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Reptile and Great Crested Newt Survey Report

Site Name

Greenfield Farm, Barns Green

Client

Manorwood

Issue Date

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About the Author

This report has been prepared by Eleanor Fitter, an assistant ecologist in her first year. Eleanor is currently a student member of CIEEM, in the process of applying for membership and holds herself to their code of professional conduct. She has extensive survey experience from her time at The Ecology Co-op across bat, reptile, great crested newt, and dormouse surveys.

About the Reviewer

This report has been reviewed by Kate Priestman, who is a Principal Ecologist with over twenty years' experience. Kate has undertaken extensive survey work and reporting, encompassing a breadth of deliverables, and prepared European Protected Species licences for numerous schemes. As a Full member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and a Chartered Environmentalist (CEnv), she is bound by CIEEM's code of professional conduct.

Report Summary

Purpose	The Ecology Co-op was commissioned by Manorwood to undertake reptile presence/absence surveys and great crested newt *Triturus cristatus* (GCN) surveys at Greenfield Farm, Valewood Lane, Barns Green, West Sussex in relation to a proposal to station five static caravans, three associated day rooms and associated landscape works on the land (case ref: DC/25/0055). The surveys have been undertaken to ascertain what, if any, reptile species and GCN are present on the site.
Context	A Preliminary Ecological Assessment undertaken by Sylvatica Ecology in November 2024 identified the presence of suitable habitat for reptiles and GCN within the zone of influence of the proposed development. Consequently, reptile presence/absence surveys were recommended to determine the importance of the site for reptiles and any likely significant effects of the proposed development on reptile populations. Environmental DNA (eDNA) surveys were recommended for ponds within 500m of the application site to determine the presence/absence of GCN. The existing site measures approximately 1.2ha in area and comprises of a grassland field to the east and tall ruderal vegetation, hardstanding and a stable block to the west. The proposed development will comprise the stationing of static caravans and day rooms within the grassland field, along with the associated landscape works. The existing access point is to be utilised and the stable block and yard to be retained.
Key findings	The reptile survey was carried out by placing 14 artificial refugia in suitable areas across the site. These were left to 'bed in' for a minimum of ten days, followed by a total of seven survey visits during suitable weather conditions at appropriately spaced intervals. No reptiles were found during the surveys. GCN eDNA was absent from the pond bordering the site boundary. However positive eDNA results were confirmed in two ponds within the local area.
Interpretation	It is considered very unlikely that reptiles or GCN are utilising the site.
Recommendations	Since GCN are confirmed to be present in the local area, a toolbox talk will be carried out by a suitably qualified ecologist prior to the commencement of works. In the unlikely event a GCN is found on site a suitably qualified ecologist must be contacted immediately to advise. All habitat manipulation works are to be completed during optimal conditions and timing for amphibians and reptiles to ensure safe dispersal from harm (April–October, >10°c, between 11:00-15:00).

CONTENTS PAGE

1 INTRODUCTION 1

1.1 Purpose of the Report 1
1.1 Background 1
1.2 Legal Basis 3

2 METHODOLOGY 4

2.1 Desk Study 4
2.2 Field Survey 4
1.3 Limitations 6

3 RESULTS 7
4 IMPACT ASSESSMENT AND MITIGATION RECOMMENDATIONS 8

4.1 Interpretation of Findings 8
4.2 Mitigation 8

5 OPPORTUNITIES FOR ENHANCEMENT 9
6 CONCLUSIONS 10
7 APPENDIX A – GCN eDNA report 11

1 INTRODUCTION

1.1 Purpose of the Report

The Ecology Co-op was commissioned by Manorwood to undertake reptile presence/absence surveys and great crested newt *Triturus* critatus (GCN) Environmental DNA (eDNA) surveys in relation to a proposal to station five static caravans and three associated day rooms for residential purposes at Greenfield Farm (case ref: DC/25/0055).

This report provides the results of the reptile presence/absence surveys carried out by Eleanor Fitter and Joshua Harwood, between 7th May 2025 and 7th July 2025, and the GCN survey results with water samples collected for eDNA analysis on 21st May 2025 by Joshua Harwood and Eleanor Fitter. Joshua is an associate member of the Chartered Institute of Ecology and Environmental Management (ACIEEM) and holds both a GCN class 1 survey licence and sand lizard and smooth snake survey licence (licence numbers available upon request).

The purpose of the reptile survey is to identify the presence or likely absence of reptile species at the site and if present, determine the approximate population size of the reptile species to provide tailored mitigation and compensation measures, should they be necessary.

The GCN survey aims to identify the likely presence of the species on site and within the wider habitat network to determine if the development is likely to present a risk to GCN, and similarly to provide tailored mitigation and compensation measures should be deemed necessary.

1.1 Background

The site is located at Greenfield Farm, Valewood Lane, Barns Green, West Sussex RH13 0QJ. The central grid reference for the site is TQ 11497 26437. The Ecology Co-op was commissioned to undertake reptile surveys at Greenfield Farm, after suitable habitat for reptiles was identified in a Preliminary Ecological Appraisal by Sylvatica Ecology in November 2024[1]. Sylvatica Ecology also identified suitable habitat for GCN on site in the same report, with a pond 10m east to the site, and a network of ponds within the wider landscape[1]. NatureSpace subsequently commented on the planning application concluding it necessary to undertake eDNA surveys to determine whether GCN are present in ponds within 500m of the site.

The existing site measures approximately 1.2ha in area and comprises of two sections. The western and eastern sections. The western area of the site comprises of tall ruderal vegetation, hardstanding and a dilapidated stable block, while the eastern area of the site comprises of grassland likely to have been previously heavily grazed. Figure 1**Error! Reference source not found.** shows the approximate boundary of the site and local context. The site is located in a predominantly rural setting with the majority of habitats within 2km consisting of agricultural land, utilised for arable and pasture, and deciduous woodland, with the closest being grassland located directly east of the site. Several residential homes and gardens also border the northern and southern section of the red

[1] Sylvatica Ecology Ltd (2024). Preliminary Ecological Appraisal – Greenfield Farm.

line boundary.

Sylvatica Ecology identified the potential for habitats on site to have suitability to support common reptile species. The ruderal habitat has been subject to a lack of maintenance and is therefore made up of vegetation of varying sword heights, whilst also providing some opportunities for artificial refugia where brash materials were present. The grassland during surveys was of very limited sward height due to the lack of maintenance, the grassland still provides potentially to support reptile species and GCN though this potential is believed to have been reduced compared to the original site assessment through natural succession of habitats.

The proposed plan for the site (as of March 2025) is indicated in Figure 2 below, provided by Promethean Planning.



Figure 1. An aerial image showing the location of the site. The approximate site boundary is outlined in red. Image produced courtesy of Google earth (map data ©2025 Google).

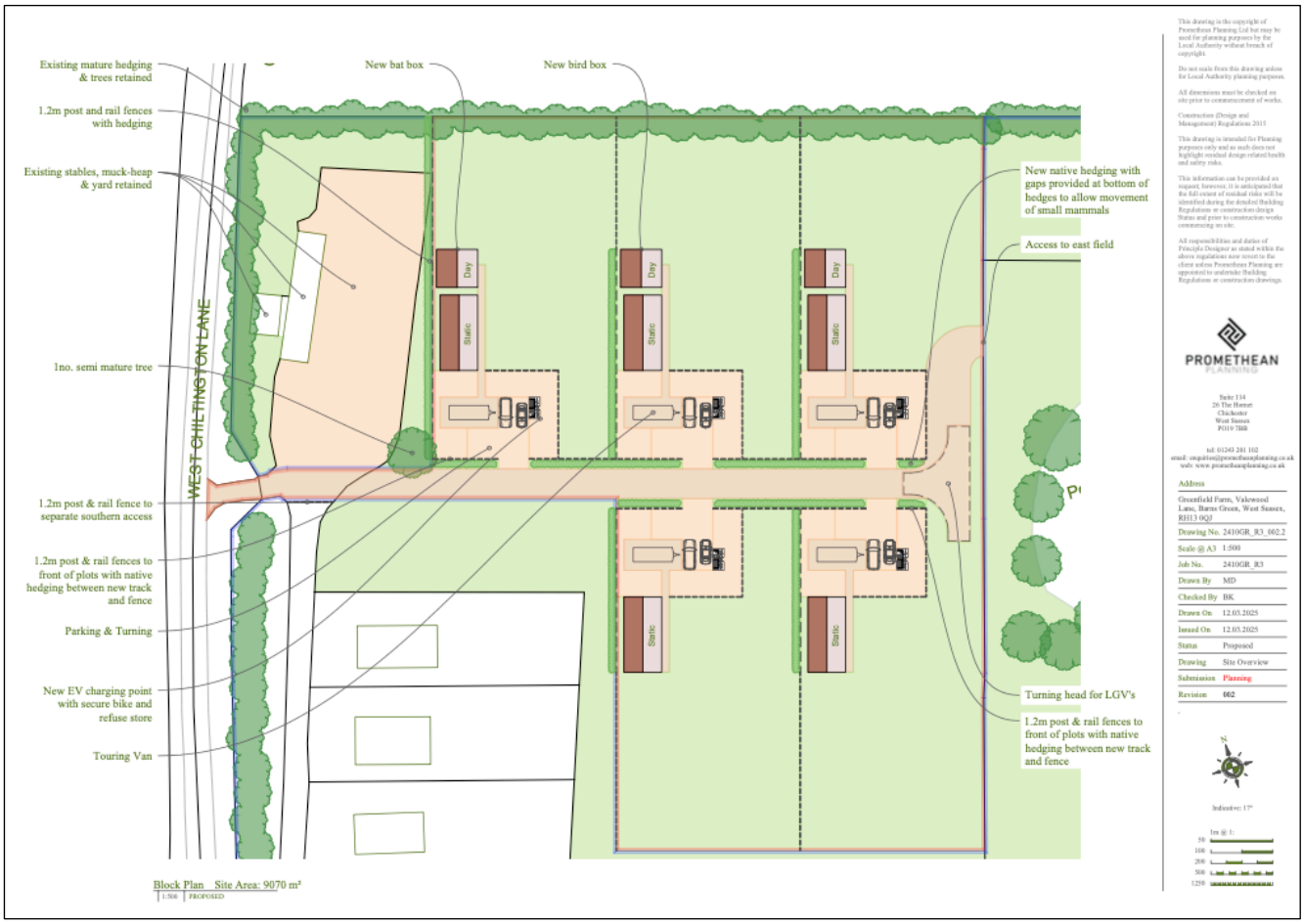


Figure 2. The proposed development layout plan for Greenfield farm. Image reproduced courtesy of Promethean Planning. Drawing no. 2410GR_R3_002.2. Dated 12.03.2025.

1.2 Legal Basis

This section briefly describes the legal protection afforded to reptiles and GCN. 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 simply summarises the salient points.

Common lizard *Zootoca vivipara*, grass snake *Natrix helvetica*, slow-worm *Anguis fragilis*, and adder *Vipera berus* are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), in respect of Section 9 (5) and part of Section 9 (1). This protection was extended by the Countryside and Rights of Way (CRoW) Act 2000. Under the legislation it is an offence to:

- intentionally or deliberately kill or injure any individual of these species; or
- sell or attempt to sell any part of these species either alive or dead.

Additionally, two rarer reptile species in the UK including sand lizard *Lacerta agilis*, smooth snake *Coronella austriaca,* and the great crested newts are European Protected species protected under Section 41 of the Conservation of Habitats and Species Regulations 2017 and subsections 9(4) and 9(5) of the Wildlife and Countryside Act 1981(as amended). This prohibits the following:

- deliberate capturing, injuring or killing;
- deliberate disturbance;
- deliberate taking or destroying of eggs;
- damaging or destroying a breeding site; or
- selling or attempt to sell or exchange any part of these species either alive or dead.

2 METHODOLOGY

The methodologies used for these surveys are in accordance with the Guidelines for Preliminary Ecological Appraisal[2], but also consider the Guidelines for Ecological Report Writing, Second Edition[3].

2.1 Desk Study

Sylvatica Ecology carried out a search for existing records of protected and notable species within 2km of the application site using the National Biodiversity Network in November 2024. This search revealed four grass snake records and eight GCN records[1].

2.2 Field Survey

Reptile surveys
The common lizard, slow-worm, grass snake and adder are widespread species that can be found in many semi-natural habitats, such as rough grassland, scrub, heathland and open woodland where there is good vegetation cover, an abundance of invertebrate, amphibian or small mammal prey and areas of open ground for basking.

The standard approach to reptile presence/absence surveys requires a minimum of eight site visits, first to set out artificial refuges ('reptile mats'), followed by seven survey visits. The optimal months for survey are April, May and September but they can be undertaken at any time from April to October, provided weather conditions are suitable.

The survey was carried out by placing artificial refugia around the site, in areas of suitable habitat for reptiles, which heat up in the sun and provide cover. Reptiles are attracted to these refugia to warm up in the mornings and late afternoon to regulate their temperature and a suitably qualified surveyor can count the number and, in some cases, determine the sex of each species present. All survey visits were completed within appropriate temperatures and without the influence of rain. A total of eight survey visits were undertaken and the highest count of reptiles from these visits is used to estimate the population of each reptile species on the site as low, medium, or exceptional.

Standard reptile presence/likely absence surveys involve setting out artificial refugia (reptile 'mats' or 'tins') in

[2] CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal, 2nd edition.* Chartered Institute of Ecology and Environmental Management, Winchester.
[3] CIEEM (2017). *Guidelines for Ecological Report Writing, 2nd edition.* Chartered Institute of Ecology and Environmental Management, Winchester.

potentially suitable habitat. Reptile mats are pieces of roofing bitumen felt and reptile tins are pieces of corrugated metal sheet approximately 1m x 0.5m in size, which absorb heat from the sun more rapidly than the surrounding vegetation and provide cover and basking places attractive to reptiles. These are then checked for presence of animals under suitable weather conditions. They are placed in areas of potentially suitable habitat at an approximate density of 20/ha, or 20m apart along linear features. There are no up-to-date best practice guidelines for reptile surveys, but a minimum of seven survey visits under suitable weather conditions is generally considered to be adequate when determining their presence/likely absence, and 15–20 visits are used to calculate a 'peak count' for a more detailed population size class assessment. An appropriate survey effort may depend upon the size of a site and suitability of habitats present and often requires the judgment of a suitably qualified and experienced ecologist.

A total of 14 roofing-felt mats were used in this survey (see Figure 3). The mats were left in situ for a minimum of 10 days to 'bed in' and allow reptiles to locate them before the first check. The mats were checked at least seven times over the period 7th May to 10th July 2025 and all observations of reptiles were recorded, together with the weather conditions, temperature and time of day.

The survey refugia were placed around the site, focusing on the areas of long vegetation and margins where they would warm up in the morning or afternoon sun. The survey sheets were spaced evenly in all suitable reptile habitat around the site, where possible avoiding areas that would be constantly shaded by trees.



Figure 3. Location of reptile refugia. Image produced courtesy of Google Maps (map data ©2025 Google).

GCN eDNA surveys

Sylvatica Ecology identified seven ponds located within the wider landscape in a 500m search radius, with particular focus on the ponds within 250m of the site boundary. The closest pond is located 12m to the east of the site boundary (pond 7).

Access letters were sent out to the properties requesting access for pond water sampling. Following this eDNA surveys were undertaken of pond 7 to the east of the construction zone, and two ponds to the south of the site (ponds 4a and 4b) by Joshua Harwood ACIEEM and Eleanor Fitter on 21st May 2025.



Figure 4. Location of ponds within 500m of the site boundary. Each pond is labelled with a corresponding number and the distance from the application site listed below. Images produced courtesy of Google Maps (map data ©2025 Google).

1.3 Limitations

Surveys record any fauna that is present at the time of the survey visits. It is therefore possible that reptile species

may not have been present during the survey but may be evident at other times of the year and may appear or disappear from the site if habitat conditions change. For this reason, the surveys are considered valid for up to two years. If the habitat conditions change significantly in the intervening period, then it is recommended that the surveys be updated.

There was evidence observed during surveys on the 12th May 2025 and 7th July 2025 that several refugia had been moved from their original position as the location of the refugia did not exactly match the patch of altered vegetation marking where the mat had previously 'bedded in'. In these occasions the mats were returned to their exact original position.

Some surveys were conducted during air temperatures slightly higher than the highest optimum recommended temperature by Froglife, Reptile Survey guidance[4] (18 °C). Despite some surveys being conducted during temperatures of 20-21°C, this was frequently the daily and often weekly low due to national heatwave conditions. Furthermore the site experiences high humidity, therefore in combination these conditions described in the results section maintain the site to still be suitable reptiles, particularly those pre sloughing and/or foraging grass snakes.

Water was not able to be sampled from pond 1, pond 2, pond 5 and pond 6 due to lack of permitted access to private property. Furthermore, upon inspection, pond 3 was too dry to collect a water sample. A sample was taken from pond 4a and also 4b, a small garden pond not visible from aerial imagery.

3 RESULTS

Reptile surveys

A total of eight visits were undertaken on site between 7th May and 10th July 2025. No reptiles were found during the surveys. The survey findings, dates, and conditions are presented in **Table *1*** below.

Table 1. Results of reptile survey undertaken at Greenfield Farm, West Sussex (cc= Cloud Cover, BF= Beaufort scale).

Date	Survey start time	Temp. degrees centigrade, weather conditions throughout survey	Results
7th May 2025	14:56	Air temp: 16°C. 15% cloud cover and light breeze (BF2), dry.	No reptiles recorded.
12th May 2025	16:02	Air temp: 18°C. 20% cloud cover and very light breeze (BF1), dry.	No reptiles recorded.
2nd June 2025	16:52	Air temp: 21.9°C. 10% cloud cover and light breeze (BF3), dry.	No reptiles recorded.
12th June 2025	08:35	Air temp: 20.1°C. 80% cloud cover and light breeze (BF2), dry.	No reptiles recorded.
17th June 2025	07:55	Air temp: 20.6°C. 5% cloud cover and very light breeze (BF1), dry.	No reptiles recorded.
26th June 2025	07:58	Air temp: 19.8°C. 100% cloud cover and light breeze (BF2), dry.	No reptiles recorded.
7th July	10:35	Air temp: 18.8°C.	No reptiles recorded.

[4] Froglife (1999). *Reptile Survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation.* Froglife Advice Sheet 10. Froglife, Halesworth.

Date	Survey start time	Temp. degrees centigrade, weather conditions throughout survey	Results
2025		80% cloud cover and breezy (BF4), dry at time of survey but rainy conditions overnight and throughout the morning with the ground remaining damp.	
10th July 2025	07:30	Air temp: 21°C 0% cloud cover and very light breeze (BF1), dry.	Refugia collected- No reptiles recorded.

GCN eDNA surveys

A total of three water samples were taken from ponds within the wider habitat network on 21st May 2025. Ponds 4a and 4b returned positive water samples for GCN eDNA, confirming their likely presence in these ponds. Pond 7 however returned a negative result. The reported findings of this survey are detailed in Appendix 1.

4 IMPACT ASSESSMENT AND MITIGATION RECOMMENDATIONS

4.1 Interpretation of Findings

Reptile surveys

The survey assessment did not identify the presence of reptile species on site. As the surveys were conducted without any constraints likely to impact the outcome of the survey, it is concluded that the site is unlikely to support any reptile populations or support reptile species that may commute across the site.

GCN eDNA surveys

Ponds 4a and 4b presented positive results for GCN eDNA confirming the presence of the species in these ponds and the surrounding habitat. The land surrounding ponds 4a and 4b appeared to provide suitable GCN habitat with areas of extensive vegetation cover, natural/grazed fields, and woodland. These ponds are separated from the application site by 265m, a small road (Valewood Lane) and residential properties/gardens. The pond samples for pond 7 (located 12m from the site boundary) retuned as negative. It is highly likely if GCN were to be utilising the site by travelling from ponds 4a and 4b they would be present in this adjacent pond. It is therefore deemed the site is very unlikely to support GCN and the risk of construction to GCN is considered to be negligible.

4.2 Mitigation

Since GCN presence is confirmed within the local area through eDNA analysis, a toolbox talk will be conducted by a suitably qualified ecologist prior to the commencement of works. The toolbox talk will include at a minimum the identification of GCN, including other amphibians, and reptiles and their protection. In the unlikely event a GCN is found on site, all works must cease and a suitably qualified ecologist must be contacted for further advice.

All habitat manipulation work is to be completed during optimal conditions and timing for amphibians and reptiles to further reduce the risk of incidental sightings and ensure animals are not hibernating (April–October, >10 °c, between 11:00 and 15:00).

The construction zone must then be maintained as cut short until works commence, to ensure that herptiles are not encouraged to move into the construction zone. Any wildlife found within the construction zone must be moved

into an area of retained habitat.

5 OPPORTUNITIES FOR ENHANCEMENT

The site and field (containing pond 7) to the east of the proposed site present opportunities for enhancement of biodiversity, a list of recommendations for such enhancements include but are not limited to:

- native tree and shrub planting within the proposed garden areas;
- addition of native herbaceous and grassland species planted into newly landscaped areas;
- creation of small, scattered mounds or bunds to increase the surface area and planting area of native grass and flower species, to provide increased basking opportunities for reptiles whilst also providing improved conditions for local invertebrates and flowering species;
- enhancement of the pond through the thinning of boundary vegetation;
- creation of a reptile hibernaculum. This can be built using logs and branches, piled on top of each other, with grass cuttings, earth and turf laid over the top to provide insulation; and
- new species rich hedgerows can be planted along boundaries where they are not currently present.

Reptile hibernaculum can be built using logs, piled on top of each other within a stripped area of turf approximately 50cm deep with earth. Soil material, grass cuttings, brash and leaf litter or other suitable natural material should be laid over the top to provide insulation and retain moisture (see **Figure 5**). This feature would also provide benefits for other species including solitary bees, wasps and saproxylic insects.

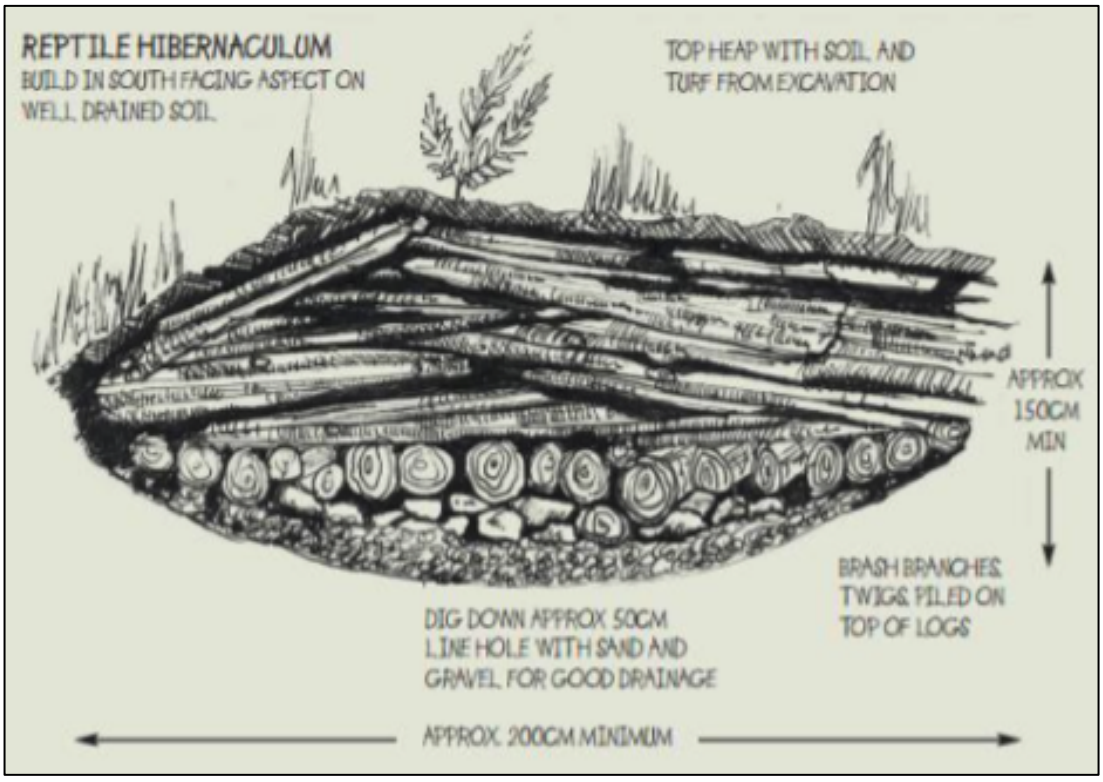


Figure 5. Illustration on how to build a reptile hibernaculum. Image taken from the 'Reptile Habitat Management Guidelines' by Herefordshire Amphibian and Reptile Team and the Herefordshire Nature Trust.

6 CONCLUSIONS

No reptile species were recorded during the site surveys therefore no reptile-specific mitigation is required.

Since GCN are confirmed present within the local area through eDNA analysis, yet absent from the application site, mitigation measures must be followed for GCN in the unlikely event any individuals are found on site.

The enhancement opportunities identified in section 4 of this document will result in new opportunities for reptiles and likely beneficial effects for biodiversity at the site should they all be implemented in full.

It is important that no habitat clearance or other site preparation work should be undertaken until planning permission has been granted and all relevant protections for habitats of importance and protected species have been detailed and implemented. Please be advised that any work to remove or modify habitats outside of typical management may undermine a future planning application.

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

APPENDIX A – GCN eDNA report

Folio No: 1927-2025
Purchase Order: P10436
Contact: The Ecology Co-Operation
Issue Date: 12.06.2025
Received Date: 29.05.2025

SureScreen Scientifics

GCN eDNA Analysis

Summary

When great crested newts (GCN), *Triturus cristatus* , inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analyzing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

Results

Lab ID	Site Name	OS Reference	Degradation Check	Inhibition Check	Result	Positive Replicates
GCN25 4054	Greenfields Farm - P4b	TQ 11362 26091	Pass	Pass	Positive	2/12
GCN25 5911	Greenfields Farm - P7	TQ 11544 26429	Pass	Pass	Negative	0/12
GCN25 5912	Greenfields Farm - P4a	TQ 11430 26114	Pass	Pass	Positive	12/12

Matters affecting result: none

Reported by: Amy Bermudez

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