

HARLOW GREAT CRESTED NEWT 2006 SURVEY REPORT



Report Date January 2007

Jones & sons Environmental Sciences Ltd

21-23 North Road

Hertford

Herts

SG14 1LN

Tel: 01992 552407

**Report to Harlow District Council
Planning Services, Civic Centre, The Water Gardens
Harlow, Essex CM20 1WG**

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1 Summary

- 1.1 Britain supports the largest population of Great Crested Newts (*Triturus cristatus*) in the world and most of these are in the lowland areas of England. Due to the recent widespread decline across Europe they have been identified as an endangered species. Great crested newts are a priority species in the Essex Biodiversity Action Plan and have been identified as one of the flagship species for Harlow District Council.
- 1.2 A survey for any presence/absence of great crested newts was undertaken of selected ponds within the District of Harlow between March and July 2006 to produce a site inventory and mapped (computerised GIS) layer to feed into the Local Development Framework.
- 1.3 A total of 51 water bodies (ponds and ditches) were targeted for survey with 46 of these being successfully surveyed. 33 of the ponds support amphibians (72%) with 16 ponds supporting great crested newts (35%). Smooth newts (*Triturus vulgaris*) were found in 28 ponds (61%), common frogs (*Rana temporaria*) in 21 ponds (46%) and common toads (*Bufo bufo*) only in 2 ponds (4%).
- 1.4 The total number of great crested newts/pond recorded ranged from 1 to 11 adults and breeding (presence of eggs or larvae) was confirmed in 14 ponds. The majority of ponds support low populations with one pond (a pond by the M11) supporting an estimated medium population of great crested newts.
- 1.5 The majority of great crested newt ponds in Harlow were found around the east and south perimeter of Harlow and tended to be within 500 m of other great crested newt ponds. The exception to this was the isolated pond in the golf course in the northwest corner of Harlow and a central garden pond. No great crested newts were recorded in the waterbodies within the near vicinity of the River Stort.
- 1.6 The majority of the ponds with confirmed great crested newts had an area of 100-300 m², a pH ranging from 6.97 to 7.75 and Total Dissolved Solids ranging from 68 ppm to 1022 ppm. None of the ponds supporting great crested newts suffered from excessive shading and only a few had excessive aquatic vegetation cover. The main issue regarding vegetation was the lack of sufficient favourable aquatic vegetation for egg attachment or to provide cover for the newts.
- 1.7 The majority of great crested newt ponds in the outer areas of Harlow support favourable surrounding terrestrial habitats with woodland or rough grassland. The ponds in the urban area are under threat due to isolation. Other main threats identified were pollution caused by rubbish or excess nutrients, the presence of New Zealand Stonecrop, the presence of sticklebacks and goldfish, the proximity of the M11 (and its associated proposed development) and also the pressures to accommodate development within and around Harlow.
- 1.8 The report includes management recommendations for the ponds surveyed.



2 Introduction

- 2.1 Harlow is situated in west Essex adjacent to the county of Hertfordshire. The River Stort borders the north of the District and the M11 borders the east.
- 2.2 In 1947, Sir Frederick Gibberd designed the new town of Harlow to provide self-sufficient neighbourhoods. The new town was built on predominantly rural farmland resulting in the fragmentation of the rural areas. The new town however was designed to provide wildlife corridors across the town linking the built up areas to the wider countryside. These large landscape wedges are known as Green Wedges.
- 2.3 Many of the important wildlife habitats around Harlow (woodlands and semi-natural grasslands) fall within the Green Wedges across the town.
- 2.4 Since Harlow has been identified as a potential location for growth within the Eastern Region, it is important to identify and safeguard Harlow's existing environmental assets. In addition to important semi-natural habitats (such as Sites of Special Scientific Interest, Local Nature Reserves and County Wildlife Sites), this should also include habitats that support nationally important species (such as priority species listed in the UK BAP and species protected under the Wildlife and Countryside Act 1981 (as amended)). This includes habitats supporting great crested newts.
- 2.5 Harlow District Council Planning Services has therefore commissioned a survey of ponds in Harlow for any presence of great crested newts. The survey was undertaken by Jones and Sons Environmental Sciences Ltd during 2006.
- 2.6 Britain supports the largest population of Great Crested Newts in the world and most of these are in the lowland areas of England. Due to the recent widespread decline across Europe they have been identified as an endangered species. For this reason they have been afforded special protection under UK and European legislation. Understanding the distribution of great crested newts is therefore highly important in order to be able to protect the endangered species and their habitats.
- 2.7 Great crested newts are a priority species in the UK Biodiversity Action Plan and the Essex Biodiversity Action Plan and have been identified as one of the flagship species for Harlow District Council. The recent Planning Policy Statement (PPS9): Biodiversity and Geological Conservation (2005) published by the Office of the Deputy Prime Minister details national policies regarding how biodiversity and geological features of conservation interest are to be protected through the planning system. One of the key principles of PPS9 is that all plan policies and planning decisions should aim to maintain and enhance, restore or add to biodiversity and geological conservation interests, with the intention that harm to these resources must be prevented. A great crested newt survey is therefore required to produce a site inventory to assist the Local Planning Authority through



policies in the Local Development Framework and through the development control system.

- 2.8 A site inventory available in an easy-to-use, visual format such as a mapped computerised GIS (Geographical Information System) will enable planning authorities to view whether great crested newt habitats are present within proposed development areas.
- 2.9 Where adverse impacts are identified that may threaten the survival of great crested newts, planning applications should be refused. Planning permission should only be granted where there is a proven need for the development and appropriate mitigation has been designed to safeguard great crested newts and maintain their populations at a favourable conservation status within the local area. An appropriate mitigation plan involves: avoiding any adverse impact on great crested newt habitats where possible, avoiding any impact on the animal by exclusion, capture and moving and providing appropriate compensation habitats to offset the damage caused by the development. Capturing and moving newts, and destroying their habitats, should only be considered as a last resort and should only be undertaken if their populations can be maintained at a favourable conservation status within the local area.
- 2.10 In addition to ensuring species protection through the Local Development Framework and development control process, the identification of great crested newts sites will help to ensure their appropriate management. Unmanaged ponds can become silted up and over-shaded leading to reduced viability as breeding sites. Provision of great crested newt information to land owners and managers will enable ponds and their surrounding terrestrial habitat to be appropriately managed to help safeguard their great crested newts and encourage the enhancement of populations within the local area.
- 2.11 An important consideration is that the environment is constantly changing. Development plan policies, planning decisions and management schemes need to be based upon information that is as up-to-date and reliable as possible in order to provide quality information and enable wise decisions to be made.
- 2.12 A phase one habitat survey for Harlow carried out in 2004 identified that there was a lack of data in relation to great crested newts. The survey undertaken by Jones and Sons Environmental Sciences in 2006 will therefore help to produce a more complete coverage of the status of great crested newts in Harlow.



3 Constraints

- 3.1 The survey represents a ‘snap shot’ in time and it should be recognised that great crested newts requirements change throughout the year; animals may move to different locations during the year and between years and the habitat may change over time.
- 3.2 The report is based on surveys of targeted ponds within the Harlow area and is not a comprehensive survey of all the ponds within Harlow. The absence of great crested newt records within an area should therefore not be interpreted as an absence of great crested newts.
- 3.3 From the original list of ponds, five ponds could either not be accessed or the ponds were not located.
- 3.4 A supporting report has been written for the Planning Services of Harlow District Council which includes sensitive data on great crested newt (a protected species) sites. The report will be disclosed to land owners (with great crested newts on their land) and to people involved with great crested newt conservation. However the Council has decided that it will not make the report available to the general public.
- 3.5 The Environmental Information Regulations (2004) imposes a duty on public bodies to provide information relating to the environment to anyone who requests it; the aim of the legislation is to protect the environment by ensuring greater access to environmental information. However it would clearly be contradictory if disclosure of information would lead to damage to the environment. The EIR therefore provides various exceptions to the duty to disclose environmental information.
- 3.6 It is Harlow District Council’s view that publishing the location of great crested newt sites would increase the risk of disturbance to those sites and thus damage the environment (Regulation 12(5)(g)). It is further concluded that the public interest in maintaining the exception outweighs the public interest in disclosing the information.



4 Legislation relevant to Great Crested Newts

4.1 Great crested newts have suffered a major decline in status in Britain and Europe over the last century. This decline has led them to be afforded special protection.

4.2 Great crested newts and their places of shelter are fully protected by the Wildlife and Countryside Act 1981 (as amended), through inclusion in Schedule 5, Section 9. They are also included in Schedule 2 of the Conservation (Natural Habitats, &c.) Regulations 1994 which defines 'European protected species of animals.' More recently, the Countryside & Rights of Way (CROW) Act 2000 has significantly strengthened the Wildlife and Countryside Act and added the word "reckless" to the offence of disturbing a great crested newt or damaging its habitat.

4.3 The wording in the 1981 Act and 1994 Regulations is slightly different but, in summary, taken together the legislation makes it illegal to:

- Intentionally or deliberately capture or kill, or intentionally injure any life stage of a great crested newt.
- Deliberately disturb any life stage of great crested newts or intentionally or recklessly disturb them while they are occupying a structure or place that is used for shelter and protection.
- Damage or destroy a breeding site or resting place or intentionally or recklessly damage, destroy or obstruct access to any place used for shelter or protection. (Places of shelter include both the breeding pond and the surrounding terrestrial habitat used by great crested newts).
- Possess a great crested newt, or any part of it, unless acquired lawfully
- Sell, barter, exchange or transport great crested newts or parts of them.

4.4 Actions that are prohibited by the legislation can be made lawful by the granting of a licence by the appropriate statutory authority. For scientific, educational and conservation purposes this will be Natural England (formerly English Nature). Licences are required for egg searches (if eggs are to be disturbed), netting great crested newts, bottle trapping, pitfall trapping and refuge searching. For torch surveying if disturbance is considered likely, a licence is also required. Pond management may also require a licence and this should be discussed with Natural England.

4.5 Developments that contravene the protection afforded to great crested newts under the Conservation (Natural Habitats & c) Regulations 1994 require a Habitat Regulations Licence to be issued by the Department for Environment, Food and Rural Affairs (DEFRA) before any works can commence.

4.6 Three tests must be satisfied before DEFRA can issue a licence to permit otherwise prohibited acts. These are:

- That the development is "in the interests of public health and public safety, or for other imperative reasons of overriding public interest, including



those of social or economic nature and beneficial consequences of primary importance for the environment” (Regulation 44 (2)(e).

- That there is no satisfactory alternative (Regulation 44 (3)(a).
- That 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 (Regulation 44 (3)(b).

4.7 In order to obtain a licence to allow the capture of newts or destruction of great crested newt habitat (pond and surrounding terrestrial habitat) it will need to be clearly demonstrated that any damage will be adequately compensated for to satisfy Regulation 44(3)(b). Where it is unavoidable that a development will affect great crested newt population, the mitigation should aim to maintain a population of equivalent status on or near the original site. The legislation means that any change of land use will need to have a clearly documented compensation strategy to maintain the numbers of great crested newts in the area.

4.8 The police are the main enforcement body for wildlife offences and, in some cases, local authorities may also take action. The maximum fine on conviction of offences under Section 9 and Regulation 39 currently stands at £5000/ animal or per offence. The CRoW Act 2000 amended the 1981 Act to allow for a custodial sentence of up to six months instead of, or in addition to, a fine.

4.9 Other legislation relevant to great crested newts includes the Abandonment of Animals Act 1960. Releasing a great crested newt in unsuitable habitat likely to cause undue suffering to the animal would constitute an offence under this legislation.



5 Methodology

5.1 Research

- 5.1.1 Research was undertaken of any historical (or ongoing) Great Crested Newt surveys for the Harlow area. This mainly involved consultation with the County Recorder (Mr D. R. Scott) for amphibians and the Essex Amphibian and Reptile Group (Essex ARG). The results of the research are given on page 22 and page 43.
- 5.1.2 Contact was also made with the Essex Wildlife Trust and Essex County Council. Clair Cadman (the Essex Biodiversity Officer and species lead for the GCN BAP) had recently left the Wildlife Trust and the Essex Records Centre was not fully operational at the time. Colchester Records Office was also contacted but they did not have information for the Harlow area. The research concentrated on organisations with specific species datasets, which meant that organisations such as the Environment Agency were not contacted.
- 5.1.3 Consultation with the public was undertaken through the provision of a great crested newt presentation at Harlow Civic Centre.
- 5.1.4 A data search was also undertaken of the National Biodiversity Network (NBN) gateway website. A search was made of the interactive species map.
- 5.1.5 Publications for the area were also researched.
- 5.1.6 In order to establish the origin of the ponds the historic maps of Harlow were viewed at the Harlow Museum to determine any presence of the pond in the 1880s- 1920s.



5.2 Pond Survey

- 5.2.1 Fifty-one water bodies (ponds and ditches) were targeted for survey during March and July 2006.
- 5.2.2 The pond details recorded included: site reference, site name, Ordnance Survey Grid Reference (10 figure), date of survey, the owner of the site, public access to the pond and type of pond (rural, urban, farm, woodland etc). The description of the pond include: dimensions, depth, pond permanence, presence of shallow edges, pond shading, presence of aquatic vegetation, vegetation types (emergent, submerged and floating), a description of surrounding terrestrial habitat and land use. Notes on management and any presence of threats such as large numbers of water fowl, fish, accumulated rubbish, pollution, presence of alien plants and level of public disturbance were also recorded.
- 5.2.3 Some ponds were also sampled for their diversity of invertebrates and water quality. Measurements taken included pond pH, temperature and Total dissolved solids.
- 5.2.4 The recording of this range of pond features ensures that the data can be used to assess the ponds suitability for great crested newts and also complies with the national pond survey methodology.
- 5.2.5 Criteria considered for great crested newt pond suitability include: pond location, pond density in the area, pond area, pond profile, pond permanence, water quality, pond shading, presence of aquatic vegetation, presence of newt friendly habitat, number of waterfowl and occurrence of fish.
- 5.2.6 Photographs of each pond and the surrounding area were taken and a sketch map drawn highlighting the main ecological features of the pond and the locations where any great crested newts were identified.
- 5.2.7 Two qualified zoologists (Dr Jenny Jones MIEEM and Mr Roger Jones) experienced in conducting great crested newt surveys undertook the surveys. Dr Jenny Jones holds an English Nature licence to survey for great crested newts.



5.3 Egg searches

5.3.1 Egg searches were undertaken in the ponds surveyed to ascertain any use of the pond for breeding. Examining submerged vegetation for newt eggs is a speedy effective method for detecting the presence of great crested newts. Great Crested Newt eggs are 'rice sized' and can be readily distinguished from those of the smaller newts by their size, shape and colour. This is a useful technique that can be applied in the daytime.

Photograph 1: Great Crested Newt egg



5.3.2 Great crested newt eggs have a jelly capsule (4.5-6 mm long) with a light yellowish centre. Smooth and palmate newts lay grey-brown (dirty white) coloured eggs surrounded by a smaller jelly capsule (3mm).

5.3.3 Adult great crested newts travel from the land to their breeding pond between February and April depending on factors such as temperature and rainfall.

5.3.4 Female great crested newts attach single eggs to the leaves of aquatic plants. Eggs are usually produced when the temperature reaches above 9 °C; egg searches are therefore best undertaken between mid April and mid June.

5.3.5 The egg search involves searching the aquatic plants around the margins of the pond for great crested newt eggs wrapped in the leaves of the vegetation. The leaves are usually bent sharply back on themselves.

5.3.6 The egg searches were undertaken by a licensed worker (Dr Jenny Jones) between April and June 2006.



5.4 Pond Netting

- 5.4.1 Development of great crested newt eggs is dependant on temperature and requires warm conditions; cold spells in the early spring will delay development. On average, after approximately 4 weeks, the eggs develop into larvae (newt tadpoles). A problem faced by great crested newts however is that due to a chromosome abnormality, 50% of great crested newt eggs may die at an early stage.
- 5.4.2 At first the larvae are transparent with external gills but over the summer months they get larger, their skin darkens and they develop legs. The larvae of great crested newts can be distinguished from other species by the presence of a filament at the tail tip and black blotches over the body and tail. The larvae can reach a length of 50-90 mm before metamorphosis compared to 30-40mm for the smaller species. The growth of the larvae is influenced by their prey availability (aquatic invertebrates and small tadpoles).
- 5.4.3 Although adult newts will start to leave their breeding pond between June and July, juvenile newts usually emerge from the ponds from August onwards. A small proportion however may stay on until October or even over winter amongst the pond debris.

Photograph 2: pond netting



Photograph 3: adult great crested newt



- 5.4.4 Dip netting was undertaken of the ponds surveyed in June and July to establish any presence of newt larvae and also sample the diversity of invertebrates. Invertebrates were identified at the site to taxonomic order and if possible also to genera and species
- 5.4.5 Different areas of the pond were sampled over a total of 3 minutes.



5.5 Torch Survey

5.5.1 Amphibians are best observed at night when they are more active. The torch survey was the main methodology used for the identification of any presence of great crested newts. Torch surveys were undertaken between April and June when adult great crested newts would be present in their breeding pond.

Photograph 4: night torch survey



5.5.2 The night time torch survey involves searching for newts by walking around the perimeter of the pond shining a torch into the water. A powerful two million candlepower torch was used.

5.5.3 The locations, sex/stage (male, female, immature) and numbers of great crested newts were recorded.

5.5.4 In addition to recording the presence of great crested newts, any presence of smooth newt, palmate newt, common frog and common toad were also recorded.

5.5.5 The surveys were only undertaken under suitable weather conditions (temperature above 5°C, no/little wind, no rain) and the time of survey and weather conditions (temperature, relative humidity, wind speed) were recorded for each evening visit.

5.5.6 Any constraints on the survey (e.g. cloudy water, abundant surface vegetation cover, inaccessible parts of the pond) were also noted. Where poor bank access or turbid conditions prevented effective recording alternative methods (egg searches or bottle trappings) were used.

5.5.7 Although the main objective of the survey was to establish presence/absence of newts during the torch survey; if found to be present a population score was assigned to the pond as given in the Great Crested Newt Guidelines produced by English Nature.

5.5.8 A count of less than 10 newts were defined as a low population, a count of between 10 and 100 newts a medium population and a count of over 100 newts a high population.



5.6 Bottle Trapping

5.6.1 Bottle trapping is an effective method for capturing great crested newts but in areas with high public disturbance there may be a risk of newts being harmed. This method was therefore only used on a small number of ponds where the welfare of the newts was considered not to be at risk.

5.6.2 Bottle trapping involves setting 2 litre plastic bottle traps around the pond margin in the late evening and returning in the early hours of the following morning to inspect the traps. Submerged bottles with air bubbles are set at a density of 1-2 metres of shoreline.

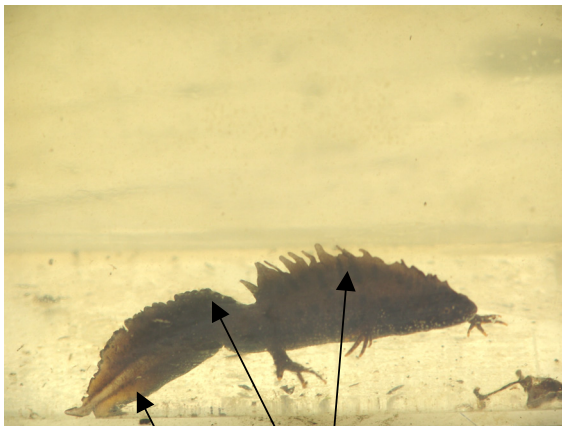
Photograph 5: Bottle trapping



Photograph 6: male GCNs in bottle



Photograph 7: Male great crested newt



White/ silver stripe

Crest

Photograph 8: Female great crested newt



Orange stripe along bottom edge of tail



6 Results of the great crested newt data search

6.1 Research was undertaken of past great crested newts records held by the county recorder (Mr D. Scott), Essex ARG and other organisations. A table of the records provided are given below. These records should not be made freely available and any use of the records should acknowledge their source.

Table 1: Great crested newt records for Harlow before 2006

Location	Date	Number of GCNs	Source
New Hall Farm Pond 1 (near Challinor Close)	1 st April 2004	7	Essex ARG and County Recorder D. R. Scott
	2 nd April 2004	3	
	26 th April 2004	7	
	27 th April 2004	3	
	4 th May 2004	4	
	5 th May 2004	5	
	10 th May 2004	1	
New Hall Farm Pond 2	1 st April 2004	3	
	2 nd April 2004	3	
	27 th April 2004	3	
	10 th May 2004	4	
	11 th May 2004	2	
New Hall Farm Pond 3 Hubbards Hall	2 nd April 2004	5	
	26 th April 2004	1	
	4 th May 2004	1	
	10 th May 2004	9	
New Hall Farm Pond 4	20 th April 2004	1	
	11 th May 2004	8	
New Hall Farm Pond 5	26 th April 2004	3	
	4 th May 2004	2	
Dicks Pond	11 th May 2004	9	
Parndon Wood visitor centre	4 th June 2006	3	
Kingsdon Lane Pond		Present	2004 Report by Middlemarch Environmental Ltd.
Church End pond		Possible presence	
Latton Common			
Nettlewell Rectory			

6.2 The results of the great crested newt records provided by the County Recorder are included in the distribution map for great crested newts in the Appendix on page 43.

6.3 Other organisations consulted are included in section 5.1 on page 16.

7 Results of the 2006 great crested newt survey

7.1 Of the 51 water bodies targeted for survey, 46 sites were surveyed for great crested newts. 16 ponds were confirmed to support great crested newts (35%). These are listed in the table below along with other amphibians recorded.

Table 2 Ponds with great crested newts found during the 2006 pond survey

Site Ref	Site	Date	Method	GCN egg	GCN female	GCN male	Eft	Total GCN	Smooth newt	Other amphibian	Notes
1	Brenthall Wood Pond	9/5/06	Torch	egg	1	4		5	1	Frog	Pipistrelle Bats
2	Challinor Close Pond	24/4/06	Torch	Egg	4	3		7	10		
5	Kingsdon Lane Pond 1	22/4/06	Torch,	Egg	1	2		3	20	Frog Toad	Pipistrelle Bats
		3/7/06	Net				eft	Present			
11	Foster Street (M11) Ponds	24/4/06	Torch	Egg	3	8		11	6		
12	Mill Street Pond	3/5/06	Torch	Egg	1	2		3	12	Frog	
13	Latton Common Pond	18/5/06	Bottle	Egg				Present	1	Frog	
14	Tom's Pond, Mark Bushes	18/5/06	Bottle			1		1	5		
15	Mark Bushes Pond 1	18/5/06	Bottle	Egg	1			1	2		
16	Mark Bushes Pond 2	18/5/06	Bottle	Egg				Present	6		
17	Latton Wood Pond	18/5/06	Bottle	Egg	2	1		3	5		
19	Rundell's Grove Pond	18/5/06	Bottle	Egg	3			3	9	Frog	
20	Mark Bushes/Field corner Pond	18/5/06	Bottle	Egg				Present	1	Frog	Sticklebacks
21	Parndon wood visitor centre ponds	11/5/06	Torch,	Egg	1	1		2	2		Pipistrelle Bats
25	Cemetery Pond	11/5/06	Torch	Egg				Present	20	Frog	
32	The Dashes	27/6/06	Torch		2	1	eft	3	30		
33	Golf Course Pond	27/6/06	Torch,		2			2	1		Goldfish

7.2 The total number of Great Crested Newts (GCNs) recorded ranged from 1 to 11 adults. The majority of ponds therefore support a low population with the exception of the pond by the M11 (pond 11) that has a medium population.

7.3 Breeding was confirmed in 14 of the ponds; confirmed by the presence of eggs or newt larvae (efts).



Fig 1: Percentage of ponds with great crested newts.

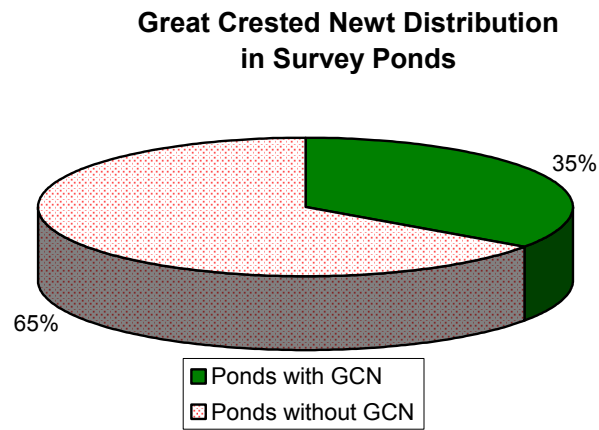


Fig 2: Number of ponds with amphibians

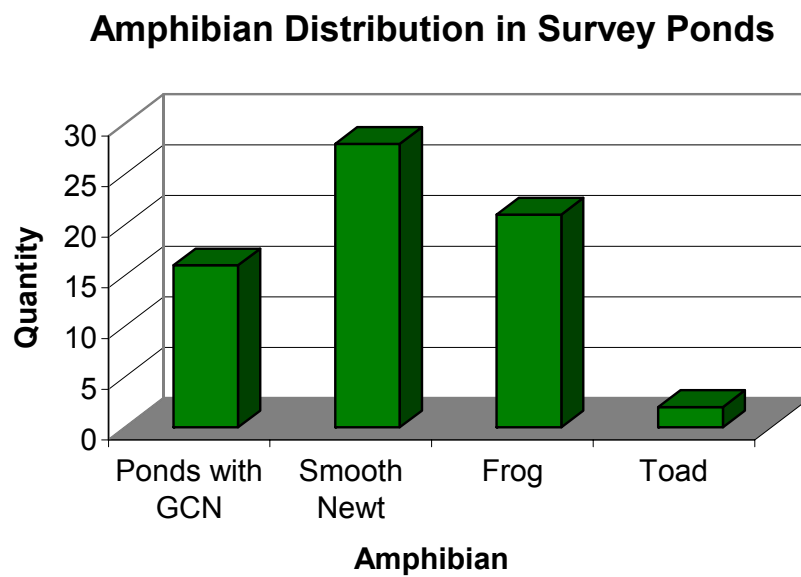


Table 3: Results of the surveys for other ponds with amphibians but no GCNs.

Site Ref	Site	Date	Method	Smooth newt	Other amphibian	Notes
4	Old Hall Rise Pond	24/4/06	Torch,	25		
6	Kingsdon Lane Pond 2	22/4/06	Torch,	50	Frog, Toad	Goldfish Pipistrelle Bats
		3/7/06	Net		Frog	Goldfish
7	Kingsdon Lane pond 3	15/3/06			C 100 Frogs	
8	Nightingales Pond	9/5/06	Torch		Frog	
10	Kitchen Hall Farm Pond 2	9/5/06	Torch	70		Pipistrelle Bats
22	Parndon Wood dipping pond	11/5/06	Torch	1		Sticklebacks Pipistrelle Bats
23	Parndon Wood Pond	11/5/06	Torch,	10	Frog	Sticklebacks Pipistrelle Bats
		27/6/06	Bottle	4		Sticklebacks
24	Parndon wood v2 crater pond	11/5/06	Torch,	20	Frog	Pipistrelle Bats
		26/6/06	Bottle	11		
26	Hospital/Risdens Wood Pond	11/5/06	Torch	8	Frog	Pipistrelle Bats
		27/6/06	Bottle			Zero catch
27	Burnett's Wood Pond	22/4/06	Torch	C 200	Frog	
		3/7/06	Net			Zero catch
28	Sheppards Road Pond	22/4/06	Torch			Zero
		3/7/06	Net		Frog	
29	Church End Pond	24/4/06	Torch		Frog	Sticklebacks Pipistrelle Bats
		3/7/06	Net	larvae	Frog	Sticklebacks
30	Passmores Moat	9/5/06	Torch,	1	Frog	Pipistrelle Bats
		3/7/06	Net		Frog	
31	Markhall Wood	26/6/06	Torch	2	Frog	
35	Parndon Mill Moat	3/5/06	Torch	12		Pipistrelle Bats
40	Town Park pond	14/5/06	Torch		Frog	
46	Edinburgh Way	13/3/06			Frog	No evening access

7.4 A further 19 ponds supported other amphibians (smooth newts, frogs and toads) but no great crested newts. In total 33 ponds supported amphibians (72%).

7.5 Smooth newts were found in 28 of the ponds (61%) including the 16 ponds with great crested newts. Frogs were found in 21 ponds (46%) and toads only in 2 ponds (4%).



Fig 3: Percentage of ponds with smooth newt

**Smooth Newt Distribution
in Survey Ponds**

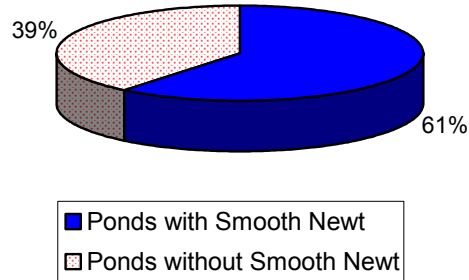


Fig 4: Percentage of ponds with common frog

**Common Frog Distribution
in Survey Ponds**

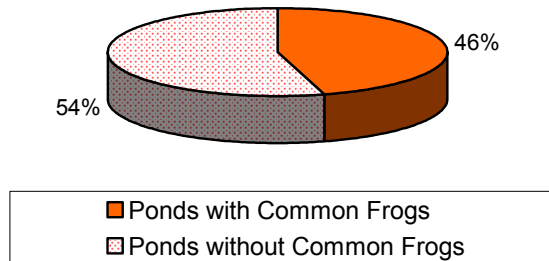


Fig 5: Percentage of ponds with common toad

Toad Distribution in Survey Ponds

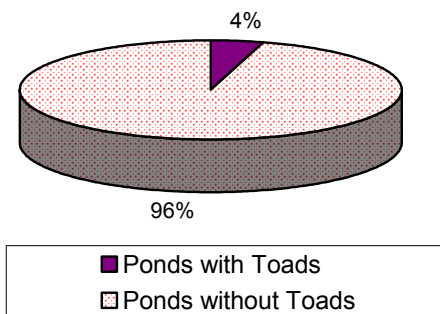


Table 4: Results of the surveys for other ponds with no amphibians

Site Ref	Site	Date	Method	Notes
3	Water Tower	24/4/06	Torch	No open water
9	Kitchen Hall Farm Pond 1	9/5/06	Torch,	Sticklebacks Pipistrelle Bats
18	Latton Wood field pond	18/5/06	Bottle	Zero catch acidic
34	Parndon Mill ditches	3/5/06	Torch	Pipistrelle Bats
36	Parndon Mill Pond	3/5/06	Torch	Pipistrelle Bats
37	Town Park Water Meadows	14/5/06	Torch	Pipistrelle Bats
38	Town Park Water Meadows	14/5/06	Torch	Pipistrelle Bats
39	Town Park Ditches	14/5/06	Torch	Sticklebacks Pipistrelle Bats
41	Town Park Railway Pond	14/5/06	Torch	Sticklebacks Pipistrelle Bats
42	Maymead marsh ditches	14/5/06	Torch	Sticklebacks Pipistrelle Bats
43	Maymead Marsh Pond	14/5/06	Torch	Sticklebacks Pipistrelle Bats
44	Marshgate Spring	26/6/06	Torch	Sticklebacks
45	Marshgate Spring ditches	26/6/06	Torch	Sticklebacks

7.6 No amphibians were recorded in thirteen other water bodies visited (ponds and ditches).

7.7 Of the water bodies surveyed with no amphibians, one was a very acidic pond (pond 18), seven had sticklebacks and four were associated with ditches likely to be accessible by fish.

Table 5: Ponds not accessed

Site Ref	Site	Notes
47	Feltimores Pond	Private grounds, surrounded by scrub.
48	Goldsmiths Pond	Being sold for development. Old rural pond
49	Latton Farm Pond	Private Garden, Letter delivered. Favourable area.
50	Marsh Lane Pond	Along private drive. Owner unknown.
51	Netteswell Rectory Pond	Pond searched for but not found.

7.8 From the original list of ponds, five ponds could either not be accessed or the ponds were not located.

7.9 In addition to surveying the water bodies for any presence of great crested newts the water quality of the ponds/ditches and suitability parameters for great crested newts were assessed.

7.10 The results are featured in the individual pond descriptions but are also summarised in the tables below. TDS refers to the Total Dissolved Solids in the pond.



Table 6 Quality of Ponds with great crested newts

Site Ref	Site	Total GCN	Estimated Area m ²	Depth	pH	TDS in ppm	% shading	Plant cover	Pond setting	Threats
1	Brenthall Wood Pond	5	200	0.5-1m	7.75	418	25-50%	<25%	Woodland	Rubbish in wood. Few aquatic plants
2	Challinor Close Pond	7	100	0.5-1m	7.24	780	50-75%	<25%	Woodland	Rubbish Development
5	Kingsdon Lane Pond 1	3	200	0.5-1m	7.72	1022	<25%	25-50%	Housing Estate	Rubbish Fish nearby Isolation
11	Foster Street (M11) Ponds	11	300	0.5-2m	7.57	551	25-50%	<25%	Wetland by M11	M11 development
12	Mill Street Pond	3	250	0.5-2m	7.37	312	25-50%	<25%	Roadside by garden	M11 development
13	Latton Common Pond	Present	600	0.5-2m	7.6	235	25-50%	50-75%	Woodland Grassland	Rubbish Ducks
14	Tom's Pond, Mark Bushes	1	200	0.5-1m	7.27	206	50-75%	Virtually zero Leaf litter	Woodland	No aquatic plants. Rubbish
15	Mark Bushes Pond 1	1	100-200	0.5-1m	7.61	286	25-50%	25-50%	Woodland clearing	Deer trampling
16	Mark Bushes Pond 2	Present	100-200	0.5-1m	7.52	213	25-50%	25-50%	Woodland clearing	Deer trampling
17	Latton Wood Pond	3	200-300	0.5-2m	6.97	100	<25%	25-50%	Woodland clearing	Rubbish <i>Crassula</i>
19	Rundell's Grove Pond	3	200	0.5-2m	7.44	446	50-75%	<25%	Woodland Arable	
20	Mark Bushes/Field corner Pond	Present	100	0.5-1m	7.38	319	25-50%	50-75%	Woodland by Field	Sticklebacks
21	Parndon wood visitor centre ponds	2	small	0.5-1m	7.59	68	<25%	50-75%	Woodland Nature Reserve	
25	Cemetery Pond	Present	100	0.5-1m	7.71	450	<25%	50-75%	Grassland	
32	The Dashes	3	<2m ²	1-2m	7.07	198	<25%	50-75%	Garden Allotments	Urban area Isolation
33	Golf Course Pond	2	150	0.5-1m	7.61	360	<25%	<25%	Golf course grassland	Goldfish Isolation



Table 7: Quality of Ponds with amphibians (SN = smooth newt)

Site Ref	Site	Amphibian	Estimated Area m ²	Depth	pH	TDS ppm	% shading	Plant cover	Pond setting	Threats
4	Old Hall Rise Pond	SN	100	0.5-1m	7.41	582	25-50%	Zero Leaf litter	Housing Estate	Rubbish
6	Kingsdon Lane Pond 2	SN frog toad	550	0.5-2m	7.56	589	<25%	<25%	Housing Estate	Many ducks Goldfish Rubbish
7	Kingsdon Lane Pond 3	frog	20	<0.5			<25%	>75%	Housing Estate	Dries up
8	Nightingales Pond	frog	Small plastic ponds unsuitable	<0.5	7.06	109			Housing Estate	Unsuitable location
10	Kitchen Hall Farm Pond 2	SN	30	0.5-1m	7.47	482	<25%	>75%	Garden by Common	Little open water
22	Parndon Wood dipping pond	SN	200?	0.5-2m	8.14	190	<25%	Virtually zero	Woodland nature reserve	Sticklebacks
23	Parndon Wood Pond	SN frog	500?	0.5-2m	8.33	330	<25%	<25%	Woodland nature reserve	Abundant sticklebacks <i>Crassula</i>
24	Parndon wood v2 crater pond	SN frog	100	0.5-2m?	7.54	249	25-50%	Zero Leaf litter	Woodland nature reserve	Deer eating vegetation
26	Hospital/Risdens Wood Pond	SN frog	200-300	0.5-1m	6.94	218	<25%	25-50%	Woodland	Deep silt
27	Burnett's Wood Pond	SN frog	100	<0.5m	7.63	731	<25%	>75%	Public area. Woodland	Litter
28	Sheppards Road Pond	Frog	200	<0.5m	8.39	525	50-75%	25-50%	Urban woodland	Deep silt Rubbish
29	Church End Pond	SN frog	>1000	0.5-2m	8.05	896	25-50%	50-75%	Public area Grassland Woodland,	Many ducks Abundant sticklebacks Rubbish
30	Passmores Moat	SN frog	600	0.5-2m	7.49	400	25-50%	Zero Leaf litter	Former museum garden	Rubbish Sticklebacks recorded in past.
31	Markhall Wood	SN frog	50	0.5-1m	7.51	313	>75%	Zero Leaf litter	Woodland	Rubbish
35	Parndon Mill Moat	SN	>1000	0.5-2m	7.46	500	<25%	25-50%	Wetland by Stort	Proximity to fish areas
40	Town Park pond	Frog	100	0.5-1m	7.24	468	25-50%	25-50%	Grassland by Stort	Proximity to fish areas
46	Edinburgh Way	frog	>1000	0.5-2m			<25%	>75%	Industrial area	Rubbish Building disturbance.



Table 8: Quality of Ponds with no amphibians

Site Ref	Site	Estimated Area m ²	Depth	pH	TDS	% shading	Plant cover	Pond/Ditch setting	threats
3	Water Tower overflow pond	500	<0.5m	7.05	450	<25%	>75%	Plantation.	No open water
9	Kitchen Hall Farm Pond 1	550	0.5-2m	8.01	326	<25%	25-50%	Garden by Common	Sticklebacks
18	Latton Wood field pond	350	0.5-1m	4.23	1138	25-50%	Zero	Woodland Fields	Acidic No life Rubbish
34	Parndon Mill ditches	300	0.5-1m	7.58	411	<25%	25-50%	Wetland by Stort	Proximity to fish areas
36	Parndon Mill Pond	800	0.5-1m	7.84	790	<25%	50-75%	Wetland by Stort	Proximity to fish areas
37	Town Park Water Meadows	Ditch network	0.5-1m	7.53	418	<25%		Wetland by Stort	Proximity to fish areas
38	Town Park Water Meadows	Ditch network	0.5-1m	7.58	372	<25%		Wetland by Stort	Proximity to fish areas
39	Town Park Ditches	Ditch network	0.5-1m	7.4	445			Wetland by Stort	Sticklebacks
41	Town Park Railway Pond	>1000	>2m	7.55	424	<25%	<25%	Wetland by Stort	Sticklebacks Rubbish
42	Maymead marsh ditches	Ditch network	0.5-1m	7.08	256			Ditch system by River Stort	Sticklebacks
43	Maymead Marsh Pond	2000	0.5-2m?	7.76	447	<25%	25-50%	Wetland by Stort	Sticklebacks Herons
44	Marshgate Spring ponds	100-200	0.5-1m	7.60	519	Spring >75% New pond more open	>75%	Woodland with ditches	Sticklebacks
45	Marshgate Spring ditches	Ditch network	0.5-1m	7.77	518	>75%	>75%	Woodland with ditches	Sticklebacks



- 7.11 The majority of great crested newt ponds (80%) possess an area of between 100-300 square metres with two ponds being less than 100 m² and one pond being over 300 m². In comparison the ponds supporting other amphibians supported a greater range of sizes with 47% being 100 m² or less and 35% being over 300 m².
- 7.12 Great crested newts are known to generally prefer small to medium sized ponds (50-250 m²) with smaller ponds being used more successfully where they occur in clusters (Froglife 2001).
- 7.13 Great crested newts in smaller ponds are more likely to support a low population and may not support a viable population unless associated with other small ponds within the area. Groups of associated populations, which live around a cluster of ponds, are referred to as metapopulations. Living in metapopulations increases great crested newt's chances of survival by making them less vulnerable to habitat changes than populations based on a single breeding pond. Areas with high pond densities are therefore more likely to support great crested newts.
- 7.14 The majority of great crested newt ponds in Harlow were found around the east and south perimeter of Harlow and tended to be within 500 m of other great crested newt ponds. The exception to this was the isolated pond in the golf course in the northwest corner of Harlow and the garden pond in the centre of Harlow.
- 7.15 Most great crested newts spend their lives within 200-500 metres of their breeding pond although they are known to travel as far as 1km away from water.
- 7.16 Great crested newts generally prefer ponds containing areas of relatively deep water, high aquatic plant density and terrestrial habitat diversity (Swan & Oldham 1993, 1994). The ponds should ideally have gently sloping sides, shallow water areas that warm up quickly and deep-water areas for protection and prevent larvae desiccation.
- 7.17 Great crested newts may also be frequently found in ponds that dry up during periods of drought; this however is mainly due to the fact that fish and other aquatic predators of newts are dependant on water and will therefore not be able to colonise ponds that dry out. The problem with this, however, is that pond permanence is essential for newt larvae to complete their metamorphosis and develop into adults. Adult great crested newts are capable of using atmospheric oxygen and are relatively tolerant of eutrophic conditions and ponds drying up. The larvae however are more vulnerable and require oxygenated water; regular drying out before metamorphosis is complete will therefore lead eventually to population extinction.
- 7.18 PH is a measure of the acid content of water rising from 1(acidic) to 14(alkaline). Water with an equal balance of acid and base content will have a pH of 7 (neutral). Examination of the pH of the ponds showed that those



ponds supporting great crested newts had an average pH of 7.46 with a range from 6.97 to 7.75. Great crested newts are known to favour ponds with a pH above 6 and slightly eutrophic (nutrient rich).

- 7.19 Those ponds supporting other amphibians had an average pH of 7.61 with a greater range of pH from 6.94 to 8.39. Of the ponds with no amphibians one was found to be extremely acidic (Latton wood field corner pond 18) with a pH of 4.23.
- 7.20 The Total Dissolved Solids was also measured. This is a measure of the concentration of dissolved matter in the water. Rainwater will have a Total Dissolved Solids of less than 10 ppm. If the Total Dissolved Solids is too high, the chemical nature of the pond may change and become lethal to aquatic life.
- 7.21 The Total Dissolved Solids of the great crested newt ponds averaged 341 ppm but had a range from 68 ppm (the rainwater pond at Parndon nature reserve 33c) to a high 1022 ppm (Kingsdon Lane pond 5). In the ponds with other amphibians, but no great crested newts, the average Total Dissolved solids was 438 ppm with a range of 109 to 896 ppm. In the water bodies with no amphibians the average was 501 ppm with a range of 256 to 1138 ppm. The pond with the high total dissolved solids was also the pond with the acidic pH (pond 18).
- 7.22 The level of shading is also known to be important to great crested newts. Great crested newts need open areas around the pond particularly on the south side to allow sunlight to heat up the water for development of the newts and for the growth of the aquatic vegetation. A small amount of scrub around the edges is beneficial but too much will overshadow and cool the water. Excessive tree cover may also increase the organic content of the pond through leaf fall.
- 7.23 The National Amphibian Survey (Swan & Oldham 1993) found that newt occurrence was significantly reduced above a threshold of 75% shade. Although 10 of the great crested newt ponds within Harlow were within woodland they were generally within clearings and shade was not found to be excessive. None of the great crested newt ponds had >75% shade. For ponds to be favourable for great crested newts it is generally recommended that there should be less than 20% scrub cover with no shade on the south side. Some overhanging branches however are beneficial for displaying newts. Male newts chose open less vegetated parts of the pond for display purposes and may favour sections with overhanging branches.
- 7.24 Aquatic vegetation provides a substrate for egg attachment and cover from predators. Generally the greater diversity of plants the greater diversity of animal life and the more likely there is sufficient food availability. Newts are carnivorous and in the water will hunt on aquatic invertebrates and also tadpoles. Ponds with up to 75% vegetation cover (emergent and submerged combined) with areas of open water to accommodate newt courtship behaviour are more likely to support higher numbers of great crested newts.



- 7.25 In addition to the breeding ponds the terrestrial habitat also needs to be taken into account. It has been calculated that one hectare of good terrestrial habitat is only enough to support 250 adult newts; less than half a hectare even of ideal habitat is unlikely to sustain a viable population. Habitats regarded as newt friendly include patches of scrub, open woodland, densely vegetated hedgerows, ditches with good bank cover, unimproved grassland with long grass/uneven tussocky grassland and structurally diverse established gardens. Log piles, rockeries, vegetation clumps near the waters edge can provide important land refuges for newts. Habitats unfavourable to newts are arable fields, improved pasture with short grassland, mown amenity grassland and urban land (buildings and roads). Barriers to newt dispersal include rivers and roads.
- 7.26 One of the main reasons for the decline of great crested newts is the removal of favourable terrestrial habitats around their breeding pond.
- 7.27 The majority of the ponds in Harlow where great crested newts were found were located in areas with favourable surrounding terrestrial habitat. Those under threat due to surrounding terrestrial habitat include the pond in Kingsdon Lane (Pond 5) that is completely surrounded by housing and the newts in the garden pond (The Dashes pond 32) in the centre of Harlow. The close proximity of housing and the M11 to the Challinor Close Pond (pond 2) and the close proximity of the M11 to the Foster Street pond (pond 11) may also impose a threat to the survival of the newts in these ponds. There are proposals to increase the capacity of the M11.
- 7.28 Other threats to great crested newts include the presence of fish and excessive use by waterfowl.
- 7.29 Predatory pressure from fish reduces the numbers of invertebrates and amphibians and the cloudiness of the water created by fish may prevent the growth of aquatic plants. Ponds without fish are more likely to have large amphibian populations. Fish will eat the larvae of all amphibian species except the common toad. Where amphibians co-exist it is usually due to the protection provided by the dense cover or low numbers of fish in the pond. Great crested newts are the most vulnerable to fish predation; their larvae like to swim in mid water and are not always as well camouflaged as smooth newt larvae which stay within the cover of vegetation. This behaviour means that they are easy prey to fish.
- 7.30 The presence of Sticklebacks generally leads to the failure of great crested newt breeding in the pond. The larger predatory fish species such as perch and trout rarely coexist with great crested newt populations.
- 7.31 Two of the great crested newt ponds in the Harlow study also had fish (12% of the ponds). Goldfish were recorded in the Golf Course pond (pond 33) and sticklebacks were recorded in the Mark Bushes Field Corner pond (pond 20). Draining down and drying out a pond is the only way to guarantee total fish



removal but this can cause massive disruption. All methods of fish removal are subject to licensing and/or consents. Timing is also a crucial consideration.

- 7.32 Of the other ponds with amphibians, 5 had fish (29%) and of the ponds/ditches with no amphibians, 7 (54%) had fish.
- 7.33 The presence of waterfowl at a newt breeding site can also have a damaging affect on newt populations due to: grazing of the aquatic vegetation, trampling of the pond margins and the pollution of the pond sediment by duck faeces and through bread being thrown into the water to feed the ducks. The damaging impact increases in proportion to the number of birds present (Oldham et al 2000). In naturally occurring numbers mallards and moorhens have little adverse effect upon newt populations but when greater numbers of ducks are attracted to ponds, usually through supplementary feeding, the damaging impact to the pond and amphibians increases.
- 7.34 Although some of the ponds in Harlow with great crested newts had low numbers of ducks in the ponds, most were currently not considered to be a threat. Many ponds without great crested newts had high numbers of ducks one of which along Kingsdon Lane is adjacent to a pond with great crested newts. Due to the proximity of this pond (pond 6) to the great crested newt ponds it may be necessary to discourage the public from feeding the ducks.
- 7.35 An additional threat noted during the survey was the presence of rubbish and pollution. Where ponds are polluted, plant and invertebrate diversity declines impacting on amphibian populations. Pollution also leads to poor water clarity, algae blooms and extensive cover of duckweed and filamentous algae.
- 7.36 Rubbish was noted in 14 of the ponds (30% of the total ponds) including 6 of the ponds with great crested newts.



8 Further pond details

- 8.1 Individual pond descriptions for the ponds surveyed, including management recommendations for the landowners, are provided in a separate report.
- 8.2 Ponds reported on include: Brenthall Wood Pond, Challinor Close Pond, Water Tower pond, Old Hall Rise Pond, Kingsdon Lane ponds, Nightingales pond, Kitchen Hall ponds, Horn and Horseshoes Pond, Mill Street pond, Latton Common/Latton Park Wood ponds, Parndon Wood ponds including cemetery pond, Hospital and Risdens Wood, Burnett's wood pond, Sheppards Road Upper Wood pond, Church End Pond, Passmores Moat, Markhall Wood pond, The Dashes pond, Canons Book Golf Course pond, Parndon Mill moat and ditches, Town Park ponds and ditches, Maymeads Marsh ditches and pond, Marshgate Spring ditches and pond and Edinburgh Way pond.
- 8.3 Ponds not surveyed included Feltimores Pond, Goldsmiths pond, Pond 49 Latton Farm pond, Marsh Lane Pond and Nettleswell Rectory Pond. These are described below
- 8.4 Feltimores pond (Pond 47) is situated on the east side of Harlow within Feltimores Meadows. Feltimores meadow is a species diverse meadow that has been identified as a County Wildlife Site (Reference Number 31) in the Harlow Local Plan (November 2002). The pond is an old rural pond shown on the historical maps of the area. The pond itself could not be surveyed although Jones and Sons Environmental Sciences Ltd assessed the surrounding area on 13th March 2006. A footpath from Hobbs Cross Road crosses the meadow but does not go within the vicinity of the pond which was believed to be situated in a hollow within scrub to the south of the scrub. On the date of the initial assessment sheep were grazing the field. The owner of the field was not identified to obtain permission to survey the pond. The pond was considered to have potential for great crested newts.
- 8.5 Goldsmiths Pond (pond 48) is an old rural pond (shown on the historic maps) situated on the south side of Harlow, along Partridge Road off Southern Way. An identified Green Wedge (Harlow Local Plan) is present to the east of the house that includes playing fields and farm fields. The pond located to the north of the house, falls just outside the Green Wedge.
- The building known as Goldsmiths was within the ownership of Essex County Council but during 2006 (at the time of the survey) was in the process of being sold. Although the pond itself could not be surveyed, Jones and Sons Environmental Sciences Ltd assessed the surrounding area on 13th March 2006. Wet grassland is present to the west of Goldsmiths and there is a ditch bordering the property with wet hollows. The pond was considered to have potential for great crested newts.
- 8.6 Latton Farm pond (Pond 49) is situated within Harlow to the south of Markhall Wood at the Puffers Green end of Latton Street. Since the pond is on



private property letters were delivered to the house to obtain permission to survey but, as no reply was received, the pond was not surveyed. Although the pond itself could not be surveyed Jones and Sons Environmental Sciences Ltd assessed the surrounding area on 13th March 2006. There are fields to the north between the house and woodland and a ditch with possible further ponds in the fields by the ditch. The historic maps show the presence of Latton Farm pond and associated ditch ponds. The area falls within a Green Wedge (Harlow Local Plan). The pond was considered to have potential for great crested newts.

- 8.7 Marsh Lane (Pond 50) is situated on the north east side of Harlow. The clay pit pond is surrounded by woodland scrub and is to the south of the lane. The site has been identified as a County Wildlife Site (Reference Number 7) in the Harlow Local Plan (November 2002). The pond has been reported to support damselflies, other invertebrates and breeding amphibians. Marsh Lane is a private road and the owner of the pond was not identified. Unfortunately therefore the pond could not be surveyed but the location of the pond would suggest that it has potential to support great crested newts.
- 8.8 Nettleswell Rectory is situated on the east side of Manston Road to the north of Second Avenue (A1025). The small Nettleswell Rectory pond (Pond 51) is reported to be south of the Rectory within old grassland. The Nettleswell Rectory site has been identified as a County Wildlife Site (Reference Number 25) in the Harlow Local Plan (November 2002) and is also within a Green Wedge location. The Wildlife Site is an area of species diverse old grassland and the pond is reported to support a good aquatic habitat with emergent marginal vegetation. The pond is an old rural pond shown on the historic maps of the Harlow area. There are reports of the possible presence of great crested newts on the site. The land is in the ownership of Harlow District Council. Jones and Sons visited the site on two occasions and walked across the horse-grazed field searching for the pond but no pond was found.



9 General great crested newt management recommendations

- 9.1 It is important when managing great crested newt habitats that any threat or disturbance to great crested newts should be minimised.
- 9.2 Natural succession will ultimately result in the loss of ponds as terrestrial vegetation encroaches and the pond silts up. In great crested newt ponds the rate of succession will need to be controlled.
- 9.3 If pond management is considered necessary, the works should be timed to avoid the period when most newts are likely to be in the water. Newts and their larvae may be found in the pond at any time of the year but are less likely to be there in the late autumn/ early winter when most adults would have left the pond after breeding. The best time for pond work is therefore late October to November.
- 9.4 Removal of silt should only be necessary where there is a significant reduction of depth in the pond. If silt is removed, favourable aquatic vegetation should be retained and replanted and submerged logs should also be retained as refuge areas for amphibians.
- 9.5 Great crested newts prefer ponds with well developed aquatic and emergent plant communities. The presence of dense strands of plants provides protection for newt larvae and also aquatic invertebrates. Occasionally plants such as Greater reedmace (*Typha latifolia*) may spread over the whole area of the pond leaving very little open water (Great crested newts prefer areas of open water for their courtship). Where open water is <25%, some gentle management will be required. Remove plants from deep to shallow water rather than raking out plants just from the deep areas. Invertebrate communities change with water depth. Any aquatic vegetation removed should be checked for newts and then left on the pond edge so that any newts missed may crawl back to the pond.
- 9.6 The development of a diversity of aquatic plants with leaves that can be used to wrap eggs up in should be encouraged (preferably not less than 30% cover). Suitable plants include: water forget-me-not (*Myosotis scorpioides*), water speedwell (*Veronica anagallis*), water crowfoot (*Ranunculus aquatilis*), water starwort (*Callitriche palustris*), water mint (*Mentha aquatica*), brooklime (*Veronica beccabunga*), water cress (*Rorippa nasturtium-aquaticum*), great willowherb (*Epilobium hirsutum*) and low growing grasses such as floating sweet grass (*Glyceria fluitans*). Newts will also attach their eggs to Greater Reedmace (*Typha latifolia*); a plant that can become invasive. To encourage diversity partial removal of dominant species such as greater reedmace and duckweed may be required when they become too invasive.
- 9.7 Generally ponds should be left to colonise naturally but if there is a problem with lack of aquatic vegetation it may be necessary to introduce favourable



plants from other nearby ponds. If plants are introduced they should be carefully checked before planting to avoid any transfer of fish or fragments of undesirable invasive aquatic plants.

- 9.8 If the pond suffers from nutrient enrichment the use of barley straw bales can help to get rid of algae. The fungi that live on the barley straw release an algaecide into the water which kills the algae. Rotting tree bark also gets rid of algae by the release of tannins from the bark; willow is particularly good. These measures however do not get rid of the underlying nutrient problem that should be investigated.
- 9.9 Submerged branches, tree trunks and leaf litter all provide valuable food for invertebrates. The presence of logs and stones in the pond also provide additional refuge areas for great crested newts.
- 9.10 The pond should not be stocked with fish. Where fish are present, if possible they should be removed. Temporarily draining the pond during the winter months may be the best method or allowing the pond to dry out naturally. Deliberate capture and removal of fish must be licensed by the Environment Agency.
- 9.11 Feeding of ducks should be discouraged since excessive numbers of ducks can have a damaging affect on newt populations.
- 9.12 The pond should be regularly checked for litter and any rubbish found removed, particularly before the spring when the newts start moving back to the pond. Care may be needed when removing rubbish since newts may use litter as refuges or for laying eggs (they will use plastic bags and strips of plastic for egg attachment).
- 9.13 The pond should be protected from any run-off contaminants from roads (hydrocarbons or salt), arable fields and recreational areas (fertilizers, herbicides, pesticides).
- 9.14 Create new ponds within 500 metres of a known great crested newt pond wherever possible. Clusters of ponds in a great crested newt area will ensure that if one pond is lost, dries up or becomes unsuitable for newts (e.g. through the introduction of fish) the great crested newt population in the area can be sustained by the other ponds. Also if only one breeding site is available the population may become progressively inbred.
- 9.15 Since great crested newts spend most of the year on the land, the management of the surrounding terrestrial habitat is of equal importance. The timing of land management should be planned to minimize any impact on the newts. Adult great crested newts are least likely to be on the land in the late spring/ early summer and work on the land (at ground level) should therefore be timed for June when the majority of newts are in the water. It should be noted however that immature newts are likely to be terrestrial all year round and will not return to the water until they are sexually mature which may take as long as



four years. Great crested newts spend their lives within 200-500 metres of their breeding pond and it is generally recommended that areas up to 250 metres from the pond should be managed for great crested newts.

- 9.16 Terrestrial habitat should be managed to include a variety of vegetation such as uneven tussocky grassland, patches of scrub, open woodland, logs, stones and dispersal corridors (old hedgerows, ditches and strips of tall grass). Woodland and hedgerows can support 250 newts/hectare, grazed pasture 95-newts/hectare and arable land 20 newts/hectare.
- 9.17 The cutting of grass around a newt pond should not be needed but if considered necessary it is preferable to cut once a year during hot weather in June when the newts are in the pond and less likely to be harmed. The grass should be cut to a medium rather than a short height so that it still affords some protection (a minimum of 5-10 cm or more). Areas of long grass should be left as dispersal corridors wherever possible.
- 9.18 Retain trees and some overhanging branches but, if the level of shade around the pond exceeds 20%, consider clearing scrub or reducing the height of the trees (coppice, pollard, trim) on the south side to allow more light to reach the water. Greater sunlight will encourage a greater diversity of aquatic vegetation and the increased water temperature will enable the more rapid development of newt eggs.
- 9.19 In any tree reduction undertaken, care must be exercised not to impact on any possible hibernation areas below the tree roots. Any cut branches should be used to create a log pile near the pond as hibernacula and also to provide dead wood refuge areas.
- 9.20 Ponds should be regularly monitored to check for great crested newt population changes and identify any threats to the population.
- 9.21 Up-to-date records of great crested newts are required to alert planners and land managers of the importance of the sites so that they can help to protect and conserve important great crested newts and their habitats. Great crested newt surveyors should ensure the results of surveys are forwarded to the appropriate people who can make use of the information.
- 9.22 Consultation with Natural England is required to abide by the legislation for management works likely to impact on great crested newt habitats.



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11 Appendix

Map of ponds surveyed in 2006.

Map of great crested newt pond distribution in 2006 survey.

Map of 500 metre GCN zones (including past Essex ARG records).

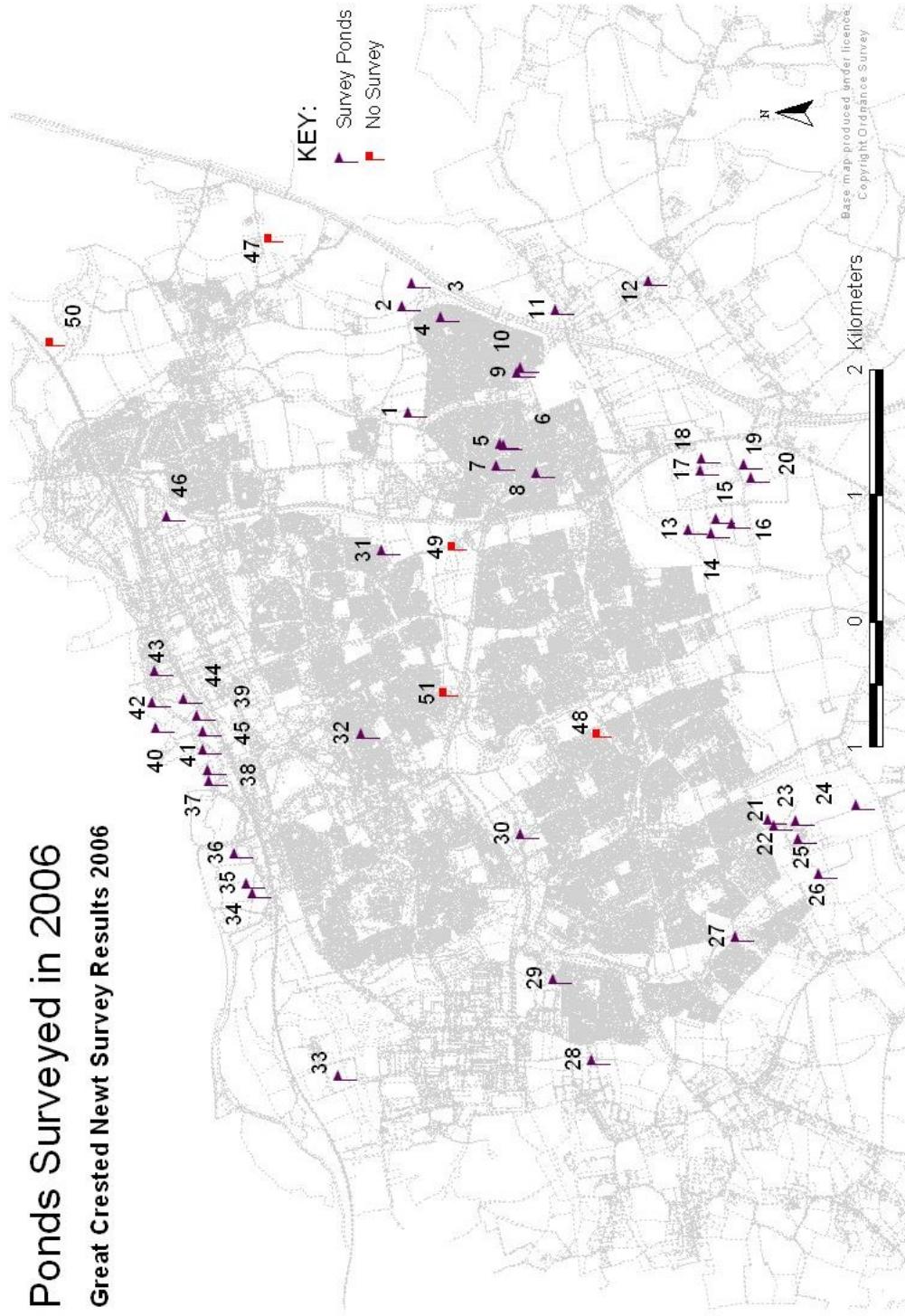
Map of amphibian pond distribution in 2006 survey.

Map showing distribution of great crested newts and fish in 2006 survey.



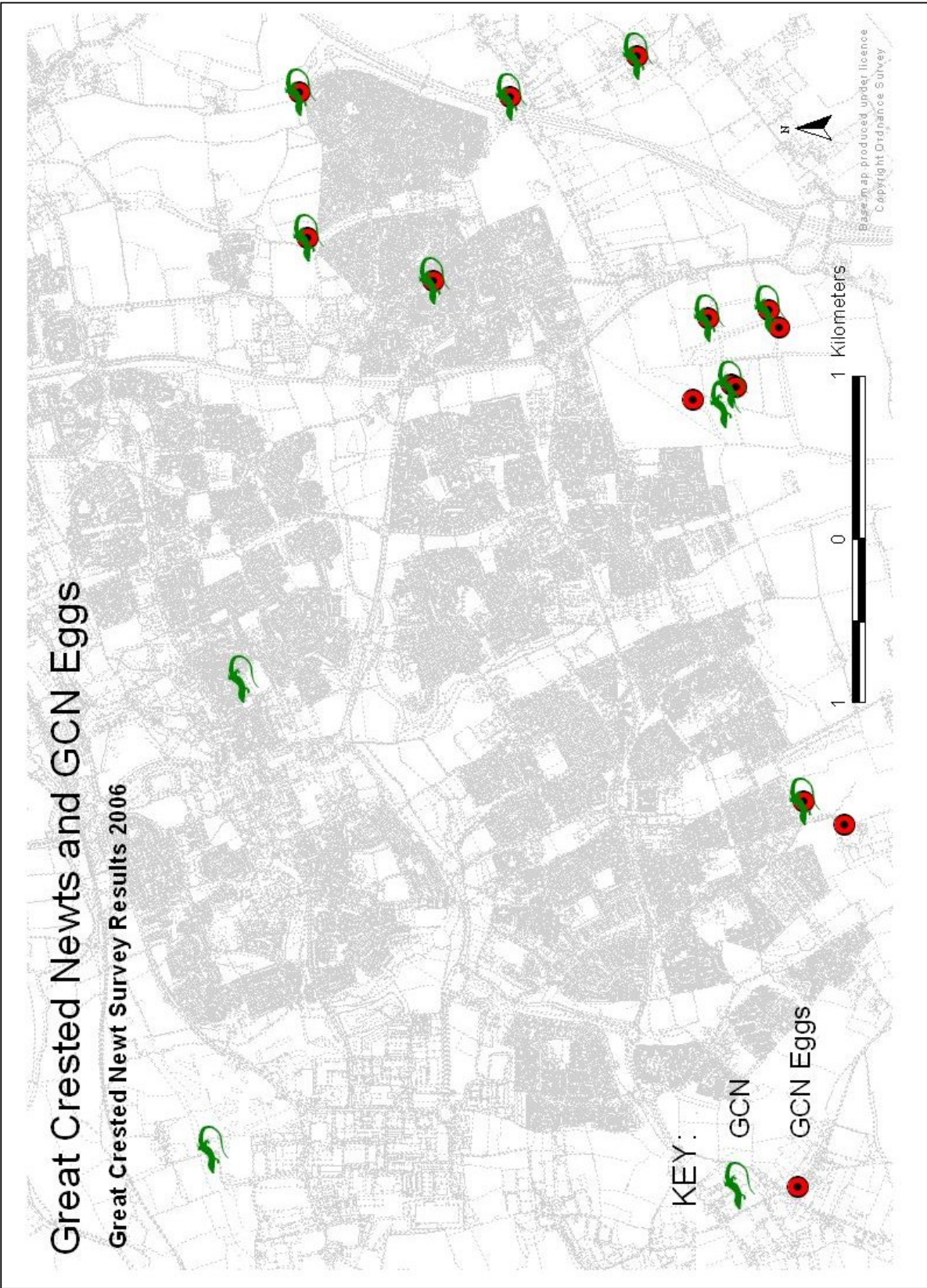
Ponds Surveyed in 2006

Great Crested Newt Survey Results 2006



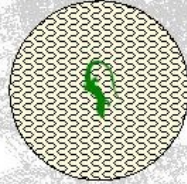
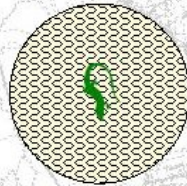
Great Crested Newts and GCN Eggs

Great Crested Newt Survey Results 2006



Great Crested Newt Survey Results 2006

Map of 500 metre GCN zones
(including past Essex ARG records)



KEY:



GCN



GCN Eggs



Essex ARG



500 metre Zone A
(Jones & Sons survey)



500 metre Zone B
(Essex ARG records)



Base map produced under licence
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Distribution of Great Crested Newts and Fish

Great Crested Newt Survey Results 2006

