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Great Crested Newt Presence / Absence Survey and Population Assessment

**Bonhams, Hoe Lane, Flansham,
West Sussex, PO22 8NP**

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Report Summary

1. Surveys for great crested newts were carried out in April on ponds within 500 meters of land at Bonhams, Hoe Lane, Flansham to ascertain the presence/likely absence of this species as there is a proposal for a residential development upon this land. This was completed further to a Phase 1 habitat survey carried out by The Ecology Co-op in March 2017, which identified 8 ponds within 500 meters of the site and a single great crested newt record.
2. These surveys were led by Paul Whitby a Full member of Chartered Institute for Ecology and Environmental Management (CIEEM).
3. Two great crested newts survey visits were undertaken on Pond 2 and 3. A single survey visit was carried out on Pond 5 and Pond 6. Pond 4 was not surveyed as it had completely dried out at the time of the first visit. Following initial presence/absence survey visits an environmental DNA (eDNA) assessment was carried out on Pond 2, 3 and 6. Ponds 7 and 8 were deemed to have sufficient barriers to movement between them and the site. Access was declined to Pond 1 which could therefore not be surveyed.
4. Pond 2, was concluded as having a positive result for great crested newt DNA however no great crested newts were identified during the two presence/absence survey carried out in April. The pond has reduced suitability to support great crested newts given that it supports a population of fish and has a major impact from water fowl. Furthermore, this pond is situated a considerable distance from the proposed development site (272 meters west).
5. There is no evidence to suggest great crested newts are present with Pond 3 and 6 with no great crested newts identified during the two surveys undertaken and a negative result for an eDNA test confirming their absence from these ponds. Pond 1 could not be surveyed due to a lack of permitted access however, it was confirmed by the owner that it is regularly dry reducing its suitability for great crested newts.
6. The terrestrial value of the site been significantly reduced for great crested newts due to the grassland field being regularly sprayed as part of its management with herbicide leading to limited cover for foraging and expanses of bare ground being present.
7. It is considered highly unlikely that great crested newts would be found within the construction zone at any time. Therefore, a European Protected Species (EPS) license is not considered necessary to permit works at this site. Furthermore, precautionary mitigation for reptiles which includes managing the site short prior to construction and the instillation of semi-permanent reptile fence around the entire site boundary, will act as indirect precautionary mitigation for this species.



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1 INTRODUCTION

1.1 Purpose of the Report

This report summarises the findings of great crested newt surveys undertaken on ponds within 500 meters of land at Bonhams, Hoe Lane, Flansham. The surveys were led by Paul Whitby a Full member of the Chartered Institute of Ecology and Environmental Management and licensed great crested newt surveyor (class license WML – CL08) and assisted by Briony Hill Grad CIEEM and licensed great crested newt surveyor. The grid reference for this site is SU 96149 01172.

The objective of the survey was to identify the presence or likely absence of great crested newts within ponds located within 500 meters of Land at Bonhams, Flansham, and, if present, determine the population size class in accordance with current best practice guidelines and provide mitigation advice should it be necessary.

These surveys and report were carried out and produced at the request of Pallant Homes Limited.

1.2 Background

The Ecology Co-operation was commissioned to undertake great crested newt surveys on land at Bonhams, Hoe Lane, Flansham after the potential for this species to be present was identified during a Phase 1 habitat survey of the site conducted by The Ecology Co-op in March 2017 with 8 ponds identified within 500 meters of the site (see figure 1 and 2). Further surveys were recommended for this species on ponds 1, 2, 3, 4, 5 and 6. Ponds 7 and 8 were deemed to have sufficient barriers to movement that would make the presence of foraging great crested newts on the site from them extremely unlikely.

Furthermore, biodiversity records requested from the Sussex Biodiversity Records Centre identified a great crested newt record, from 2016, approximately 280 meters to the east of the site. This record appeared to be associated with Pond 1 or 2 which indicates that these ponds could support a population of great crested newts.

The assessment was carried out further to a proposal to construct 34 residential properties at this site (see figure 3).



Figure 1. An aerial image showing the location of the site. The approximate site boundary is outlined in red.

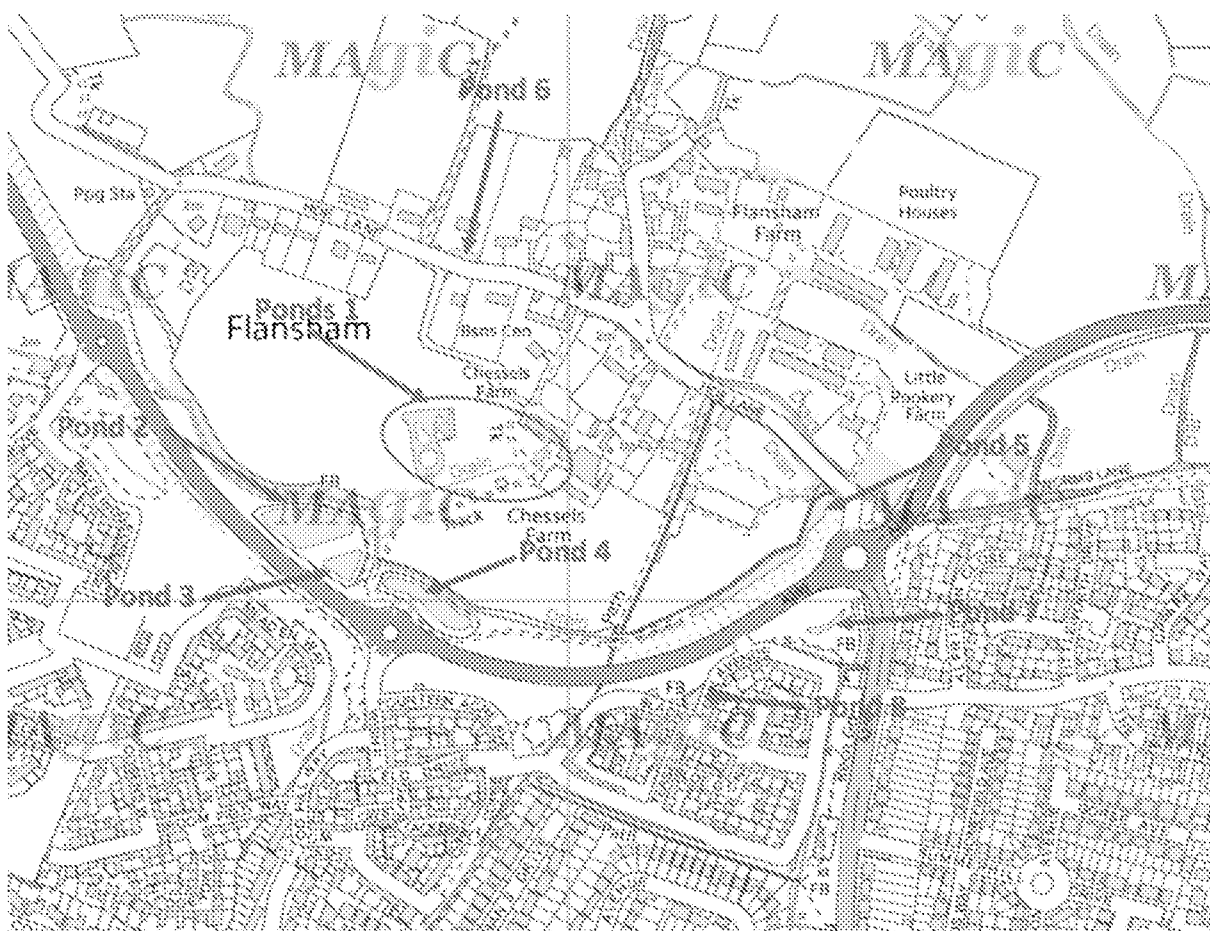


Figure 2. Locations of ponds in relation to the site with the sites approximate boundaries shown in red.



Figure 3. Existing site plan with the site boundary shown in red.

1.3 Site Description

Land at Bonhams, Hoe Lane, Flansham, is situated just north of Flansham, West Sussex. The site is approximately 1.9 hectares in area and is split into two distinct areas:

The first area comprises a field of poor semi-improved grassland with ruderal vegetation. This includes rough tussocky grassland which is suitable to be used by foraging and commuting great crested newts. There are suitable hibernacula for this species across the site in the form of a large pile or brash and leaves, piles of straw and logs and earth mounds (see figure 4 and 5).

The second area comprises two residential properties (which will remain undisturbed by the proposals) and associated garden spaces and various outbuildings. Here, terrestrial habitats comprise amenity



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grassland, herbaceous flower beds, scattered parkland/broadleaved trees, species-poor hedgerow, bare ground, areas of hard-standing and bare ground tarmac, concrete and gravel. These artificial habitats are considered less suitable for foraging great crested newts, although suitable resting places may exist under paving slabs, outbuildings and compost heaps (figure 5).



Figure 4. The earth mounds with ruderal habitat at the south west corner of the site.



Figure 5. Large pile of brash considered to be a suitable reptile hibernacula.

1.3.1 Pond 1

This pond is located approximately 210 meters to the west situated within a pasture field. During the initial Phase 1 survey this pond could not be accessed and therefore there potential to support great crested newts could not be assessed.

A letter requesting access to the pond was sent by the Ecology Co-op to the land owner. However, this was declined via email on the 4th April 2017. The owner reported that this pond is frequently dry.

Due to it not being possible to access the pond information could only be gained from aerial imagery (see figure 6). The pond is located within a small woodland copse and is most likely heavily shaded and considerable leaf litter accumulation within the waterbody. A cattle-grazed grassland and two trees lines separate them.



Figure 6. Aerial image of Pond 1.

1.3.2 Pond 2

Located approximately 272 meters west of the site with a cattle grazed pasture field and a tree line separating the two, this is a SUDS pond situated to the north of the A259. Reedmace (*Typha latifolia*) has established along the margins with dense stands located at the eastern and western banks.

The pond measures approximately 1500 m² in surface area and is expected to never dry out with the water body appearing to be deep. It has 30% macrophyte cover composed of bulrush and has no shade (see figure 7). The surrounding terrestrial habitat is moderate with rough grassland and ruderal habitat on the surrounding banks and an establishing hedgerow to the north along with grazed cattle field to the east which is expected to have moderate to poor value for this species. Suitable foraging habitat does not extend to the south as the A259 is located close to the south and western boundaries.

There is a major water fowl impact to this pond with mute swans, mallard and heron recorded during the Phase 1 assessment. The pond also has major fish population indicated by poor water clarity and fish being seen to come to the surface of the pond.



Figure 7. Pond 2 a SUDS pond

1.3.3 Pond 3

Another SUDS pond, smaller than Pond 2, is situated 255 meters to the west of the site. Being that this pond is situated 22 meters from Pond 2 the surrounding terrestrial habitat is the same.

The pond measures approximately 350 m² in surface area and is expected to frequently dry out given the shallow water level. This pond is heavily vegetated by reedmace with a macrophyte cover of 90% and has no shade (see figure 8).



Figure 8. Pond 3 a SUDS pond

1.3.4 Pond 4

This is another SUDS pond located approximately 135 meters west of the site situated to the north of the A259. This pond was almost completely dried out with just a small area of standing water at the centre. Reedmace, soft rush and common reed (*Phragmites australis*) dominate the ponds area (see figure 9).



Figure 9. Pond 4.



1.3.5 Pond 5

This SUDS pond is located just a few meters from the south-eastern site boundary of the development site.

This pond was drying out at the time of the Phase 1 survey with the water level approximately 15cm deep within the center with the water having receded from the north and southern banks. The water quality is poor and stagnant. It has 90% macrophyte cover composed of bulrush, willow sp., goat willow and some creeping thistle with approximately 20% shade (see figure 10). Ruderal and grassland habitat are located on the banks with a recently planted hedgerow close to the south-eastern boundary beyond which the A259 is adjacent.



Figure 10. Pond 5 located a few meters from the south eastern site boundary.

1.3.6 Pond 6

This garden pond is situated to the south of Willows residential property approximately 255 meters to the north of the sites boundaries.

The pond measures approximately 130 m² in surface area and has approximately 30% macrophyte cover with the following species recorded: soft rush, sedge sp., willow herb sp., bull rush and a number of exotic species. A duck house and additional bird house are present within the waterbody leading to minor to possible major waterfowl impact however the water clarity of this pond is very good (see figure 11).

The surrounding terrestrial habitat is poor with a narrow strip of long surrounding grassland with a hard-

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standing tarmac lane to the south and mown amenity grassland to the north and west beyond this.

The owner of the pond informed us that this pond dries out frequently and has supported a large fish population in the past.

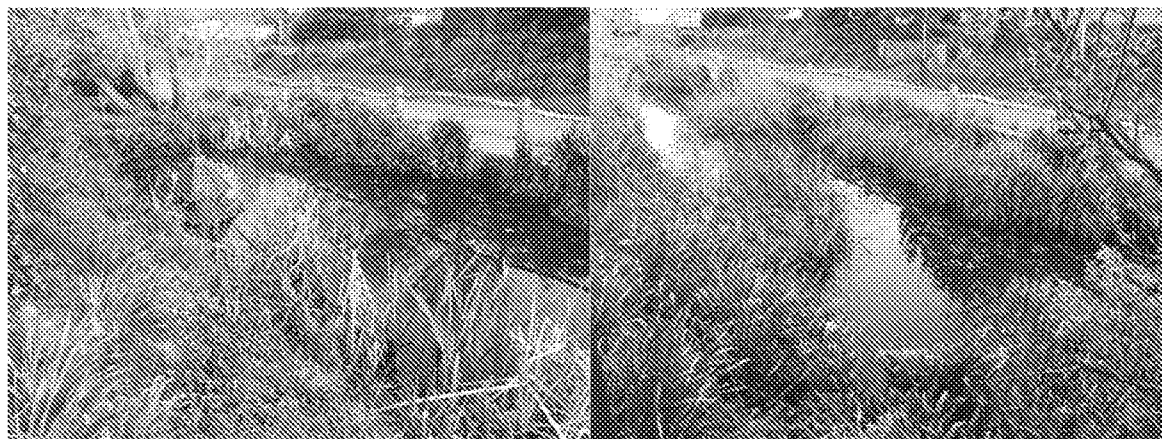


Figure 11. Pond 6 a garden pond supporting a duck house.

1.3.7 Pond 7 and 8

These two ponds are situated to the south of the site on the other side of the A259 with Pond 7 approximately 80 meters and Pond 8 approximately 75 meters from the sites boundaries. The A259 is a busy trunk road and represents a considerable barrier to movement for great crested newts between the pond and the proposed development site. These ponds have therefore been scoped out.

2 LEGAL PROTECTION

This section briefly describes the legal protection afforded to protected species. It is for information only and is not intended to be comprehensive or to replace specialised legal advice. It is not intended to replace the text of the legislation, but summarises the salient points.

Great crested newt (*Triturus cristatus*) are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), and receive full protection under Section 9. This species is also all listed as European Protected Species on Schedule 2 of the Conservation (Natural Habitats, etc.) Regulations 1994 which gives them full protection under Regulation 39. Protection was extended by the Countryside and Rights of Way Act 2000 (the CROW Act). Under the above legislation it is an offence to:

- kill, injure or take an individual;
- possess any part of an individual either alive or dead;
- intentionally or recklessly damage, destroy or obstruct access to any place or structure used by these species for shelter, rest, protection or breeding;
- intentionally or recklessly disturb these species whilst using any place of shelter or protection;
- or
- sell or attempt to sell any individual.

Great crested newts are protected under the NERC Act (2006) which places a statutory duty under Section 40 on all public bodies, including planning authorities, to take, or promote the taking by others,



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steps to further the conservation of *habitats and species of principal importance for the conservation of biodiversity* in England (commonly referred to as the 'Biodiversity Duty'). This duty extends to all public bodies the biodiversity duty of Section 74 of the Countryside and Rights of Way (CROW) Act 2000, which placed a duty only on Government and Ministers.

Great crested newts are listed in Section 41 'species of principle important'. This originates from the priority species listed under the UK Biodiversity Action Plan (UK BAP) with some omissions and additions.

3 METHODOLOGY

3.1 Presence/absence Survey Visits

All presence/absence surveys for great crested newts carried out by The Ecology Co-op follow best practice guidelines as described within Natural England's 'Great Crested Newt Mitigation Guidelines'.

In accordance with these guidelines, surveys have been carried out on evenings when the ambient temperature was not less than 5°C between mid-March and mid-June. This timing ensures that surveys are carried out when newts are most likely to be breeding, thus maximizing the potential to identify newt presence and establish a population.

A total of four survey techniques can be used to identify newt presence. These are as follows:

- Bottle trapping – Plastic bottles are converted into funnel traps and placed in a water body at two metre intervals along the bank. The traps sit on the bottom and newts enter into the trap during the night. Where some parts of a pond bank may be inaccessible, slightly higher trapping densities may be used elsewhere.
- Egg searching – Where available, newts will lay their eggs on the leaves of aquatic vegetation and fold the leaf over to protect the egg from predation. Leaves which have been folded over are often easily spotted (particularly in ponds where only little vegetation is present). Although Palmate (*Lissotriton helveticus*) and Smooth newts (*Lissotriton vulgaris*) also lay their eggs on vegetation, Great Crested Newt eggs are identified through their larger size and paler colour.
- Torching – Torch surveying is carried out by shining a torch onto the bottom of the water body and counting any newts present. This method is most effective in ponds with good water quality and little pond weed, so that visibility into the water is not hampered.
- Netting – using a long-handled dipping net, newts can be captured by sampling the area around the pond edge. A perimeter walk is carried out (where accessible) and at least 15 minutes of netting per 50 metres of shoreline is conducted. This technique is least favoured where other survey methods can be successfully employed, due to the disturbance that is caused creating suspended sediments and potentially damaging aquatic vegetation.

As either torch surveying or bottle trapping could be carried out effectively in all ponds, netting was discounted as a survey method, due to the invasive nature of this technique, which can disturb a variety of pond life.



3.2 eDNA testing

DNA testing is a widely used as an alternative to full surveys involving environmental DNA (eDNA) testing. This technique has been researched by the Freshwater Habitats Trust (FHT) and has been accepted as evidence of presence or absence of great crested newts by Natural England.

DNA testing consists of taking 20 samples from various places around the pond, making sure to sample areas that may attract newts such as vegetated areas for egg laying and open spaces for male displays. Once all the samples have been collected in a bag, 6 x 15ml samples are syringed out and pipetted into 6 x 35ml solutions and sent off to be analysed.

Following two initial presence/absence survey visits an environmental DNA (eDNA) assessment was carried out on Pond 2, 3 and 6. Water samples were collected for analysis separately from the three ponds (Pond 2, 3 and 6) by Paul Whitby, and Briony Hill on the 18th April 2017 according to the strict guidance set out by Surescreen Scientifics. These water samples were then sent to the laboratory at Surescreen Scientifics for analysis.

4 RESULTS

4.1 Presence/absence Survey Visits

Two great crested newts survey visits were undertaken on Pond 2 and 3 and a single survey visits was undertaken on Pond 6 following which an environmental DNA assessment was carried out on each of these. A single survey visit was carried out on Pond 5 which dried out after having a very low water level during the first visit and Pond 4 was not surveyed as it had completely dried out at the time of the first visit. Pond 1 was not surveyed at all as access was denied and surveys of Ponds 7 and 8 were not deemed necessary.

Pond 2 was surveyed using a mixture of bottle trapping, torching and netting. Egg searches could not be undertaken as the only vegetation within the water body is common reed, *Phragmites australis* with only reed stems present in the water body which are unsuitable for egg laying. Leaf litter is used by great crested newts for egg laying in the absence of other suitable vegetation, however it is difficult to conduct an egg search on this. A dead carp was identified during the first survey indicating that the pond supports a population of this species.

Pond 3 was surveyed using torching only; bottle trapping and netting were not suitable due to the shallow water level and high macrophyte cover. As with Pond 2 egg searches could not be utilised due to the present of phragmites vegetation only.

Pond 5 was surveyed once using torching. It could not be bottle trapped due to the low water level at the time of the survey, netting could not be employed due to the high macrophyte cover and egg searches could not be carried out as the only vegetation within the water body was phragmites and soft rush.

Pond 6 was surveyed using torching with the water clarity was very good. Bottle trapping was not appropriate given the location of the pond next to a pavement, where there would a risk of public



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interference. Netting was discounted as a survey method, due to the invasive nature of this technique, which can disturb a variety of pond life.

No great crested newts were observed in Pond 2, 3, 5 or 6 during the survey visits undertaken which suggests the likely absence of this species within these ponds. Following the initial survey visits to these ponds an environmental DNA test for great crested newts was conducted. The full details from all surveys at each pond are provided in the tables below.

4.2 eDNA testing

The results were received on the 9th May 2017 from Surescreen Scientifics. A positive result for great crested newt DNA in Pond 2 was concluded (see figure 12). Whilst not exact science generally a lower score out of 12 replicates indicates a lower amount of DNA suggesting a low population of great crested newts within this pond.

30794		Bonhams, Flansham, Bognor Regis, Big Vale Pond		SURS00106		Pass		Pass		Pass		Positive		4
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Figure 12. Results for the eDNA analysis of Pond 2 received on the 9th May 2017 from Surescreen Scientifics.

eDNA results for Pond 3 and Pond 6 concluded a negative result for great crested newt DNA (see figure 13 and 14). As a result, there is no evidence to suggest great crested newts are present with these two water bodies.

30798		Bonhams, Flansham, Bognor Regis - SUD6 Pond		SURS790103		Pass		Pass		Pass		Negative		0
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Figure 13. Results for the eDNA analysis of Pond 3 received on the 9th May 2017 from Surescreen Scientifics.

30793		Bonhams, Flansham, House Pond		SURS010131		Pass		Pass		Pass		Negative		0
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Figure 14. Results for the eDNA analysis of Pond 6 received on the 9th May 2017 from Surescreen Scientifics.

4.3 Constraints/Limitations

The survey efforts were hampered by the following factors:

- Pond 6 could only be torched as bottle trapping was not appropriate given the location of the pond next to a pavement, where there would a risk of public interference.
- Pond 3 could only be torched as it was too shallow to allow bottle trapping or netting.
- An egg search could not be carried out on Pond 2, 3 or 5 as the only vegetation within the water body is phragmites or soft rush.
- Pond 1 could not be surveyed as access was declined by the land owner via email on the 4th April 2017.



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Pond 2 – GCN = Great crested newt, M = Mae, F = Female, Juv = Juvenile, SN = Smooth Newt, P =Palmate.					
<u>Date</u>	<u>Survey Method Employed</u>	<u>Results</u>	<u>Pond Notes</u>	<u>Weather Notes</u>	<u>Other Notes/Constraints</u>
05/04/17	Bottle trapping Torching	Bottle trapping – 0 GCN (1 M P, 2 F P, 6 M SM, 9 F SM) Torching – 0 GCN	Water temperature – 15.6/6.3°C	8°C, 20% cloud cover, 0- 5mph wind and dry	60 traps set at 19:45 and retrieved at 7:40 Torching carried out at 20:00 however visibility was poor.
18/04/17	Netting	Netting – 0 GCN (4 F SM)	Water temperature – 11.7°C	6°C, 40% cloud cover, 0- 5mph wind and dry	Netting was carried out at 20:10.

Pond 3 – GCN = Great crested newt, M = Mae, F = Female, Juv = Juvenile, SN = Smooth Newt, P =Palmate.					
<u>Date</u>	<u>Survey Method Employed</u>	<u>Results</u>	<u>Pond Notes</u>	<u>Weather Notes</u>	<u>Other Notes/Constraints</u>
05/04/17	Torching	Torching – 0 GCN (2 F SM/P, 8 M SM)	Water temperature – 11.1°C	8°C, 20% cloud cover, 0- 5mph wind and dry	Torching carried out at 20:15 visibility was good.
18/04/17	Torching	Torching – 0 GCN (10 F S/P)	Water temperature – 10.5°C	6°C, 40% cloud cover, 0- 5mph wind and dry	Torching carried out at 21:00 visibility was good.

Pond 5 – GCN = Great crested newt, M = Mae, F = Female, Juv = Juvenile, SN = Smooth Newt, P =Palmate.					
<u>Date</u>	<u>Survey Method Employed</u>	<u>Results</u>	<u>Pond Notes</u>	<u>Weather Notes</u>	<u>Other Notes/Constraints</u>
05/04/17	Torching	Torching – 0 GCN (4 M SM)	Water temperature – 14.1°C	8°C, 20% cloud cover, 0- 5mph wind and dry	Torching carried out at 20:30 visibility was good.



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Pond 6 – GCN = Great crested newt, M = Mae, F = Female, Juv = Juvenile, SN = Smooth Newt, P =Palmate.					
<u>Date</u>	<u>Survey Method Employed</u>	<u>Results</u>	<u>Pond Notes</u>	<u>Weather Notes</u>	<u>Other Notes/Constraints</u>
05/04/17	Torching	Torching – 0 GCN (11 F SM/P)	Water temperature – 12.9°C	8°C, 20% cloud cover, 0-5mph wind and dry	Torching carried out at 20:55 visibility was very good.



4.4 Water Voles

During the great crested newt surveys undertaken evidence of water voles in the form of droppings, food stores, vegetation chewed at an angle and numerous loose bulrush fronds on the water surface was identified within Pond 2 and Pond 3. No evidence of water voles was identified within Pond 5 during a walkover which is located adjacent to the south-eastern site boundary.

5 DISCUSSION AND RECOMMENDATIONS

5.1 Great Crested Newts

Pond 2, was concluded as having a positive result for great crested newt DNA. Whilst not proven science generally a lower score out of 12 indicates a lower amount of DNA. This pond scored 4 positive replicates out of 12, which suggests only a 'low' population of great crested newts within this pond. No great crested newts were identified during the two presence/absence survey carried out on the 5th and 18th April. The pond has reduced suitability to support great crested newts given that it supports a population of fish, which predate upon the eggs and effs of great crested newts, with confirmed presence of carp. The pond also has a major impact from water fowl further reducing its suitability. Furthermore, this pond is situated 272 meters west with great crested newts typically traveling up to 250 meter from a breeding ponds and less often up to 500 meters.

There is no evidence to suggest great crested newts are present with Pond 3 and 6.

Pond 4 and Pond 5 were concluded as being unsuitable for great crested newts due to them drying out prior to mid April with breeding great crested newts requiring ponds to support water throughout the spring and summer to allow the eggs to hatch and effs to develop.

Pond 1 could not be surveyed due to a lack of permitted access however, it was confirmed by the owner that it is regularly dry reducing its suitability to support great crested newts.

During the Phase 1 habitat survey undertaken by the Ecology Co-op in April 2017 the site was concluded as having moderate-poor terrestrial value for great crested newts with the rough tussocky grassland having the potential to be used for foraging and commuting. However, the grassland at the site is regularly sprayed with herbicide and had been sprayed since the phase 1 survey leading to the habitat suitably being significantly reduced for great crested newt's with limited cover for foraging and expanses of bare ground which does not provide cover from predators (see figure 15).

In conclusion, it is considered highly unlikely that great crested newts would be found within the sites boundaries at any time. Furthermore, precautionary mitigation for reptiles which includes managing the site short prior to construction and the instillation of semi-permanent reptile fence around the entire site boundary, detailed within the Reptile Presence/Absence Survey Report produced by The Ecology Co-op in May 2017, will act as indirect precautionary mitigation for this species. The semi-permanent reptile fencing will act as a barrier to any that have to potential to commute to the site.

As it is considered highly unlikely that great crested newts would be found within the construction zone



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at any time a European Protected Species (EPS) license is not considered necessary to permit works at this site.

If any newt species are identified at any time during the construction phase of this development, work must stop immediately and an ecologist contacted for advice.



Figure 15. Grassland across the site which has been sprayed reducing its value for reptiles. Photo taken 9th May 2017.

5.2 Water Voles

During the great crested newt surveys undertaken evidence of water voles was identified within Pond 2 and Pond 3 which are located approximately 272 meters and 255 meters, respectively, to the west of the site. Water voles from these ponds would not be found within the sites boundaries as they do not travel over land and typically would only be found a few meters from the water's edge. No evidence of water voles was identified within Pond 5 during a walkover which is located adjacent to the south-eastern site boundary.

Furthermore, as detailed within the Phase 1 Habitat survey report the site does not support any wet ditches or water courses with the ditch located a few meters beyond the north-western boundary being dry. Approximately 12 meters to the north of the site is a drainage ditch located on the other side of Hoe Lane which would act as a barrier to movement and likely prevent any water voles, if present, accessing the site. As a result, it is considered unlikely that this species would be found upon the site at any time and no further surveys or mitigation is recommended.

Should you need any further advice on the information provided above, please do not hesitate to contact The Ecology Co-op.