

ST PATRICK'S HALL

Great Crested Newt Report

for

UPP

July 2016

THE **Landmark**
PRACTICE

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**D denotes a Draft version*

The information which we have prepared and provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

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EXECUTIVE SUMMARY

Purpose of Report	The purpose of this report is to inform the LPA of the findings of the great crested newt surveys
Methodology	A desktop study was undertaken using OS maps to identify all waterbodies within 500m of the site. Any waterbodies holding water were then subject to a Habitat Suitability Index assessment. This was then followed by presence/likely absence surveys using three survey methods on four occasions.
Results	No great crested newts were recorded in any of the ponds, although a small population of smooth newts was recorded in pond 2. Nuttall's pondweed was also present in pond 2.
Discussion and Recommendations	No great crested newt were recorded in any of the waterbodies during any of the survey visits, neither was the survey significantly constrained which might have led to a false negative result. Therefore, there is no evidence to suggest presence and likely absence is concluded. Nuttall's pondweed is listed on Schedule 9 of the Wildlife and Countryside Act 1981, so it is an offence to plant or otherwise cause to grow in the wild this species. This needs to be taken into consideration by those managing these ponds in the future i.e. if any dredging works are proposed.

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1.0 INTRODUCTION

- 1.1 The Landmark Practice (TLP) was commissioned by University Partnerships Programme (UPP) in March 2016 to undertake a great crested newt (*Triturus cristatus*) survey to inform the redevelopment of St Patrick's Hall at the University of Reading. This was following a request by Reading Borough Council's ecologist, Giles Sutton, for further information on the species.
- 1.2 This report has been prepared by Alison Pike, BSc., MCIEEM of The Landmark Practice. The report has been produced to inform the LPA of the findings of the great crested newt surveys. This report also makes reference to an Amphibian Survey Report produced for the redevelopment of Whiteknights Campus (RPS, 2007).

2.0 LEGISLATION

- 2.1 The great crested newt is fully protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010 making it a European Protected Species. The legislation protects the newts and their places of shelter or protection, which may extend 500m from the breeding pond.

3.0 METHODS

Desk Study

- 3.1 A desk study was undertaken using Ordnance Survey maps and aerial photographs, to identify any ponds within 500 m of the site that could potentially support breeding great crested newts. This distance is based on the Great Crested Newt Mitigation Guidelines (English Nature, 2001), which advise that ponds up to 500 m away should be surveyed if it is thought likely that great crested newt populations centred on those ponds would be affected by changes to the development site subject to assessment.
- 3.2 This report also draws on information gathered to inform an Ecological Impact Assessment for the site. As part of the Extended Phase 1 Habitat survey undertaken in June 2015 (TLP, 2016), details of legally protected species records within 2 km of the site were sought from the Thames Valley Environmental Records Centre (TVERC). In addition, the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) was accessed in September 2015 for records of Natural England great crested newt mitigation licences within 2 km of the site.

Habitat Suitability Index

- 3.3 Two ponds and four ditches were identified within 500m of the site (**Figure 1** refers). The two ditches in Cintra Park are no longer present (referred to as Ditches 2 & 3). The ditch near Sherfield Hall was dry in both 2015 and 2016 (referred to as Ditch 1). Therefore the two ponds and remaining ditch (referred to as Ponds 1 & 2 and Ditch 4), were assessed using Habitat Suitability Index (HSI) assessment (Oldham et al, 2000).
- 3.4 HSI is a numerical index between 0 and 1 (0 indicates unsuitable habitat, 1 represents optimal habitat) and incorporates ten suitability indices, which are factors thought to affect great crested newts such as the size of pond, presence of fish and quality of surrounding terrestrial habitat. Each of these factors were assessed in relation to the two ponds and remaining ditch.

Presence/Likely Absence Surveys

- 3.5 The surveys were conducted by, or under the supervision of, a Natural England great crested newt licence holder (Alison Pike, registration number 2015-18944-CLS-CLS). Four visits were undertaken in suitable weather conditions (i.e. night-time air temperature >5°C, no/little wind and no rain). These were carried out between mid-March to mid-June, with at least two of the visits during the peak season (mid-April to mid-May) and they were spread throughout the survey period, to maximise the chance of finding great crested newts should they be present. Three survey methods were used (preferably torchlight surveys, bottle-trapping and egg searches, netting was used as a third method if one of the other methods was not possible).

Torch Survey

- 3.6 The margin of the pond was slowly walked once, checking for presence of great crested newts using a suitably powerful torch (i.e. at least 500,000 candlepower).

Bottle-Trapping

- 3.7 Bottle traps (made from 2-litre plastic bottles) were secured with canes around the pond margin, at a density of one trap per two metres of shoreline. The traps were left overnight and then checked the following morning between the hours of 06:00 and 11:00.

Egg Search

- 3.8 The live and dead submerged vegetation within the pond was carefully searched for the presence of great crested eggs. Care was taken during searches not to damage the eggs or the aquatic and marginal vegetation.

Netting

- 3.9 A perimeter walk of the pond was undertaken and 15 minutes of netting per 50m of shoreline was carried out, using a long-handled dip-net to sample the area around the pond edge. Netting can be conducted by day or night, but better results may be obtained at night when adult newts are more likely to be in open water.

Constraints

- 3.10 A thick mat of common duckweed (*Lemna minor*) was present in Pond 1, making torching impossible so netting was used as an alternative survey method.
- 3.11 As Ditch 4 was very shallow only two survey methods could be used to survey it, namely torching and egg searching.
- 3.12 The turbidity of Pond 1 on survey 1 and Pond 2 on survey 2 was moderately high (i.e. 3 or above) and this could have reduced the detectability of newts. However, as both ponds had lower turbidity levels during three out of the four survey visits, this was not considered a significant limitation.

4.0 RESULTS

- 4.1 The location of the waterbodies is shown on **Figure 1**.

Descriptions

- 4.2 Pond 1 is located in woodland and surrounded by willow (*Salix fragilis*) and oak (*Quercus robur*) trees so is relatively heavily shaded (**Photograph 1** refers). A good diversity of

emergent plants were present including water dropwort (*Oenanthe crocata*), gypsy-wort (*Lycopus europaeus*), water figwort (*Scrophularia auriculata*), water-cress (*Rorippa nasturtium-aquaticum*), bulrush (*Typha latifolia*), yellow iris (*Iris pseudacorus*) and common duckweed. Moorhen (*Gallinula chloropus*) footprints were present, indicating use of the pond by this species.

- 4.3 Pond 2 forms part of the landscape associated with Benyon Student Residential Hall and was created as a sustainable urban drainage system (SUDS) (**Photograph 2** refers). It has little shade, as only a small number of immature willow shrubs were present. Species recorded include bulrush, yellow water-lily (*Nuphar lutea*), white water-lily (*Nymphaea alba*), branched bur-reed (*Sparganium erectum*), broad-leaved willowherb (*Epilobium montanum*) and Nuttall's waterweed (*Elodea nuttallii*).
- 4.4 Ditch 4 is the outflow of Pond 2 (**Photograph 3** refers) and is heavily shaded by willow shrubs. The channel is full of vegetation, species recorded in the channel include water-cress and bramble (*Rubus fruticosus*). Species recorded on the banks include hairy tare (*Vicia hirsutum*), hedge bindweed (*Calystegia sepium*), hedge woundwort (*Stachys sylvatica*) and common comfrey (*Symphytum officinale*).

Desk Study

- 4.5 HSI assessment results for the two ponds and the single ditch are given in **Table 1** below :

Table 1: HSI Results

Assessment Criteria	Waterbody		
	Pond 1	Pond 2	Ditch 4
Pond location	1.00	1.00	1.00
Surface area	1.00	0.66	0.02
Desiccation rate	0.90	0.90	0.10
Water quality	0.33	0.67	0.33
Shade	0.20	1.00	0.60
Waterfowl	0.67	0.67	1.00
Fish population	0.67	0.01	1.00
Pond density	0.84	0.69	0.84
Terrestrial habitat	1.00	0.67	0.67
Macrophyte cover	0.51	0.36	1.00
Score & result:	0.64 Average	0.46 Poor	0.43 Poor

- 4.6 Although Pond 1 supported a diversity of emergent plants, most of these were out of the water, so provided few opportunities for aquatic egg laying should great crested newt be present. The pond was heavily infested with common duckweed. Male great crested newts undertake an elaborate courtship display which require areas of open water. The presence of duckweed at this density would make it difficult for any great crested newts (if present) to undertake this courtship display. In addition, the water body functions as a storm water outfall, any associated runoff from the site is likely to reduce the pond's water quality. Oil was noted on the surface of the water on several occasions.

- 4.7 Pond 2 was heavily infested with Nuttall's waterweed (*Elodea nuttallii*), this would limit the amount of open water available and make displaying difficult for any newts, should they be present. Several mallards (*Anas platyrhynchos*) were recorded, as well as a pair of breeding Canadian geese (*Branta canadensis*) in the spring of 2016, and the pond is also stocked with numerous koi carp (*Cyprinus carpio*). Both ducks and fish are known to predate on newt larvae, making successful breeding difficult in ponds supporting these factors.
- 4.8 Ditch 4 supported very shallow water (approximately 2.5cm/1 inch), making any newts (if present) vulnerable to predation. In addition, rust-coloured algae is present, indicating that the quality of the water present is poor.
- 4.9 The data search with TVERC did not return any records for great crested newts within 2km of the site. There are, furthermore, no records of Natural England great crested newt mitigation licences being held within 1 km of the site and an amphibian survey at Whiteknights Campus (located adjacent to the site) completed in 2007, did not record the presence of great crested newts.
- 4.10 The likelihood of great crested newt presence was therefore considered low. This conclusion is supported by the relatively isolated within an urban setting of the site and by the sub-optimal conditions and habitats, which is dominated by short amenity grassland and buildings/hardstanding, available for great crested newt in their terrestrial phase.
- 4.11 Notwithstanding the above conclusions, the Reading Borough Councils Ecologist has sought a precautionary approach to informing the application scheme in respect of the status of great crested newts at and within the context of the site.

Presence/Likely Absence

- 4.12 The prevailing weather conditions and vegetation cover and turbidity scores are given in **Table 2** below.

Table 2: Weather Conditions and vegetation cover/turbidity

Survey	Survey Date	Air Temp. (°C)	Weather Conditions	Vegetation Cover (0-5)			Turbidity (0-5)		
				P1	P2	D4	P1	P2	D4
1	21 & 22/03/16	5	Little wind and no rain	4	1	3	4	2	1
2	05 & 06/04/16	7	Little wind and no rain	4	1	3	0	3	1
3	18 & 19/04/16	8	Little wind and no rain	4	2	3	0	2	1
4	03 & 04/05/16	6	Little wind and no rain	4	2	3	0	2	1

P1 = pond 1, P2 = pond 2 and D4= ditch 4.

- 4.13 The results for pond 1 are given in **Table 3** below.

Table 3: Pond 1 Results

Species	Survey 1			Survey 2			Survey 3			Survey 4		
	Bottle	Egg	Net	Bottle	Egg	Net	Bottle	Egg	Net	Bottle	Egg	Net
GCN	0	0	0	0	0	0	0	0	0	0	0	0
Palmate newt	0	0	0	0	0	0	0	0	0	0	0	0
Smooth newt	0	0	0	0	0	0	0	0	0	0	0	0
Common frog	0	0	0	0	0	1 x ♂	0	0	0	1 x frogpole	0	0

Bottle = bottle trapping, Egg = egg search and Net = netting.

4.14 The results for pond 2 are given in **Table 4** below.

Table 4: Pond 2 Results

Species	Survey 1			Survey 2			Survey 3			Survey 4		
	Bottle	Egg	Torch	Bottle	Egg	Torch	Bottle	Egg	Torch	Bottle	Egg	Torch
GCN	0	0	0	0	0	0	0	0	0	0	0	0
Palmate newt	0	0	0	0	0	0	0	0	0	0	0	0
Smooth newt	0	0	0	0	0	0	0	0	1 x ♀	2 x ♀ 1 x ♂	0	1 x ♀
Common frog	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	Fish	0	0	0	0	Fish	0	0	0

Torch = torching.

4.15 The results for ditch 4 are given in **Table 5** below.

Table 5: Ditch 4 Results

Species	Survey 1		Survey 2		Survey 3		Survey 4	
	Torch	Egg	Torch	Egg	Torch	Egg	Torch	Egg
GCN	0	0	0	0	0	0	0	0
Palmate newt	0	0	0	0	0	0	0	0
Smooth newt	0	0	0	0	0	0	0	0
Common frog	0	0	0	0	0	0	0	0

Torch = torching and Egg = egg searching.

5.0 DISCUSSION AND RECOMMENDATIONS

- 5.1 No great crested newt were recorded in any of the waterbodies during any of the survey visits, neither was the survey significantly constrained which might have led to a false negative result. Therefore, there is no evidence to suggest presence and likely absence is concluded.
- 5.2 Nuttall's pondweed was present in pond 2 and it is listed on Schedule 9 of the Wildlife and Countryside Act 1981, so it is an offence to plant or otherwise cause to grow in the wild this species. This needs to be taken into consideration by those managing these ponds in the future i.e. if any dredging works are proposed.

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FIGURES



- Site Location
- 500m Buffer
- Ponds within 500m

ST PATRICK'S HALL
UNIVERSITY OF READING

FIGURE 1
Ponds within 500m

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APPENDIX A- SITE PHOTOGRAPHS

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Photograph 1- showing pond 1 with a dense cover of duckweed.



Photograph 2- showing pond 2.



Photograph 3- showing ditch 4.