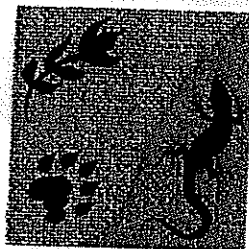


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Haycock & Jay Associates Ltd

CONSULTANT ECOLOGISTS

**Land Adjacent to 110 Preston Road,
Longridge, Preston, Lancashire**

Great Crested Newt Survey

Submitted to:

**Grimbaldeston Farm Trustees
c/o W Monks (Longridge) Ltd
Hacking Hobbs Estate
Longridge
Preston
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JWP001.02

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Figure 1 Waterbodies surveyed

APPENDICES

Appendix 1 Photographs

1.0 SUMMARY

- 1.1.1 A Phase 1 habitat survey of land adjacent to 110 Preston Road, Longridge, Preston, Lancashire, was conducted by Haycock and Jay Associates Ltd. for Grimbaldeston Farm Trustees on 9th December 2010. This survey identified the presence on the site of habitat suitable for great crested newts
- 1.1.2 Haycock and Jay Associates Ltd. was commissioned by Grimbaldeston Farm Trustees on 25th May 2011 to carry out a great crested newt survey on land adjacent to 110 Preston Road, Longridge, Preston, Lancashire.
- 1.1.3 There is one small pond on the proposal site, but this was initially nearly dry, becoming completely dry, during the survey period and could not be surveyed comprehensively for great crested newt. In order to gain a clear picture of the great crested newt population likely to be using the proposal site, two ponds in the adjacent field to the south-west of the site and within 100m of the site boundary were also surveyed.
- 1.1.4 Using the Habitat Suitability Index for great crested newt habitat (Oldham et al, 2000), the pond within the proposal site is categorised as providing good quality habitat, and each of the field ponds provide excellent quality habitat.
- 1.1.5 Evidence of breeding great crested newts was found in one of the field ponds. This is approximately 100m from the proposal site boundary, and individuals are highly likely to use terrestrial habitat within the proposal site. A development licence from Natural England will therefore be required to ensure that the law with regard to great crested newts is not contravened as a result of the development. Natural England will need to approve the proposed mitigation in order to issue the necessary licence.
- 1.1.6 The following mitigation and compensation is recommended:
 - Exclude great crested newts from all areas of suitable terrestrial habitat within the impact zone of the proposed development, during the active period for the species. This must be conducted by a suitably licensed ecologist;
 - Maintain exclusion fencing throughout the duration of the development works, to ensure that great crested newts do not re-enter the impact zone of the proposed development;
 - Conduct a destructive search of suitable terrestrial habitat within the impact zone of the proposed development for great crested newts, moving any amphibians found to suitable habitat outside the exclusion fence. This must be conducted by a suitably licensed ecologist.

- Retain the pond within the development site, and restore it so that it provides higher quality aquatic habitat for great crested newts than it does at present.
- Retain terrestrial habitat suitable for great crested newts, as far as possible. Where terrestrial habitat is lost, compensate by the creation of habitat of at least equivalent quality and extent, and ensuring that connectivity to the field ponds and other ponds in the vicinity is retained, and where possible, enhanced.
- Draw up and implement a management plan for the site, so that it continues to maintain a great crested newt population in the long term.

2.0 INTRODUCTION

2.1 Background

2.1.1 Residential development is proposed on land adjacent to 110 Preston Road, Longridge, Preston. A Phase 1 habitat survey of this land was conducted by Haycock and Jay Associates Ltd for Grimbaldeston Farm Trustees on 9th December 2010, and this survey identified the presence of habitat suitable for great crested newts on the site.

2.1.2 On 25th May 2011 Haycock and Jay Associates was commissioned by Grimbaldeston Farm Trustees to carry out a great crested newt survey in relation the proposed development on this land.

2.2 Site location and description

2.2.1 The site encompasses approximately 2.5ha of land centred on National Grid Reference SD 600 361, to the south of Longridge. Hereafter in this report, land within the development proposal is referred to as 'the proposal site'.

2.2.2 There is one small pond on the proposal site. The Phase 1 habitat survey (Report Ref. JWP001/01) describes this pond as follows:

"The waterbody is small and possibly dries out on occasion, making it potential breeding habitat for great crested newt. Additionally there is well-structured terrestrial habitat in the form of rough grassland and hedge bottoms. Of particular note are the piles of stone along the hedge bottom in the south west of the site. This provides suitable hibernation and resting habitat for great crested newt.

2.2.3 "As the pastoral landscape with field ponds extends westwards from this population, it is likely that great crested newt are present in terrestrial habitat and may breed in the pond on site".

2.2.4 The report also describes the great crested newt presence in the locality as follows:

"Great crested newt (*Triturus cristatus*) are known to be common and widespread in this part of Lancashire, with the frequent field ponds (derived from marl pits) throughout the landscape affording good breeding habitat. A breeding population was recorded 386m away in 2003 forming the eastern-most pond of a metapopulation'.

2.3 Survey scope

2.3.1 On the first visit to survey for great crested newts it was found that the pond on the proposal site had only a very limited area of very shallow water, and could therefore not be surveyed comprehensively for great crested newts

2.3.2 In order to gain a clear picture of the great crested newt population likely to be using the proposal site, two ponds in the adjacent cattle-grazed grass field to the south-west of the site and within 100m of its boundary were included in the survey. One is referred to in this report as 'the round field pond' and the other as 'the scrape'. Their locations are shown in Figure 1.

2.4 Great crested newt legislation

2.4.1 The great crested newt is protected both within and outside designated sites. It is an internationally important species identified on Annexes II and IV of the EC Habitats Directive and Appendix II of the Bern Convention. In the UK the directive is translated to the Conservation of Habitats and Species Regulations 2010. In domestic legislation the species is protected Section 9 and Schedule 5 of the Wildlife & Countryside Act 1981 (as amended).

2.4.2 Taken together, these make it an offence to:

- Intentionally or deliberately kill, or intentionally injure, a great crested newt;
- Deliberately disturb a great crested newt or intentionally or recklessly disturb them in a place used for shelter or protection;
- Damage or destroy a breeding site or resting place of a great crested newt;
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a great crested newt;
- Possess or control any live or dead specimen or anything derived from a great crested newt, unless acquired lawfully; and
- Sell, barter, exchange or transport or offer for sale great crested newts a part of them

2.4.3 If proposed work could cause killing, injury or disturbance to great crested newts or damage their habitats, appropriate mitigation which seeks to avoid these impacts should be devised and implemented under licence from Natural England

2.5 UK Biodiversity Action Plan And Species of Principal Importance

- 2.5.1 Great crested newt is listed as a Priority Species in the UK Biodiversity Action Plan (HM Government, 1994 et seq.) The UK Biodiversity Action Plan was published in response to the 1992 International Convention on Biological Diversity.
- 2.5.2 As Priority Species in the UK Biodiversity Action Plan, great crested newts are also considered to be Species of Principal Importance for the Conservation of Biodiversity in England under Section 74 of the Countryside and Rights of Way Act 2000. This places a duty on all government departments to have regard for the conservation of this species and on the Secretary of State to further, or promote others to further, the conservation of the species
- 2.5.3 This mandate was reinforced by the Natural Environment and Rural Communities (NERC) Act (2006). Section 40 of the Act requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

2.6 Great crested newt ecology

- 2.6.1 The great crested newt requires aquatic habitat within which to breed, and suitable terrestrial habitat within which to forage and hibernate. Suitable breeding ponds are usually well vegetated with still water that is not heavily shaded or very exposed. Terrestrial habitat includes rough grassland, woodland, scrub, field edges and gardens. Hibernation can occur under stone or log piles, in crevices or leaf litter and under the soil. Occasionally great crested newts may be found hibernating in their breeding ponds.
- 2.6.2 Over the last few decades the great crested newt and other amphibian species have suffered a decline in numbers. This is due to a combination of factors, including habitat destruction and fragmentation, loss of breeding pools through unsympathetic management and neglect, introduction of fish (which eat newt larvae) and pollution.

3.0 SURVEY METHODOLOGY

- 3.1.1 The pond within the proposal site and two ponds in the adjacent field were surveyed for the presence of great crested newts and other amphibians on six separate occasions between 26th May and 22nd June. The surveys were undertaken by Sylvia Jay, a suitably experienced and licensed ecologist (Natural England great crested newt licence number 20111959), assisted by three qualified ecologists trained in great crested newt survey

3.2 Habitat Suitability Index assessment

- 3.2.1 The Habitat Suitability Index (HSI) is a measure of habitat quality for great crested newts using a numerical index between 0 and 1 derived from an assessment of variables known to influence the presence of the species (Oldham et al., 2000).
- 3.2.2 To calculate the HSI of each waterbody the following variables were recorded: geographic location; pond size; permanence (years out of ten the pond dries out); water quality; percentage shaded; presence of fish; presence of waterfowl; number of ponds within 1 kilometre; quality of terrestrial habitat surrounding ponds; and percentage of pond surface area occupied by macrophytes, including emergent and floating plants (not duckweed) and submerged plants reaching the water surface, (Oldham et al, 2000).
- 3.2.3 The Habitat Suitability Index for each pond was calculated using scores for each of the variables taken from ARG UK Advice Note 5. The scores were then used to determine the pond suitability, as shown in Table 1.

Table 1: Habitat Suitability Index and pond suitability

Habitat Suitability Index	Pond Suitability
< 0.5	Poor
0.5 – 0.59	Below average
0.6 – 0.69	Average
0.7 – 0.79	Good
> .0.8	Excellent

3.3 Aquatic great crested newt survey

- 3.3.1 The surveys were conducted following Natural England's guidelines for great crested newt survey (English Nature, 2001). Each visit involved at least three of the four standard survey methodologies for aquatic habitat.
- 3.3.2 The four methodologies used were as follows:

Egg search

- 3.3.3 Newts lay their eggs singly on submerged or floating leaves, and then fold the leaf around the egg. Floating and submerged vegetation, including dead leaves and leaves of overhanging plants, was searched for the presence of great crested newt eggs. It is necessary to unwrap a folded leaf to identify the egg. Since this interference increases the risk of predation for the egg, once a great crested newt egg is found at a particular waterbody the use of this technique is ceased.

Netting

- 3.3.4 Long handled dip nets were used to sample the margins of each water body, focusing on areas of aquatic vegetation where newts present are likely to be resting during the day. At least 15 minutes of netting was conducted per 50m of accessible shoreline.

Torchlight search

- 3.3.5 From dusk, a search was conducted for amphibians in the water, walking slowly around all accessible parts of the water body margin and searching with the aid of 1,000,000 candlepower torches

Bottle trapping

- 3.3.6 Trapping was carried out using bottle traps. These are constructed from a plastic drinks bottle with the top cut off and inverted to make a funnel leading into the bottle. Newts may enter a trap during their nocturnal activities and become trapped inside. The traps were set according to the guidance in the Herpetofauna worker's manual (JNCC, 1998), and were put out in the evening then checked and removed before 9am the following morning. Traps were placed along accessible lengths of water body margin at intervals of approximately 2m.

3.4 Terrestrial search

- 3.4.1 It was not possible to conduct full aquatic surveys at the pond within the proposal site, therefore, on each survey visit a terrestrial search for great crested newts around the pond was made. This involves looking under rocks, timber and other debris for amphibians resting under such refuges. This survey method is considered to be a very inefficient one (English Nature, 2001) and negative results using this method alone are not reliable.

3.5 Information recorded

- 3.5.1 For each survey, the results were recorded, including number of adult male and female and juvenile great crested newts. Findings of other amphibian species, fish, waterfowl and aquatic invertebrates which give an indication of water quality were also recorded.
- 3.5.2 Survey conditions were recorded, including temperature, water clarity, wind and rain which may increase turbidity and prevent inspection below the water surface.

3.6 Survey conditions and constraints

Pond conditions

- 3.6.1 The pond within the proposal site could not be surveyed comprehensively due to the lack of standing water. The terrestrial search round this pond was also restricted by the presence of dense bramble, the fact that many possible refuges were stone blocks and timber that was too heavy to lift. The large earth mound near to the pond provides potential terrestrial habitat within deep cracks, but these could not be searched thoroughly.
- 3.6.2 On 1st June a torch survey was not conducted at the scrape due to the presence in the field of cattle including a bull (this pond is not fenced). The condition of the two field ponds was otherwise suitable for them to be comprehensively surveyed.

Survey timing

- 3.6.3 Natural England's guidelines (EN 2001) states that, for population class estimates, surveys for great crested newts should be undertaken during the period between mid-March and mid-June, with at least three visits between mid-April and mid-May. None of the survey visits were conducted within the optimum period for surveying for great crested newts in their aquatic habitat, since they were carried out between 26th May and 22nd June. Nevertheless, evidence of breeding great crested newt was found at one pond.

Weather conditions

- 3.6.4 Great crested newts are active when the night-time air temperature is above 5°C. Weather conditions were favourable for all the surveys; details are given in Table 2.

Table 2: Weather conditions during survey

Date	Air temp minimum (°C)	Rain	Wind disturbing water	Bright moonlight
26 th May	10	None	Slight	No
30 th May	8	None	No	No
1 st June	13	Yesterday	No	No
6 th June	10	None	No	No
14 th June	13	None	No	No
22 nd June	11	Yesterday	No	No

4.0 RESULTS

4.1 Overview

- 4.1.1 Surveys were undertaken on six occasions, with good survey conditions each time. The results of the Habitat Suitability assessment, and the amphibian survey, including survey methods and effort, and amphibians encountered, are summarised in Tables 3 and 4 respectively.

4.2 Pond descriptions

4.2.1 Pond within the proposal site

- 4.2.2 The pond within the proposal site is shaded on all sides by tall hawthorn (*Crataegus monogyna*) and blackthorn (*Prunus spinosa*). On 25th May the pond was represented by an area of approximately 4m² of open water, up to 3cm deep. The remainder of the pond had dried up leaving deep mud, vegetated with flote grass (*Glyceria* sp) and creeping buttercup (*Ranunculus repens*). By the third survey visit on 6th June no open water remained, though subsequent rain resulted approximately 3m³ open water plus puddles in boot prints on the final survey on 22nd June.

4.2.3 Round field pond

- 4.2.4 The round field pond is approximately 20m in diameter, and entirely fringed with reeds (*Phragmites australis*). Though the pond is bounded by a strand of barbed wire, the margin is poached by cattle and the surrounding vegetation is browsed to the water's edge.

4.2.5 The scrape

- 4.2.6 The scrape is approximately 20m long and 10m wide, and predominantly un-vegetated except for marginal grasses which overhang into the water, and small stands of soft rush (*Juncus effusus*). Along the eastern and northern edges the margins are boggy and vegetated with rushes and celery-leaved buttercup (*Ranunculus sceleratus*). It is unfenced and heavily poached by cattle.

4.3 Habitat Suitability Index

- 4.3.1 The results of the Habitat Suitability Index assessment and scores are given in Table 3, below.

Table 3: Habitat Suitability Index

Category Number	Category	Pond within proposal site		Round field pond		Scrape	
		Result	Score	Result	Score	Result	Score
1	Location	Area B	0.5	Area B	0.5	Area B	0.5
2	Pond area (m ²)	75	0.1	200	0.2	100	0.05
3	Permanence (years in 10)	2	1	Never	0.9	Never	0.9
4	Water quality (years in 10 dries)	Poor	0.33	Poor	0.33	Moderate	0.67
5	% shade	100	0.2	0	1	0	1
6	Waterfowl	None	1	Minor	0.67	None	1
7	Fish	None	1	Possible	0.67	None	1
8	Pond count	23	1	24	1	24	1
9	Terrestrial habitat	Moderate	0.67	Moderate	0.67	Moderate	0.67
10	% Macrophytes	40	0.7	60	0.8	10	0.4
Habitat Suitability Index		0.71		0.88		0.90	

4.3.2 The Habitat Suitability Index for the pond within the proposal site indicates that the habitat for great crested newts is good (following Table 1, Para 3.2.3).

4.3.3 The Habitat Suitability Index for the two field ponds indicate that they provide excellent habitat for great crested newts.

4.4 Aquatic great crested newt survey

4.4.1 The full results of the aquatic survey are given in Table 4, below.

Great crested newt

4.4.2 The presence of breeding great crested newt was recorded in the scrape, with an egg found during surveys 4 and 5. An adult male was caught in a bottle trap during survey 5.

4.4.3 No evidence of great crested newt was recorded for the round field pond or the pond within the proposal site

Other amphibians

4.4.4 Breeding smooth newts were found in both the round field pond and the scrape, with eggs found and individuals caught.

4.4.5 Frogs were recorded at both the field ponds, and a toad was seen at the round field pond

4.5 Fish

4.5.1 No fish were recorded in any of the ponds.

4.6 Waterfowl

4.6.1 Minor waterfowl impact was recorded at the round field pond, with two mallard seen on the pond at the fourth visit.

Table 4: Aquatic great crested news survey results

Eft – newt tadpole.

Proposal site pond							
Date	Method	Margin surveyed (%)	Survey effort	Great crested newt	Smooth / palmate newt	Frog	Toad
26 th May	Egg	40	10 minutes	-	-	-	-
	Torch	100	30 minutes	-	-	-	-
	Terrestrial	N/A	30 minutes	-	-	-	-
30 th May	Egg	100	15 minutes	-	-	-	-
	Torch	100	30 minutes	-	-	-	-
	Terrestrial	N/A	20 minutes	-	-	-	-
1 st June	Egg	100	10 minutes	-	-	-	-
	Torch	100	30 minutes	-	-	-	-
	Terrestrial	N/A	20 minutes	-	-	-	-
6 th June	Egg	0	N/A	-	-	-	-
	Torch	100	30 minutes	-	-	-	-
	Terrestrial	N/A	20 minutes	-	-	-	-
14 th June	Egg	0	N/A	-	-	-	-
	Torch	100	20 minutes	-	-	-	-
	Terrestrial	N/A	20 minutes	-	-	-	-
22 nd June	Egg	100	5 minutes	-	-	-	-
	Torch	100	10 minutes	-	-	-	-
	Terrestrial	100	20 minutes	-	-	-	-

Round field pond							
Date	Method	Margin surveyed (%)	Survey effort	Great crested newt	Smooth / palmate newt	Frog	Toad
26 th May	Egg	100	40 minutes	-	2 eggs	-	-
	Torch	100	35 minutes	-	-	-	-
	Bottle trap	100	25 traps	-	-	-	-
30 th May	Egg	100	60 minutes	-	1 egg	-	-
	Net	100	60 minutes	-	-	-	-
	Torch	100	30 minutes	-	-	1 adult	1 adult
1 st June	Egg	100	70 minutes	-	-	1 tadpole	1 tadpole
	Torch	100	30 minutes	-	-	-	-
	Trap	100	25 traps	-	1 adult male smooth	-	-
6 th June	Egg	100	50 minutes	-	18 eggs	-	-
	Net	100	40 minutes	-	-	1 tadpole	-
	Torch	100	30 minutes	-	1 adult male smooth	1 adult	-
14 th June	Egg	100	50 minutes	-	11 eggs	-	-
	Torch	100	35 minutes	-	-	-	-
	Trap	100	25 traps	-	-	1 immature	-
22 nd June	Net	100	30 minutes	-	-	-	-
	Torch	100	30 minutes	-	-	-	-
	Trap	100	25 traps	-	1 adult male smooth	-	-

Scrape							
Date	Method	Margin surveyed (%)	Survey effort	Great crested newt	Smooth / palmate newt	Frog	Toad
26 th May	Egg	100	20 minutes	-	4 eggs	-	-
	Net	100	25 minutes	-	31 smooth efts	-	-
	Torch	100	20 minutes	-	-	-	-
30 th	Egg	100	20 minutes	-	-	-	-

Scrape							
Date	Method	Margin surveyed (%)	Survey effort	Great crested newt	Smooth / palmate newt	Frog	Toad
May	Net	100	40 minutes	-	32 smooth efts 1 egg	1 adults	-
	Torch	100	30 minutes	-	3 female 1 adult	-	-
1 st June	Egg	100	20 minutes	-	1 egg 1 egg	-	-
	Net	75	30 minutes	-	-	-	-
6 th June	Egg	100	6 minutes	1 egg	-	-	-
	Net	100	50 minutes	-	48 smooth efts	-	-
	Torch	100	20 minutes	-	3 female 1 male smooth	1 adult	-
14 th June	Egg	100	2 minutes	1 egg	-	-	-
	Torch	100	35 minutes	-	-	1 adult	-
	Trap	100	20 minutes	1 adult male	1 male smooth	-	-
22 nd June	Net	100	15 minutes	-	56 smooth efts	-	-
	Torch	100	20 minutes	-	1 male smooth 2 female 11 smooth efts	-	-
	Trap	100	15 traps	-	1 smooth eft	-	-

4.7 Terrestrial search

- 4.7.1 No amphibians were found during the search of terrestrial habitat around the pond on the proposal site.

5.0 CONCLUSIONS & RECOMMENDATIONS

5.1 Great crested newt

5.1.1 Appropriate and adequate survey in accordance with Natural England guidelines was carried out on the two field ponds, with three survey methods used on six occasions, though none was within the optimal survey period. Evidence of great crested newt presence was found in the scrape. This pond is 100m from the boundary of the proposal site, and within the range of great crested newts from the site.

5.1.2 According to English Nature (2001), great crested newt population sizes can be classed by using the maximum number of adult animals seen in each pond during one visit, using the following scale:

- Small = maximum count of up to 10
- Medium = maximum count between 11 and 100
- Large = maximum count of over 100

5.1.3 Since a single great crested newt was found and a great crested newt egg, this would indicate presence of a small breeding population at this site

5.1.4 The proposal site provides good quality terrestrial habitat for great crested newts (and other amphibians) and there is good connectivity between the two. It is therefore likely that great crested newts at the scrape use suitable habitat within the proposal site during their terrestrial phase.

5.1.5 The proposed work could cause killing, injury or disturbance to great crested newts and damage their habitats, and appropriate mitigation which seeks to avoid these impacts needs to be devised, and implemented under licence from Natural England. This licence will include a method statement to be followed to ensure that the law with respect to great crested newts is not contravened.

5.1.6 The following mitigation and compensation is recommended:

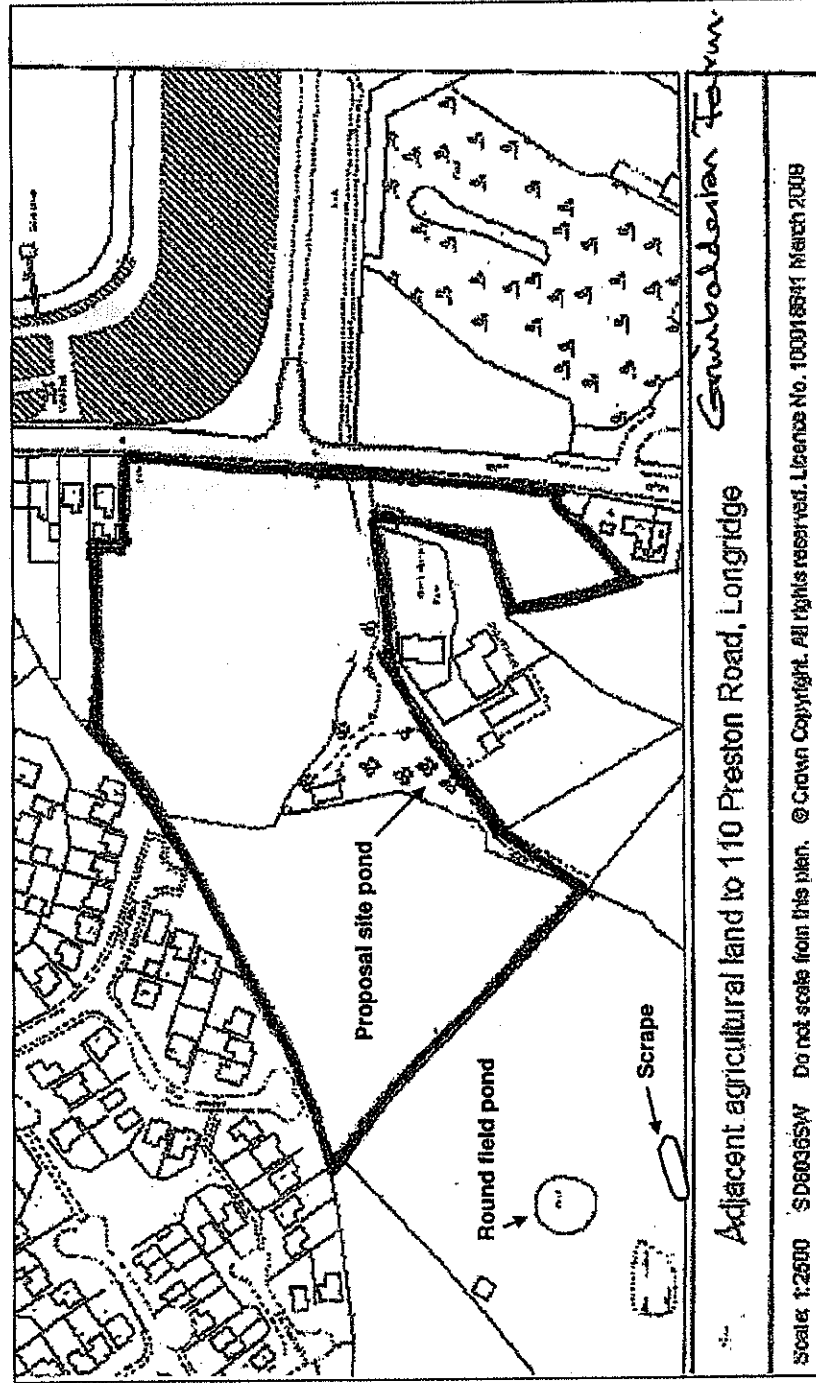
- Exclude great crested newts from all areas of suitable terrestrial habitat within the impact zone of the proposed development, during the active period for the species. This will involve installing exclusion fences and pitfall traps, and checking the traps for a minimum of 30 days or until there have been five consecutive days without a catch, (following the standard Natural England guidelines). This must be conducted by a suitably licensed ecologist.
- Maintain the exclusion fence throughout the duration of the development works, to ensure that great crested newts do not re-enter the impact zone of the development;

- Conduct a destructive search of suitable terrestrial habitat within the impact zone of the proposed development for great crested newts, moving any amphibians found to suitable habitat outside the exclusion fence. This must be conducted by a suitably licensed ecologist.
- Retain the pond within the development site, and restore it so that it provides higher quality aquatic habitat for great crested newts than it does at present.
- Retain terrestrial habitat suitable for great crested newts, as far as possible. Where terrestrial habitat is lost, compensate by the creation of habitat of at least equivalent quality and extent, and ensuring that connectivity to the field ponds and other ponds in the vicinity is retained, and where possible, enhanced
- Draw up and implement a management plan for the site, so that it continues to maintain a great crested newt population in the long term.

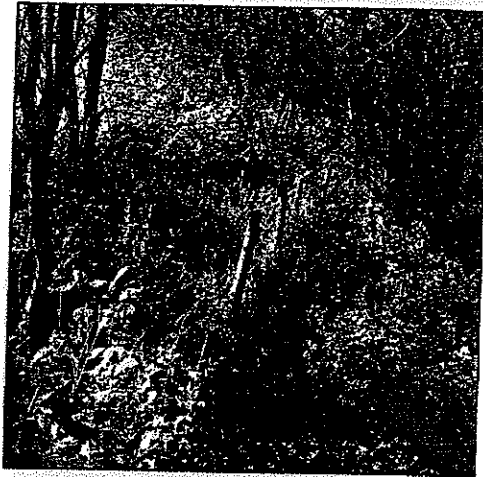
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Figure 1. Waterbodies surveyed



PHOTOGRAPHS



Proposal site pond



Round field pond



Scrape

