Appendix 10.4
Great Crested Newt Survey, 2004-2006

M74 JUNCTION 5, RAITH

GREAT CRESTED NEWT SURVEY

FINAL REPORT

Prepared for:	**Mouchel Fairhurst**
Prepared by:	**Linda Swankie**
Approved by:	**Karen Atkins**
Date:	**October 2006**
Young Associates Ref:	**B4400/R3**

TABLE OF CONTENTS **Page No.**

1. INTRODUCTION

1.1 Background

1.1.1 Great crested newt surveys were carried out in 2004 and 2005 as part of the baseline ecological studies in relation to proposed improvements at Raith Junction, M74 Junction 5 (M74 Junction 5, Raith, Stage 2 Environmental Impact Assessment Report. MFJV 2005) .

1.1.2 As part of the development of a preferred improvement option for Raith, a further amphibian survey was carried out to update previous survey data and provide a robust basis for the assessment of possible impacts upon amphibians in general, and great crested newts in particular. A total of 12 ponds are located within 500m of Raith Junction. Six of these ponds were surveyed in May-June 2006..

1.1.3 Great crested newts and their habitats are given full protection under Section 9 of the Wildlife and Countryside Act 1981, as amended. They are also listed on Annexes II and IV of Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (known as the Habitats Directive), which is implemented in the UK by The Conservation (Natural Habitats, &c.) Regulations 1994, commonly referred to as the Habitats Regulations.

1.1.4 The great crested newt is included on Schedule 2 of the Habitats Regulations, which lists “European protected species of animals” (Regulation 38). This makes it an offence intentionally to kill, injure, take or sell great crested newts or to damage, destroy or obstruct access to any structure or place used for shelter or protection. It is also an offence to disturb great crested newts while they are occupying any such place of shelter.

2. METHODOLOGY

2.1 Great Crested Newt Survey

2.1.1 Previous great crested newt surveys carried out in the area of Raith Junction in relation to DMRB Stage 2 assessments identified the presence of 12 ponds within 500m of the survey boundary. Pond numbers remain as referenced in previous reports. Surveys to determine presence/absence of great crested newts were carried out on six ponds. It was not possible to survey a number of the ponds due restricted access or potentially hazardous conditions. All waterbodies were surveyed to a methodology according with English Nature Great Crested Newt Mitigation Guidelines 2001.

2.1.2 Brief details of these methods are given below:

- Egg searches - Newts lay their eggs individually on the leaves of submerged/emergent water plants, which are then folded around the egg. Their size and colouration readily distinguishes the eggs of great crested newts from those of smaller smooth and palmate newts.

- Torch surveys using 1,000,000 candle-power “Clu-lite” torches, were undertaken in suitable weather conditions after dark. These surveys involve walking slowly around accessible edges of the pond and scanning the water with the torch. The species, sex and number of newts seen by torchlight are recorded. Torch surveys are most effective in ponds with relatively clear water, with easy access to the banks and which are not choked with vegetation.

- Bottle trapping is a useful method of surveying for great crested newts where water quality is poor or the vegetation is too dense to give good results from torch surveys. They are inserted into the pond at night and are retrieved early the following morning. The traps were set on the same evening as the torch survey and retrieved early the following morning.

2.1.3 Surveys for great crested newts were carried out on six ponds (Ponds 16, 18, 21, 24, 24a and 24b) shown on Figure 1. The surveys consisted of four visits undertaken on 10th and 11th May and 12th and 13th June 2006. Survey methods utilised egg searches and torch surveys only on four of the six ponds. Bottle trapping was carried out on Pond 18 on the first visit only, as the water was found to be flowing, and on Pond 21. The remaining ponds were either too shallow to bottle trap, or it was considered unsafe to employ this method. All surveys were undertaken in suitable weather conditions, e.g. night time temperatures above 5°C with little or no rain.

2.2 Limitations

2.2.1 Limitations of the survey are as above. It was not possible to access four ponds identified in the area and a further pond was considered too dangerous to survey due to very deep silt at the margins. However, the surveys that were carried out were carried out in accordance with published guidance and the results are supported by previous great crested newt surveys carried out in the same area. It is therefore not considered that the above limitations would have any material effect on the conclusions reached in this survey report.

3. RESULTS

3.1 Description of Ponds

Pond 16

3.1.1 This pond measures approximately 50m x 15m, with a depth > 0.50m in places. Hard rush *Juncus inflexa* is abundant throughout the pond, with emergent water plantain *Alisma plantago-aquatica* and sedge *Carex spp*. Aquatic vegetation comprises of common water-starwort *Callitriche stagnalis*.. It was not possible to carry out bottle trapping on this pond due to the presence of horses.

Pond 17

3.1.2 The pond is approximately 35m X 35m with no banks. Marginal vegetation consists of hard rush, creeping buttercup *Ranunculus repens* and small amounts of amphibious bistort *Polygonum amphibium.* Reed mace *Typha latifolia* is present as both marginal and emergent vegetation. The pond is not shaded by trees and no invasive species are present.. It was difficult to access the edge of the water due to extensive marginal vegetation and it was therefore not possible to survey for GCNs.

Pond 18

3.1.3 This pond is approximately 100m X 40m, with no banks. The water is clear at the edges with no aquatic vegetation present. Marginal vegetation comprises of reed mace, soft rush *Juncus effuses,* creeping buttercup and fescue spp. Reedmace and soft rush were also present as emergent vegetation, along with floating sweet grass *Glyceria fluitans*. No invasive species were present and there were no trees shading the pond.

Pond 19

3.1.4 This pond is approximately 70m X 40m. There is no bank vegetation but the pond is surrounded by hawthorn and silver birch *Betula pendula*. Marginal vegetation comprises of reedmace, lesser celandine *Ranunculus ficaria* and water cress, with no aquatic or emergent vegetation present. The pond receives no shading from trees and no invasive species are present. No access for GCN surveys was possible.

Pond 20

3.1.5 This large pond is very difficult to access due to dense vegetation covering almost 100% of the surface area. Vegetation is dominated by bulrush, with reed canary grass, soft rush, meadowsweet, great willowherb and some bottle sedge. Not surveyed for GCN.

Pond 21

3.1.6 The pond is approximately 120m X 80m. There is clear water around the edge, with a small amount of common duckweed *Lemna minor*. Bankside vegetation consists of cock's foot *Dactylus glomerata* and hawthorn *Crataegus monogyna,* with reed mace as marginal vegetation. Emergent vegetation comprises rosebay willowherb *Chamerion angustifolium* and common reed *Phragmites australis.* There are no invasive species present and the pond is not shaded by trees. The surrounding area is scrub land. Adult frogs and coots were recorded at the pond.

Pond 22

3.1.7 The pond is approximately 40m X 30m and has no banks. Marginal vegetation comprises of reed mace and floating sweet grass, with no emergent or aquatic vegetation present. Frogs, coots and swans were recorded within this habitat. No access for GCN surveys was possible.

Pond 23

3.1.8 This pond measures approximately 15m X 25m. As above. No access for GCN surveys was possible.

Pond 24

3.1.9 This location comprises a depression in the field where water has collected. The margins are poached by horses. The pond measures 10m x 4m, with a depth of 20cm. Marginal vegetation consists of a small amount of hard rush, with emergent water plantain and floating sweet grass. Due to the presence of horses in the field the pond was not bottle trapped.

Pond 24a

3.1.10 This body of water has collected in a horse poached depression, measuring 6m X 5m, with a depth of 10cm. Marginal vegetation comprised of hard rush with emergent and aquatic vegetation consisting of amphibious bistort and common water-starwort and floating sweet grass.

Pond 24b

3.1.11 This pond measures 8m x 3m and was almost dry at the time of survey (11/05/06). The vegetation consisted of marginal hard rush and emergent water plantain.

Pond 25

3.1.12 This pond measures approximately 40m X 50m. There are no banks and marginal vegetation comprises of reed mace and floating sweet grass. No emergent or aquatic vegetation is present and the pond is not shaded by trees. Herons were recorded at this site. No access for GCN surveys was possible.

3.2 Results

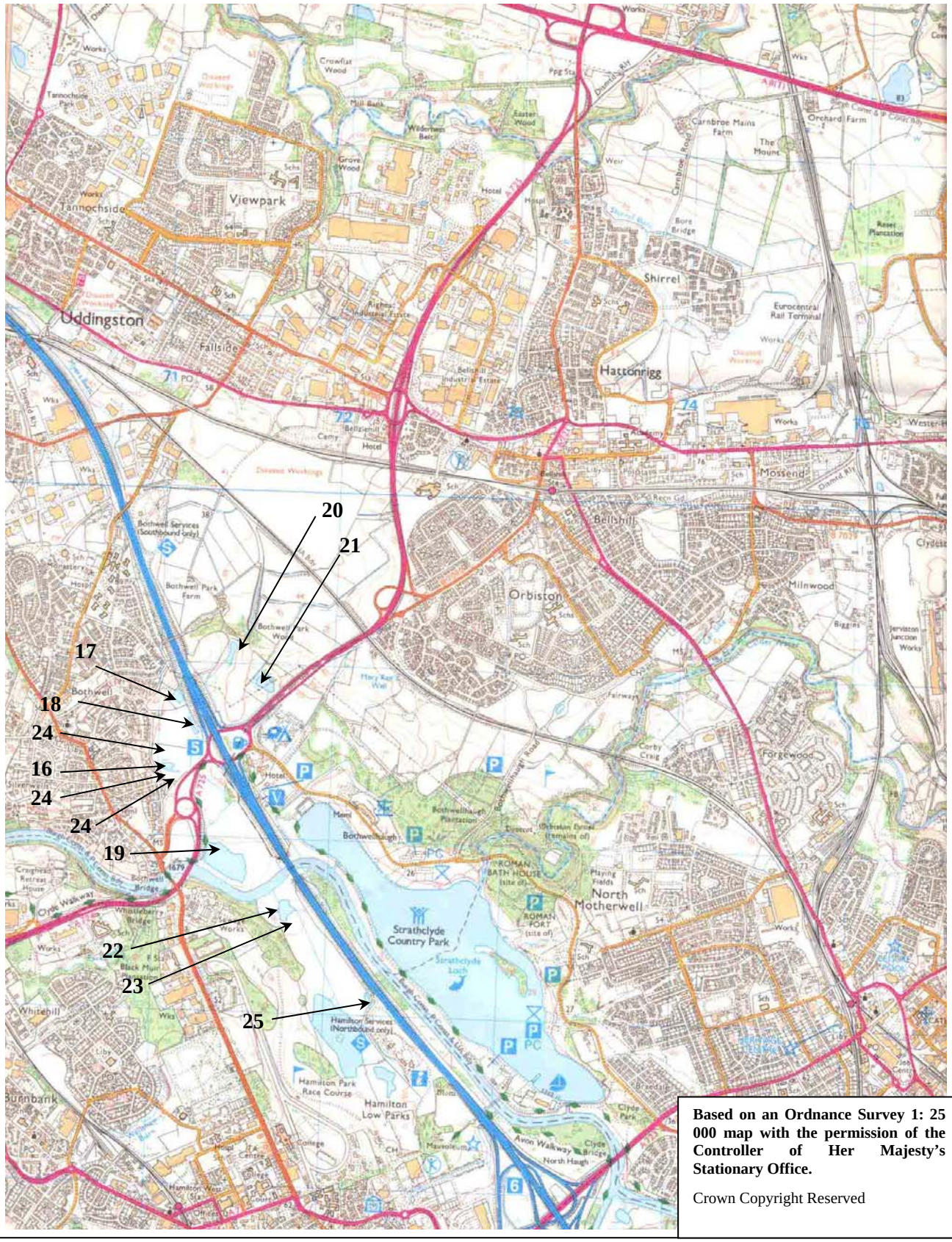
3.2.1 No great crested newts, nor their eggs, were recorded in any of the surveyed ponds.

3.2.2 Smooth newts were recorded in three of the ponds surveyed (Ponds 16, 21, and 24b). Smooth newt eggs were recorded in pond 16. Full results from the surveys are provided in Table 1 at Annex 1.

4. CONCLUSIONS

4.1.1 No great crested newts were recorded during the surveys in 2006, which supports the findings of the previous surveys in 2004 and 2005. However, it was not possible to survey all the ponds within 500m of the road scheme boundary, so it is possible that great crested newts could be breeding in those ponds not surveyed. However, the lack of any evidence of great crested newts over a three separate surveys strongly suggests that this species is not present within the survey area around Raith Junction.

4.1.2 The proposed scheme directly affects one pond (Pond 18), encroaching on a proportion of its total area. This pond has not been found to contain great crested newts. Indirect impacts on other wetland features around Raith Junction will be avoided or minimised as far as practicable through the application of suitable mitigation measures. Mitigation will also involve the creation of additional pond habitat to the north west and north-east of the junction.



Based on an Ordnance Survey 1: 25 000 map with the permission of the Controller of Her Majesty's Stationary Office.

Crown Copyright Reserved

Figure 1

M74 - Junction 5 - Raith

Location of Ponds/wetlands in and around Raith Junction

Young Associates

The Long Barn

Chester Road

Tattenhall

ANNEX 1

SUMMARY OF SURVEY RESULTS 2006

GREAT CRESTED NEWT *Triturus cristatus*						
Ponds	**Survey Method**	**Dates**				**Notes**
		10th May	11th May	12th June	13th June	
16	Egg search	0	0	0	0	Frog and toad tadpoles
	Torching	0	0	0	0	
	Bottle-trapping					
18	Egg search	0	0	0	0	Fish and frog tadpole
	Torching	0	0	0	0	
	Bottle-trapping	0	0			
21	Egg search	0	0	0	0	Diving beetles, tadpoles, frogs
	Torching	0	0	0	0	
	Bottle-trapping	0	0	0	0	
24	Egg search	0	0	*	*	
	Torching	0		*	*	
	Bottle-trapping			*	*	
24a	Egg search	0	0	*	*	
	Torching	0	0	*	*	
	Bottle-trapping			*	*	
24b	Egg search	0	0	*	*	
	Torching	0	0	*	*	
	Bottle-trapping			*	*	

SMOOTH NEWT *Triturus vulgaris*						
Ponds	**Survey Method**	**Dates**				**Notes**
		10th May	11th May	12th June	13th June	
16	Egg search	✓	0	0	0	Frog and toad tadpoles
	Torching	35m 15f 7u	4m 9f	0	0	
	Bottle-trapping					
18	Egg search	0	0	0	0	Fish and frog tadpole
	Torching	0	0	0	0	
	Bottle-trapping	0	0			
21	Egg search	0	0	0	0	Diving beetles, tadpoles, frogs
	Torching	0	0	0	0	
	Bottle-trapping	0	1m 1f	0	0	
24	Egg search	0	0	*	*	
	Torching	0		*	*	
	Bottle-trapping			*	*	
24a	Egg search	0	0	*	*	
	Torching	0	0	*	*	
	Bottle-trapping			*	*	
24b	Egg search	0	0	*	*	
	Torching	4m 2f	0	*	*	
	Bottle-trapping			*	*	