

7.8 AMPHIBIAN SURVEY

Introduction

- 7.8.1 Amphibian observations were gathered between March and June 2013. The survey method agreed with CCW and NCC involved examining all of the ditches by 2 day-time pond-netting surveys and 2 night-time torch surveys, and this was supplemented by incidental sightings of amphibians made during other ecology surveys. A Habitat Suitability Index assessment was also completed, to assess the potential for presence of Great Crested Newts.

Survey method

- 7.8.2 The only ditches holding standing water by March 2013 were the main ditch known as Lottery's Reen, flowing west across the north of the site, and a short section of ditch beside the track to the south-west of Lottery's Reen. The torch and netting surveys were therefore limited to these ditches. The survey was undertaken by 2 surveyors. The initial day-time visit employed a standard 25cm frame pond-net with a 1mm mesh bag, sampling for amphibians at approximately 5m intervals along the length of the ditch. The surveyors returned after dark the same day, searching for amphibians by using powerful torches (Clu-lite, 1 million candle-power). The second survey was more limited because the ditches were almost dry, and little water was visible in Lottery's Reen because it was flowing beneath a mat of dead vegetation and fresh reed growth. Netting was not carried out during the second survey because the vegetation had become too dense, and also because netting would probably have caused disturbance to birds nesting in the reeds. The torch survey during the second survey was limited to a few places where the water was visible beneath the shade overhanging willows, and around the culvert and footbridge.

Survey findings

- 7.8.3 The observations to date are summarised in Table 7.8.1 below.

Table 7.8.1. Amphibian survey observations

Date	Time	Weather	Observations
18/3/2013	1pm	70% cloud, calm, 8.5°C	1 clump of Frog Spawn in wheel-rut in damp grassland. (Observation during reptile survey).
30/4/2013	7:40 to 8:30pm	10% cloud, calm, 13°C	Netting survey, but ditch almost dry and mostly too shallow to use nets effectively. No sign of amphibians in Lottery's Reen, but high density of Sticklebacks present. Ditch at TN11 was dry. Frog tadpoles present in wheel rut (same as above).
30/4/2013	10:25 to 11:15pm	10% cloud, calm, 9°C	Torch survey, limited to Lottery's Reen. No amphibians seen. High density of Sticklebacks present.
22/5/2013	10am	80% light cloud, light breeze, 14°C.	Well developed Frog tadpoles in wheel rut (Observation during reptile survey).

Date	Time	Weather	Observations
5/6/2013	10:20 to 10:40pm	20% cloud, light breeze, 14.5°C.	Lottery's Reen almost dry. Torch survey limited to a few more open sections. No amphibians seen. High density of Sticklebacks and mosquito larvae present. Frog tadpoles in wheel rut no longer present (probably having emerged as froglets). One adult Common Frog observed in school pond (TNA4) (seen through fence).

Habitat Suitability Index for Great Crested Newts

- 7.8.4 An assessment of the wet potential suitability of the Lottery's Reen for Great Crested Newts was made using the Habitat Suitability Index (HSI) 1 approach developed by ARG UK. The HSI is a scoring system for evaluating habitat quality and quantity. It provides a score between 0 and 1, where 1 represents optimal habitat. The HSI is the geometric mean of 10 separate suitability indices, and is represented by the formula:

$$HSI = (SI1 \times SI2 \times SI3 \times SI4 \times SI5 \times SI6 \times SI7 \times SI8 \times SI9 \times SI10)^{1/10}$$

- 7.8.5 The scores for each of the component indices are determined using the surveyor's experience and judgement to derive the most appropriate scores from the maps and scales within the HSI guidelines.
- 7.8.6 The HSI is not a substitute for survey work, but can be helpful in evaluating the general suitability of habitat for Great Crested Newts. It is designed for use in ponds, but is applied here as the slow-moving channel could feasibly be used by amphibians, although flowing water is much less likely to be used by Great Crested Newts than ponds would be. The HSI can be broadly related to pond suitability as shown in Tables 7.8.2.

Table 7.8.2. Categorisation of HSI scores

HSI	Suitability for Great Crested Newts
<0.5	Poor
0.5 – 0.59	Below average
0.6 – 0.69	Average
0.7 – 0.79	Good
>0.8	Excellent

- 7.8.7 The HSI assessment for the wet ditch at Herbert Road is summarised in Table 7.8.3 below.

Table 7.8.3. HSI assessment of the ditch at Herbert Road

Index	Factor	Comment	Score
SI 1	Location	Marginal ('Area B' in guidelines)	0.50
SI 2	Area	Approximately 150m ² of water area.	0.30
SI 3	Permanence	Not known, probably never dries completely.	0.90
SI 4	Water quality	Poor. Much litter, ochreous water entering up-stream, few invertebrates, no submerged plants.	0.33
SI 5	Shade	Approximately 40% shaded.	1

¹ Amphibian and Reptile Groups UK (2010). Great Crested Newt Habitat Suitability Index. ARG UK Advice Note 5.

SI 6	Fowl	No significant evidence of wildfowl.	1
SI 7	Fish	High density of Sticklebacks.	0.01
SI 8	Ponds	The only pond nearby is a very new pond in the new school. OS maps or aerial photographs show no other potential ponds within 1km.	0.1
SI 9	Terrestrial	Moderate foraging habitat within 250m.	0.67
SI 10	Macrophytes	Approximately 90% cover by common reed.	0.9
		Habitat Suitability Index	0.35

Discussion

- 7.8.8 The Herbert Road site supports very limited potential breeding habitat for amphibians. The only species observed was Common Frog, which spawned in a wheel-rut in damp ground. An adult frog was seen in the school pond, and it is likely that this could also be used as a breeding site.
- 7.8.9 The ditches within and around the site appear very unlikely to support breeding amphibians, because most dry out very early in the spring. The small section of wet ditch to the south-west of Lottery's Reen looks potentially the most suitable habitat for amphibians, but it is heavily disturbed by dogs. Lottery's Reen and the short adjacent ditch both support a very high density of Sticklebacks.
- 7.8.10 Based on a HSI score of 0.35, the suitability of the Lottery's Reen for Great Crested Newts would best be categorised as poor. The likelihood of it supporting Great Crested Newts is further reduced when taking account of the water body being a flowing ditch rather than a pond, and the absence of any SEWBReC records of Great Crested Newts within this part of Newport. It is therefore concluded that they are probably absent.