GREAT CRESTED NEWT (*TRITURUS CRISTATUS*) SURVEYS
AT
GROBY LODGE FARM
GROBY
LEICESTERSHIRE

SURVEY RESULTS: MAY-JUNE 2011

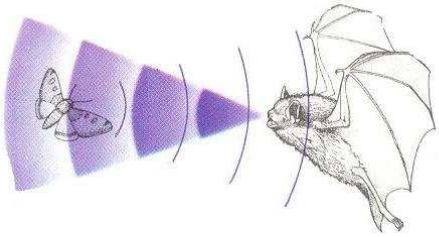
A report to:

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1.0 Introduction

1.1 This report has been prepared by B J Collins - Protected Species Surveyor for Thomas Taylor Planning Limited on behalf of the client Mr J Barker. The project brief was to complete a survey for great crested newts (*Triturus cristatus*) at Groby Lodge, Groby, Leicestershire between 2nd May and the 29th May 2011 in the selected water bodies 'Pond 1' and 'Pond 2', see plan in Appendix 1.

1.2 The four surveys were completed to inform a proposed development at Groby Lodge Farm which will include land potentially supporting great crested newts in tier terrestrial phase.

1.3 Great crested newts are protected under British law by the Wildlife and Countryside Act 1981 (as amended), and are classified as European Protected species under the Conservation of Habitats and Species Regulations 2010.. This makes it an offence to intentionally capture, kill or injure a great crested newt or to damage or destroy any place used for breeding, rest or shelter. The legislation extends to both breeding ponds as well as terrestrial habitat.

Legislation applicable to Great Crested Newt

1.4 Development work can only be permitted that has an affect upon Great Crested Newts under a European Protected Species licence from Natural England.

1.5 Licences in respect of European Protected Species affected by development can be granted under Section 53(3) (e) of The Conservation of Habitats and Species Regulations 2010, for the purpose of preserving public health or public safety or other imperative reasons of overriding public interest including those of social or economic nature and beneficial consequences of primary importance for the environment.

1.6 Under Section 53(9) of the Regulations licences can only be issued if Natural England are satisfied that:

- There is no satisfactory alternative to the work specification and
- The action authorised will not be detrimental to the maintenance of the population of the species at a favourable conservation status in their natural range.

1.7 Natural England aim to process licence applications within 35 working days of receipt.

2.0 Site Description

Pond 1

2.1 Pond 1 is the most southerly of the two ponds, and the smallest at approximately 600 sq metres. The pond is apparently man-made and also contains a spring at the south western end surrounded by concrete. The pond does not appear particularly deep (except the concrete area) and the banks are largely accessible. A row of mature aspen *Populus tremula* trees are adjacent south of the pond and a line of mature oaks *Quercus robur* to the west. Arable fields are beyond this with The M1 motorway to the south west.

2.2 Most of the water is visible, around 70%, with areas of vegetation (dominated by *Typha sp. and Phragmites sp.*) to the north eastern and south western ends. Several immature willow trees (*Salix sp.*) are also present as are small stands of willowherb (*Ebilobium angustifolium*) and rushes (*Juncus sp.*). There is minimal floating vegetation with more locally abundant submerged vegetation apparent.

2.3 The pond is surrounded by tall improved grassland and ruderal herbs. Species include: common nettle *Urtica dioica*, curled dock *Rumex crispus*, and creeping thistle *Cirsium arvense*, with small patches of silverweed *Argentina anserine* and meadow buttercup *Ranunculus acris.* Grasses comprise cocksfoot *Dactylis glomerata*, false oatgrass *Arrhenatherum elatius*, and perennial ryegrass *Lolium perenne*, with some Yorkshire fog *Holcus lanatus.*

Photograph 1: Northern aspect of Groby Pond 1.



Photograph 2: Southern aspect of Groby Pond 1.



Pond 2

2.4 Pond 2 is the much larger most northerly of the two ponds, approximately 7,200 sq metres. This pond is a former fishing lake, although it is unclear what fish stocks remains. An island (with nesting wildfowl) is present in the middle of the pond which is dominated by tall ruderal vegetation, such as common nettle, and oxeye daisy *Leucanthemum vulgare*, with a single immature willow tree. Wildfowl impact around the pond is significant.

2.5 Around 80% of the water is visible except for mature stands of *Phragmites* and *Typha* vegetation, mainly on the north western and south eastern banks. The perimeter of the pond is accessible via shallow banks except where the vegetation is dense. The pond appears deep away from these shallow banks. Large areas of submerged vegetation are visible (particularly by torchlight) and algal blooms are also apparent in some areas. A small patch of yellow water-lily *Nuphar lutea* is present at the southern end.

2.6 Poor semi-improved grassland surrounds the pond with an arable field beyond this to the west, and a plantation beyond this to the east. Grassland species include yorkshire fog in abundance, as well as false oatgrass, perennial ryegrass, annual meadow grass *Poa annua*, and white clover *Trifolium repens*, with oxeye daisy, and black knapweed *Centaurea nigra* also frequently occurring.

Photograph 3: Groby Pond 2 facing south east from the north west.



3.0 Survey Methodology

3.1 The ponds were surveyed for amphibians in accordance with the industry standard[1]. This consisted of the following survey techniques:

Habitat Suitability Index

3.2 The great crested newt habitat suitability index (HSI)[2] is a quantitative measure of the habitat quality and evaluates the suitability of the water body and surrounding land to support great crested newts. The HSI is a number between 0 and 1 which is derived from an assessment of ten habitat variables known to influence the presence of newts. These variables include quality of the terrestrial habitat, water quality in the pond, presence of fish and fowl, and aquatic macrophyte cover. An HSI of 1 is optimal habitat (high probability of supporting great crested newts) and 0 is very poor quality with a minimal chance of occurrence.

3.3 The habitat suitability index for each pond was calculated in May 2011 and the results can be seen in the appendix.

Evening surveys

3.4 The ponds were then surveyed for the presence of amphibians on four occasions, using a combination of standard methods (Natural England 2001) as described below. The weather conditions recorded on each survey visit are shown in the appendices. Health and safety cover was provided by the onsite caretaker on all occasions.

Torchlight survey

3.5 The ponds and lake were searched by torchlight between dusk and midnight. The surveyor walked slowly along the banks, where accessible and safe to do so, shining a 1,000,000 cp Clulite torch onto the surface of the water. Particular attention was paid to areas with patches of open water, with potential for male newts to display.

Bottle Trapping

3.6 The ponds were also surveyed using bottle traps. A total of 30 traps were used in each pond. The traps were placed around the margins of each pond on each survey visit and left for no more than 10 hours. Each was anchored using a garden cane, ensuring that an air bubble was present.

Egg Search

3.7 In order to aid the determination of the breeding status of the ponds on the site an egg search was conducted at each pond, prior to the bottle-trap setting and torching. Vegetation stands were examined for the presence of eggs from all three native newt species but with a particular emphasis on locating eggs of great crested newts. Once an egg was identified, no more searching was undertaken.

3.8 Each pond was visited on four occasions between the 2nd May and the 29th May 2011. At least two of these visits occurred between mid April and mid May. The forecasted weather conditions were used to select a suitable day for the survey on each occasion and are described in the results section.

3.9 The water bodies were surveyed by licensed great crested newt ecologist Mr M Cook BSc (Hons) MSc AIEEM, Natural England licence no: 20110848 assisted by Mr BJ Collins MSc MIEEM, Natural England licence no: 20101927

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[1] Natural England. 2001 *Great crested newt mitigation guidelines*. English Nature, Peterborough

[2] Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). *Evaluating the suitability of habitat for the Great Crested Newt* (*Triturus cristatus*). Herpetological Journal 10 (4), 143-155.

4.0 Survey Results

Detailed results can be seen in the Appendix, including weather conditions for each survey, and the HSI scoring.

Summary

4.1 Pond 1 received a HSI score of 0.78 categorising the pond as having 'good' suitability for great crested newts. Pond 2 received a HSI score of 0.48 categorising this pond as having 'poor' suitability for great crested newts.

4.2 No great crested newts were recorded during any of the four survey visits, via either of the three survey techniques. Therefore fifth and sixth visits (to assess any great crested newt population – Natural England guidelines 2001) were not necessary.

4.3 The most prevalent amphibian was the smooth newt (*Lissotriton vulgaris*), with both sexes occurring frequently in both ponds. The peak count of smooth newts across the four survey visits for each pond was 17 in Pond 1 (smallest) on the 29th May, and 33 in Pond 2 (largest) on 2nd May 2011. The peak count being the greatest number of animals seen on either the trapping session or the torch count and not the two combined. Table 1 below summarises these results.

Table 1: Peak smooth newt counts at Groby Lodge, 2011.

	2nd May	11th May	21st May	29th May
Pond 1	11	16	15	17
Pond 2	33	27	22	31
Site Total	**44**	**43**	**37**	**48**

4.4 The results regarding smooth newts in both ponds are also combined to give peak counts for the site as a single entity (on the given dates) above in Table 1. Figure 1 below shows these results in graphical format.

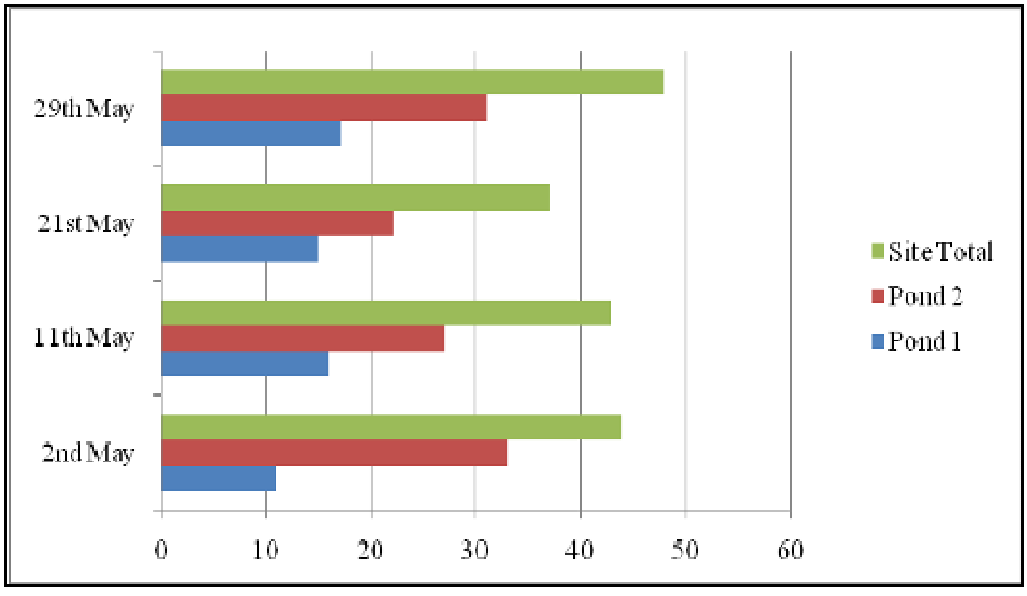


Figure 1: Results for peak smooth newt counts at Groby Lodge, 2011.

4.5 Smooth newt eggs were also identified in the smaller Pond 1 but could not be located in the much larger Pond 2.

4.6 Both common frog *Rana temporaria* (two occasions) and common toad *Bufo bufo* (one occasion) were recorded at Pond 1 but neither at Pond 2 during the survey period. Similarly, *Odonata (*dragonfly and damselfly) larvae were recorded at Pond 1 but not Pond 2. Predatory beetles were recorded at both ponds.

5.0 **Discussion**

5.1 The results of the four surveys using three standard survey methods (Natural England, 2001) were that great crested newts were not recorded from the two ponds surveyed at Groby Lodge Farm.

5.2 Using the Habitat Suitability Index (HSI) assessment (Oldham *et al.*, 2000) Pond 2 received a 'poor' suitability score of <5. This was largely due to the significant impact of wildfowl combined with the potential impact of fish in a large pond in poor to moderate surrounding habitat. These reasons are likely to dictate why great crested newts are absent. Smooth newt populations are more resilient to these affecting factors.

5.3 Pond 1 however was deemed more suitable for great crested newts with a HSI score of 0.78, grading the pond suitability as 'good'. The impact of wildfowl, although present, was minor, and there was no evidence of fish. The pond was also a more suitable size for great crested newts in moderate surrounding habitat. Despite the thorough survey methodology however (including 30 bottle traps in a ~600 m^2 pond on each occasion), no great crested newts were uncovered.

5.4 Great crested newts generally exist in metapopulations. This is a group of associated populations living and breeding in and around a cluster of ponds. These clusters of ponds are primarily within 1km of each other, ideally within 250 metres. This means such metapopulations are therefore more resilient to factors influencing population, such as habitat modifications. Aside from the two ponds surveyed as part of this remit, only one other pond is apparent within 1km. This pond is almost 900m north across several fields. Whilst it is feasible that great crested newt populations may colonise the two surveyed ponds from this other water body over time (if present there), generally only small numbers of great crested newts move 1km or more. The majority of animals remain within 250m of a given pond. The motorway to the south west forms a significant barrier to any movement from this direction.

6.0 **Conclusion**

6.1 As a result of these findings, no mitigation is therefore required at this time for great crested newts.

7.0 **Appendices**

7.1 Habitat Suitability Index Results

Please refer to: Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10 (4), 143-155.

Pond Ref:	**Pond 1**	**Pond 2**
SI1 - Location	1	1
SI2 - Pond Area	1	0.8
SI3 - Pond Drying	0.9	0.9
SI4 - Water Quality	0.67	0.67
SI4 - Shade	1	1
SI6 - Fowl	0.67	0.01
SI7 - Fish	0.67	0.33
SI8 - Ponds Nearby	0.83	0.83
SI9 - Terrestrial Habitat	0.67	0.67
SI10 - Macrophytes (Cover)	0.55	0.7
HSI Score:	**0.78**	**0.48**
GCN Suitability (HSI Rating):	**Good**	**Poor**

7.2 Pond 1 Survey Results

Date: 2nd May 2011 **Surveyor**: Matt Cook
Wind Disturbing Water: Y **Rain**: N
Overnight (Low) Temp: 2°C **% Shoreline Surveyed**: 80%
Water Clarity: Intermediate, bottom visible from shallows

	Torch				**Bottle**				**Egg Search**
	Torch Temp: 7°C				**No. of Traps**: 30				Yes
	M	F	Juv.	Larvae	M	F	Juv.	Larvae	Found?:
Great Crested Newt									
Smooth Newt	2	9			5	3			
Palmate Newt									
Common Frog		1							
Common Toad		1							
Other	5 Gt Diving Beetles.								

Date: 11th May 2011 **Surveyor**: Matt Cook
Wind Disturbing Water: N **Rain**: N
Overnight (Low) Temp: 5°C **% Shoreline Surveyed**: 80%
Water Clarity: Intermediate, bottom visible from shallows

	Torch				Bottle				Egg Search
	Torch Temp: 7°C				No. of Traps: 30				No
	M	F	Juv.	Larvae	M	F	Juv.	Larvae	Found?:
Great Crested Newt									
Smooth Newt	5	10 *			1	2			
Palmate Newt									
Common Frog		1							
Common Toad									

Other * plus 1 Unidentified Smooth, 1 Gt Diving Beetle.

Date: 21st May 2011 **Surveyor**: Matt Cook
Wind Disturbing Water: Y **Rain**: N
Overnight (Low) Temp: 9°C **% Shoreline Surveyed**: 80%
Water Clarity: Intermediate, bottom visible from shallows

	Torch				Bottle				Egg Search
	Torch Temp: 13.5°C				No. of Traps: 30				Yes
	M	F	Juv.	Larvae	M	F	Juv.	Larvae	Found?:
Great Crested Newt									
Smooth Newt	3	7 *			4	10	1		
Palmate Newt									
Common Frog									
Common Toad									

Other * plus 3 Unidentified Smooths, 4 Gt Diving Beetles.

Date: 29th May 2011 **Surveyor**: Matt Cook
Wind Disturbing Water: N **Rain**: N but recent
Overnight (Low) Temp: 12.5°C **% Shoreline Surveyed**: 80%
Water Clarity: Intermediate, bottom visible from shallows

	Torch				Bottle				Egg Search
	Torch Temp: 13.5°C				No. of Traps: 30				Yes
	M	F	Juv.	Larvae	M	F	Juv.	Larvae	Found?:
Great Crested Newt									
Smooth Newt	1	12 *			2	6			Yes
Palmate Newt									
Common Frog									
Common Toad									

Other * plus 4 Unidentified Smooths, 3 Gt Diving Beetles, 4 dragonfly larvae.

7.3 Pond 2 Survey Results

Date: 2nd May 2011 **Surveyor**: Matt Cook
Wind Disturbing Water: Y **Rain**: N
Overnight (Low) Temp: 2°C **% Shoreline Surveyed**: 70%
Water Clarity: Intermediate, bottom visible from shallows

	Torch				Bottle				Egg Search
	Torch Temp: 7°C				**No. of Traps**: 30				Yes
	M	F	Juv.	Larvae	M	F	Juv.	Larvae	Found?:
Great Crested Newt									
Smooth Newt	5	28				1			
Palmate Newt									
Common Frog									
Common Toad									
Other	5 Gt Diving Beetles.								

Date: 11th May 2011 **Surveyor**: M Cook & BJ Collins
Wind Disturbing Water: N **Rain**: N
Overnight (Low) Temp: 5°C **% Shoreline Surveyed**: 70%
Water Clarity: Intermediate, bottom visible from shallows

	Torch				Bottle				Egg Search
	Torch Temp: 7°C				**No. of Traps**: 30				No
	M	F	Juv.	Larvae	M	F	Juv.	Larvae	Found?:
Great Crested Newt									
Smooth Newt	9	9 *				2			
Palmate Newt									
Common Frog		1							
Common Toad									
Other	* 9 Unidentified Smooth.								

Date: 21st May 2011 **Surveyor**: Matt Cook
Wind Disturbing Water: Y **Rain**: N
Overnight (Low) Temp: 9°C **% Shoreline Surveyed**: 70%
Water Clarity: Intermediate, bottom visible from shallows

	Torch				Bottle				Egg Search
	Torch Temp: 13.5°C				**No. of Traps**: 30				Yes
	M	F	Juv.	Larvae	M	F	Juv.	Larvae	Found?:
Great Crested Newt									
Smooth Newt	5	9 *							
Palmate Newt									
Common Frog									
Common Toad									
Other	* 8 Unidentified Smooths.								

Date: 29th May 2011 **Surveyor**: Matt Cook
Wind Disturbing Water: N **Rain**: N but recent
Overnight (Low) Temp: 12.5°C **% Shoreline Surveyed**: 70%
Water Clarity: Intermediate, bottom visible from shallows

	Torch				Bottle				Egg Search
	Torch Temp: 13.5°C				**No. of Traps**: 30				Yes
	M	F	Juv.	Larvae	M	F	Juv.	Larvae	Found?:
Great Crested Newt									
Smooth Newt	4	18 *			1				Yes
Palmate Newt									
Common Frog									
Common Toad									
Other	* 9 Unidentified Smooths.								

7.4 Architects Plans (edited) showing ponds surveyed

