149 PARK LANE, KNYPERSLEY, STAFFORDSHIRE

GREAT CRESTED NEWT SURVEY

A Report to: Rob Duncan Planning

Report No: RT-MME-121547

Date: April 2017

MIDDLEMARCH ENVIRONMENTAL

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REPORT VERIFICATION AND DECLARATION OF COMPLIANCE

This study has been undertaken in accordance with British Standard 42020:2013 "Biodiversity, Code of practice for planning and development".

Report Version	Date	Completed by:	Checked by:	Approved by:
Final	26/04/2017	Ellie Rickman MSc ACIEEM (Senior Ecological Consultant) and Charlotte Richardson MSc (Ecological Consultant)	Tom Docker MSc MCIEEM (Ecological Impact Assessment Manager)	Dr. Philip Fermor MCIEEM, CEnv (Managing Director)

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

DISCLAIMER

The contents of this report are the responsibility of Middlemarch Environmental Ltd. It should be noted that, whilst every effort is made to meet the client's brief, no site investigation can ensure complete assessment or prediction of the natural environment.

Middlemarch Environmental Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

VALIDITY OF DATA

The findings of this study are valid for a period of two to four years, depending upon the nature of works proposed and the potential for these works to impact upon great crested newts. If works have not commenced within two years of this study, it may be necessary to undertake an updated survey to allow any changes in the status of great crested newts on site to be assessed, and to inform a review of the conclusions and recommendations made.

NON-TECHNICAL SUMMARY

In November 2016, Middlemarch Environmental Ltd were commissioned by Mr and Mrs Stonier to undertake a great crested newt survey at a proposed development site adjacent to 149 Park Lane, Knypersley in Staffordshire. To fulfil this brief an ecological desk study and a Great Crested Newt survey (in accordance with Natural England Guidance for Great Crested Newt Survey methodology) were undertaken.

The surveys were undertaken between 16th March and 21st April 2017 by Charlotte Richardson MSc (Ecological Consultant – Natural England Great Crested Newt Survey Licence WML-CL08), Oliver Jarratt BSc (Hons) (Project Officer) and Ellie Rickman MSc (Senior Ecological Consultant ACIEEM, Natural England Great Crested Newt Survey Licence WML-CL08).

The ecological desk study identified that no Great Crested Newt records were found within 1km of the proposed development site.

Three ponds were identified within 500 m of the development site, one of which, pond P1, was located 30 m north and was directly linked to the site via terrestrial habitat. This pond was included in the survey.

The other two ponds, P2 and P3 were separated from the site by housing and a road and are believed to have been filled in. No access was granted to these ponds and they were therefore excluded from the survey.

No great crested newts were recorded in pond P1 and it is therefore considered to be very unlikely that this species would be present on the proposed development site. Therefore, no further action is necessary regarding this species but the following precautionary recommendation has been made:

R1 In the unlikely event that a great crested newt is discovered during any works at the site all works should cease immediately and Natural England and / or a great crested newt licensed ecologist should be contacted immediately to determine a way forward.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

In November 2016, Mr and Mrs Stonier commissioned Middlemarch Environmental Ltd to undertake a survey for great crested newts *Triturus cristatus* at the site of a proposed residential development at 149 Park Lane, Knypersley, Staffordshire.

Middlemarch Environmental Ltd has previously carried out a Preliminary Ecological Appraisal for Rob Duncan Planning Consultancy Ltd on behalf of Mr and Mrs Stonier at this site. The findings of this survey are detailed in Report RT-MME-121391.

Great crested newts are European protected species and they are capable of being material considerations in the planning process. A summary of the legislation protecting great crested newts is included within Appendix 1. This section also provides some brief information on the ecology of great crested newts.

1.2 DEVELOPMENT SITE DESCRIPTION AND CONTEXT

The development site is located in an urban fringe location on the south-eastern edge of Knypersley in Staffordshire, at National Grid Reference SJ 89359 56497.

The land, which was rectangular in shape, sloped down to the west of an existing building and measured approximately 0.1 ha. It comprised a small area of woodland in the south, with semi-improved grassland and ruderal vegetation to the north of this. A line of ornamental shrubs ran along the western boundary of the site, with some denser scrub present adjacent to this boundary and scattered scrub present between the woodland and grassland areas.

Park Lane ran along the southern boundary of the site with residential housing beyond this whilst further residential housing and gardens were present to the immediate east and west of the site. A small area of woodland containing a pond was present to the north of the site. Beyond this the landscape to the north, east and south comprised farmland consisting of hedgerow-bounded fields, with occasional areas of woodland and properties present. Greenway Bank Country Park was also present approximately 1 km to the south. The built-up areas of Knypersley and Biddulph were present a short distance to the west and north-west of the site.

1.3 SURVEY AREA AND JUSTIFICATION

Reference to Ordnance Survey mapped data indicates the potential presence of up to three ponds within a 500 m radius of the site.

The only pond surveyed within a 500 m radius was Pond 1 (P1), which was located approximately 30 m to the north of the proposed development area. The landowner of Ponds P2 and P3 did not grant access, so were not included in the surveys. Both ponds P2 and P3 were separated from the site by houses and a road (Park Lane).

Pond Reference	Distance from Development Boundary	Subject to Survey?	Justification
P1	30 m north	Yes	This pond was included within the survey effort, as direct connectivity to the site is facilitated by the presence of a variety of suitable habitats including semi-improved grassland, hedgerows and tall ruderal.
P2	65 m south	No	This pond was not included within the survey effort, as access was not granted by the landowner. The client, however, spoke to the land owner, and he informed him that the pond has been filled in.
P3	130 m south	No	This pond was not included within the survey effort, as access was not granted by the landowner. The client, however, spoke to the land owner, and he informed him that the pond has been filled in.

Table 1.1: Distance of Ponds from the Development Boundary

1.4 DOCUMENTATION PROVIDED

The conclusions and recommendations made in this report are based on information provided by the client regarding the scope of the project. Documentation made available by the client is listed in Table 1.2.

Document Name / Drawing Number	Author
Block Plan (836-01-A2)	FGP architects

Table 1.2: Documentation Provided by Client

2. METHODOLOGY

2.1 DESK STUDY

As part of the Preliminary Ecological Appraisal (Report RT-MME-121391) an ecological desk study was undertaken in December 2015. The consultee for the desk study was Staffordshire Ecological Record.

Middlemarch Environmental Ltd then assimilated and reviewed the desk study data provided by this organisation. Relevant newt data are discussed in Chapter 3. In compliance with the terms and conditions relating to its commercial use, the full desk study data are not provided within this report.

2.2 HABITAT SUITABILITY INDEX AND CONNECTIVITY ASSESSMENT

Pond P1 was visually assessed for its suitability to support great crested newts by a suitably qualified ecologist. Ponds were assessed utilising the great crested newt Habitat Suitability Index (HSI) developed by Oldham *et al* in 2000 and revised by ARG UK in 2010. The HSI is a numerical index between 0 and 1, wherein a score of 1 represents optimal habitat for great crested newts. The HSI score is used to define the suitability of the pond on a categorical scale (Table 2.1). It should be noted, however, that the system is not precise enough to allow the conclusion that a pond with a high score will definitely support great crested newts whilst those with a low score will not.

HSI Score	Pond Suitability
< 0.5	Poor
0.5 – 0.59	Below average
0.6 – 0.69	Average
0.7 – 0.79	Good
> 0.8	Excellent

Table 2.1: Great Crested Newt HSI Scoring

The HSI is given by assigning a quantitative figure to each of 10 variables, including pond area, water quality and level of shading, which are all factors thought to affect great crested newts. The tenth root of the product of these variables is then calculated, giving a figure for habitat suitability. An assessment was also made of the habitat connectivity between ponds and the site, based on a review of habitat survey data (if available) and mapped sources.

2.3 GREAT CRESTED NEWT PRESENCE / ABSENCE SURVEY

Surveys for the presence of great crested newts require a minimum of four visits per year, with at least two visits between mid-April and mid-May to record peak numbers of great crested newts (English Nature, 2001).

Several survey methodologies are to be utilised during these visits. The standard survey methodologies include:

- Torchlight survey;
- Bottle trapping;
- Egg searching; and,
- Refuge searching.

The torchlight survey is a standard amphibian recording technique employing a high power torch to illuminate the ponds and allow the surveyor to record any great crested newts seen. This technique was undertaken during the survey visits, when males will be displaying and courting females.

Bottle traps were laid during the evening using the method described by Gent and Gibson (1998). The traps were then checked for newts before 10 am the following morning. Any newts found were recorded and then released back into the pond.

The egg search involved a direct assessment of emergent and submerged vegetation for great crested newt eggs. Egg surveys can only be undertaken during late spring and early summer (April to June).

Refuge searching involved looking underneath objects such as rocks, logs, moss and discarded debris in the vicinity of a pond. Adult and juvenile great crested newt can often be found underneath such objects, between March and October, especially if the objects are flat and retain moisture. Refuge searching is not a reliable method on its own and is only used as a supporting method to the other methods described.

2.4 Population Size Class Assessment

As no great crested newts were recorded in the pond, a population class size assessment was not required.

3. DESK STUDY RESULTS

3.1 BIOLOGICAL RECORDS

As part of the Preliminary Ecological Appraisal (Report RT-MME-121391) completed by Middlemarch Environmental Ltd, a desk study for records of protected species was completed in December 2015. During the desk study, no records of great crested newts were identified within a 1 km radius of the study site. However, it should be noted that a lack of desk study records does not confirm that great crested newts are absent from the area.

3.2 PREVIOUS SURVEYS

Middlemarch Environmental Ltd are unaware of any previous Great Crested Newt Surveys undertaken at this site.

4. RESULTS

4.1 INTRODUCTION

The surveys were undertaken between 16th March 2017 and 21st April 2017 by:

- Charlotte Richardson MSc (Ecological Consultant – Natural England Great Crested Newt Survey Licence Ref: 2015-17612-CLS-CLS); and
- Oliver Jarratt BSc (Hons) (Project Officer)
- Ellie Rickman MSc (Senior Ecological Consultant - Natural England Great Crested Newt Survey Licence Ref: 2015-18160-CLS-CLS)

Any constraints encountered during the surveys are detailed in Section 4.2.

At the time of the first presence / absence survey visit, each pond was subject to a habitat assessment to determine its suitability to support great crested newts. The findings of this assessment, including the calculated HSI score for each pond surveyed, are provided in Section 4.3.

The results of the great crested newt surveys are detailed in Section 4.4. Where additional survey visits were undertaken to inform a population size class assessment, the results of this assessment are provided in Section 4.5.

4.2 SURVEY CONSTRAINTS

Pond 1 was fully accessible, however, visibility during torch surveys was limited to the south due to dense vegetation growth (particularly great reedmace *Typha latifolia*). Fewer bottle traps could be installed during the third and fourth surveys due to a reduction in water levels.

Ponds 2 and 3 could not be surveyed, as the landowner did not grant access. However, the client informed Middlemarch Environmental Ltd that he had spoken to the landowner and that both ponds had been filled in. Additionally, these two ponds were separated from the site by a road and line of houses and gardens. It was considered unlikely that great crested newts, if present, would travel from ponds P2 or P3 to the proposed development site, which provided only moderate to poor terrestrial habitat, whilst better areas of habitat were available closer to these ponds. Therefore, the exclusion of ponds P2 and P3 was not considered to be a significant constraint.

4.3 HABITAT SUITABILITY INDEX ASSESSMENT AND CONNECTIVITY ASSESSMENT

Table 4.1 provides a brief description of the surveyed pond, and assesses the presence or absence of habitat features favoured by great crested newts. Pond locations (including those which could not be surveyed) are shown on Middlemarch Environmental Ltd Drawing C121547-01 in the Chapter 7. Photographs of surveyed ponds are provided in Chapter 8.

The proposed development site provided only moderate to poor terrestrial habitat for great crested newts as it was largely shaded by trees and had little ground cover. However, grassier areas to the northern end of the plot provided better areas for foraging and shelter.

Attribute	Description
Pond P1	
Description	An irregular shaped pond located at the base of a 50° slope (which is located to the east) with an island in the centre of the northern section and a small wooden bridge over the narrow central section. The pond is located within a residential garden and it is immediately surrounded by woodland and grassland areas with scattered ornamental shrubs. The pond is clay lined, but an abundance of leaf litter from the overhanging trees is also present.
Grid Reference	SJ 8936 5656
Pond Area	90m^2
Distance from Development Boundary	Approximately 30 m to the north of the proposed development area
Permanence	Sometimes dries
Water Quality	Moderate. Although there was an oily residue on the surface of the pond, a variety of invertebrate species were identified, including water boatmen, leeches, mosquito larvae, caddisfly nymphs and pond snails.
Shade	Approximately 50% of the pond surface is shaded by the broad-leaved and coniferous trees within the surrounding woodland. The island located towards the north of the pond is also likely to shade different areas at different times of the day.
Macrophytes	Approximately 75% of the pond surface is colonised by a mixture of greater reedmace and grasses. Duckweed was also recorded, particularly within the northern section of the pond.
Egg Laying Habitat	Small amounts of plants suitable for egg laying are located within the northern section of the pond. Greater reedmace dominates the southern section of the pond, but this is considered less suitable for egg laying newts. Leaf litter is abundant at the ponds base, also providing a potential egg laying medium.
Open Courtship Area	Although approximately 75% of the ponds surface is covered with macrophytes, the remaining 25% is occupied by open water which would serve as a potential courtship area for great crested newts. The open water was located to the east and west of the northern island, and it measured approximately 200 mm in depth. An abundance of frogspawn was identified within the eastern open water area.
Wildfowl	A small number of mallards were seen on the pond during the survey, and the client informed the surveyors that a heron is a regular visitor.
Fish	Fish were considered to be absent.
Surrounding Terrestrial Habitat	The pond is located within a residential garden, and is immediately surrounded by woodland and grassland with scattered ornamental shrubs. Connectivity to the site is available via hedgerows, grassland areas and tall ruderal habitats.
Photo Reference (see Chapter 8)	Plate 8.1

Table 4.1: Pond Description and Assessment of Habitat Features for Great Crested Newts

The HSI score for the pond assessed is detailed in Table 4.2. As access to Ponds 2 and 3 was not granted by the landowner, no HSI calculation could be undertaken.

Pond Ref.	HSI Category										HSI Score
	SI 1	SI 2	SI 3	SI 4	SI 5	SI 6	SI 7	SI 8	SI 9	SI 10	
P1	1	0.2	0.5	0.67	1	0.67	1	1	0.67	1	0.70 (good)

Key:

SI 1 – Location
SI 2 – Pond Area
SI 3 – Pond Drying
SI 4 – Water Quality
SI 5 – Shade
SI 6 – Waterfowl
SI 7 – Fish
SI 8 – Ponds Within 1km
SI 9 – Terrestrial Habitat
SI 10 – Macrophytes

Table 4.2: Habitat Suitability Index of Ponds Within 500 m of Study Area

4.4 GREAT CRESTED NEWT SURVEY RESULTS

Table 4.3 provides a summary of the survey dates and weather conditions.

Survey Visit Number	Date	Time	Parameter			
			Temperature °C	Cloud %	Precipitation	Wind (Beaufort Scale)
1	16-03-17	pm	8	100	Showers	F2
	17-03-17	am	5	100	Dry	F2
2	23-03-17	pm	8	0	Dry	F3
	24-03-17	am	5	20	Dry and Sunny	F2
3	18-04-17	pm	10	50	Dry	F1
	19-04-17	am	7	40	Dry	F1
4	20-04-17	pm	7	100	Dry	F2
	21-04-17	am	10	100	Dry	F2

Table 4.3: Weather Conditions During Great Crested Newt Surveys

Table 4.4 details the results of the great crested newt surveys.

	Pond P1
Survey Visit 1 – [16.03.17 / 17.03.17]	
Torch Survey	9 CF
Bottle Trapping	0
Refugia Search	-
Egg Search	0
Vegetation Cover (0-5)	3
Turbidity (0-5)	2
Peak GCN Count 1	**0**
Survey Visit 2 – [23.03.17 / 24.03.17]	
Torch Survey	0
Bottle Trapping	0
Refugia Search	-
Egg Search	0
Vegetation Cover (0-5)	3
Turbidity (0-5)	3
Peak GCN Count 2	**0**
Survey Visit 3 – [19-04-17 / 19-04-17]	
Torch Survey	0
Bottle Trapping	0
Refugia Search	-
Egg Search	0
Vegetation Cover (0-5)	3
Turbidity (0-5)	3
Peak GCN Count 3	**0**
Survey Visit 4 – [20-04-17 / 21-04-17]	
Torch Survey	0
Bottle Trapping	0
Refugia Search	-
Egg Search	0
Vegetation Cover (0-5)	3
Turbidity (0-5)	3
Peak GCN Count 4	**0**
Pond Notes	Two mallards were seen on the pond during survey visits 1, 2 and 4. A large amount of frog's spawn was also identified to the north and south of the pond in the first two visits and subsequently tadpoles were recorded in the last two visits.

Notes:
'Peak GCN Count' is the peak count of adult great crested newts recorded during a single visit using a single survey technique.
'Vegetation Cover': 0 = No vegetation obscuring survey. 5 = Water completed obscured by vegetation
'Turbidity': 0 = Completely clear. 5 = Very turbid.

Table 4.4: Great Crested Newt Survey Results – Pond 1

4.5 Population Size Class Assessment

As no great crested newts were recorded during the surveys a population size class assessment was not required.

5. DISCUSSION AND CONCLUSIONS

5.1 Summary of Site Proposals

It is understood that a single residential house and attached garage are to be built towards the northern end of the site, with access to be created from Park Road to the south and along the western boundary of the site to the proposed location of the dwelling. To facilitate the site access four trees are to be removed in the south-west of the site, whilst the house and garage will be located within an area of the site currently occupied by grassland and ruderal vegetation.

5.2 Habitat Suitability Index Assessment

Pond P1 scored 0.70 on the Habitat Suitability Index indicating that it is of good suitability to support breeding great crested newts.

5.3 Great Crested Newt Survey Findings

No great crested newts were recorded in pond P1. Frogspawn and frog tadpoles were recorded in the pond an all four survey visits.

5.4 Conclusions and Summary of Potential Impacts

No great crested newts were identified during any of the survey visits to any of the ponds, therefore it is not considered that the development proposals outlined in Section 5.1 will impact upon the favourable conservation status of this species.

6. RECOMMENDATIONS

All recommendations provided in this section are based on Middlemarch Environmental Ltd's current understanding of the site proposals, correct at the time the report was compiled. Should the proposals alter, the conclusions and recommendations made in the report should be reviewed to ensure that they remain appropriate.

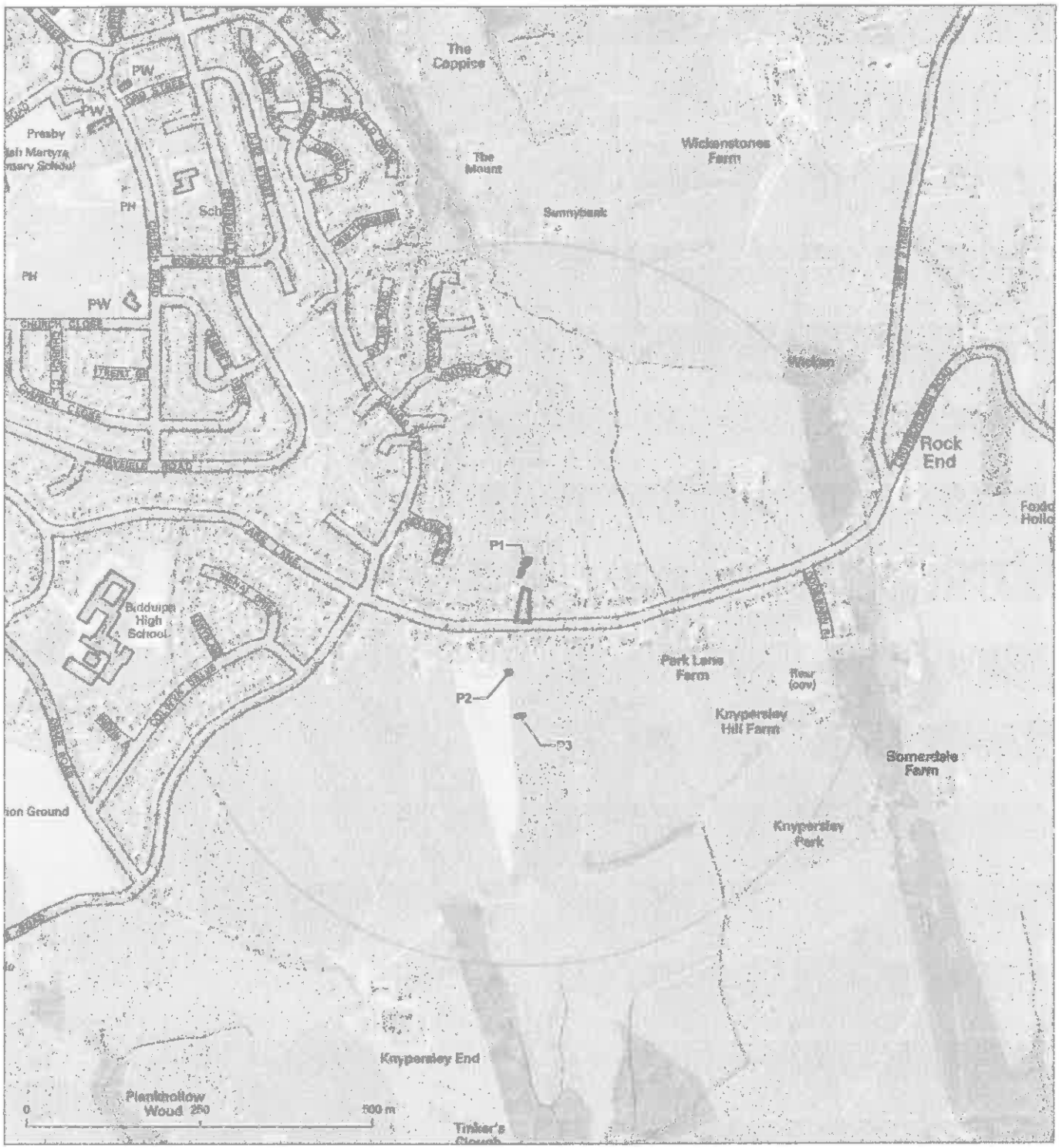
No great crested newts were identified within Pond P1 and it is therefore considered to be highly unlikely that great crested newts would be present on the proposed development site.

R1 In the unlikely event that a great crested newt is discovered during any works at the site all works should cease immediately and Natural England and / or a great crested newt licensed ecologist should be contacted immediately to determine a way forward.

No further recommendations are made regarding this species.

7. DRAWINGS

Drawing C121547-01 – Pond Location Plan



Legend

- Pond included in survey
- Ponds excluded due to access constraints
- 500 m radius from site boundary
- Approximate site boundary

Project	149, Park Lane, Knypersley
Drawing	Great Crested Newts Map
Client	Mr and Mrs Stonier
Drawing Number: C121547-01	Revision: 00
Scale @ A4: 1:8,000	Date: April 2017
Approved By: ER	Drawn By: GP

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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

C121547-01

8. PHOTOGRAPHS



Plate 8.1: Pond P1



Plate 8.2: Proposed Development Site

REFERENCES AND BIBLIOGRAPHY

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The Conservation of Habitats and Species Regulations 2010, as amended.

The Wildlife and Countryside Act, 1981 (as amended).

APPENDIX 1

LEGISLATION

Great crested newts and the places they use for shelter or protection receive European protection under The Conservation of Habitats and Species Regulations 2010 (Habitats Regulations 2010). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. This protection means that great crested newts, and the places they use for shelter or protection, are capable of being a material consideration in the planning process.

Regulation 41 of the Habitats Regulations 2010, states that a person commits an offence if they:

- deliberately capture, injure or kill a great crested newt;
- deliberately disturb great crested newt;
- deliberately take or destroy eggs of a great crested newt; or
- damage or destroy a great crested newt breeding site or resting place.

Disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong.

It is an offence under the Habitats Regulations 2010 for any person to have in his possession or control, to transport, to sell or exchange or to offer for sale, any live or dead great crested newt, part of a great crested newt or anything derived from great crested newt, which has been unlawfully taken from the wild. This legislation applies to all life stages of great crested newt.

Whilst broadly similar to the above legislation, the WCA 1981 (as amended) differs in the following ways:

- Section 9(1) of the WCA makes it an offence to *intentionally* kill, injure or take any protected species.
- Section 9(4)(a) of the WCA makes it an offence to *intentionally or recklessly** damage or destroy, *or obstruct access to*, any structure or place which a protected species uses for shelter or protection.
- Section 9(4)(b) of the WCA makes it an offence to *intentionally or recklessly** disturb any protected species *while it is occupying a structure or place which it uses for shelter or protection*.

*Reckless offences were added by the Countryside and Rights of Way (CRoW) Act 2000.

Great crested newts are listed as Species of Principal Importance on the UK Post-2010 Biodiversity Framework (2012), and as such are material considerations in the planning process.

ECOLOGY

The great crested newt is the largest of the three newt species in the UK. Like all UK amphibians, they breed within ponds but great crested newts spend the majority of the year on land. Great crested newts prefer to breed in medium to large ponds without fish or significant numbers of waterfowl. Ponds which lack shade on the southern margins appeared to be favoured. Newts enter the ponds to breed in the spring, immediately after they come out of their winter dormancy. The females lay eggs individually on the leaves of aquatic vegetation, and these generally hatch within four weeks, although the exact timing is dependent on environmental conditions. The larvae then stay in the water until the metamorphosing into adult newts (when they lose their external gills) between August and October and are now able to leave the water. Great crested newts can live up to 14 years in the wild and spend most of their lives out of the ponds, foraging at night in areas of undisturbed habitat, favouring rough grassland, scrub and woodland areas. Newts may travel up to 1 km from a breeding pond, but most tend to travel no more than 250 m if the ponds are close to suitable terrestrial habitat. Great crested newts are predators from birth, taking a variety of live prey including aquatic invertebrates, frog tadpoles, slugs, earthworms, spiders and other land invertebrates. Great crested newt hibernate during the winter months in underground crevices, such as gaps between tree roots, or under piles of logs, rubble etc.

Great crested newt populations have declined significantly in Britain, and continental Europe, since the 1940s as a result of habitat loss.