

**LAND OFF COBBETT WAY, BOTELY
SOUTHAMPTON**

**REPTILE SURVEY & MITIGATION
STRATEGY**



A Report to: The Trustees of The Mulberry
Investments Pension Scheme

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1. INTRODUCTION

1.1 BACKGROUND

In March 2023, The Trustees of The Mulberry Investments Pension Scheme commissioned MMEcology to undertake a Reptile Survey of suitable habitats at a parcel of land off Cobbett Way, in Botley, Southampton. This assessment is required to inform a planning application associated with a new housing development of up to 34 dwellings, along with new access from Cobbett Way and landscaping. Figure 1 below shows the Illustrative Masterplan.



Figure 1. Illustrative Masterplan.

1.2 SITE DESCRIPTION

The application site is located at National Grid Reference SU 50437 13058, to the south of Broad Oak, between the residential areas of Botley to the east and Hedge End to the west. To the east of the site is residential dwellings with their private gardens, with paddocks located to the west. To the south is a small, wooded area, with dwellings and their gardens forming the northern boundary of the site.

The application site is covered by a grass field, with a mature tree line and dry ditch located immediately outside the western boundary of the site. A small area of woodland is located immediately to the south of the site. The field boundaries support managed bramble scrub, with a small section of a stream located within the north-eastern corner. The site is approximately 2.9 hectares in size.

The site is situated within a semi-urban setting with paddocks to the east, beyond which are densely populated residential buildings. Whilst there is a row of dwellings to the north, beyond Broad Oak is mainly grass fields and wooded pockets, with an industrial estate. To

the south is a mix of grass fields and woodland, with low-density residential buildings. To the east is a small residential area with more grass fields, wooded areas and low-density commercial units. Figure 2 shows the site location plan, with Figure 2a showing the location of the site in the wider landscape.

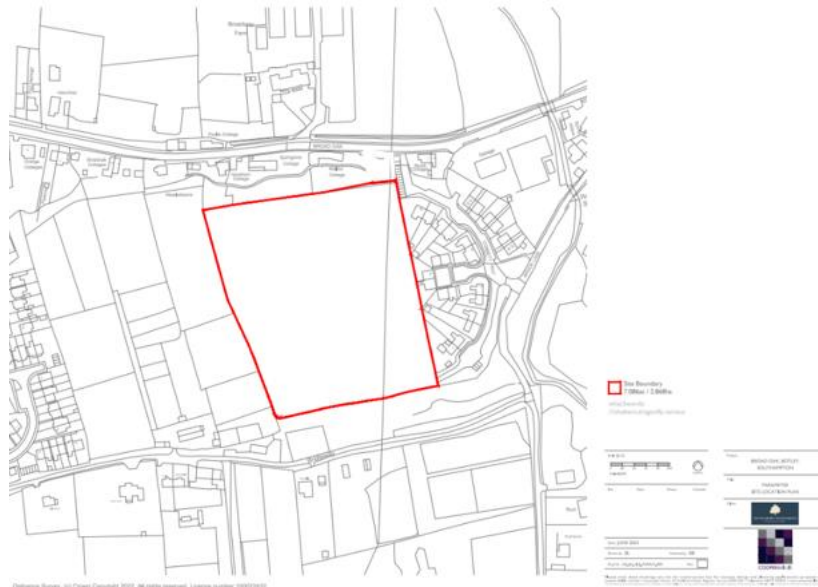


Figure 2. Site location plan



Figure 2a. Location of the proposed site (Source: Google maps)

The main body of the site was covered by unmanaged poor, semi-improved grassland in March 2023 and is considered to provide suitable habitat for reptiles. The site is however periodically used as a paddock and at the end of June/early July 2023, the grassland was used for grazing horses. The boundaries which mainly support managed bramble scrub are sub-optimal for reptiles.

2. METHODOLOGIES

2.1 PRESENCE/ABSENCE SURVEY

A presence/absence survey for reptiles was undertaken in accordance with the best practice methodology detailed in the Herpetofauna Workers Manual (Gent and Gibson, 2003). This consisted of the following works:

- An initial assessment of the habitats on site, in order to identify habitats of potential value to reptile species.
- A total of 85 artificial refugia were installed within the site to facilitate detection of reptiles. These refugia consisted mainly of squares of roofing felt, measuring approximately 500mm x 500mm, with a number of Onduline (corrugated sheets), measuring 1000mm x 1000 mm.
- Seven survey visits to the site to inspect the artificial refugia in suitable weather conditions.

Reptiles are ectotherms, deriving their body heat from the external environment. Therefore, the timing of the survey visits was dictated by the time of year and weather conditions. The surveys were undertaken in suitable weather conditions to maximise the probability of recording reptiles within the site. Suitable weather conditions for undertaking refugia checks are outlined in the Herpetofauna Workers Manual and are summarised in Table 1 below.

Parameter	Value
Temperature	9 - 17° C
Sunshine	Preferable.
Cloud	Little or none, unless on warm days
Wind	Low or none

Table 1. Suitable weather conditions for reptile surveys

In order to provide an assessment of site importance for reptiles, the results of the survey were analysed in the context of Froglife Advice Sheet 10 - Survey Assessment: Key Reptile Sites (Froglife, 1999). This provides a simple methodology for assessing the value of a site to reptile species, based upon the number of species recorded on site and the peak adult count for each species per hectare, when refugia are installed at a density of up to 10 per hectare. The guidelines for assessing the value of the site to reptile species are summarised in Table 2.

Reptile Species	Low Population	Good Population	Exceptional Population
Slow worm	<5 individuals/ha	5-20 individuals/ha	>20 individuals/ha
Common lizard	<5 individuals/ha	5-20 individuals/ha	>20 individuals/ha
Grass snake	<5 individuals/ha	5-10 individuals/ha	>10 individuals/ha
Adder	<5 individuals/ha	5-10 individuals/ha	>10 individuals/ha

Table 2: Reptile population assessment criteria

3. LEGISLATION

All of the UK's native reptiles are protected by law. Common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, adder *Vipera berus* and grass snake *Natrix natrix* are protected under the Wildlife and Countryside Act 1981 (as amended) from intentional killing or injuring. The two rarest species, sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca*, are additionally protected under The Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019, extending the protection to their habitats and against disturbance.

4. RESULTS

On 22 March 2023, a total of 85 reptile refugia were installed and left for at least two weeks before checking, to allow them to 'bed-in'. The location of the refugia is marked on Figure 3. The presence/absence checks were carried out between April and May 2023.



Figure 3. Approximate location of the reptile refugia

Table 3 below summarises the weather conditions and the findings of the presence/absence survey work, with Figures 4 and 5 showing examples of species found on site.

Visit number	Date	Weather & Time	Slow worm	Common lizard	Adder	Grass snake
1	09.04.23	0% (cloud), 12°C (temperature), F1 (wind), Dry (precipitation), 14:00 (time)	-	-	-	-
2	02.05.23	10%, 14°C, F1, Dry, 12:00	-	-	-	-
3	04.05.23	40% with intermittent sun, 14°C, F1, Dry, 11:00	6 Adults (2 Females + 4 Males) 6 Juveniles	-	-	-
4	12.05.23	80% with intermittent sun, 16°C, F2, Dry, 11:00	13 Adults (5 Males + 8 Females) 12 Juveniles	-	-	-

5	19.05.23	90% (rain before survey), 15°C, F1, Dry, 10:30	12 Adults (7 Females + 5 Males) 5 Juveniles	-	-	-
6	22.05.23	5%, Sunny, 16°C, F1, Dry, 10:30	4 Adults (2 Males + 2 Females) 1 Juvenile	-	-	-
7	26.05.23	15°C, F1, 0%, Sunny, Dry, 11:00	3 Adults (2 Females + 1 Male)	-	-	-

Table 3. Presence/absence survey results



Figure 4. Example of slow worms found on site



Figure 5. Example of slow worms found on site

The reptile surveys confirmed the presence of slow worms within the surveyed areas. The reptiles were recorded along all the boundaries, with more concentrations in the north, north-west and south-east. The location of positive records of slow worms is shown on Figure 6 below. No other reptile species were found during the surveys.



Figure 6. Location of slow worm records

Only slow worms were found to be present on site; therefore, the development site could not be considered as a key reptile site as it does not meet any of the criteria detailed in Section 2.4.

As the maximum number of adult slow worms recorded within the surveyed area during one visit was 13, according to Froglife Advice Sheet 10 (1999) a 'Low' population of slow worms is present (i.e. 13 individuals in 2.9ha = <5 individuals/ha).

5. CONCLUSIONS

5.1 SUMMARY OF PROPOSALS

Construction of up to 34 residential units, along with landscaping is proposed. The proposals will result in the removal of the majority of the areas of poor semi-improved grassland on site, with the exception of a relatively large area in the west of the site, dedicated to a green open space.

5.2 FINDINGS OF REPTILE SURVEY

The reptile surveys undertaken between April and May 2023 confirmed the presence of a low population of slow worm on site. During the surveys, a maximum count of 13 adult slow worm were identified during any one site visit. These were identified mainly along the northern, south-eastern and north-western boundaries. No other reptile species were recorded during the surveys.

5.3 IMPACTS

The proposed construction of the residential units will result in the permanent loss of the majority of the areas of suitable habitat for reptiles in the form of poor semi-improved grassland. If unmitigated, the proposed works are likely to result in killing/injury of slow worms in the works footprint. Therefore, to avoid any adverse impacts such as killing or injury and loss of habitat, mitigation measures are required to ensure compliance with relevant wildlife legislation.

6. MITIGATION STRATEGY

In order to achieve the proposed development, loss of the majority of the existing poor semi-improved grassland habitat is unavoidable. An estimated area of 0.63ha of grassland will be retained/created/enhanced, along with 124 new trees, 0.19ha of native scrub planting and 0.12ha of new ponds with associated wetland wildflower meadow planting. Through additional planting/seeding, installation of features such as hibernacula and log piles and management which will increase the carrying capacity of the habitats in the west, north and south of the site, the loss of the areas of grassland habitat on site will be compensated. The grassland in the west will be used as the receptor site for reptiles, with the opportunity for reptiles to disperse to the newly planted areas of scrub in the south, tussocky grassland along the northern boundary, the new residential gardens, the paddocks in the west and woodland to the south of the site. The location of the reptile receptor site is shown in Figure 7.

To ensure that individual reptiles are removed from the area which will become part of the development plot, it is proposed that a programme of capture and exclusion will be implemented as per below:

- The extent of reptile exclusion fencing will be marked out on site (Figure 8).
- Prior to installation of the exclusion fencing, direct search of the fence lines will be carried out by a suitably qualified ecologist.
- The reptile exclusion fence line will be installed around the works footprint to English Nature (2004) specification – Drawing C120756-01 (Figure 10). The exclusion fence will be erected around the works footprint and retained to prevent reptiles from entering the working area once trapping and re-location is complete. The condition of the exclusion fencing will be monitored throughout the trapping programme, and repairs will be carried out as necessary.
- Artificial Cover Objects (reptile refugia) will be installed along the inside of all fence lines to attract reptiles and aid capture. Refugia will consist of tiles of roofing felt approximately 0.50 m x 0.50 m. Approximately 100 refugia will be used.
- The refugia will be checked once a day with trapping and re-location of reptiles for a minimum of 30 consecutive days (with 5 clear days) during reptile active season to the receptor area. Trapping of reptiles will be undertaken during the optimal weather conditions outlined in the Herpetofauna Workers Manual (Gent and Gibson, 1998).
- Upon completion of the trapping period, phased vegetation clearance under the supervision of an experienced ecologist will be carried out to facilitate vegetation stripping.
- The topsoil will then be stripped to make the habitat unsuitable for reptiles. This destructive search will be supervised by an experienced ecologist.
- At the end of the construction period, the exclusion fencing will be supervised by an ecologist.

Reptiles will be re-located and allowed to remain within areas where vegetation is to be retained and enhanced. This includes the area of green open space in the west of the site.

Prior to the commencement of the capture and relocation programme, the receptor site will be made suitable and landscaped for reptiles. This will include the removal of any bramble scrub along the western boundary of the site, planting of native trees, excavation and planting of the ponds, and seeding the area with a species-rich grassland seed mix such as Emorsgate Basic General Purpose Meadow Mixture EM1. This mixture supports 10% wildflowers such as Yarrow *Achillea millefolium*, Common Knapweed *Centaurea nigra*, Oxeye Daisy *Leucanthemum vulgare*, Musk Mallow *Malva moschata*, Ribwort Plantain *Plantago lanceolata*, Salad Burnet *Poterium sanguisorba*, Meadow Buttercup *Ranunculus acris* and Wild Carrot *Daucus carota*, with 90% grasses such as Common Bent *Agrostis capillaris*, Crested Dogstail *Cynosurus cristatus*, Red Fescue *Festuca rubra*, Smaller Cat's-tail *Phleum bertolonii* – Smooth-stalked Meadow-grass *Poa pratensis*. A species-rich tussock grassland such as Emorsgate EM10 or equivalent will also be included along the northern, western and southern boundaries of the site.

An appropriate grassland management for reptiles will be employed, in the form of mosaic mowing on a rotational basis to maintain good structural diversity; this is also essential for achieving a good condition as per the Biodiversity Net Gain criteria for the site. Once the grassland is established, the management will include a main late summer/early autumn hay cut in combination with an early spring mowing if required. Two height cuts of approximately 300mm (50% of the grassland) and 50mm (50% of the grassland) should be adopted.

A single log pile will be created in close proximity to one of the new ponds, along with a hibernacula in the south-western corner of the site, where the grassland joins the new area of scrub planting on site. Approximate location of these features is shown on Figure 8. The specifications follow those shown in Design Manual for Roads and Bridges (DMRB) Annex D Volume 10 Section 4 Part 7 HA 116/05 (Figures 11 and 12).

Population monitoring will give an indication as to the success of the re-location project, as well as indicating if any remedial actions may be required. Therefore, monitoring of the re-located reptile population is recommended to be undertaken for a period of two years after the first occupation of the dwellings on site.



Figure 7. Approximate location of onsite reptile receptor site



Figure 8. Approximate location of exclusion fencing

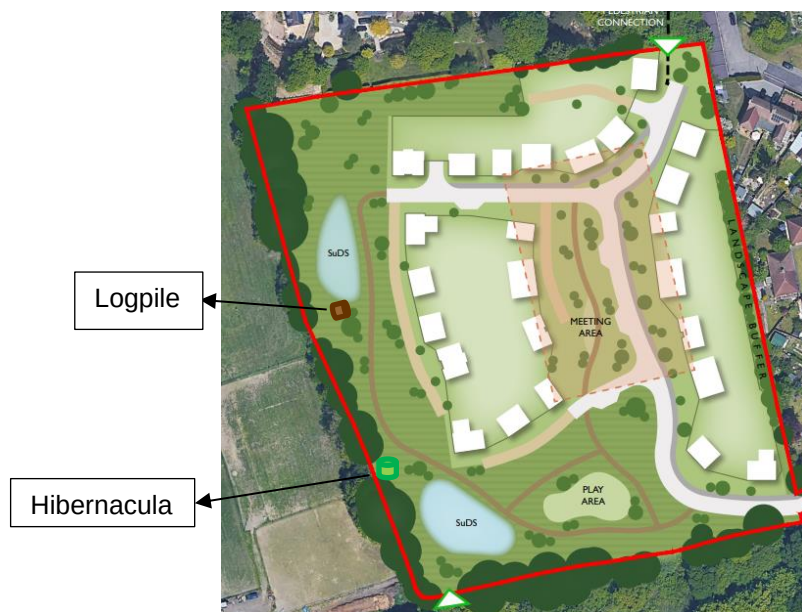


Figure 9. Approximate location of logpile and hibernacula

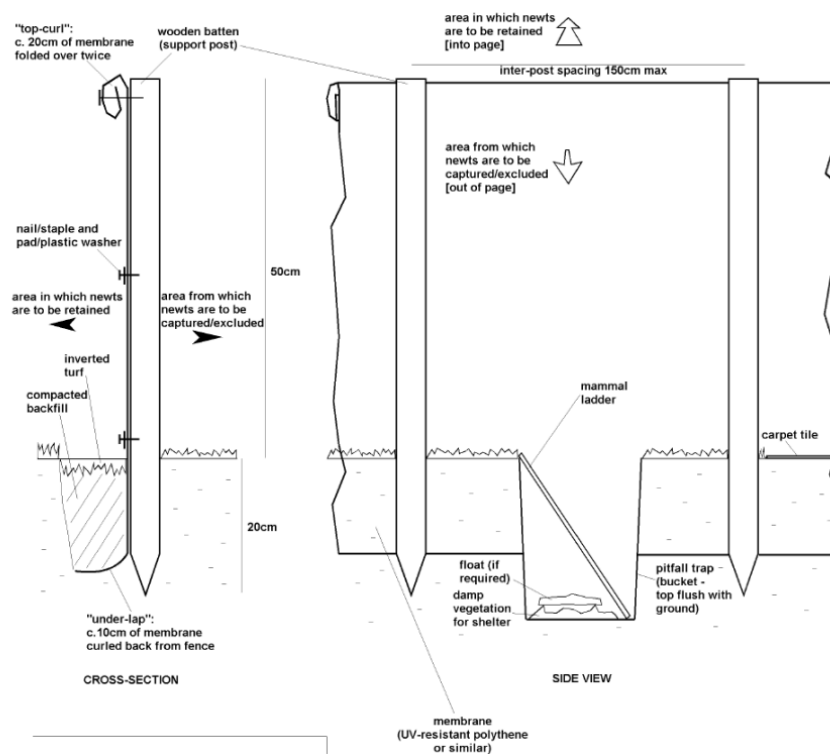


Figure 10. Exclusion fencing specification

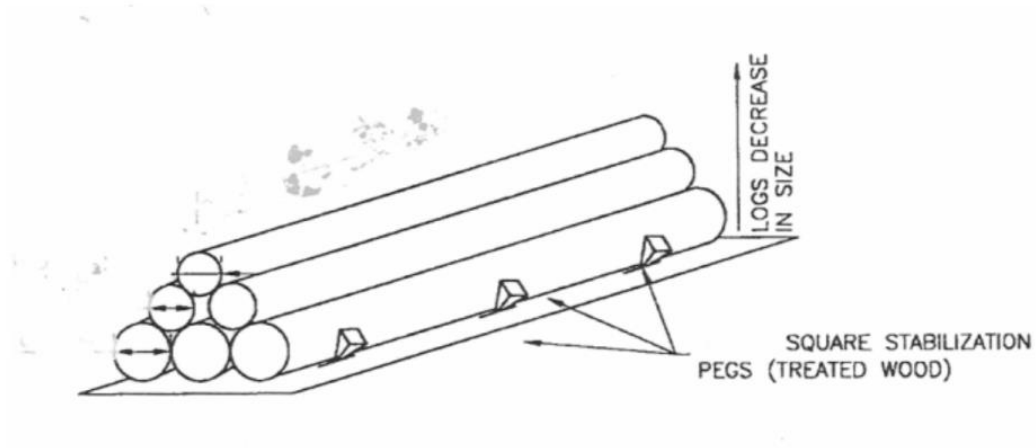


Figure 11. Logpile specification

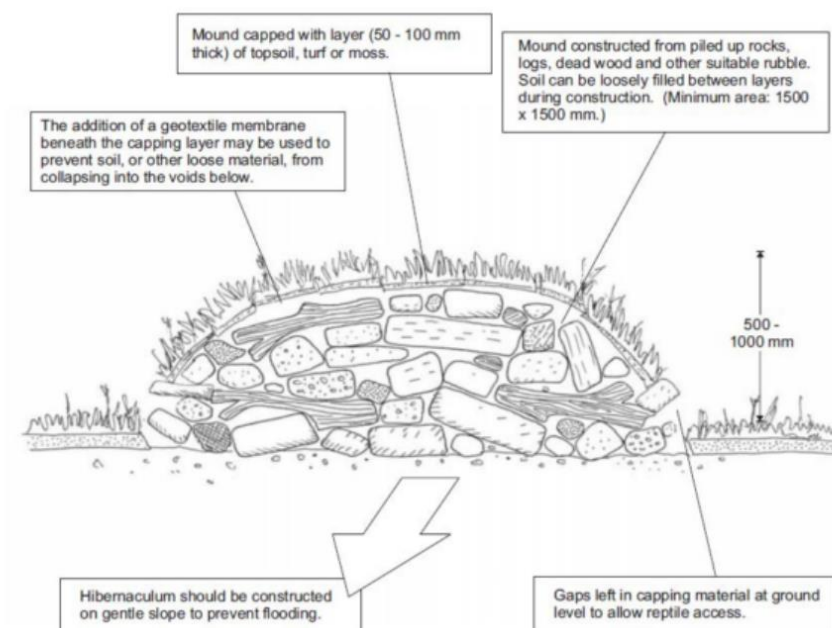


Figure 12. Hibernacula specification

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