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Reptile Survey Report

Site Name

Land at Parklands, Burgess Hill

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Client

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This report has been prepared by Andy Fry, an Assistant Ecologist at The Ecology Co-op. He holds a master's degree in Zoology, and over 4 years' experience in consultancy.

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 Rachel Baxter to undertake a reptile presence/absence survey of Parklands, further to a proposal to construct a new residential dwelling. The surveys have been undertaken to ascertain what, if any, reptile species are present on the site.
Context	The site is situated within a residential back garden, east of Keymer Road, in a semi-rural environment. It is bordered to the north and south by residential houses, and to the east by disused farmland earmarked for a residential development. The site is dominated by rank tussocky grassland and low-lying shrub, with scattered trees mostly concentrated around the eastern and southern borders. The northern border comprises an overgrown hedgerow made up of Leyland cypress <i>Cupressus × leylandii</i> and privet <i>Ligustrum</i> sp.. There is a single mature, potentially veteran, oak tree near to the northern border. Reptile surveys were recommended due to prior reptile surveys indicating presence of slow worm <i>Anguis fragilis</i> and grass snake <i>Natrix helvetica</i> on site.
Key findings	The survey was carried out by placing 22 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. A low population of slow worm and grass snake has been confirmed on site, with a peak count of two individual slow worms, and one juvenile grass snake. The site has also been confirmed to be used as terrestrial habitat for great crested newts <i>Triturus cristatus</i> , with an adult female found under a refugia.
Interpretation	The proposed development will result in the loss of suitable reptile habitat and will have an impact on the reptile population identified during the survey that is significant at the site level only. Without mitigation reptiles may be harmed during development.
Recommendations	Due to the presence of reptiles on site, habitat manipulation must be actioned prior to any construction works commencing at the site, and between the months of March and October to avoid the hibernation season. This includes a hand search of the construction area by an Ecological Clerk of Works (ECoW) followed by a supervised, two-phase strim. The client has been approved for a District Level Licence with regards to great crested newts, therefore no further action is necessary beyond reasonable adjustment measures during the construction phase. It is also recommended that the eastern portion of the site is retained as an on-site receptor area, and enhanced through the addition of log piles and a herptile hibernaculum. Temporary amphibian fencing was installed on the 11th May 2026 and a trapping/translocation programme for GCN and reptiles is ongoing.



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1 INTRODUCTION

1.1 Purpose of the Report

The Ecology Co-operation Ltd (hereafter The Ecology Co-op) was commissioned by Rachel Baxter to undertake reptile presence/absence surveys in relation to the construction of a single residential dwelling.

This report provides the results of the reptile presence/absence surveys carried out by The Ecology Co-op between 8th August and 13th October 2025.

The purpose of the 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.

1.1 Background

Parklands is situated on the outskirts of Burgess Hill, grid reference: TQ 3193 1776. The existing site is a residential garden measuring approximately 0.34ha in area. Figure 1 shows the approximate boundary of the site and local context. The property lies directly east of Keymer Road, with residential properties holding large gardens to the north and south. It is bordered by disused farmland to the east, which has been approved for the development¹ of 260 residential units.

Habitats within the site boundary currently consist largely of rank, somewhat tussocky modified grassland with scattered trees throughout. The species assemblage broadly indicates ruderal grassland, with some species associated with wetter and more wooded environments.

The present reptile surveys have been undertaken alongside a Preliminary Ecological Appraisal (PEA)² completed in September 2025 commissioned further to the resubmission of a planning application granted in 2016, subject to conditions. Reptile surveys were pre-emptively recommended based on a previous Herpetofauna Survey Assessment³ completed by Calumma Ecological Services in 2016, which identified a low population of grass snake *Natrix helvetica* and a good population of slow worm *Anguis fragilis* on site.

¹ CSA Environmental (2022). *Land East of Keymer Road and South of Folders Lane, Burgess Hill. Ecological Impact Assessment.*

² Ecology Co-op (2025). *Preliminary Ecological Appraisal. Land at Parklands, Burgess Hill.*

³ Calumma Ecological Services (2016). *Herpetofauna Survey Assessment. Land at Parklands, Burgess Hill, West Sussex.*



Figure 1. The approximate boundary of the site. Image produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).

The proposals would see the construction of a single new residential dwelling (Figure 2).



Figure 2. A plan showing the proposed layout of the development at Land at Parklands. Reproduced courtesy of Hyde & Hyde Architects. Drawing No. 25166_MHS_S3_205.

1.2 Legal Basis

This section briefly describes the legal protection afforded to reptiles. 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, slow-worm, 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* and smooth snake *Coronella austriaca* are European Protected species protected under Section 41 of the Conservation of Habitats and Species Regulations 2010 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 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.

2.1 Field Survey

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 survey was carried out by placing artificial refugia around the site, in areas of suitable habitat for reptiles. Artificial refugia (reptile 'mats' or 'tins') 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. 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 individual present. 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. 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. 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. For the present survey, a total of seven 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, as detailed in Table 2.

A total of 22 roofing-felt mats were used in this survey (see Figure 3) and were deployed on the 22nd July 2025. The mats were left in situ for a minimum of 3 weeks to 'bed in' and allow reptiles to locate them before the first check. The mats were checked seven times over the period 8th August to 13th October 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 (identified with red dots and a unique number). A red line indicates the survey area. Image produced courtesy of Google maps (map data ©2025 Google).

2.2 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 were no specific constraints to this presence/absence survey.

3 RESULTS

A total of seven visits were undertaken on site between 8th August and 13th October 2025. These surveys have confirmed reptile presence on site. Both male and female slow worms have been found with a peak count of two, and at least three individuals identified. One juvenile grass snake was also found, as well as a female great crested newt. Given that the great crested newt was found outside of breeding season, the lack of a dorsal crest was not diagnostic, however the orange markings on the underside of the tail confirmed that this individual was female. The survey findings, dates and conditions are presented in Figure 4 and Table 1 below.



Table 1. Results of reptile survey undertake at Parklands, Burgess Hill.

Date	Survey start time	Temp. degrees centigrade, weather conditions throughout survey (BF = Beaufort scale)	Results
8 th August 2025	08:55	Air temp: 19°C. 100% cloud cover and light breeze (BF2)	Two female slow worms.
20 th August 2025	09:33	Air temp: 14°C. 100% cloud cover and light breeze (BF2)	One male, one female slow worm.
27 th August 2025	17:03	Air temp: 17°C 100% cloud cover, occasional spit, otherwise dry	One male slow worm, one juvenile grass snake.
4 th September 2025	16:15	Air temp: 18°C. 20% cloud cover, rained all morning and the previous day	One male, one female slow worm.
25 th September 2025	09:02	Air temp: 8°C. 0% cloud cover, damp ground but direct sun	No reptiles.
3 rd October 2025	11:02	Air temp: 13°C. 80% cloud cover and gentle breeze (BF3), ground damp from overnight rain	No reptiles.
13 th October 2025	13:58	Air temp: 15°C. 90% cloud cover and light air (BF1), dry	One female great crested newt.



Figure 4. Reptile survey results. Yellow circles indicate where slow worm was identified, an orange circle indicates where both grass snake and slow worm were identified, and a blue circle indicates where great crested newt was identified. Images produced courtesy of Google maps (map data ©2025 Google).



4 IMPACT ASSESSMENT AND MITIGATION RECOMMENDATIONS

4.1 Interpretation of Findings

The results of these surveys indicate low populations of grass snake and slow worm, following Froglife guidelines⁴ (shown in Table 2). The site has also been shown to hold terrestrial habitat for great crested newts.

Table 2. Calculating Populations (from Froglife). Figures in the table refer to the maximum number of adults seen by observation and/or under refuges (placed at a density of up to 10 per hectare (of suitable habitat)) by one person in one day.

Species	Low population Score 1	Good population Score 2	Exceptional population Score 3
Slow worm	<5	5 – 20	>20
Grass snake	<5	5 – 20	>20

The natural regeneration of scrub and grassland has increased the suitability for reptiles in some areas of the site. Since the majority of the existing grassland is set to be cleared, the proposed development would result in the loss of suitable reptile habitat on site. The small reptile population confirmed during these surveys would therefore be negatively impacted by the planned works in the absence of mitigation. The site is not considered to be important to slow worms and grass snakes beyond the site level.

Clearance of ground-level vegetation will destroy terrestrial habitat confirmed during these surveys to also support great crested newts. Other potential impacts of the proposal include the risk of killing/injuring great crested newts during clearance or the construction phase, and severing commuting routes between terrestrial and aquatic habitats. With suitable habitat and confirmed great crested newt populations in the surrounding landscape¹, the impacts of this proposal are considered to be significant at the site level only.

4.2 Mitigation

The limited number of reptiles found during the surveys and the wider suitable habitat parcels in combination with the proposed parcel of retained habitat does not warrant a full reptile translocation process. Instead, a precautionary method statement and an ecologically sensitive design are favoured.

With the knowledge of recent records of great crested newt populations within neighbouring properties, the client opted to apply for a District Level Licence via the NatureSpace Partnership, which was approved in June 2025. Under DLL, developers make a conservation payment, which funds the creation, restoration, and management of high-quality great crested newt habitat at strategic sites across the district. This removes the need for site-based survey and mitigation, beyond basic reasonable avoidance measures during construction, which will comprise 'toolbox' talks and sensitive vegetation clearance (i.e. a two-phase strim).

As the proposed development aims to retain much of the border vegetation, habitat manipulation and enhancement is recommended rather than translocation surveys. It is recommended that at least 500m² of the eastern portion of the site (shown in Figure 5), which will not be affected during the construction phase, is retained

⁴ Froglife (1999). *Advice Sheet 10 – Reptile Survey*.



and enhanced to act as a reptile receptor site. This will also provide some habitat continuity with the patch of scrub immediately adjacent to the eastern border, which has been allocated as an on-site receptor area for the adjacent housing estate¹ currently under development. Potential existing refugia on the site, such as rubble and log piles, will be dismantled and removed under supervision from a suitably qualified ecologist. The habitat manipulation shall be completed in a minimum of two stages cutting from west to east in a two phased strim under ecological supervision. The first cut shall be from existing height to no less than 15cm in height, with the second cut to ground level. The cuts will be strategically located to encourage reptiles that may be on site at the time of works to naturally find the proposed on site receptor area. Following this, a destructive search can be completed under ecological supervision using a toothed bucket to scrape back the first 10 to 15cm of soil to ensure no reptiles are fossorial at the time of clearance, this work must be appropriately planned to ensure no soil compaction is undertaken prior to the soil stripping reducing the risk of any reptiles being harmed during works. All habitat manipulation work is to be completed during optimal conditions for reptiles to ensure safe dispersal from harm (April – October, >10°C, dry, sunny and between 08:00 – 18:00).

The construction zone must then be maintained as cut short, to ensure that herptiles are not encouraged to move back into the construction zone. Any wildlife found within the construction zone must be moved into an area of retained habitat.

A suitably qualified ecologist must oversee all habitat manipulation works, so that if a protected species is found within the construction zone, they can be safely relocated to suitable habitats in the surrounding landscape.



Figure 5. The eastern portion of the site (highlighted in white with red hatching) recommended for retention and enhancement of existing reptile habitat.



4.2.1 Reptile Fencing Installation

A semi-permanent polypropylene material that is tough and stabilised against ultraviolet light must be installed to a depth of not less than 20cm below ground and supported by stakes every 2m fixed with clout nails and washers (see Figure 6). The fencing will be backfilled with earth and tightly compacted to make sure that it acts as an impassable barrier. This will be carried out outside of the hibernation period.

The fencing will be installed, such that it makes a continuous fence line to separate the construction zone from all adjacent habitats from which reptiles may migrate onto the site (Figure 6). The fencing must remain in place until all construction work deemed a risk to reptiles has been completed, i.e. earthworks and associated landscaping. A suitably qualified ecologist should be contacted for confirmation.



Figure 6. An example of the semi-permanent fencing that will be constructed.

The installation of the fencing will be overseen by an ecologist, with a hand search conducted of the fencing construction line ahead of a trencher or small excavator digging the trench for the installation of the fence. The fence will be installed outside of the reptile hibernation period (generally avoiding October to late February dependent of weather conditions) to minimise the risk of death or injury of reptiles during fence installation.

Construction method:

1. At least 24 hours prior to the construction, the fence route would be hand searched by a suitably qualified ecologist and trimmed of vegetation to a height of no more than 5cm and a 2m width, with all cuttings raked off and removed. The trimming process will be completed in two passes, with the grass cut to a height of 15cm on the first pass, to reduce the risk of harming reptiles during the trimming process. This will ensure that reptiles are discouraged from the fencing construction zone.
2. The fencing construction zone will not be allowed to grow taller than 5cm prior to construction of the fence and materials will not be stored along the fencing route, which could otherwise attract reptiles to them as refugia.



3. The entire length of the fence must first be established by excavating a 20cm wide 20cm deep trench, overseen under watching brief by a suitably qualified ecologist. Excavated earth will be piled on the outside edge of the trench so that it is easily backfilled once the fence has been installed. Excavation work for the trench will be carried out by an excavator or trencher no larger than 1.5 tons in weight to minimize ground disturbance.
4. Fence stakes will be positioned every 2m and will be sunk into the ground to a depth of at least 30cm to ensure they are secure.
5. Where the fence line crosses Roost Protection Zones the fencing will be staked, backfilled and sand bagged above ground level to prevent damage to trees.
6. The fencing material will be rolled out along the outside edges of the trench and will be lifted into place when each full roll has been unravelled or cut into manageable sections.
7. The upper and lower edges of the panels will be folded away from the construction area to create a lip to prevent reptiles from climbing over or burrowing under the fencing, as shown in Figure 8.
8. The fencing sheet will be attached to the stakes using 2 clout nails and plastic washers at the top and 15cm from the bottom of each stake.
9. Once fixed, the excavated earth will be backfilled along the trench and trodden in to ensure that it is lightly compacted to prevent animals from digging into it.
10. After establishment, fence checks will be undertaken every week to look for any signs of damage. Once construction has commenced, the fence checks and maintenance will become the responsibility of the works contractor.
11. Site staff must be briefed prior to the commencement of construction on the importance of protecting the reptile fencing and contacting an ecologist in the event that any reptiles or other wildlife is identified within the construction zone.

If the fence is to be broken in order to create access to the site, the open ends must have 'cut backs' on each of its ends (Figure 7), to prevent herptiles from entering the site through the opening. This is where the fence loops back on itself, so that any animals travelling along the edge of the fence are guided away from the site entrance. In addition to this the grassy cover around the edge of the fencing will be monitored regularly to ensure that the grass is kept short and unsuitable for amphibians and reptiles to deter them away naturally where necessary.

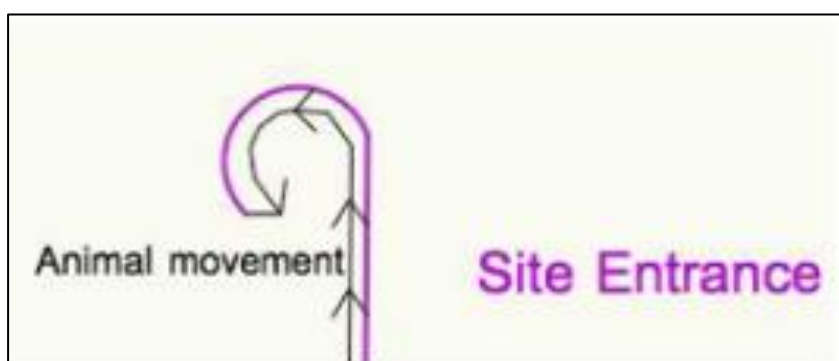


Figure 7. 'Cut backs' used to guide animals away from the entrance.

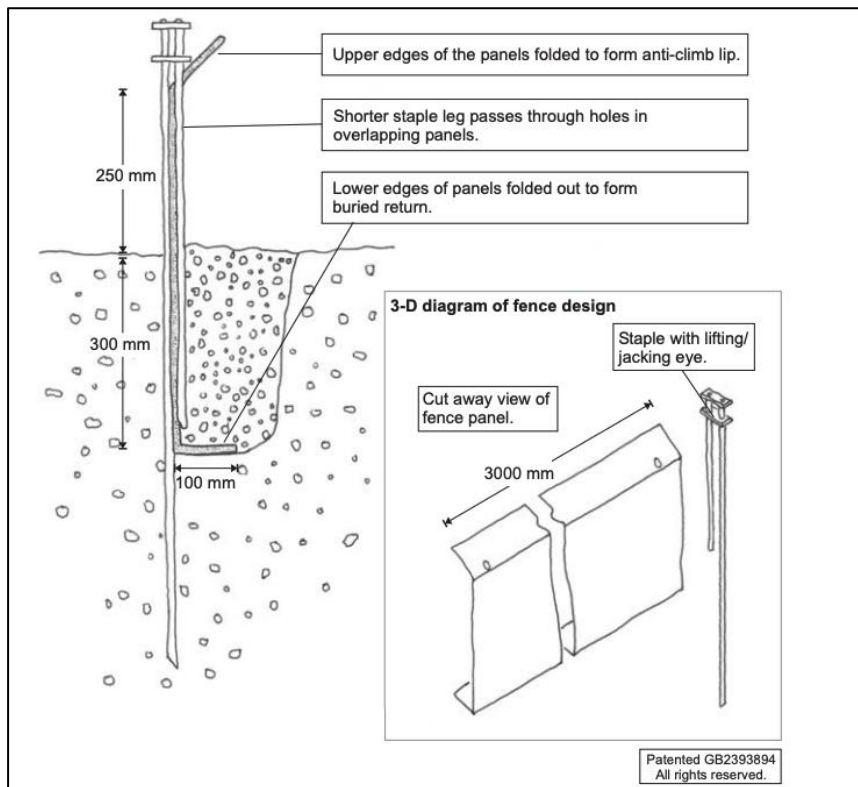


Figure 8. An example of the construction of a semi-permanent reptile exclusion fence, published by the Highways Agency (2005).

Temporary amphibian fencing was installed at the site under licence on 11th May 2026. A trapping and translocation programme is currently ongoing and will run for 25 days. Following the completion of the trapping and when no GCN or very low numbers are being captured, supervised vegetation clearance and ground preparation works will commence.



Photograph 1. A photo taken on 12.05.26 showing the temporary amphibian fencing installed at Land at Parklands.

5 OPPORTUNITIES FOR ENHANCEMENT

The eastern portion of the site is to be protected and retained as minimal intervention habitat, and will be enhanced for reptiles through the creation of log piles and a herptile hibernaculum (see Figure 9). These structures 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 will be laid over the top to provide insulation and retain moisture. This feature would also provide benefits for other species including solitary bees, wasps and saproxylic insects.

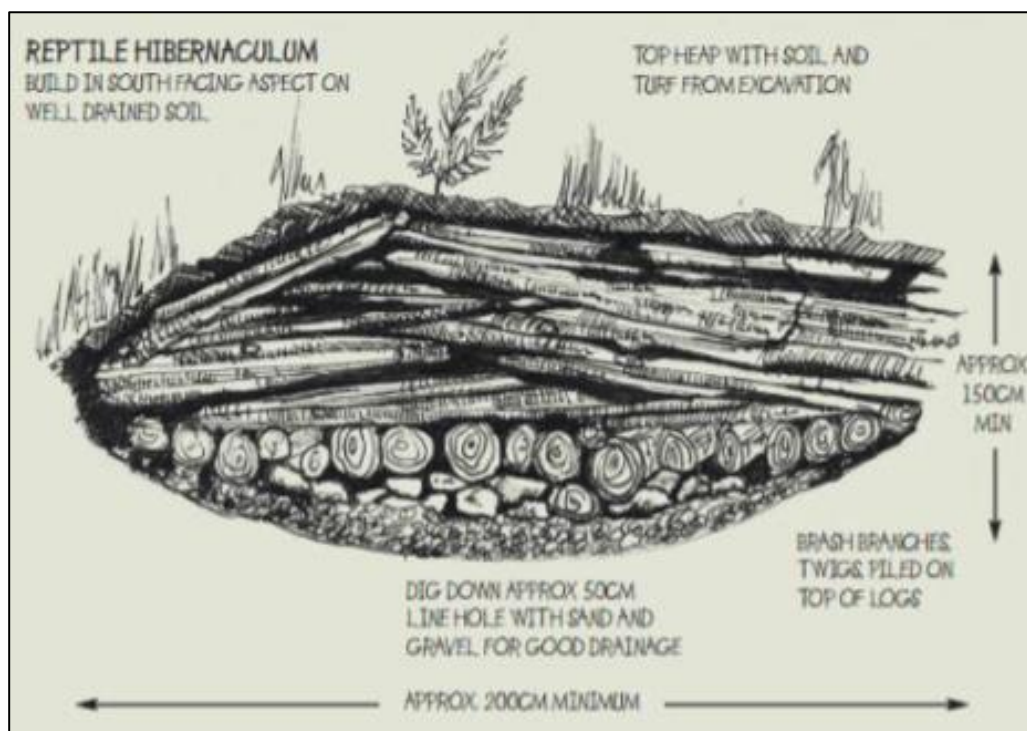


Figure 9. Illustration on how to build a reptile hibernaculum. Image taken from the 'Reptile Habitat Management Guidelines' by Herefordshire Amphibian and Reptile Team and the Herefordshire Nature Trust

6 CONCLUSIONS

During the reptile surveys, slow worm presence was confirmed with a peak count of two adults, with at least three individuals being identified across the surveys. One juvenile grass snake and one female great crested newt were also found. This concludes that there is a low population of both slow worm and grass snake within the site boundary, and terrestrial habitat in use by great crested newt.

The construction of a new dwelling represents an impact that is likely to result in effects that are significant at a site level only. The precautionary mitigation set out in section 4.2, must be followed to ensure that there is not a breach of the Wildlife and Countryside Act.

The enhancement opportunities identified in section 5 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.