

The Vinery, Poling, West Sussex

Great Crested Newt Survey

Report for Fargo

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Revision			
Revision			

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Executive Summary

The Ecology Consultancy was commissioned to carry out a great crested newt *Triturus cristatus* survey at The Vinery, Poling, West Sussex. This follows on from a previous reptile survey where an individual great crested newt was found within the north-east of the site (The Ecology Consultancy 2012). In order to adhere to current legislation, a European Protected Species Mitigation (EPSM) licence must be obtained from Natural England to facilitate works at the site and pond surveys are required to inform the licence application. The main findings of the survey are as follows:

- A total of five ponds were included in the great crested newt pond survey. However, Pond 5 was excluded following the first survey visit due to the sub-optimal conditions provided and a low Habitat Suitability Index Assessment score.
- Great crested newts were found in Pond 1 during the course of six survey visits. This pond was found to support a **medium** population of great crested newts based on current guidelines set out by Natural England (English Nature 2001). Great crested newts were also found to be breeding within the pond.
- A peak count of 28 adult great crested newts was recorded during the third survey visit on the 18th April 2013. Smooth newts *Lissotriton vulgaris* were also found to be present in Pond 1.
- No great crested newts or any other newt species were found during the course of the survey visits in Ponds 2, 3 and 4.
- On the basis of the survey results it is recommended that a great crested newt capture and exclusion process is carried out at the site under a European Protected Species Mitigation (EPSM) licence from Natural England. This should be carried out within the active season for great crested newts taken to run between **Mid-March** and **October** inclusive.
- Due to a medium population of great crested newts being recorded during the pond surveys, a minimum trapping period of 60 nights will be required at the site.
- Further details are provided in the recommendations section of this report. Additional information pertaining to the translocation process including site enhancement measures have been detailed previously in Section 5 of the reptile survey report document (The Ecology Consultancy 2012). This information will need to be incorporated into a Method Statement document and submitted as part of the licence application and therefore should be read in conjunction with this report.

1 Introduction

BACKGROUND

- 1.1 The Ecology Consultancy was commissioned by Fargo, a horticultural wholesale supplier of goods to the UK horticultural industry, to carry out a great crested newt *Triturus cristatus* survey across the site in March and April 2013. This follows on from a previous reptile survey carried out in October 2012, which recorded a single great crested newt within the northern extent of the site (The Ecology Consultancy, 2012).
- 1.2 Great crested newts receive protection under the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2010 (as amended). Under this legislation both individuals, and the habitats they use for shelter and breeding, are protected.
- 1.3 Any ground works or vegetation clearance around the site has the potential to negatively impact on this species through both habitat loss, and the killing or injury of individuals. In order to adhere to current legislation a European Protected Species Mitigation (EPSM) licence must be obtained from Natural England prior to any works at the site.
- 1.4 This series of pond surveys enables a population assessment of great crested newts within the site and up to 500m around the site. This information is required to inform the licence application.
- 1.5 The findings are presented in this report. Possible impacts of the development on this species group are identified and discussed.

SCOPE OF REPORT

- 1.6 The report provides an assessment of the status of great crested newts within the vicinity of the site, providing data on their presence/absence and distribution. This report has been compiled to provide pond survey data for the licence application in respect to the development at the Vinery and the data used to inform the level of trapping effort required for the great crested newt capture and exclusion process.
- 1.7 A detailed mitigation strategy in respect to this species has been compiled within the previous reptile survey report (The Ecology Consultancy, 2012) and should be read in conjunction with this report.

SITE CONTEXT AND STATUS

- 1.8 The site is located to the south of the A27, Arundel Road in Poling, West Sussex. The National Grid reference for the centre of the site is TQ 051 054.
- 1.9 The site measured approximately 4.5 hectares (ha) in size and comprised areas of grassland, hedgerows, scrub, drainage ditches, tall ruderal vegetation, introduced shrub and buildings and hard-standing.
- 1.10 There is an access road (The Vinery) to the site from the north-eastern boundary, a public footpath lies along the northern boundary, continuing diagonally and bisecting the western section of the site.
- 1.11 A hedge and scrub line, and shallow drainage ditches, form the western and southern boundaries, with a scrub and tree line also forming the eastern boundary. The surrounding area comprises light industry, arable farmland and residential development with numerous areas of woodland listed on the National inventory for ancient semi-natural woodland (ASNW).
- 1.12 There are no on-site ponds, but there are five within a 500m radius of the site. These are located within arable farmland to the south and woodland to the south-east. A single pond is also located in a residential garden to the west. The closest pond is located approximately 230m south and forms the first of a series of interlinking ponds extending south from the site.

DESCRIPTION OF THE PROPOSALS

- 1.13 Proposals involve the redevelopment of the site to provide a new horticultural plant nursery and to include construction of a new office complex and polytunnels. There is also a soft landscaping scheme that comprises tree and scrub planting, enhancements to the ditch system that include ditch creation, additional planting where required and a new balancing pond.
- 1.14 It is understood that, under current proposals, the western third of the site beyond the public footpath, would remain unchanged with grassland, trees, scrub and drainage ditches being retained and, where appropriate, enhanced through additional planting.

2 Methodology

GREAT CRESTED NEWT SURVEY

Habitat Suitability Index Assessment

- 2.1 A Habitat Suitability Index (HSI) assessment based on criteria developed by Oldham *et al.*, (2000) was carried out by an ecologist from The Ecology Consultancy concurrently with the first presence/absence survey visit on 10th April 2013. The HSI Assessment was carried out for the five ponds within 500m of the site.
- 2.2 The habitat suitability 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).
- 2.3 The results of the HSI calculation were 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.
- 2.4 The habitat suitability assessment uses ten key habitat criteria and is based on the assumption that habitat quality determines GCN 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.
- 2.5 The results of the HSI 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 categories

Probability of ponds supporting GCN	HSI score
Poor	Below 0.5
Below average	0.5-0.59
Average	0.6-0.69
Good	0.7-0.79
Excellent	Above 0.8

(Extracted from Oldham *et al.*, 2000)

Pond Surveys

- 2.6 The five ponds within 500m of the site were initially included in the survey. These were located 430m west, 229m, 320m and 430m south and 395m south-east from the site.
- 2.7 The pond numbers are shown on the Survey Map in Appendix 1.
- 2.8 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 April 2013 with two of those visits taking place within the peak survey time within mid-April. An additional two survey visits were made to all of the ponds to allow a population estimate to be made in mid-April.
- 2.9 The pond surveys were led by Carly Teague and Amy Richards, both are holders of great crested newt class survey licences: WML-CL08.
- 2.10 All surveys were undertaken in periods of suitable weather conditions; avoiding strong winds and heavy rain, and at suitable temperatures. 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 at 5m intervals, where access permitted. Traps were left overnight for a maximum of twelve hours and checked and removed the following morning;

- 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.

2.11 Following the first survey, Pond 5 located 395m south-east of the site was excluded from survey on the basis of poor water quality within this pond reducing the likelihood of great crested newts being supporting in this pond.

Population Assessment

2.12 Where great crested newts were found to be present, a population assessment was made following the population size class assessment set out 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 Table 2 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

2.13 Due to the close proximity of ponds to each other and habitat connectivity between them, all of the ponds were surveyed six times, even those where great crested newts were not positively identified during the first four presence absence surveys. This is due to the potential for great crested newts to move amongst the network of ponds throughout their breeding season.

LIMITATIONS

2.14 The surveys are considered to be sufficiently robust to prove presence or absence of great crested newts and to determine a population size class.

3 Results

GREAT CRESTED NEWT SURVEY

Overview

- 3.1 Great crested newts were found in Pond 1 during the course of the six survey visits. This pond was found to support medium population of great crested newts based on current Natural England guidelines (English Nature, 2001).
- 3.2 A peak count of 28 adult great crested newts was recorded in Pond 1 on the 18th April 2013.
- 3.3 No great crested newts were found during the course of the survey visits in Ponds 2, 3 and 4.
- 3.4 Smooth newts *Lissotriton vulgaris* were also found to be present in Pond 1.
- 3.5 Table 2 below presents peak counts of each species for all of the ponds that were surveyed. Full survey and HSI data is presented in Appendix 3.

Table 3: Summary of great crested newt survey results

Pond number	Great crested newt	Smooth newt	Palmate newt
1	28	8	0
2	0	0	0
3	0	0	0
4	0	0	0

Pond 1

- 3.6 A medium sized pond measuring approximately 315 m² located within a front garden of a residential property adjacent to Poling Street. Areas of short amenity grassland, planted shrubbery and mature trees were located in the immediate surrounds of the pond, with hedgerows bounding the garden to the east and south, adjacent to the pond. In the wider surrounds the residential property extended to the north, arable fields were located to the east and west, and residential properties and associated

gardens were to the north and south. The pond had shallow margins of approximately 0.5m at their deepest point, and became deeper in the centre. Iris *Iris* sp. had formed clumps around the ponds margins. There was an abundance of leaf litter within the water from nearby trees. The pond had high water clarity; however duckweed *Lemna* sp. extended to cover some of the ponds surface during the final two surveys. A fallen tree was present along the northern bank, the roots of which formed potential shelter for amphibians within the water's edge.

- 3.7 The HSI score for the pond was **Good** and it was categorised as having a **High** probability of supporting great crested newts due to good water quality and suitable egg laying opportunities.
- 3.8 A peak count of 25 great crested newts was found during the third survey visit. Great crested newt eggs were also found, indicating newts are using the pond for breeding.
- 3.9 Smooth newts were also recorded in the pond, with a peak count of eight adults recorded during the second survey visit.

Pond 2

- 3.10 Pond 2 was a large, deep pond located within a pasture field. The pond measured approximately 2000m² and the banks of the pond had been poached by cattle. Poaching had resulted in some shallow areas around the pond margins, some of which had been colonised by water mint *Mentha aquatica* within the northern pond extent. Rushes *Juncus* sp., had also formed clumps around the margins of the pond. Fish were observed within the pond during all of the survey visits and waterfowl including mallard *Anas platyrhynchos* and moorhen *Gallinula chloropus* were also recorded. The banks of the pond were steep in places and dense scrub restricted access along discrete parts of the western extent. The substrate comprised fine silts and sands, and the pond had poor water clarity.
- 3.11 Areas of tussock grassland surrounding the pond and a mature hedgerow adjacent to the south-west of the pond provided potential sheltering and hibernation opportunities for amphibians. Within the wider surrounds, farmland comprising pasture and arable fields in addition to hedgerows were present in all directions.
- 3.12 The HSI score for the pond was **Poor** and it was categorised as having a **Low** probability of supporting great crested newts. This indicated there were limiting

factors reducing the potential for great crested newt to be supported, such as the low water quality and limited aquatic vegetation.

3.13 No great crested newts were found during any of the six survey visits.

Pond 3

3.14 This was a large pond adjacent to the south of Pond 2 and connected to it via a shallow ditch. Aquatic vegetation was restricted to clumps of water mint and willowherb *Epilobium* sp. in the shallower areas with dense stands of rush throughout the lower banks. Evidence of poaching by cattle was also observed along the banks, creating a variation in steep and shallow bank profiles. Bramble *Rubus fruticosus* agg was scattered along the banks. A small island was present within the centre of the pond, covered by scrub and scattered trees and used by nesting waterfowl at the time of the survey. The substrate comprised sands and fine silts although appeared to support a higher quantity of coarse stones than Pond 2. Due to the nature of the pond and the connectivity to Pond 2, it was considered likely that fish were present although none were observed within the pond during the survey.

3.15 Areas of tussock grassland surrounding the pond and a mature hedgerow adjacent to the western extent provided potential sheltering and hibernation opportunities for amphibians. Within the wider surrounds, farmland comprising pasture and arable fields in addition to hedgerows were present in all directions.

3.16 The HSI score for the pond was **Poor** and it was categorised as having a **Low** probability of supporting great crested newts. This suggested there were limiting factors which reduced the potential for great crested newts to be supported, such as low water quality.

3.17 No great crested newts were found during any of the six survey visits.

Pond 4

3.18 This pond was similar to Ponds 2 and 3, detailed above, with poaching by cattle creating a varied bank profile. Aquatic vegetation was limited, restricted to rushes clumped along the lower banks. Areas of tussocky grassland surrounded the pond and a mature hedgerow and scattered scrub was adjacent to the west, providing potential sheltering and hibernation opportunities for amphibians. Within the wider

surrounds, farmland comprising pasture and arable fields and hedgerows were present in all directions.

3.19 The HSI score for the pond was **Poor** and it was categorised as having a **Low** probability of supporting great crested newts. This suggested there were limiting factors which reduced the potential for great crested newts being supported, such as low water quality and limited aquatic vegetation.

3.20 No great crested newts were found during any of the six survey visits.

Pond 5

3.21 This was a large pond set within Decoy Pond Wood, an area of ancient and semi-natural woodland currently managed for wildfowl. The water quality of the pond was poor, aquatic vegetation was absent and there was evidence of a significant population of brown rat *Rattus norvegicus* in the locality in the form of a series of burrows within the pond banks and recent droppings. A small island was present in the centre of the pond which was in use by nesting wildfowl. Habitats surrounding the pond included woodland and farmland, linked by a network of hedgerows which offered a range of sheltering and hibernation opportunities for amphibians.

3.22 The HSI score for the pond was **Poor** and it was categorised as having a **Low** probability of supporting great crested newts. This suggested there were limiting factors which reduced the potential for great crested newt presence, such as low water quality and an abundance of wildfowl.

3.23 Due to the sub-optimal conditions supported, this water body was considered to be completely unsuitable for great crested newts and was excluded from surveys following the first survey visit.

3.24 No great crested newts were found during the first and only survey visit.

Population Assessment

3.25 Pond surveys confirmed the presence of a **Medium** population of great crested newts in Pond 1. Great crested newts were also found to be breeding within the pond.

4 Conclusions and Recommendations

CONCLUSIONS

- 4.1 The site is within a rural setting within the north-eastern extent of the village of Poling, West Sussex. The landscape provides extensive areas of suitable habitat for great crested newts, including woodland blocks and farmland linked by hedgerows to a network of ponds and ditches. Although no ponds were present within the development boundary, the site provides suitable terrestrial habitat for great crested newts, supporting areas of grassland, tall herbaceous vegetation and debris piles.
- 4.2 Surveys confirmed the presence of a **medium** population of great crested newts within Pond 1, located approximately 430m to the west of the site. Great crested newts were also confirmed to be breeding within this pond.
- 4.3 No great crested newts were found in any of the other three ponds included in the survey (Ponds 2, 3 and 4), located to the south of the site. Pond 5, located approximately 395m south-east of the site, was excluded from the survey owing to conditions being found to be sub-optimal during the initial HSI assessment and the first survey visit to support great crested newts.
- 4.4 Guidelines suggest 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). Therefore, it is considered likely that the great crested newt found on-site during the previous reptile survey in 2012 (The Ecology Consultancy, 2012) was part of the same meta-population as that recorded within Pond 1. This assessment is supported by the habitat connectivity present between the Pond 1 and the site which would facilitate movement of great crested newts between these areas.
- 4.5 Great crested newts pose a constraint to development proposals as this species receives protection under the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2010 (as amended). Under current legislation, both the individual and habitats they use for shelter and breeding are protected.
- 4.6 Although there are no on-site ponds, any ground works or vegetation clearance around the site has the potential to negatively impact on this species through both terrestrial habitat loss and the killing or injury of individuals. In order to adhere to current legislation a European Protected Species Mitigation (EPSM) licence must be

obtained from Natural England to allow works to be carried out which would otherwise infringe the legislation.

- 4.7 This approach will require a programme of translocation to re-locate great crested newts away from the development footprint prior to works starting and will require individuals to be moved to a suitable receptor area.
- 4.8 Due to a medium population of great crested newts being recorded during the pond surveys, a minimum trapping period of 60 nights will be required at the site in order to capture the population present. This must be carried out within the active season for great crested newts which is between **mid-March** and **October**, inclusive.
- 4.9 An outline of the recommended approach is provided below; however this has been detailed previously in Section 5 of the reptile survey report which includes details on site enhancement (The Ecology Consultancy, 2012) and both documents should be read in conjunction to one another.

RECOMMENDATIONS

- 4.10 It is recommended that a great crested newt capture and exclusion process is carried out at the site under licence from Natural England. This must be carried out in suitable conditions within the active season for great crested newts, which is taken to run between **mid-March** and **October**, inclusive. This process is outlined below.

Exclusion Fencing

- 4.11 A line of exclusion fencing will be installed around the boundary of the development footprint in order to separate the newt capture area from the receptor area and other surrounding suitable habitat. The fence line will be checked over by the project ecologist. The design of the fencing should be the same as that illustrated in the *Great Crested Newt Mitigation Guidelines* (Natural England, 2004) and reproduced in Appendix 4.
- 4.12 The fence would be made of UV resistant polythene, approximately 500mm in height and buried 200mm deep into the ground. There would also be a turn out or roll down at the top of the fence facing out towards the receptor area. Pitfall traps will be installed at 5-10m intervals along the internal length of fence line. These must be located flush with the fence line with the top of the trap flush with or just below ground level.

- 4.13 The exact location of the fencing and density of pitfall traps will be decided on-site between the client, ecologist and fencing contractors. The exclusion fence will be retained until completion of the construction period and will be removed under an ecological watching brief.

Receptor Site

- 4.14 The proposed receptor area is within the curtilage of The Vinery within the northern site extent. This area currently comprises an area of poor semi-improved grassland and scattered scrub. The habitats will be enhanced prior to the translocation in order to increase its suitability for great crested newts. Enhancement will include the creation of a wildflower meadow throughout the receptor area which will be achieved through re-seeding the grassland with a wildflower seed mix.
- 4.15 The area will measure at least 0.2 ha although the exact extent will be determined by the client, ecologist and landscape architect prior to submission of the licence application.
- 4.16 This area is contiguous with suitable habitat to the east and west, and its location will also enable great crested newts to re-colonise suitable on-site habitat post works and maintain connectivity to surrounding off-site habitat.
- 4.17 The carrying capacity of the receptor area will be increased through grassland re-seeding and the placement of additional habitat such as hibernacula prior to the translocation commencing. This will also serve to compensate for the loss of newt habitat within the remainder of the development area.

Habitat Management- First Phase

- 4.18 Habitats within the site comprise areas of tall ruderal vegetation, grassland, dense and scattered scrub and scattered trees.
- 4.19 Clearance of areas of scrub and scattered trees must avoid the nesting bird season, which is taken to run between March and August, inclusive, as detailed in the previous report (The Ecology Consultancy, 2012).
- 4.20 In the first phase, areas of grassland, scrub and tall ruderal vegetation will be cut to 200mm above level to reduce the amount of available cover with small 'islands' of uncut vegetation retained as refuge habitat. This should be carried out immediately prior to commencing the translocation in order to facilitate capture. Vegetation will be cleared using hand tools, such as chain saws and strimmers. All cut vegetation will be removed from the site.

Great Crested Newt Capture

- 4.21 Due to a medium population of great crested newts being recorded during the pond surveys. A minimum trapping period of 60 nights will be required at the site. This must be carried out within the active season for great crested newts which is between **mid-March** and **October**, inclusive. The exact timing of the start point will be decided between the project ecologist and the client. This process will aim to relocate all great crested newts away from the footprint of construction.
- 4.22 The exact number of visits would be determined by the pattern of newt captures, but will continue until there have been at least five consecutive visits with no animals caught or sighted. When this point is reached a destructive search of the site will be undertaken.
- 4.23 All captured newts will be released into suitable grassland habitat within the north of the site, as detailed in the receptor site section above.
- 4.24 Once the capture programme has started the pitfall traps will be checked once daily by a suitably experienced ecologist early each morning before temperatures warm up. Any newts found within the traps will be caught by hand and kept temporarily in a smooth sided plastic container with sufficient covering material and secure fitted lid with ventilation holes. Other species, which may have entered the traps over night such as small mammals, will be captured and placed in separate containers for subsequent release to the receptor area. The sex, life stage and the location of all individuals collected and observed will be recorded. All animals will be released as soon as practical to the newt receptor area. A route will be taken around the site to enable each trap to be checked during each capture visit.

Habitat Management- Second Phase

- 4.25 All vegetation within the newt capture area should be reduced to ground level. This should be carried out towards the end of the newt capture programme, once capture rates have seen a significant decline. This point will be decided by the project ecologist after studying the catch data. This should be done using hand tools and under an ecological watching brief.

Destructive Search

- 4.26 A destructive search is the process of destroying any remaining newt habitat within the capture area and translocating any remaining newts or other animals disturbed in the process. The destructive search will be initiated once capture rates have dropped to zero over five consecutive capture visits.

- 4.27 The destructive search will also entail the careful removal, by hand, of all potential refugia such as rubble piles, large piece of debris and logs in order to capture any sheltering animals. This will be undertaken by a suitably experienced ecologist.
- 4.28 A 360° excavator equipped with a toothed bucket will be used to strip the surface of the topsoil to approximately 100mm in depth throughout the newt capture area. The destructive search will be carried out under an ecological watching brief. The use of the excavator will follow the principles below:
- The health and safety of the machine operator and ecologist is paramount and a Safe System of Work will be established to minimise the inherent risks.
 - All on site operatives will hold current CSCS cards and a dedicated Risk Assessment for this operation will be drawn up in advance.
 - Excavators will not track on any previously undisturbed areas and all soil and arisings will be piled up to make windrows no more than 1.5m high. These windrows will be left undisturbed for a minimum of 24 hours to enable any animals within the soil to escape.
 - Windrows will be created on previously cleared ground and machines must not track back onto them.
 - All disturbed ground and windrows to be checked for newts, any newts disturbed in this process will be captured.

During and Post Construction

- 4.29 The exclusion fence must remain in place until all construction works have been completed. The fence should then be removed under an ecological watching brief to ensure no animals are injured which may have taken refuge along the fence line.
- 4.30 The exclusion fence should be regularly checked by on-site personnel for condition and correct operation throughout the construction period and any breaks repaired as soon as possible. No materials should be stored on or near the fence line and the contractors must be made fully aware of its position and function.

References

Natural England (2001). *Great Crested Newt Mitigation Guidelines*. Natural England, Peterborough, UK.

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)*. Herpetological Journal 10 (4), 143-155.

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Appendix 1: Survey Map



Ecology Consultancy

Job title
The Vinery
ECL Job no. 121112

Client
Fargro

Drawing title
**GREAT CRESTED
NEWT SURVEY MAP**

Section: N/A
Scale (at A3) 1:3,750

Date of survey
April / May 2013

Surveyor
Giles Coe, Amy Richards, Carly Teague

Drawn CAT
Checked GC

Approved CAT
Date 16/05/2013

KEY

 Site boundary

 Surveved pond (and number)

This plan is provided solely for the purpose of supporting the description of the ecological features of the site as contained in the accompanying report

Appendix 2: Survey Results

Project	The Vinery
Project number/reference	121112
Site	The Vinery

Pond number/reference	Pond 1 (Poling Lane)
OS Grid reference	TQ 046 055
Location details	200m down Poling Lane on Right
Distance from site	430m west
Pond area approx m ²	315m ²

General description/notes/comments		
A medium sized pond measuring approximately 315 m² located within a front garden of a residential property. Areas of short amenity grassland, planted shrubbery and mature trees were located in the immediate surrounds of the pond, with hedgerows bounding the garden to the east and south, adjacent to the pond. The pond had shallow margins of approximately 0.5m at their deepest point, and became deeper in the centre. Iris <i>/is</i> sp had formed clumps around the ponds margins. There was an abundance of leaf litter within the water from nearby trees. A fallen tree was present along the northern bank, the roots of which formed a potential sheltering area for amphibians within the water's edge.		
Habitat Suitability Index		
		SI value
SI1. Map location A/B/C	A	1
SI2. Surface area (m ²)	2000	0.63
SI3. Desiccation rate never/rarely/sometimes/frequently	Never	0.10
SI4. Water quality good/moderate/poor/bad	Good	1.00
SI5. Shade % of margin shaded 1m from bank	50	1.00
SI6. Waterfowl absent/minor/major	Minor	0.67
SI7. Fish population absent/possible/minor/major	Possible	0.67
SI8. Pond density number of ponds within 1km	20	1.00
SI9. Terrestrial habitat good/mod/poor/isolated	moderate	0.67
SI10. Macrophyte cover %	20	0.51
HSI score		0.78
Pond suitability		GOOD

	Visit 1				Visit 2				Visit 3			
Date	10/04/13				15/04/13				18/04/13			
Personnel	GC NF				GC AR				AR PA			
Temperature (°C)	10				11				7			
Weather	Overcast, slight breeze				Dry, clear, no breeze				Dry, clear, moderate breeze			
Turbidity	0				0				0			
Vegetation cover	3				3				3			
Methods	Torch Trap Net Egg Torch Trap Net Egg								Torch Trap Net Egg			
<i>indicate methods used or number of bottle traps</i>												
<i>T. cristatus</i>												
Male					6	2			7	0		
female					3	3			18	3		
unknown												
total adults												
immature												
Larvae												
eggs present?	None Found				GCN Egg Found							
<i>L. vulgaris</i>					3 (torch) 8 (in bottle traps)							
<i>L. helveticus</i>												
<i>R. temporaria</i>												
<i>B. bufo</i>												
Other									Female GCN seen egg laying			

Great Crested Newt Survey: Pond No: 1

	Visit 4				Visit 5				Visit 6			
Date	23/04/13				29/04/13				01/05/13			
Personnel	AR PA				CAT MT				CAJ, BK			
Temperature (°C)	12				15				11			
Weather	Dry, clear, no breeze				Dry, mild, no breeze				Dry, no breeze			
Turbidity	0				0				1			
Vegetation cover	3				4				4			
Methods												
indicate methods used or number of bottle traps	Torch	Trap	Net	Egg	Torch	Trap	Net	Egg	Torch	Trap	Net	Egg
	✓	10		✓	✓		✓	✓	✓		✓	✓
<i>T. cristatus</i> male female unknown total adults immature larvae eggs present?												
	0	1										
	0	0										
									1			
<i>L. vulgaris</i>	1 (in bottle trap)											
<i>L. helveticus</i>												
<i>R. temporaria</i>												
<i>B. bufo</i>												
Other									Eggs seen on iris (folded leaves out of water)			

Project	The vinery
Project number/reference	121112
Site	The Vinery

Pond number/reference	Pond 2
OS Grid reference	TQ 051 051
Location details	In farmland to south of The Vinery
Distance from site	229m south
Pond area approx m ²	2000m ²

General description/notes/comments		
A large deep pond located within a pasture field. The pond measured approximately 2000m ² and the banks of the pond had been poached by cattle. Poaching had resulted in some shallow areas around the pond margins, some of which had been colonised by water mint <i>Mentha aquatica</i> within the northern pond extent. Rushes <i>Juncus</i> sp, had also formed clumps around the margins of the pond. Fish were observed within the pond during all of the survey visits and waterfowl including mallard <i>Anas platyrhynchos</i> and moorhen <i>Gallinula chloropus</i> were also recorded. The banks of the pond were steep in places and dense scrub restricted access along discrete parts of the western extent. The substrate comprised fine silts and sands.		
Habitat Suitability Index		
		SI value
SI1. Map location A/B/C	A	1
SI2. Surface area (m ²)	2000	0.79
SI3. Desiccation rate never/rarely/sometimes/frequently	Never	0.90
SI4. Water quality good/moderate/poor/bad	Poor	0.33
SI5. Shade % of margin shaded 1m from bank	10	1.00
SI6. Waterfowl absent/minor/major	Major	0.01
SI7. Fish population absent/possible/minor/major	major	0.01
SI8. Pond density number of ponds within 1km	20	1.00
SI9. Terrestrial habitat good/mod/poor/isolated	Moderate	0.67
SI10. Macrophyte cover %	10	0.41
	HSI score	0.30
	Pond suitability	POOR

	Visit 1				Visit 2				Visit 3			
Date	10/04/13				15/04/13				18/04/13			
Personnel	GC NF				GC AR				AR PA			
Temperature (°C)	10				11				7			
Weather	Overcast, slight breeze				Dry, clear, no breeze				Dry, clear, moderate breeze			
Turbidity	4				4				4			
Vegetation cover	2				2				2			
Methods												
<i>indicate methods used or number of bottle traps</i>												
	✓ Torch	Trap	✓ Net	✓ Egg	✓ Torch	Trap	Net	✓ Egg	✓ Torch	Trap	Net	✓ Egg
	✓		✓	✓	✓	15		✓	✓	16		✓
<i>T. cristatus</i>												
Male												
female												
unknown												
total adults												
immature												
Larvae												
eggs present?												
<i>L. vulgaris</i>												
<i>L. helveticus</i>												
<i>R. temporaria</i>												
<i>B. bufo</i>												
Other												

Great Crested Newt Survey: Pond No: 2

	Visit 4				Visit 5				Visit 6			
Date	23/04/13				29/04/13				01/05/13			
Personnel	AR PA				CAT MT				CAJ, BK			
Temperature (°C)	12				15				11			
Weather	Dry, clear, no breeze				Dry, mild, no breeze				Dry, no breeze			
Turbidity	4				4				4			
Vegetation cover	2				2				2			
Methods												
indicate methods used or number of bottle traps	Torch	Trap	Net	Egg	Torch	Trap	Net	Egg	Torch	Trap	Net	Egg
	✓	16		✓	✓		✓	✓	✓		✓	✓
<i>T. cristatus</i>												
male												
female												
unknown												
total adults												
immature												
larvae												
eggs present?												
<i>L. vulgaris</i>												
<i>L. helveticus</i>												
<i>R. temporaria</i>												
<i>B. bufo</i>												
Other												

Project	The Vinery
Project number/reference	121112
Site	The Vinery

Pond number/reference	Pond 3
OS Grid reference	TQ 052 050
Location details	In farmland to south of The Vinery
Distance from site	310m south
Pond area approx m ²	2770m ²

General description/notes/comments		
A large pond adjacent to the south of Pond 2 and connected to it via a shallow ditch. Aquatic vegetation is restricted to clumps of water mint and willowherb <i>Epilobium</i> sp in the shallower areas with dense stands of rush throughout the lower banks. Evidence of poaching by cattle was also observed along the banks, creating a variation in steep and shallow bank profiles. Bramble <i>Rubus fruticosus</i> agg was scattered along the banks. A small island was present within the centre of the pond, covered by scrub and scattered trees and used by nesting waterfowl at the time of the survey. The substrate comprised sands and fine silts although appeared to support a higher quantity of coarse stones than Pond 2.		
Habitat Suitability Index		
		SI value
SI1. Map location A/B/C	A	1
SI2. Surface area (m ²)	2770	0.67
SI3. Desiccation rate never/rarely/sometimes/frequently	Never	0.90
SI4. Water quality good/moderate/poor/bad	Poor	0.33
SI5. Shade % of margin shaded 1m from bank	5	1.00
SI6. Waterfowl absent/minor/major	Major	0.01
SI7. Fish population absent/possible/minor/major	Major	0.01
SI8. Pond density number of ponds within 1km	20	1.00
SI9. Terrestrial habitat good/mod/poor/isolated	Moderate	0.67
SI10. Macrophyte cover %	0	0.31
HSI score		0.29
Pond suitability		POOR

	Visit 1				Visit 2				Visit 3			
Date	10/04/13				15/04/13				18/04/13			
Personnel	GC NF				GC AR				AR PA			
Temperature (°C)	10				11				7			
Weather	Overcast, slight breeze				Dry, clear, no breeze				Dry, clear, moderate breeze			
Turbidity	4				4				4			
Vegetation cover	0				0				0			
Methods	Torch Trap Net Egg Torch Trap Net Egg Torch Trap Net Egg								Torch Trap Net Egg			
<i>indicate methods used or number of bottle traps</i>												
<i>T. cristatus</i>												
Male												
female												
unknown												
total adults												
immature												
Larvae												
eggs present?												
<i>L. vulgaris</i>												
<i>L. helveticus</i>												
<i>R. temporaria</i>												
<i>B. bufo</i>												
Other												

Great Crested Newt Survey: Pond No: 3

	Visit 4				Visit 5				Visit 6			
Date	23/04/13				29/04/13				01/05/13			
Personnel	AR PA				CAT MT				CAJ, BK			
Temperature (°C)	12				15				11			
Weather	Dry, clear, no breeze				Dry, mild, no breeze				Dry, no breeze			
Turbidity	4				4				4			
Vegetation cover	0				0				0			
Methods												
indicate methods used or number of bottle traps	Torch	Trap	Net	Egg	Torch	Trap	Net	Egg	Torch	Trap	Net	Egg
	✓	12		✓	✓		✓	✓	✓		✓	✓
<i>T. cristatus</i>												
male												
female												
unknown												
total adults												
immature												
larvae												
eggs present?												
<i>L. vulgaris</i>												
<i>L. helveticus</i>												
<i>R. temporaria</i>												
<i>B. bufo</i>												
Other												

Project	The Vinery
Project number/reference	121112
Site	The Vinery

Pond number/reference	Pond 4
OS Grid reference	TQ 052 049
Location details	In farmland to S of The Vinery
Distance from site	430m south
Pond area approx m ²	1980m ²

General description/notes/comments		
This pond was similar to Ponds 2 and 3 with poaching by cattle creating a varied bank profile with limited aquatic vegetation, restricted to rushes clumped along the lower banks. Areas of tussocky grassland surrounding the pond and a mature hedgerow and scattered scrub adjacent to the west provide potential sheltering and hibernation opportunities for amphibians. Within the wider surrounds, farmland comprising pasture and arable fields in addition to hedgerows are present in all directions.		
Habitat Suitability Index		
		SI value
SI1. Map location A/B/C	A	1
SI2. Surface area (m ²)	1980	0.79
SI3. Desiccation rate never/rarely/sometimes/frequently	Never	0.90
SI4. Water quality good/moderate/poor/bad	Poor	0.33
SI5. Shade % of margin shaded 1m from bank	5	1.00
SI6. Waterfowl absent/minor/major	Major	0.01
SI7. Fish population absent/possible/minor/major	Major	0.01
SI8. Pond density number of ponds within 1km	20	1.00
SI9. Terrestrial habitat good/mod/poor/isolated	Moderate	0.67
SI10. Macrophyte cover %	1	0.31
HSI score		0.30
Pond suitability		POOR

	Visit 1				Visit 2				Visit 3			
Date	10/04/13				15/04/13				18/04/13			
Personnel	GC NF				GC AR				AR PA			
Temperature (°C)	10				11				7			
Weather	Overcast, slight breeze				Dry, clear, no breeze				Dry, clear, moderate breeze			
Turbidity	4				4				4			
Vegetation cover	1				1				1			
Methods												
<i>indicate methods used or number of bottle traps</i>												
	✓ Torch	Trap	✓ Net	✓ Egg	✓ Torch	Trap	Net	✓ Egg	✓ Torch	Trap	Net	✓ Egg
	✓		✓	✓	✓	19		✓	✓	16		✓
<i>T. cristatus</i>												
Male												
female												
unknown												
total adults												
immature												
Larvae												
eggs present?												
<i>L. vulgaris</i>												
<i>L. helveticus</i>												
<i>R. temporaria</i>												
<i>B. bufo</i>												
Other												

Great Crested Newt Survey: Pond No: 4

	Visit 4				Visit 5				Visit 6			
Date	23/04/13				29/04/13				01/05/13			
Personnel	AR PA				CAT MT				CAJ, BK			
Temperature (°C)	12				15				11			
Weather	Dry, clear, no breeze				Dry, mild, no breeze				Dry, no breeze			
Turbidity	4				4				4			
Vegetation cover	0				0				0			
Methods												
indicate methods used or number of bottle traps	Torch	Trap	Net	Egg	Torch	Trap	Net	Egg	Torch	Trap	Net	Egg
	✓	12		✓	✓		✓	✓	✓		✓	✓
<i>T. cristatus</i>												
male												
female												
unknown												
total adults												
immature												
larvae												
eggs present?												
<i>L. vulgaris</i>												
<i>L. helveticus</i>												
<i>R. temporaria</i>												
<i>B. bufo</i>												
Other												

Project	The Vinery
Project number/reference	121112
Site	The Vinery

Pond number/reference	Pond 5
OS Grid reference	TQ 056 051
Location details	Decoy pond in Decoy Wood
Distance from site	395m south-east
Pond area approx m ²	4680m ²

General description/notes/comments		
A large pond set within Decoy Pond Wood, an area of ancient and semi-natural woodland currently managed for wildfowl. The water quality was poor; aquatic vegetation was absent and there was evidence of a significant population of brown rat in the locality in the form of a series of burrows within the pond banks and recent droppings. A small island was present in the centre of the pond which was in use by nesting wildfowl. Habitats surrounding the pond include woodland and farmland linked by a network of hedgerows which offer a range of sheltering and hibernation opportunities for amphibians		
Habitat Suitability Index		
		SI value
SI1. Map location A/B/C	A	1
SI2. Surface area (m ²)	4680	0.36
SI3. Desiccation rate never/rarely/sometimes/frequently	Never	0.90
SI4. Water quality good/moderate/poor/bad	Poor	0.33
SI5. Shade % of margin shaded 1m from bank	2	1.00
SI6. Waterfowl absent/minor/major	Major	0.01
SI7. Fish population absent/possible/minor/major	Possible	0.67
SI8. Pond density number of ponds within 1km	20	1.00
SI9. Terrestrial habitat good/mod/poor/isolated	Good	1.00
SI10. Macrophyte cover %	0	0.31
		HSI score
		0.39
		Pond suitability
		POOR

	Visit 1				Visit 2				Visit 3			
Date	10/04/13				NOT SURVEYED				NOT SURVEYED			
Personnel	GC NF											
Temperature (°C)	10											
Weather	Overcast, slight breeze											
Turbidity	4											
Vegetation cover	0											
Methods												
<i>indicate methods used or number of bottle traps</i>	✓ Torch	Trap	✓ Net	✓ Egg								
<i>T. cristatus</i>												
Male												
female												
unknown												
total adults												
immature												
Larvae												
eggs present?												
<i>L. vulgaris</i>												
<i>L. helveticus</i>												
<i>R. temporaria</i>												
<i>B. bufo</i>												
Other	Ruled out for further survey due to the sub-optimal conditions supported											

Great Crested Newt Survey: Pond No: 5

	Visit 4	Visit 5	Visit 6
Date	NOT SURVEYED	NOT SURVEYED	NOT SURVEYED
Personnel			
Temperature (°C)			
Weather			
Turbidity			
Vegetation cover			
Methods			
indicate methods used or number of bottle traps			
<i>T. cristatus</i>			
male			
female			
unknown			
total adults			
immature			
larvae			
eggs present?			
<i>L. vulgaris</i>			
<i>L. helveticus</i>			
<i>R. temporaria</i>			
<i>B. bufo</i>			
Other			

Appendix 3: Legislation

Important Notice: This section contains details of legislation and planning policy applicable in Britain only (i.e. not including the Isle of Man, Northern Ireland, the Republic of Ireland or the Channel Islands) and is provided for general guidance only. While every effort has been made to ensure accuracy, this section should not be relied upon as a definitive statement of the law.

A NATIONAL LEGISLATION AFFORDED TO SPECIES

The objective of the EC Habitats Directive¹ is to conserve the various species of plant and animal which are considered 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) is a key piece of national legislation which implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and implements the species protection obligations of Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.

Since the passing of the Wildlife & Countryside Act 1981, various amendments have been made, details of which can be found on 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.

Other legislative Acts affording protection to wildlife and their habitats include:

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

Species and species groups that are protected or otherwise regulated under the aforementioned domestic and European legislation, and that are most likely to be affected by development activities, include herpetofauna (amphibians and reptiles), badger, bats, birds, dormouse, invasive plant species, otter, plants, red squirrel, water vole and white clawed crayfish.

Explanatory notes relating to species protected under The Conservation of Habitats and Species Regulations 2010 (as amended) (which includes smooth snake, sand lizard, great crested newt and natterjack toad), all bat species, otter, dormouse and some plant species) are given below. **These should be read in conjunction with the relevant species sections that follow.**

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

- In the Directive, the term ‘deliberate’ is interpreted as being somewhat wider than intentional and may be thought of as including an element of recklessness.
- The Conservation of Habitats and Species Regulations 2010 (as amended) does not define the act of ‘migration’ and therefore, as a precaution, it is recommended that short distance movement of animals for e.g. foraging, breeding or dispersal purposes are also considered.
- In order to obtain a European Protected Species Mitigation (EPSM) licence, the application must demonstrate that it meets all of the following three ‘tests’: i) the action(s) are necessary for the purpose of preserving public health or safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment; ii) that there is no satisfactory alternative and iii) that the action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

Herpetofauna (Amphibians and Reptiles)

The sand lizard *Lacerta agilis*, smooth snake *Coronella austriaca*, natterjack toad *Epidalea calamita* and great crested newt *Triturus cristatus* receive full protection under The Conservation of Habitats and Species Regulations 2010 (as amended) through their inclusion on Schedule 2. The pool frog *Pelophylax lessonae* is also afforded full protection under the same legislation. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of species listed on Schedule 2
- Deliberate disturbance of any Schedule 2 species as:
 - a) to impair their ability:
 - (i) to survive, breed, or reproduce, or to rear or nurture young;
 - (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate
 - b) 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
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

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
- 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). Species such as the adder *Vipera berus*, grass snake *Natrix natrix*, common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis* are listed in respect to Section 9(1) & (5). For these species, it is prohibited to:

- Intentionally (or recklessly in Scotland) kill or injure these species
- Sell, offer or expose for sale, possess or transport for purpose of sale these species, or any part thereof.

Common frog *Rana temporaria*, common toad *Bufo bufo*, smooth newt *Lissotriton vulgaris* and palmate newt *L. helveticus* are listed in respect to Section 9(5) only which affords them protection against sale, offering or exposing for sale, possession or transport for the purpose of sale.

How is the legislation pertaining to herpetofauna liable to affect development works?

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable to affect the breeding sites or resting places of those amphibian and reptile species protected under The Conservation Habitats and Species Regulations 2010 (as amended). A licence will also be required for operations liable to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licences are to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Although not licensable, appropriate mitigation measures may also be required to prevent the intentional killing or injury of adder, grass snake, common lizard and slow worm, thus avoiding contravention of the Wildlife and Countryside Act 1981 (as amended).

Appendix 4: Exclusion Fence & Hibernacula Design

Figure 1: Newt exclusion fence design: From Natural England Great crested newt mitigation guidelines (2001).

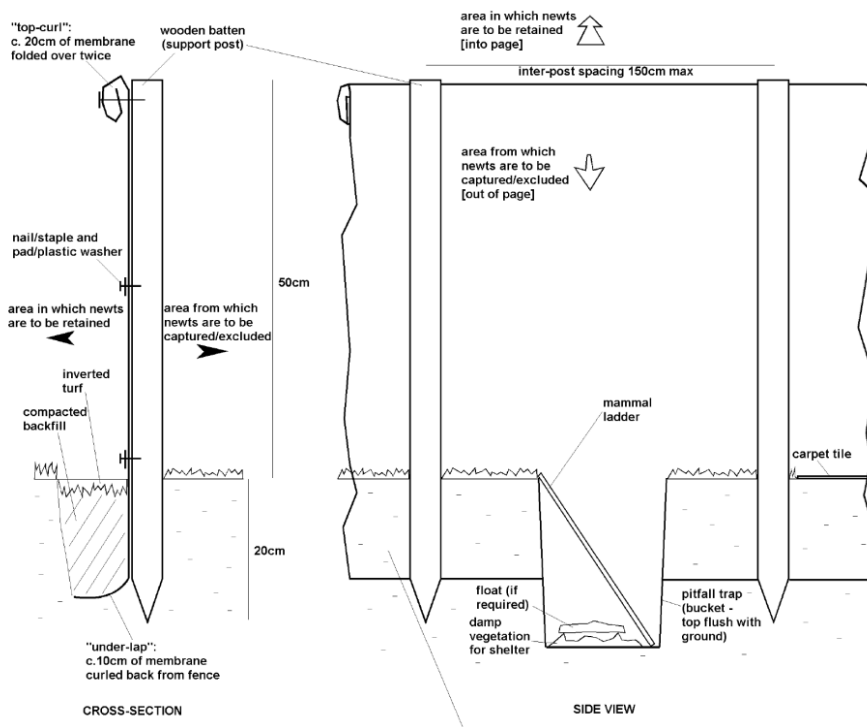
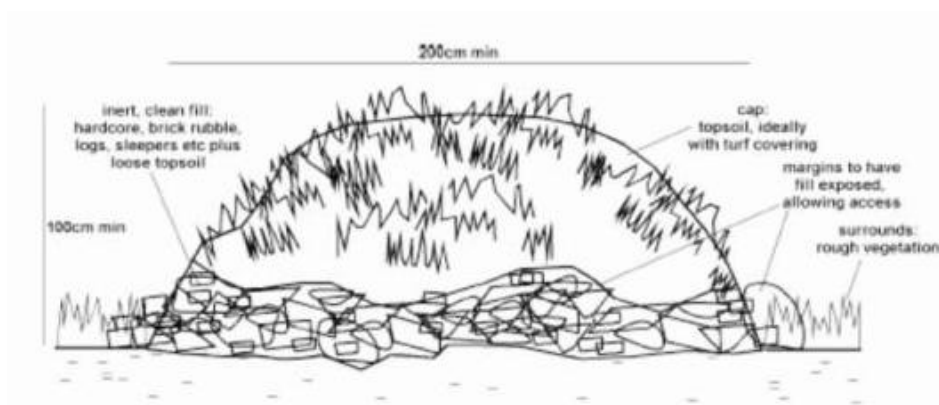


Figure 2: Newt hibernacula design: From Natural England Great crested newt mitigation guidelines (2001).



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