

APPENDIX 15.2

Great Crested Newt Survey Report

Contents

Section	Page
Appendix 15.2 – Great Crested Newt Survey Report	
1. Introduction	3
2. Methodology	3
3. Results.....	4
4. Assessment	5
5. Discussion and Conclusions.....	6
6. References	7
List of Tables	
Table 1 – Summary of great crested newt surveys undertaken	5
Table 2 – A Scoring System for the Selection of Sites with Assemblages of Amphibians	5
Table 3 – Amphibian assemblage score for ponds surveyed	6
List of Figures	
Figure 15B.1 - Amphibian pond survey areas (<i>please see Figure 1.2 of ES for final red line boundary</i>)	

1. Introduction

- 1.1 The aim of this report is to provide up-to-date and detailed information on the amphibian species present in the ponds within 500 m of the proposed scheme – in particular to establish whether the legally protected great crested newt was present in any of these ponds and to give an indication of their abundance within the survey area.
- 1.2 There are seven native amphibian species found in Britain. These are the common frog (*Rana temporaria*), the northern pool frog (*Pelophylax lessonae*), the common toad (*Bufo bufo*), the natterjack toad (*Epidalea calamita*), the smooth newt (*Triturus vulgaris*), the palmate newt (*Triturus helveticus*) and the great crested newt (*Triturus cristatus*).
- 1.3 All of these species are fairly widespread in England, except for the natterjack toad and northern pool frog. It is highly unlikely that either of these species would be present as the Dunsbury Hill site does not lie within their known distribution range. The great crested newt has undergone rapid population declines in recent years; it is because of this that this species is afforded special protection under UK and EU law and is also a national and local priority species for the UK, Hampshire and Highways Agency Biodiversity Action Plans.
- 1.4 Great crested newts are known to range 500 m from the breeding pond during the year in search of feeding and hibernation sites and during the dispersal of adults and/or juveniles to new breeding sites. Some great crested newts have been found to travel greater distances than 500 m (up to 1.3 km from breeding sites) but great crested newts most commonly move between ponds that are within 250 m of each other. Based on Natural England Guidelines *Great Crested Newt Mitigation Guidelines* (English Nature, 2001) it was decided to consider the suitability for newts of all ponds within 500 m of the proposed scheme.
- 1.5 An amphibian survey (Cranfield, 2002) was carried out for the Environmental Statement (Rummey Environmental Ltd, 2003) for a previous proposed development at Dunsbury Hill Farm on two ponds to the north and one pond to the east of the current scheme. These surveys did not record evidence of great crested newts, whilst other common amphibian species were present in two of the three ponds.
- 1.6 Initial surveys of all suitable ponds within 500 m of the scheme were undertaken in 2011, and included habitat suitability index assessments (HSI).
- 1.7 Figure 15B.1 illustrates the locations of the ponds surveyed.

2. Methodology

- 2.1 The methodology has been developed in accordance with guidance in *Great crested newt mitigation guidelines* (Natural England, 2001).

Desk Study

- 2.2 Previous reports have been reviewed and the Hampshire Biodiversity Information Centre was contacted for records in 2010.

Survey

- 2.3 As part of the scoping stage, three ponds were assessed in January 2011 to see if they were suitable for great crested newts and to determine suitable survey methods. The data

gathered enabled Habitat Suitability Index (HSI) scores to be calculated. These are shown in Annex 1.

- 2.4 The ponds considered most suitable for great crested newts were subject to more detailed surveys. As far as was possible, all detailed survey work was undertaken according to Natural England Guidelines, *Great crested newt mitigation guidelines* (Natural England 2001) using the following criteria:
- a) Three methods (preferably torch survey, bottle trapping and egg search) per visit;
 - b) Four visits to each pond in suitable weather conditions;
 - c) Survey undertaken between mid-March to mid-June with at least two of these visits in mid-April to mid-May.

Limitations

- 2.5 Due to health and safety issues regarding working at night and the risk of being attacked by people in the vicinity of Dunsbury Hill Farm, the surveys were proposed to start before dusk and bottle traps checked in the early morning. These survey proposals were discussed and agreed with Natural England.
- 2.6 The survey visits were carried out during the optimum breeding season for great crested newts (all the surveys were undertaken between April and May) in good weather and suitable temperatures.
- 2.7 Pond B had low water levels in April/May 2011 and therefore bottle traps could not be used.
- 2.8 All areas of the two ponds surveyed were accessible at the time of survey.

3. Results

Desk Study

- 3.1 Three water bodies were recorded within 500 m of the site from the herpetological survey report (Cranfield, 2002) and from a review of Ordnance Survey maps. From the herpetological survey report, no great crested newts were recorded although both palmate newts and common frogs were recorded. There were no desk study records for great crested newts. Although the ponds are within 500 m of the site, they are all outside the current proposed development site boundary. There are no barriers to dispersal for great crested newts or other amphibians between these ponds and the site. The pond nearest to the proposed development site boundary is approximately 45 metres to the east (Pond C), whilst the pond furthest away is approximately 135 metres north-east of the development site boundary (Pond B). Pond A was too dry to be surveyed in either 2002 or 2011 and was not considered suitable for supporting amphibians.

Survey

- 3.2 Table 1 below summarises the surveys undertaken on each pond and provides a brief description of the pond. The full results of all torchlight, bottle-trapping, egg search and netting surveys can be found in Annex 2.
- 3.3 No great crested newts were identified in any of the ponds surveyed in 2011. A summary of the results of the amphibian surveys is provided in Table 1 below.

Table 1 – Summary of great crested newt surveys undertaken

Pond Reference	Habitat Suitability Index Score	Pond description / other relevant information
Pond A	0.35 - POOR	The pond has a fallen willow across with cherry laurel and is largely dry with no marginal or aquatic vegetation. This pond was too dry to be surveyed in either 2002 or 2011 and is not considered suitable for supporting amphibians.
Pond B (furthest away from the Scheme)	0.72 - GOOD	Elongated pond with large willow at north end. Pond is situated at woodland edge and has some Glyceria, lesser spearwort and creeping buttercup as aquatic vegetation for egg laying. Only aquatic invertebrates noted were mosquito larvae. Palmate newts and common frogs were identified in 2011. Previous survey in 2002 found common frogs only.
Pond C (closest to the Scheme)	0.51- BELOW AVERAGE	A small deep pond within woodland edge with no marginal or aquatic vegetation. Water clarity is reasonable and only aquatic invertebrates found were mosquito larvae. The surveys in 2011 and 2002 only found palmate newts.

4. Assessment

- 4.1 No great crested newts were found to be present in any of the ponds surveyed in 2011. In addition, the desk study, including results of the surveys undertaken in 2002, did not identify the presence of great crested newts within 1 km of the site boundary.
- 4.2 The suitability of ponds was assessed using HSI scores. The HSI scored are included in Table 1 above, and the calculations attached as Annex 1. All the ponds surveyed were considered to have poor to good suitability for great crested newts.
- 4.3 Although no great crested newts were recorded, other commoner species of amphibian were identified. There are a number of methods for assessing the importance of sites for amphibians, based on the species assemblage and numbers recorded. A scoring system used by the Nature Conservancy Council for assessing the site quality for amphibians that was originally developed for the assessment of possible amphibian SSSIs (NCC, 1998, in Gent and Gibson, 2000) is shown below in Table 2. Any site with a score of 5 or more that is not adjacent to a SSSI could be considered for designation as a Local Wildlife Site (Gent and Gibson, 2000).

Table 2 – A Scoring System for the Selection of Sites with Assemblages of Amphibians

Species	Survey method	Low population, Score 1	Good population, Score 2	Exceptional population, Score 3
Great crested newt	Seen or netted in day	<5	5-50	>50
	Counted at night	<10	10-100	>100
Smooth newt	Netted in day/counted at night	<10	10-100	>100
Palmate newt	Netted in day/counted at	<10	10-100	>100

	night			
Common toad	Estimated	<500	500-5000	>5000
	Counted	<100	100-1000	>1000
Common frog	Spawn clumps counted	<50	50-500	>500

Notes: scores have to be for breeding sites observed during the breeding season. Daytime netting should be made during a 15-minute period for sites with less than 50m of water's edge, for 30 minutes for sites with 50 -100m etc. To compute the total score for a site, add the scores for individual species and add one point for four of these species present and two for five species.

- 4.4 Table 3 below shows the Species Assemblage Score for each pond surveyed in 2011 based on the scoring system shown in Table 2.

Table 3 – Amphibian assemblage score for ponds surveyed

Pond Reference	Species Assemblage Score
Pond A	None
Pond B	2*
Pond C	2

* Survey timing was programmed to the optimal survey season for the legally protected great crested newt. Frog tadpoles were already present in the pond at this time and therefore it was not possible to count the number of clumps of frogspawn as required by Table 2. Due to the size of the pond and number of tadpoles seen only a low population of common frogs is anticipated to be present.

- 4.5 None of the ponds score 5 or more and so do not meet the criteria for a Local Wildlife Site (Gent and Gibson, 2000).
- 4.6 The highest scoring pond is Pond C due to the fact that it has been recorded to contain good population levels of palmate newts (between 10-100 counted at night), with the average number counted per survey being 30. No frog spawn was recorded at Pond C, and only common frog tadpoles were recorded in addition to low numbers of palmate newts (<10) in Pond B.

5. Discussion and Conclusions

- 5.1 None of the ponds are within the Scheme boundary and they will not be affected by the development works.
- 5.2 Great crested newts were not recorded from the desk study data or from the surveys undertaken. Two of the commoner or widespread amphibian species (common frog and palmate newt) were recorded during the pond surveys; and the woodland habitat surrounding the Ponds B and C is suitable for terrestrial phases of these species and other commoner or widespread amphibian species, such as smooth newt and common toad. No species of amphibian were recorded from the desk study data.
- 5.3 Both common frog and palmate newt were recorded as present during surveys undertaken of the ponds in 2002 for a previous Environmental Statement. It was also noted that Pond A was dry at the time of the 2002 survey (Cranfield, 2002).
- 5.4 No mitigation measures are required as the current development proposal as the legally protected great crested newt is not present. The proposed development will not affect the

ponds; however a series of enhancement measures will be put in place in order to improve and increase the aquatic and terrestrial habitat for amphibians within the Scheme boundary. Proposed enhancement measures are discussed in the body of the Environmental Statement.

6. References

Cranfield, J. 2002 Herpetological Survey of Dunsbury Hill, Havant, Hampshire.

Gent, T. & Gibson, S. (editors), 2000. *Herpetofauna Worker's Manual*. 2nd ed. Joint Nature Conservation Committee: Peterborough.

Hampshire Biodiversity Partnership 2003 Hampshire Biodiversity Action Plan – Great crested newt.
<http://www.hampshirebiodiversity.org.uk/pdf/PublishedPlans/GCNewtSAPfinal.pdf>. website accessed September 2011

Herpetofauna Groups of Britain and Ireland (HGBI), 1998. *Evaluating local mitigation/translocation programmes: Maintaining best practice and lawful standards*. HGBI advisory notes for amphibian and reptile groups (ARGs). HGBI c/o Froglife: Halesworth.

Herpetological Conservation Trust *Great Crested Newt Habitat Suitability Index*.
http://www.narrs.org.uk/Documents/nasdocuments/HSI_guidance.pdf. website accessed January 2011

Natural England, 2001. *Great Crested Newt Mitigation Guidelines*. Natural England: Peterborough.

Rumney Environmental Ltd. 2003. Dunsbury Hill Farm Environmental Statement.

Annex 1 - Habitat Suitability Index Calculations

HSI calculations carried out using the following guidance note: *Great Crested Newt Habitat Suitability Index* produced by The Herpetological Conservation Trust (HCT)
www.narrs.org.uk/Documents/nasdocuments/HSI_guidance.pdf.

The table below shows the score for each question involved in the calculation and the final score and Suitability Category. Please refer to the HCT guidance note to view the questions involved in this assessment.

Pond A

SI1 - Location	1.0	Poor
SI2 – Pond area	0.16	
SI3 – Pond drying	0.10	
SI4 – Water quality	0.01	
SI5 – Shade	0.60	
SI6 – Fowl	1.0	
SI7 – Fish	1.0	
SI8 – Ponds	0.84	
SI9 – Terrestrial habitat	1.0	
SI10 – Macrophytes	0.31	
HSI	0.35	



Pond B

SI1 - Location	1.0	
SI2 - Pond area	0.40	
SI3 - Pond drying	0.50	
SI4 - Water quality	0.33	
SI5 - Shade	1.0	
SI6 - Fowl	1.0	
SI7 - Fish	1.0	
SI8 - Ponds	0.84	
SI9 - Terrestrial habitat	1.0	
SI10 - Macrophytes	0.71	
HSI	0.72	Good



Pond C

SI1 - Location	1.0	
SI2 - Pond area	0.01	
SI3 - Pond drying	1.0	
SI4 - Water quality	0.33	
SI5 - Shade	1.0	
SI6 - Fowl	1.0	
SI7 - Fish	1.0	
SI8 - Ponds	0.84	
SI9 - Terrestrial habitat	1.0	
SI10 - Macrophytes	0.31	
HSI	0.51	Below average



Annex 2 – Amphibian Survey Results

The table below details number of each species observed throughout great crested newt surveys undertaken in 2011 using bottle trapping, torching, egg search and netting.

GCN = Great crested newt

SN = Smooth newt

PN = Palmate newt

CF = Common frog

CT = Common Toad

m = adult male

f = adult female

j = juvenile

l = larvae

Pond no	Date of survey	Number of individuals / eggs			
		Bottle traps	Torching	Egg search	Netting
B	04.04.2011/ 05.04.2011	0	0	0	0
	20.04.2011/ 21.04.2011	0	1 m PN 1 f PN L CF	0	0
	03.05.2011/ 04.05.2011	0	L CF 1 Unsexed SN or PN	0	0
	11.05.2011/ 12.05.2011	0	L CF	0	0
C	04.04.2011/ 05.04.2011	2 m PN	6 f PN 24 m PN	0	0
	20.04.2011/ 21.04.2011	4 m PN 1 f PN	19 m PN 8 f PN	0	0
	03.05.2011/ 04.05.2011	2 m PN 1 f PN	1 m PN 20 f PN	0	0
	11.05.2011/ 12.05.2011	1 m PN 2 f PN	20 m PN 10 f PN	0	0