x male Bottle: 2 x male	Torch: 2 x male Bottle: 1 x female	Torch: 2 x male	0
Other	Tadpoles Unidentified small female newt	Unidentified small female newt Tadpoles	Tadpoles	0

Visit 3				
Pond Reference	1	2	3	4
Techniques used	Torch Bottle trapping Egg Search	Torch Bottle trapping Egg Search	Torch Egg Search Netting	Dry
Great Crested Newt	0	0	0	0
Smooth newt	0	Bottle: 1 x male 1 x female	0	0
Palmate newt	0	Bottle: 1 x male 1 x female	0	0
Other	Tadpoles	Tadpoles 4 unidentified small female newts	Tadpoles	0

Visit 4				
Pond Reference	1	2	3	4
Techniques used	Torch Bottle trapping Egg Search	Torch Bottle trapping Egg Search	Torch Egg Search Netting	Dry
Great Crested Newt	0	0	0	0
Smooth newt	0	0	0	0
Palmate newt	Torch: 1 x female	Torch: 2 x male 3 x female Bottle: 2 x male 1 x female	0	0
Other	Tadpoles	Tadpoles	Tadpoles	0

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