



Great Crested Newt Survey

June 2018

www.phlorum.com

Land at Church Lane, Climping

June 2018

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Page ii of iii

Contents

1.	Introduction.....	1
2.	Methodology	3
3.	Results	6
4.	Conclusions and Recommendations.....	12
5.	References	14

Appendix A – Great crested newt survey map

Appendix B – Legislation

Appendix C – Photographs

Appendix D – Survey data

1. Introduction

Background

- 1.1 Phlorum Ltd has been commissioned by Parker Dann to undertake a great crested newt (*Triturus cristatus*) survey prior to development at Church Lane, Climping, West Sussex (hereafter referred to as “the site”).
- 1.2 The great crested newt survey follows on from a Preliminary Ecological Appraisal which identified potentially suitable habitat for this species within the site.
- 1.3 The report provides an assessment of the status of great crested newt both within and in the vicinity of the site, providing information on their presence / likely absence and distribution. Potential impacts of the proposed development are identified and measures to mitigate the effects of the proposed development on great crested newts are discussed in outline.
- 1.4 It is understood that current proposals are for a residential development to include the provision of green space. It is understood the woodland within the southern and western site extents will be retained and ponds will be created as part of the proposed landscaping design.
- 1.5 An initial Great Crested Newt survey was carried out by Phlorum in 2016 (Land at Church Lane Climping, West Sussex, Great Crested Newt Survey Report, June 2016).

Site Description

- 1.6 The site at Church Lane is within a relatively rural location within the centre of Climping in West Sussex. The site comprises a large arable field, broadleaved woodland, ruderal vegetation, scrub and semi-improved grassland. The site is bounded to the north by residential housing and Horsemere Green Lane and to the east by Church Lane. Yapton Road bounds the site to the west and Crookthorn Lane is directly south.
- 1.7 In the wider surrounds, agricultural land dominates the landscape to the south, east and west with residential properties and commercial buildings to the north. Littlehampton is located approximately 1.5km to the east and the coastline is approximately 1.3km to the south.
- 1.8 The National Grid Reference for the centre of the site is TQ000 020 and the site measured approximately 21 hectares (ha).



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Page 1 of 14

- 1.9 There were no on-site water bodies. Aerial mapping and OS maps indicate that there are eight ponds located within 500m of the site boundary.
- 1.10 The areas of on-site marginal woodland, hedgerow and scattered scrub provide suitable terrestrial habitat for great crested newts and other amphibians and the arable field itself may also be used by great crested newts passing between off-site ponds.



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Page 2 of 14

2. Methodology

Data Search

- 2.1 Records for great crested newt from within a 2km radius of the site were obtained from Sussex Biodiversity Records Centre (2016) as part of the preliminary ecological appraisal (Phlorum, 2016).
- 2.2 A review of Phlorum's 2016 Great Crested Newt survey was carried out. This survey detected a low population of Great Crested newts in Ponds 1 and 2. Maximum count of 2 Great Created newts detected on one survey visit.

Great Crested Newt Survey

Habitat Suitability Index (HSI) Assessment

- 2.3 Phlorum undertook a HSI Assessment of the all ponds within 500m of the survey boundary. A total of seven ponds were included in the HSI Assessment.
- 2.4 The assessment was carried out by a suitably qualified ecologist using the methodology provided by the National Amphibian and Reptile Recording Scheme (Oldham *et al.* 2000).
- 2.5 The HSI assessment uses ten key habitat criteria and is based on the assumption that habitat quality determines great crested newt population size (Oldham *et al.*, 2000). The criteria are as follows:
 - 🌿 SI1 = geographic location;
 - 🌿 SI2 = pond area;
 - 🌿 SI3 = pond permanence;
 - 🌿 SI4 = water quality;
 - 🌿 SI5 = pond shading;
 - 🌿 SI6 = number of waterfowl;
 - 🌿 SI7 = occurrence of fish;
 - 🌿 SI8 = pond density;
 - 🌿 SI9 = proportion of 'newt friendly' terrestrial habitat; and
 - 🌿 SI10 = macrophyte (aquatic plant) content.

- 2.6 The results of the HSI assessment calculation have been compared to categorised HSI scores used by the National Amphibian and Reptile Recording Scheme (Oldham *et al*, 2000) to identify the probability of a pond supporting great crested newts. The five categories are summarised in the table below.

Table 1: HSI Assessment Categories

Probability of Ponds Supporting Great Crested Newts	HSI Score
Poor	Below 0.5
Below Average	0.5 - 0.59
Good	0.6 - 0.69
Excellent	0.7 - 0.79

(Extracted from Oldham *et al*, 2000)

Pond Surveys

- 2.7 A total of seven ponds within 500m of the site were included in the survey. One pond were excluded from the survey due to restricted access (with access being refused by the landowner or contact with the landowner not being possible).
- 2.8 The pond locations and reference numbers are represented in the Survey Map in Appendix A.
- 2.9 The survey protocol followed that set out in the Great Crested Newt Mitigation Guidelines (English Nature, 2001). The four surveys required to demonstrate presence or absence were conducted between mid-March and late June with two of those visits taking place within the peak survey time between mid-April and mid-May.
- 2.10 The pond surveys were led by Sarah Kitchen, holder of a great crested newt class survey license: CLS 32445 and Emilia Pruszkowski, acting as an accredited agent on the above licence. Health and safety support throughout the surveys was provided by Sarah Kitchen.
- 2.11 All surveys were undertaken in periods of suitable weather conditions; avoiding strong winds and heavy rain. For each survey visit at least three of the following four survey techniques were employed:
-  Torch survey: conducted at dusk using a 500,000 candlepower Clulite lamp to search the accessible margins of the water bodies;
 -  Egg search: a thorough search was made for newt eggs of any suitable vegetation present along the water margins. This comprised a search for any obviously folded leaves of emergent or marginal vegetation;

-  Bottle trapping: following the torch survey, bottle-traps (made from two litre plastic bottles) were placed along the accessible margins of areas of open water. Traps were left overnight for a maximum of twelve hours and checked and removed the following morning; and/or
-  Sweep netting: a standard professional long handled net was used to sample the water column throughout the pond around the margins and in the centre. The net was swept backwards and forwards through the water and the emptied out into a white plastic container and the contents examined and recorded.

Population Assessment

- 2.12 Where great crested newts were found to be present, a population assessment was made in accordance with the population size class assessment in the Great Crested Newt Mitigation Guidelines (English Nature 2001). These guidelines categorise the population as small, medium or high. The three categories are summarised in the Table below.

Table 2: Great Crested Newt Population Assessment

Population Size Class	Great Crested Newt Count
Small	Maximum count up to 10
Medium	Maximum counts 11 to 100
High	Maximum counts over 100

Constraints

Data Search Constraints

- 2.13 It is important to note that, even where data is held, a lack of records for a defined geographical area does not necessarily mean that there is a lack of ecological interest; the area may be simply under-recorded.

Great Crested Newt Survey Constraints

- 2.14 The surveys were however considered to be sufficiently robust to prove absence of great crested newts within the site and surrounding landscape.

3. Results

Data Search

- 3.1 The SxBRC data search returned a number of records of great crested newt within a 2km radius of the site boundary. The closest record was from 2010, located approximately 260m to the south of the survey site.

Great Crested Newt Survey

Overview

- 3.2 No great crested newts or their eggs were found in any of the ponds surveyed during the course of the four survey visits.
- 3.3 The table below presents peak counts of each species for all of the ponds that were surveyed. Full survey and HSI data is presented in Appendix D.

Table 3: Summary of Great Crested Newt Survey Results.

Pond Number	Great Crested Newt	Smooth Newt	Palmate Newt
1	0	0	1
2	0	2	12
3	0	0	0
4	0	7	0
5	0	2	0
6	0	46	0
7	0	0	0

Pond 1

- 3.4 A small pond located to on the eastern side of Climping Street, approximately 150m south of the survey site boundary. The waterbody measured 45m² and was surrounded on all sides by dense bramble (*Rubus fruticosus agg*) and hawthorn (*Crataegus monogyna*) vegetation with only a few accessible areas and marginal features. Emergent and submerged vegetation was absent and with a large layer of leaf litter from overhanging trees. The pond supported shallow bare earth banks across the majority.
- 3.5 The HSI score for the pond was **Average**. This suggests there are limiting factors which may reduce the potential for great crested newt presence such as its small size and low macrophyte cover.
- 3.6 No great crested newts or eggs of this species were found during any of the four survey visits
- 3.7 The table below summarises the survey results for this pond with peak counts for adults in red.

Table 4: Summary of Survey Results for Pond 1.

Date	Great Crested Newt	Smooth Newt	Palmate Newt
30/4/18	0	1	0
10/5/18	0	0	0
15/5/18	0	0	0
22/5/18	0	0	0

Pond 2

- 3.8 A small pond situated approximately 20m north of Pond 1 on the western side of Climping Street. The waterbody had dense bramble scrub bordering the western bank, with sparse willow (*Salix* sp.) dominating the eastern areas. Yellow-flag (*Iris pseudacorus*) and bur-reed (*Sparganium* sp.) were noted as emergent. Dense areas of starwort (*Callitriche* sp.) were also recorded.
- 3.9 The HSI score for the pond was **Average**. This suggests there are limiting factors which may reduce the potential for great crested newt presence such as its small size and low macrophyte cover. The HSI quality score of this pond dropped from Good in 2016, to average in 2018.
- 3.10 No great crested newts were found during any of the four survey visits. No eggs of this species were found during any of the survey visits.

- 3.11 The table below summarises the survey results for this pond with peak counts for adults in red.

Table 5: Summary of Survey Results for Pond 2.

Date	Great Crested Newt	Smooth Newt	Palmate Newt
30/4/18	0	1	0
10/5/18	0	2	7
15/5/18	0	0	1
22/5/18	0	0	0

Pond 3

- 3.12 A medium sized village pond located on the southern side of Horsemere Green Lane, north of the survey site. The pond measured approximately 640m², with margins dominated by yellow-flag and reedmace (*Typha latifolia*). Surrounding habitat comprised residential properties with associated gardens to the south east and west and agricultural fields to the north. During the surveys, a moderately sized population of ornamental fish were noted, as well as a constant presence of wildfowl.
- 3.13 The HSI score for the pond was **Below Average**. This suggests there are limiting factors which may reduce the potential for great crested newt presence such as the presence of fish and wildfowl.
- 3.14 No great crested newts were found during any of the four survey visits. No eggs of this species were found during any of the survey visits.
- 3.15 The table below summarises the survey results for this pond with peak counts for adults in red.

Table 6: Summary of Survey Results for Pond 3.

Date	Great Crested Newt	Smooth Newt	Palmate Newt
30/4/18	0	0	0
10/5/18	0	0	0
15/5/18	0	0	0
22/5/18	0	0	0



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Doc: 5989.Climping.GCNReport2018 Date: 01 June 2018

Page 8 of 14

Pond 4

- 3.16 One of two ornamental ponds situated within a small private residential complex south of Horsemere Green lane, north of the proposed development site boundary. The pond measured approximately 50m² and was connected to Pond 5 via a small stream. The pond was surrounded by ornamental shrub beds and amenity grassland, with little potential hibernation habitat or sheltering opportunities. The pond was noted to have a large fish population. The pond was also lined and was heavily turbid through the course of the surveys.
- 3.17 The HSI score for the pond was **Poor**. This suggests there are limiting factors which may reduce the potential for great crested newt presence such as the presence of fish and the isolated terrestrial habitat.
- 3.18 No great crested newts or eggs of this species were found during any of the six survey visits.
- 3.19 The table below summarises the survey results for this pond with peak counts for adults in red.

Table 7: Summary of Survey Results for Pond 4.

Date	Great Crested Newt	Smooth Newt	Palmate Newt
30/4/18	0	0	0
10/5/18	0	1	0
15/5/18	0	0	0
22/5/18	0	6	0

Pond 5

- 3.20 Slightly larger than Pond 4 but of similar construction with a large population of fish present. The waterbody was noted to have a stand of reeds (*Phragmites australis*) within the southern sections and several water lilies (*Nymphaeaceae*) noted.
- 3.21 The HSI score for the pond was **Poor**. This suggests there are limiting factors which may reduce the potential for great crested newt presence such as the presence of fish and the isolated terrestrial habitat.
- 3.22 No great crested newts or eggs of this species were found during any of the six survey visits.

- 3.23 The table below summarises the survey results for this pond with peak counts for adults in red.

Table 8: Summary of Survey Results for Pond 5.

Date	Great Crested Newt	Smooth Newt	Palmate Newt
30/4/18	0	0	0
10/5/18	0	1	0
15/5/18	0	1	0
22/5/18	0	0	0

Pond 6

- 3.24 A very small (i.e. 2m²) ornamental water feature located immediately south off Horsemere Green Lane. The feature was connected to Pond 7 via a culvert under Waterford Gardens road. No vegetation was noted within the waterbody, which had an average depth of 0.2m. Some surrounding planted shrubbery was present, with gravel and rock piles forming the immediate surrounding habitat.
- 3.25 The HSI score for the pond was **Poor**. This suggests there are limiting factors which may reduce the potential for great crested newt presence.
- 3.26 No great crested newts or eggs of this species were found during any of the six survey visits.
- 3.27 The table below summarises the survey results for this pond with peak counts for adults in red.

Table 9: Summary of Survey Results for Pond 6.

Date	Great Crested Newt	Smooth Newt	Palmate Newt
30/4/18	0	5	0
10/5/18	0	16	0
15/5/18	0	25	0
22/5/18	0	17	0

Pond 7

- 3.1 A small pond linked to Pond 6 via a culverted pipe. The waterbody measured approximately 13m² and was lined. A waterfall was present on the northern bank. A single waterlily was noted within the pond, with no substrate present. Surrounding habitat was dominated by amenity grassland and rockery features with some planted shrubbery.
- 3.2 The HSI score for the pond was **Below Average**. This suggests there are limiting factors which may reduce the potential for great crested newt presence.
- 3.3 No great crested newts or eggs of this species were found during any of the six survey visits.
- 3.4 The table below summarises the survey results for this pond with peak counts for adults in red.

Table 10: Summary of Survey Results for Pond 7.

Date	Great Crested Newt	Smooth Newt	Palmate Newt
30/4/18	0	0	0
10/5/18	0	0	0
15/5/18	0	0	0
22/5/18	0	0	0

4. Conclusions and Recommendations

Conclusions

- 4.1 The site at Church Lane is within a relatively rural location within the centre of Climping in West Sussex. The site comprises a large arable field, broadleaved woodland, ruderal vegetation, scrub and semi-improved grassland. The site is bounded to the north by residential housing and Horsemere Green Lane and to the east by Church Lane. Yapton Road bounds the site to the west and Crookthorn Lane is directly south.
- 4.2 Design proposals include the re-development of the site for residential and amenity use. There were no on-site water bodies; however, potentially suitable terrestrial habitat in the form of arable land, woodland blocks, scattered trees, scrub, ruderal vegetation and a hedgerow offered potential sheltering opportunities for newts.
- 4.3 Research suggests great crested newts may travel up to 500m to commute between a network of breeding ponds and individuals also move ponds between and within years (English Nature 2001).
- 4.4 No great crested newts were found in any of the waterbodies on any of the four survey visits.
- 4.5 Based on the results of the survey, great crested newts are not considered to pose a constraint to the proposed development works.
- 4.6 Enhancement options are provided in the Recommendations Section below.

Recommendations

Site Enhancement

Landscape Planting

- 4.7 Planting should include a high proportion of native species and include a mix of shrubs, trees and grassland wherever possible.
- 4.8 Grassland planting around the site should include a diverse species mix suitable for the area, to include wildflowers. For areas which will be subject to regular management an appropriate amenity wildflower mix should be used. Species within this grassland type benefit from regular mowing.
- 4.9 Boundary vegetation should be retained and enhanced through additional tree and shrub planting to provide wildlife corridors for a range of species in the landscape to move between the site, including amphibians.



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Doc: 5989.Climping.GCNReport2018 Date: 01 June 2018

Page 12 of 14

Log Piles

- 4.10 Log piles could also be installed within suitable habitat in the south of the site, near the boundaries of Pond 2. These should be oriented so as to maximise their daily exposure to the sun, with the longest side facing south. The log piles should be made from neatly stacked wood, locally sourced where possible, and stacked approximately 1m in height, either in a pyramidal shape (bound with wire to prevent it breaking apart over time) or stacked against mature trees.
- 4.11 Log piles are ideal environments for amphibians; used for hibernation and as a refuge from predators. The dead wood also supports a diverse invertebrate fauna; a food source for a range of species including amphibians, reptiles and birds.

Other

- 4.12 If works do not proceed within two years from the date of the last great crested newt survey, then the site would need to be re-surveyed to ensure that the baseline conditions have not changed and that the recommendations to include any mitigation remained appropriate.



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Doc: 5989.Climping.GCNReport2018 Date: 01 June 2018

Page 13 of 14

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Appendix A

Great Crested Newt Survey Map



Figure 1: Climping Great Crested Newt Survey Map

Drawn by: SK
 On the: 24.05.18
 Not to Scale
 ARUN DISTRICT COUNCIL CM/13/18/OUT
 Ref: 5989



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Appendix B

Legislation

Legislation

This section contains information pertaining to the legislation and planning policy applicable in Britain. This information is not applicable to Northern Ireland, the Republic of Ireland the Isle of Man or the Channel Islands. Information contained in the following appendix is provided for guidance only.

Species

The objective of the EC Habitats Directive¹ is to conserve plants and animals which are considered to be rare across Europe. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2010 (as amended) (formerly The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) and The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended).

The Wildlife and Countryside Act 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and also implements the obligations set out for species protection from the Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.

Various amendments have been made since the Wildlife & Countryside Act came into force in 1981. Further details pertaining to alterations of the Act can be found on the following website: www.opsi.gov.uk. Key amendments have been made through the Countryside and Rights of Way (CROW) Act (2000) and Nature Conservation (Scotland) Act 2004.

There are a number of other legislative Acts affording protection to species and habitats. These include:

-  Countryside and Rights of Way (CROW) Act 2000;
-  Deer Act 1991;
-  Natural Environment & Rural Communities (NERC) Act 2006;
-  Protection of Badgers Act 1992; and
-  Wild Mammals (Protection) Act 1996.

Herpetofauna (Reptiles and Amphibians)

The following species receive full protection under the Conservation of Habitats and Species Regulations 2010 (as amended) through their inclusion on Schedule 2.

-  sand lizard (*Lacerta agilis*);
-  smooth snake (*Coronella austriaca*);
-  natterjack toad (*Epidalea calamita*);

¹ Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora.

- 🐸 great crested newt (*Triturus cristatus*); and
- 🐸 pool frog (*Pelophylax lessonae*).

Under this legislation, Regulation 41 prohibits:

- 🐸 deliberate killing, injuring or capturing of species listed on Schedule 2;
- 🐸 deliberate disturbance of any Schedule 2 species as to impair their ability:
 - (i) to survive, breed, or reproduce, or to rear or nurture young; and
 - (ii) to hibernate or migrate.
- 🐸 deliberate disturbance of any Schedule 2 species as to affect significantly the local distribution or abundance of the species;
- 🐸 deliberate taking or destroying of the eggs of a Schedule 2 species;
- 🐸 damage or destruction of a breeding site or resting place; and
- 🐸 keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part of a species.

With the exception of the pool frog, these species are also currently listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this Act, they are additionally protected from:

- 🐸 intentional or reckless disturbance (at any level);
- 🐸 intentional or reckless obstruction of access to any place of shelter or protection; and
- 🐸 selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of herpetofauna are protected solely under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). These species include:

- 🐸 adder (*Vipera berus*);
- 🐸 grass snake (*Natrix natrix*);
- 🐸 common lizard (*Zootoca vivipara*); and
- 🐸 slow-worm (*Anguis fragilis*).

Under this legislation, for these species it is prohibited under Section 9(1) & (5) to:

- 🐸 intentionally (or recklessly in Scotland) kill or injure these species; and
- 🐸 sell, offer or expose for sale, possess or transport for purpose of sale these species, or any part thereof.

The following species are listed in respect to Section 9(5) of Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) which only affords them protection against sale, offering or exposing for sale, possession or transport for the purpose of sale:

- 🐸 common frog (*Rana temporaria*);
- 🐸 common toad (*Bufo bufo*);
- 🐸 smooth newt (*Lissotriton vulgaris*); and



palmate newt (*L. helveticus*).

Appendix C

Photographs

Photographs

Photograph Number and Feature	Photograph of Feature
Photograph 1: Pond 1	
Photograph 2: Pond 2	

Photograph 3:
Pond 3



Photograph 4:
Pond 4



Photograph 5:
Pond 5



Photograph 6:
Pond 6



Photograph 7:
Pond 7



Appendix D

Survey Data

Great Crested Newt Survey

1. Pond Details

Project	Climping
Project number/reference	5989
Site	

Pond number/reference	Pond 2
OS Grid reference	SU999 016
Location details	South of survey site, west of climping street
Access instructions	Accessed from Climping street

Landowner name	
Address/email	
Telephone	

Habitat Suitability Index

		SI value
SI1. Map location	A/B/C	A
SI2. Surface area	rectangle/ellipse/irregular	irregular
	length (m)	
	width (m)	
	OR estimate (m ²) if irregular	
	area (m ²) =	50
SI3. Dessication rate	never/rarely/sometimes/frequently	rarely
SI4. Water quality	good/moderate/poor/bad	moderate
SI5. Shade	% of margin shaded 1m from bank	80
SI6. Waterfowl	absent/minor/major	absent
SI7. Fish population	absent/possible/minor/major	absent
SI8. Pond density	number of ponds within 1km	6
SI9. Terrestrial habitat	good/moderate/poor/isolated	moderate
SI10. Macrophyte cover	%	10

Note: Guidance in undertaking the HSI is available at www.narrs.org.uk.
HSI calculation formulae adapted from Rob Oldham

HSI score = 0.64

Pond suitability = Average

General description/notes/comments

A small pond situated approximately 20m north of Pond 1 on the western side of Climping Street. The waterbody had dense bramble scrub bordering the western bank with sparse willow dominating the eastern areas. Yellow-flag and bur-reed were noted as emergent with dense areas of starwort increasing throughout the surveys

Survey results summary

Number of survey visits 4

Note: The great crested newt mitigation guidelines recommend that a minimum of **four** survey visits are required to determine likely absence, and **six** to assess population size class.

Presence or likely absence = **likely absent**

Peak count =

Pond population size class =

Note: Only bottle-trapping and torch survey are considered suitable methods for assessing population size class.

Note: Peak count is the maximum number of adult newts seen on one visit using one survey method.

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Great Crested Newt Survey

2. Survey Details

	Visit 1	Visit 2	Visit 3
Date	30.04.18	10.05.18	15.05.18
Personnel	SK & AP	EP & GW	EP & GW
Temperature (°C)	9	10	10
Weather	Clear & dry	Overcast & dry	Overcast & dry
Turbidity	3	3	3
Vegetation cover	1	1	1
Methods			
indicate methods used or number of bottle traps	torch trap net other	torch trap net other	torch trap net other
	✓ ✓ egg	✓ ✓ egg	✓ ✓ egg
T. cristatus			
male			
female			
unknown			
total adults			
immature			
larvae			
eggs present?	no	no	no
<i>L. vulgaris</i>		2	
<i>L. helveticus</i>	1	7	2
<i>R. temporaria</i>			
<i>B. bufo</i>			
Other			
	Visit 4	Visit 5	Visit 6
Date	22.05.18		
Personnel	EP & PN		
Temperature (°C)	12		
Weather	Clear & dry		
Turbidity	3		
Vegetation cover	1		
Methods			
indicate methods used or number of bottle traps	torch trap net other	torch trap net other	torch trap net other
	✓ egg		
T. cristatus			
male			
female			
unknown			
total adults			
immature			
larvae			
eggs present?	no		
<i>L. vulgaris</i>			
<i>L. helveticus</i>	1		
<i>R. temporaria</i>			
<i>B. bufo</i>			
Other			

Note: Cells highlighted orange indicate a potential detectability issue due sub-optimal survey conditions.

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Great Crested Newt Survey

1. Pond Details

Project	Climping
Project number/reference	5989
Site	

Pond number/reference	Pond 3
OS Grid reference	SU995 022
Location details	North of site along Horsmere Green Lane
Access instructions	Accessed from Horsmere Green Lane

Landowner name	Parish Council
Address/email	
Telephone	

Habitat Suitability Index

		SI value
SI1. Map location	A/B/C	A
SI2. Surface area	rectangle/ellipse/irregular	irregular
	length (m)	
	width (m)	
	OR estimate (m ²) if irregular	
	area (m ²) =	640
SI3. Dessication rate	never/rarely/sometimes/frequently	never
SI4. Water quality	good/moderate/poor/bad	moderate
SI5. Shade	% of margin shaded 1m from bank	10
SI6. Waterfowl	absent/minor/major	minor
SI7. Fish population	absent/possible/minor/major	major
SI8. Pond density	number of ponds within 1km	6
SI9. Terrestrial habitat	good/moderate/poor/isolated	moderate
SI10. Macrophyte cover	%	40

Note: Guidance in undertaking the HSI is available at www.narrs.org.uk.

HSI calculation formulae adapted from Rob Oldham

HSI score = 0.54

Pond suitability = Below average

General description/notes/comments

A medium sized village pond located on the southern side of Horsmere Green Lane north of the survey site. The pond measured approximately 640m² with margins dominated by yellow-flag and reed-mace. Surrounding habitat comprised residential properties with associated gardens to the south east and west and agricultural fields to the north. During the surveys a moderate sized ornamental fish were noted with a presence of wildfowl.

Survey results summary

Number of survey visits 4

Note: The great crested newt mitigation guidelines recommend that a minimum of **four** survey visits are required to determine likely absence, and **six** to assess population size class.

Presence or likely absence = likely absence

Peak count =

Pond population size class =

Note: Only bottle-trapping and torch survey are considered suitable methods for assessing population size class.

Note: Peak count is the maximum number of adult newts seen on one visit using one survey method.

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Great Crested Newt Survey

2. Survey Details

	Visit 1	Visit 2	Visit 3
Date	30.04.18	10.05.18	15.05.18
Personnel	SK & AP	EP & GW	EP & GW
Temperature (°C)	9	10	10
Weather	Clear & dry	Overcast & dry	Overcast & dry
Turbidity	3	3	3
Vegetation cover	2	2	2
Methods			
indicate methods used or number of bottle traps	torch trap net other	torch trap net other	torch trap net other
	✓ ✓ egg	✓ ✓ egg	✓ ✓ egg
T. cristatus			
male			
female			
unknown			
total adults			
immature			
larvae			
eggs present?	no	no	no
<i>L. vulgaris</i>			
<i>L. helveticus</i>			
<i>R. temporaria</i>			
<i>B. bufo</i>			
Other			
	Visit 4	Visit 5	Visit 6
Date	22.05.18		
Personnel	EP & PN		
Temperature (°C)	12		
Weather	Clear & dry		
Turbidity	3		
Vegetation cover	2		
Methods			
indicate methods used or number of bottle traps	torch trap net other	torch trap net other	torch trap net other
	✓ egg		
T. cristatus			
male			
female			
unknown			
total adults			
immature			
larvae			
eggs present?	no		
<i>L. vulgaris</i>			
<i>L. helveticus</i>			
<i>R. temporaria</i>			
<i>B. bufo</i>			
Other			

Note: Cells highlighted orange indicate a potential detectability issue due sub-optimal survey conditions.

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Great Crested Newt Survey

1. Pond Details

Project	Climping
Project number/reference	5989
Site	

Pond number/reference	Pond 4
OS Grid reference	SU999 022
Location details	Off Waterford Gardens, north of site
Access instructions	Accessed from Waterford Gardens

Landowner name	Hobdens Property Management
Address/email	
Telephone	

Habitat Suitability Index

		SI value
SI1. Map location	A/B/C	A
SI2. Surface area	rectangle/ellipse/irregular	
	length (m)	
	width (m)	
	OR estimate (m ²) if irregular	
	area (m ²) =	50
SI3. Dessication rate	never/rarely/sometimes/frequently	never
SI4. Water quality	good/moderate/poor/bad	poor
SI5. Shade	% of margin shaded 1m from bank	0
SI6. Waterfowl	absent/minor/major	absent
SI7. Fish population	absent/possible/minor/major	minor
SI8. Pond density	number of ponds within 1km	6
SI9. Terrestrial habitat	good/moderate/poor/isolated	isolated
SI10. Macrophyte cover	%	15

Note: Guidance in undertaking the HSI is available at www.narrs.org.uk.
HSI calculation formulae adapted from Rob Oldham

HSI score = 0.24

Pond suitability = Poor

General description/notes/comments

One of two ornamental ponds situated within a small private residential complex south of Horsemere Green lane north of the proposed development site boundary. The pond measured approximately 50m² and was connected to Pond 5 via a small stream. The pond was surrounded by ornamental shrub beds and amenity grassland with little potential hibernation habitat or sheltering opportunities. Fish present

Survey results summary

Number of survey visits 4

Note: The great crested newt mitigation guidelines recommend that a minimum of **four** survey visits are required to determine likely absence, and **six** to assess population size class.

Presence or likely absence = Likely absence

Peak count =

Pond population size class =

Note: Only bottle-trapping and torch survey are considered suitable methods for assessing population size class.
Note: Peak count is the maximum number of adult newts seen on one visit using one survey method.

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Great Crested Newt Survey

2. Survey Details

	Visit 1	Visit 2	Visit 3
Date	30.04.18	10.05.18	15.05.18
Personnel	SK & AP	EP & GW	EP & GW
Temperature (°C)	9	10	10
Weather	Clear & dry	Overcast & dry	Overcast & dry
Turbidity	2	3	3
Vegetation cover	1	1	1
Methods			
indicate methods used or number of bottle traps	torch trap net other	torch trap net other	torch trap net other
	✓	✓	✓
<i>T. cristatus</i>			
male			
female			
unknown			
total adults			
immature			
larvae			
eggs present?	no	no	no
<i>L. vulgaris</i>		1	
<i>L. helveticus</i>			
<i>R. temporaria</i>			
<i>B. bufo</i>			
Other			
	Visit 4	Visit 5	Visit 6
Date	22.05.18		
Personnel	EP & PN		
Temperature (°C)	12		
Weather	Clear & dry		
Turbidity	3		
Vegetation cover	1		
Methods			
indicate methods used or number of bottle traps	torch trap net other	torch trap net other	torch trap net other
	✓		
<i>T. cristatus</i>			
male			
female			
unknown			
total adults			
immature			
larvae			
eggs present?	no		
<i>L. vulgaris</i>	6		
<i>L. helveticus</i>			
<i>R. temporaria</i>			
<i>B. bufo</i>			
Other			

Note: Cells highlighted orange indicate a potential detectability issue due sub-optimal survey conditions.

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Great Crested Newt Survey

1. Pond Details

Project	Climping
Project number/reference	5989
Site	

Pond number/reference	Pond 5
OS Grid reference	SU999 022
Location details	Off Waterford Gardens, north of site
Access instructions	Accessed from Little Friths House

Landowner name	Hobdens Property Management
Address/email	
Telephone	

Habitat Suitability Index

		SI value
SI1. Map location	A/B/C	A
SI2. Surface area	rectangle/ellipse/irregular	irregular
	length (m)	
	width (m)	
	OR estimate (m ²) if irregular	
	area (m ²) =	45
SI3. Dessication rate	never/rarely/sometimes/frequently	never
SI4. Water quality	good/moderate/poor/bad	poor
SI5. Shade	% of margin shaded 1m from bank	0
SI6. Waterfowl	absent/minor/major	absent
SI7. Fish population	absent/possible/minor/major	major
SI8. Pond density	number of ponds within 1km	6
SI9. Terrestrial habitat	good/moderate/poor/isolated	isolated
SI10. Macrophyte cover	%	10

Note: Guidance in undertaking the HSI is available at www.narrs.org.uk.
HSI calculation formulae adapted from Rob Oldham

HSI score = 0.24

Pond suitability = Poor

General description/notes/comments

Slightly larger than Pond 4 but of similar construction with a large population of fish present. The waterbody was noted to have a stand of reeds within the southern sections and several water lilies noted.

Survey results summary

Number of survey visits 4

Note: The great crested newt mitigation guidelines recommend that a minimum of **four** survey visits are required to determine likely absence, and **six** to assess population size class.

Presence or likely absence = likely absence

Peak count =

Pond population size class =

Note: Only bottle-trapping and torch survey are considered suitable methods for assessing population size class.
Note: Peak count is the maximum number of adult newts seen on one visit using one survey method.

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Great Crested Newt Survey

2. Survey Details

	Visit 1	Visit 2	Visit 3
Date	30.04.18	10.05.18	15.05.18
Personnel	SK & AP	EP & GW	EP & GW
Temperature (°C)	9	10	10
Weather	Clear & dry	Overcast & dry	Overcast & dry
Turbidity	2	3	3
Vegetation cover	1	1	1
Methods			
indicate methods used or number of bottle traps	torch trap net other	torch trap net other	torch trap net other
	✓	✓	✓
<i>T. cristatus</i>			
male			
female			
unknown			
total adults			
immature			
larvae			
eggs present?	no	no	no
<i>L. vulgaris</i>		1	1
<i>L. helveticus</i>			
<i>R. temporaria</i>			
<i>B. bufo</i>			
Other			
	Visit 4	Visit 5	Visit 6
Date	15.05.18		
Personnel	EP & GW		
Temperature (°C)	10		
Weather	Overcast & dry		
Turbidity	3		
Vegetation cover	1		
Methods			
indicate methods used or number of bottle traps	torch trap net other	torch trap net other	torch trap net other
	✓		
<i>T. cristatus</i>			
male			
female			
unknown			
total adults			
immature			
larvae			
eggs present?	no		
<i>L. vulgaris</i>			
<i>L. helveticus</i>			
<i>R. temporaria</i>			
<i>B. bufo</i>			
Other			

Note: Cells highlighted orange indicate a potential detectability issue due sub-optimal survey conditions.

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Great Crested Newt Survey

1. Pond Details

Project	Climping
Project number/reference	5989
Site	

Pond number/reference	Pond 6
OS Grid reference	SU999 023
Location details	North of site, South of Horsmere Green Lane
Access instructions	From Waterford Gardens

Landowner name	Hobdens Property Management
Address/email	
Telephone	

Habitat Suitability Index

		SI value
SI1. Map location	A/B/C	A
SI2. Surface area	rectangle/ellipse/irregular	irregular
	length (m)	
	width (m)	
	OR estimate (m ²) if irregular	
	area (m ²) =	2
SI3. Dessication rate	never/rarely/sometimes/frequently	never
SI4. Water quality	good/moderate/poor/bad	moderate
SI5. Shade	% of margin shaded 1m from bank	0
SI6. Waterfowl	absent/minor/major	absent
SI7. Fish population	absent/possible/minor/major	absent
SI8. Pond density	number of ponds within 1km	6
SI9. Terrestrial habitat	good/moderate/poor/isolated	moderate
SI10. Macrophyte cover	%	0

Note: Guidance in undertaking the HSI is available at www.narrs.org.uk.
HSI calculation formulae adapted from Rob Oldham

HSI score = 0.44

Pond suitability = Poor

General description/notes/comments

A tiny ornamental water feature located immediately south off Horsmere Green Lane. The features was connected to Pond 7 via a culvert under Waterford Gardens road. No vegetation was noted within the waterbody with a average depth of 0.2m. Some surrounding planted shrubbery was present with gravel and rock piles forming the immediate surrounding habitat.

Survey results summary

Number of survey visits 4

Note: The great crested newt mitigation guidelines recommend that a minimum of **four** survey visits are required to determine likely absence, and **six** to assess population size class.

Presence or likely absence = likely absence

Peak count =

Pond population size class =

Note: Only bottle-trapping and torch survey are considered suitable methods for assessing population size class.
Note: Peak count is the maximum number of adult newts seen on one visit using one survey method.

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Great Crested Newt Survey

2. Survey Details

	Visit 1	Visit 2	Visit 3
Date	30.04.18	10.05.18	15.05.18
Personnel	SK & AP	EP & GW	EP & GW
Temperature (°C)	9	10	10
Weather	Clear & dry	Overcast & dry	Overcast & dry
Turbidity	2	2	2
Vegetation cover	1	1	1
Methods			
indicate methods used or number of bottle traps	torch trap net other	torch trap net other	torch trap net other
	✓ efugia	✓ efugia	✓ efugia
T. cristatus			
male			
female			
unknown			
total adults			
immature			
larvae			
eggs present?	no	no	no
<i>L. vulgaris</i>	5	16	25
<i>L. helveticus</i>			
<i>R. temporaria</i>			
<i>B. bufo</i>			
Other			
	Visit 4	Visit 5	Visit 6
Date	15.05.18		
Personnel	EP & GW		
Temperature (°C)	10		
Weather	Overcast & dry		
Turbidity	2		
Vegetation cover	1		
Methods			
indicate methods used or number of bottle traps	torch trap net other	torch trap net other	torch trap net other
	✓ efugia		
T. cristatus			
male			
female			
unknown			
total adults			
immature			
larvae			
eggs present?	no		
<i>L. vulgaris</i>	17		
<i>L. helveticus</i>			
<i>R. temporaria</i>			
<i>B. bufo</i>			
Other			

Note: Cells highlighted orange indicate a potential detectability issue due sub-optimal survey conditions.

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Project	Climping
Project number/reference	5989
Site	

Pond number/reference	Pond 7
OS Grid reference	SU999 023
Location details	North of site, south of Horsemere Green Lane
Access instructions	Waterford Gardens

Landowner name	Hobdens Property Management
Address/email	
Telephone	

SI1.	Map location	A/B/C	A
SI2.	Surface area	rectangle/ellipse/irregular length (m) width (m) OR estimate (m ²) if irregular area (m²) =	irregular
SI3.	Dessication rate	never/rarely/sometimes/frequently	13
SI4.	Water quality	good/moderate/poor/bad	never
SI5.	Shade	% of margin shaded 1m from bank	poor
SI6.	Waterfowl	absent/minor/major	0
SI7.	Fish population	absent/possible/minor/major	absent
SI8.	Pond density	number of ponds within 1km	absent
SI9.	Terrestrial habitat	good/moderate/poor/isolated	6
SI10.	Macrophyte cover	%	moderate
			10

Note : Guidance in undertaking the HSI is available at www.narrs.org.uk.
HSI calculation formulae adapted from Rob Oldham

HSI score =	0.51
Pond suitability =	Below average

A small pond linked to Pond 6 via a culverted pipe. The waterbody measured approximately 13m² and was lined. A waterfall was present on the northern bank. A single waterlily was noted within the pond with no substrate present. Surrounding habitat was dominated by amenity grassland and rockery features with some planted shrubbery.

Note: The great crested newt mitigation guidelines recommend that a minimum of **four** survey visits are required to determine likely absence, and **six** to assess population size class.

Note : Only bottle-trapping and torch survey are considered suitable methods for assessing population size class.

Note: Peak count is the maximum number of adult newts seen on one visit using one survey method.

Number of survey visits	4
-------------------------	---

Presence or likely absence = Likely absent

Peak count =

Pond population size class	Number of ponds	Number of fish	Mean length (mm)	Mean weight (g)	Mean condition factor
1	1	1	100	10	1.0
2	1	1	150	25	1.0
3	1	1	200	40	1.0
4	1	1	250	60	1.0
5	1	1	300	90	1.0
6	1	1	350	125	1.0
7	1	1	400	160	1.0
8	1	1	450	200	1.0
9	1	1	500	250	1.0
10	1	1	550	300	1.0
11	1	1	600	360	1.0
12	1	1	650	425	1.0
13	1	1	700	500	1.0
14	1	1	750	575	1.0
15	1	1	800	660	1.0
16	1	1	850	750	1.0
17	1	1	900	840	1.0
18	1	1	950	935	1.0
19	1	1	1000	1040	1.0
20	1	1	1050	1150	1.0
21	1	1	1100	1260	1.0
22	1	1	1150	1375	1.0
23	1	1	1200	1500	1.0
24	1	1	1250	1625	1.0
25	1	1	1300	1760	1.0
26	1	1	1350	1900	1.0
27	1	1	1400	2050	1.0
28	1	1	1450	2200	1.0
29	1	1	1500	2360	1.0
30	1	1	1550	2525	1.0
31	1	1	1600	2700	1.0
32	1	1	1650	2880	1.0
33	1	1	1700	3060	1.0
34	1	1	1750	3250	1.0
35	1	1	1800	3450	1.0
36	1	1	1850	3650	1.0
37	1	1	1900	3860	1.0
38	1	1	1950	4075	1.0
39	1	1	2000	4300	1.0
40	1	1	2050	4525	1.0
41	1	1	2100	4760	1.0
42	1	1	2150	5000	1.0
43	1	1	2200	5250	1.0
44	1	1	2250	5500	1.0
45	1	1	2300	5760	1.0
46	1	1	2350	6025	1.0
47	1	1	2400	6300	1.0
48	1	1	2450	6575	1.0
49	1	1	2500	6860	1.0
50	1	1	2550	7150	1.0
51	1	1	2600	7450	1.0
52	1	1	2650	7750	1.0
53	1	1	2700	8060	1.0
54	1	1	2750	8375	1.0
55	1	1	2800	8700	1.0
56	1	1	2850	9025	1.0
57	1	1	2900	9360	1.0
58	1	1	2950	9700	1.0
59	1	1	3000	10050	1.0
60	1	1	3050	10400	1.0
61	1	1	3100	10760	1.0
62	1	1	3150	11125	1.0
63	1	1	3200	11500	1.0
64	1	1	3250	11875	1.0
65	1	1	3300	12260	1.0
66	1	1	3350	12650	1.0
67	1	1	3400	13050	1.0
68	1	1	3450	13450	1.0
69	1	1	3500	13860	1.0
70	1	1	3550	14275	1.0

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	Visit 1	Visit 2	Visit 3
Date	30.04.18	10.05.18	15.05.18
Personnel	SK & AP	EP & GW	EP & GW
Temperature (°C)	9	10	10
Weather	Clear & drv	Overcast & drv	Overcast & drv

Turbidity	2	2	2
Vegetation cover	1	1	1

Methods	torch				trap				net				other			
indicate methods used																
or number of bottle																
traps	✓		✓	efugia	✓		✓	efugia	✓		✓	efugia	✓		✓	efugia

	1	2	3
male			
female			
unknown			
total adults			
<i>immature</i>			
<i>larvae</i>			
eggs present?	no	no	no

Other

Date	15.05.18		
Personnel	EP & GW		
Temperature (°C)	10		
Weather	Overcast & dry		

Turbidity	2		
Vegetation cover	1		

indicate methods used or number of bottle traps	torch	trap	net	other	torch	trap	net	other	torch	trap	net	other
	✓		✓	efugia								

[illegible]

Other

Note: Cells highlighted orange indicate a potential detectability issue due sub-optimal survey conditions.

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