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ECOLOGY

TREE PROTECTION FENCING

SITE PREPARATION & CLEARANCE

HABITAT MANAGEMENT & ENHANCEMENT

Report	Reptile Mitigation Strategy
Site Name	Land East of Posbrook Lane, Titchfield (57-unit scheme)
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Client	Foreman Homes Ltd
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1.0 INTRODUCTION

1.1 Background

Reptile survey work was undertaken on the land east of Posbrook lane Titchfield site across 2017 in support of a previous application for 150 new residential dwellings (submitted to Fareham Borough Council under P/17/0681/OA). This application was refused although a new application is being submitted by the client (Foreman Homes) and as such, the existing reptile strategy previously submitted has been amended to support this new application.

1.2 Site Description & Location

The site comprises of a parcel of land located immediately east of Posbrook Lane, PO14 4JD (centred on OS grid reference SU537 051) (**Fig 1**). The west of the site is bounded by Posbrook Lane, the north of residential houses, the east by horse pasture and the Meon River and the south by arable fields. The wider environ is semi-rural with the site residing to the south of Titchfield village.

Figure 1. Google aerial image (2019) with the sites approximate redline boundary.



1.3 Proposed Development

At this stage it is understood that the development will consist of 57 dwellings with associated gardens, landscaping and drives with an access road linking the dwellings to Posbrook Lane.

2.0 RELEVANT LEGISLATION & POLICY

2.1 Nature Conservation Legislation

All of Britain's reptile species are legally protected to some degree. The four "widespread" reptile species (Viviparous Lizard, Slow Worm, Grass Snake and Adder) are protected from killing, injury and sale (including offering/advertising/transporting for sale), including parts or derivatives under the Wildlife & Countryside Act 1981 (as amended). The Countryside and Rights of Way Act (CROW) 2000 strengthened the Wildlife and Countryside Act by the addition of "reckless" offences in certain circumstances, such as where there is a likelihood of a protected species being present.

2.2 Policy

2.2.1 National

Due to their legal protection, Planning Policy also seeks to ensure that reptiles are not harmed as a result of development. National government guidance is provided by National Planning Policy Framework (NPPF, 2019) which places an onus on development to conserve and enhance biodiversity with a requirement for positive biodiversity outcomes wherever possible from the overall development process.

2.2.2 Local

Policy CS4 of the Fareham Borough Local Plan (GI and Geological Conservation) includes a requirement to protect habitats important to the biodiversity of the Borough, including statutory (such as SPAs) and non-statutory (such as Sites of Importance for Nature Conservation SINC)s designated sites. It also states that:

'Where possible, particularly within identified Biodiversity Opportunity Areas, sites will be enhanced to contribute to the objectives and targets set out in the UK, Regional, County and Local Biodiversity Action Plans'.

There is also a requirement to provide GI as part of future development proposals stating:

'GI will be created and safeguarded through:

- *Investing in appropriate management, enhancement and restoration, and the creation of new resources including parks, woodland and trees and wildlife habitats;*
- *Not permitting development that compromises its integrity and therefore that of the overall GI framework'.*

It also details that mitigation to prevent adverse effects on sensitive European sites in and around the Borough will be implemented in conjunction with other local authorities. This mitigation will include provision of alternative recreational space and developer contributions where appropriate. It states:

'Development likely to have an individual or cumulative adverse impact will not be permitted unless the necessary mitigation measures have been secured'.

2.3 Biodiversity Action Plans

Biodiversity Action Plans (BAPs) are the UK's response to the 1992 Convention on Biological Diversity. The UKBAP describes the biodiversity of the UK and contains Action Plans for the most threatened habitats and species. It is implemented at a local level through regional and

local BAPs. However, it should be noted that the *UK Post 2010 Biodiversity Framework* has now superseded the UKBAP.

3.0 SURVEY METHODS

3.1 Desktop Survey

A new data request (September 2019) was submitted to Hampshire Biodiversity Information Centre (HBIC) for records held for protected and notable species from within a 1 km search radius.

3.2 Field Survey

The surveys undertaken by Ecosupport were carried out in accordance with best practice guidelines as stated in various resources (Froglife 1999) (Gent & Gibson 1998) in September (with 2 surveys conducted in early October during suitable weather conditions). Artificial refugia comprising of bitumen roofing felt were distributed throughout the suitable reptile habitats on site. A reptile survey was carried out in September – October 2016 following best practice methodology described in a number of sources (Griffiths & Inns 1998, Froglife 1999, Sewell et al., 2013). Artificial refugia comprising of bitumen roofing felt and corrugated tin were distributed throughout all suitable reptile habitats on site. Seven visits to the site were subsequently undertaken during suitable weather conditions during which all the refugia were checked for the presence of reptiles in combination with a visual observation transect.

Given that the habitats on site have not significantly changed since this survey was undertaken, it was not considered necessary to update these surveys as the status of reptiles on site is unlikely to have changed.

This survey is considered sufficient to identify the presence or likely absence of reptiles on the site. It does not provide sufficient information to allow an accurate assessment of population sizes, however, it does allow inferences to be made as to population size class in combination with other considerations such as the extent and quality of the habitat.

4.0 RESULTS

4.1 Desktop Survey

HBIC held records for the following reptile species from within 1km; Grass Snakes (*Natrix natrix*) (1 record).

4.2 Field Survey

The results of the reptile presence / likely absence survey are presented below in **Table 1** with the locations of the reptiles shown in **Fig 2** (reproduced from Ecosupport, 2017).

Table 1. Reptile Survey results carried out during the 2017 active season.

Date	Slow Worm numbers				Grass Snake numbers
	Male	Female	Juvenile	Yearling	Juvenile
16/9/2017	0	5	1	1	2
19/9/2017	3	5	4	1	1
22/9/2017	2	9	2	2	0
26/9/2017	3	9	8	2	0
30/9/2017	1	5	2	0	0
4/10/2017	1	3	1	0	0
9/10/2017	2	3	10	0	1

Figure 2. Reptile Survey results (Slow Worms located along boundaries indicated by red arrows) and Grass Snakes orange arrows.



4.3 Evaluation

The survey work undertaken is sufficient to allow an estimate of population size class when the results are considered in combination with other factors, such as habitat quality and extent.

Based on the area of suitable habitat for reptiles, the maximum number of adult Slow Worms and Grass Snakes recorded in a single survey (12 adult Slow Worms and 2 juvenile Grass Snakes), it is considered that there is currently a **Good** population of Slow Worms and a **Low** population of Grass Snakes on site (using the Froglife 1999 population valuation criteria).

Both Slow Worms and Grass Snakes are relatively widespread within Hampshire and as such, the site is considered to be **Local Value** for reptiles.

Although the Grass Snakes were recorded outside of the area to be impacted by the new proposed plans, due to their transient nature and the areas of suitable habitat for Grass

Snakes present along the western and northern boundary, it is likely that Grass Snakes also utilise areas which are to be impacted upon by the proposed plans.

5.0 ASSESSMENT OF IMPACTS IN THE ABSENCE OF MITIGATION

5.1 Introduction

This chapter considers the likely ecological impacts (both positive and negative) of the proposals in the absence of mitigation. In many cases, whilst a potential negative impact is identified at this stage, mitigation can be implemented to ensure no residual negative impacts. Correctly identifying the impacts of the development will ensure appropriate and proportionate mitigation to be designed and implemented.

5.2 Site Preparation and Construction Activities

Based on the new layout, the majority of habitat where Slow Worms were recorded will be impacted upon by the proposed works with the subsequent construction of the residential development ensuring that this loss is permanent (approximate area of suitable habitat lost estimated at 300 - 500 m² assuming similar management practices are ongoing across the site). As reptiles are likely to be present during the clearance, this could result in their death and/or injury and with all reptile species protected, this would constitute an offence under the Wildlife & Countryside Act (1981). Given the size of the site, the numbers recorded during the survey and the status of reptiles in the local area, loss of habitat and individual animals would be significant (in terms of their conservation status) within the *local* area.

5.3 Site Operation Activities

The development will result in an increased level of human activity within areas surrounding the site, which would also be used by reptiles. This is likely to result in increased disturbance of reptiles remaining within these areas and may reduce their ability to bask and forage. It may also increase their vulnerability to killing by humans and cats.

6.0 MITIGATION STRATEGY

6.1 Introduction

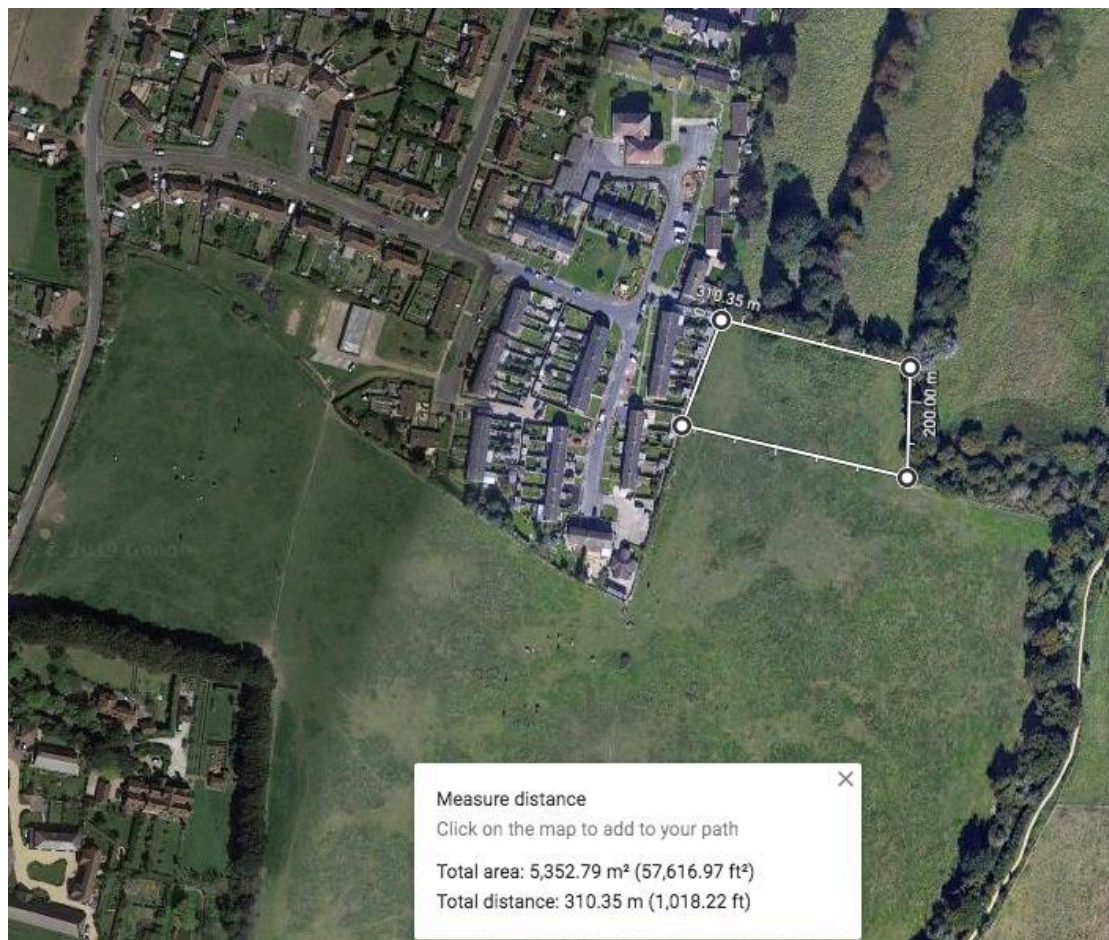
Due to the legal protection relating to reptiles, it is necessary to implement mitigation to ensure these animals are not harmed as a result of the impending construction works and to ensure that there is no net reduction in the conservation status of reptiles in the local area. Therefore, this mitigation strategy has been produced in accordance with best practice guidelines relating to reptiles and development, published by English Nature (2004) and the HGBI (1998).

6.2 Mitigation Proposals

6.2.1 Receptor Area

Wherever possible, reptiles should be retained on site, or released immediately adjacent to the site. *In-situ* relocation schemes, where reptiles are retained in suitable areas of a development site or released into immediately adjacent habitat are preferable (English Nature, 2004). This will be the case for this development as a section of the wider site will be retained for the reptiles located in the north eastern corner (approximate area of 5350 m² (Fig 3)).

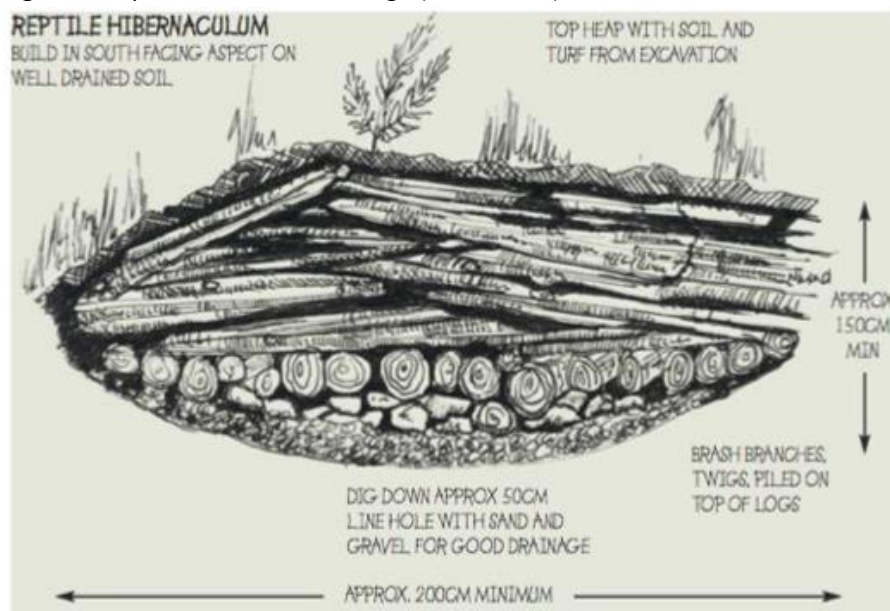
Figure 3. Approximate location of receptor area which is located within the blue line of the site.



6.2.2 Pre-release Enhancements

The receptor already supports semi improved grassland which linkages to suitable habitats to the north and east. Due to the light grazing of the entire field, the grassland does not however support the structure and heterogeneity typically required by reptiles and it will therefore be important to ensure grazing of the area is stopped at least 3 months prior to any reptile relocation works commencing (this will need to be during the active growing season to allow the grassland to develop a longer and more structured sward height). In addition to the cessation of grazing, two artificial hibernacula will be constructed in the northern most corner of the site. These will provide shelter and hibernation opportunities as well as providing a significant habitat resource for invertebrates (a food resource for reptiles). The design of the hibernacula will follow best practice guidelines (HART, 2009), comprising a mixture of rubble and organic materials with a turf cover (**Fig 4**).

Figure 4. Reptile hibernaculum design (HART, 2009).



6.2.3 Capture and Exclusion

Reptile relocation entails the capture of reptiles from the construction area (donor site) and release into the on-site site receptor area. The relocation would be carried out in accordance with guidance published by the HGBI (1998). The methodology used for the capture of reptiles is the same as that used during survey. Artificial refugia made from materials such as roofing felt or corrugated metal allow reptiles to be detected and captured relatively easily. These artificial refugia warm up faster and retain heat for longer than the ground or surrounding vegetation, reptiles, being exothermic will shelter under the refuges in order for their bodies to reach the temperature required for activity. The reptiles can then be captured by experienced field ecologists who regularly visit each refuge during suitable weather conditions.

The construction area would be set up with reptile exclusion fencing where necessary (anticipated to be required around the entirety of the construction area and to include the boundary of the receptor area as per **Fig 3**) to prevent the movement of reptiles from adjacent areas. In accordance with the HGBI guidelines (1998), artificial refugia should be distributed across the site at a minimum density of 100/ha, although given the population size of reptiles on site, a considerably higher density of refugia would be used in order to maximise the catching potential, particularly in areas where the density of reptiles recorded during the survey was found to be high.

Captured reptiles would be transported the receptor area in appropriate containers such as buckets.

6.2.4 Effort and Timing

The guidelines for carrying out reptile captures based on population class sizes are outlined within **Table 2** below adopted from HGBI (1998) where an '**Good**' population of Slow Worms using the Froglife guidance (1999) would correspond to a '**Low**' population for capturing.

Table 2. The minimum capture effort for common reptile species based on HGBI (1998). The figures relevant to this scheme are emboldened and italicised.

Species	Population Size (adult density)	Refugia Density / ha	Minimum No of Trapping Days in Good Weather
Slow Worm	High (> 100 / ha)	100	All suitable days between March and September (min 90 suitable days)
	Medium (> 50 / ha)	100	All suitable days between march and September (min 70 suitable days)
	<i>Low (< 50 / ha)</i>	<i>50</i>	<i>60 Suitable days</i>

Capture visits will continue until 5 consecutive visits have been carried out in ideal weather conditions¹ where no reptiles are captured (or seen), it is considered that the relocation can come to an end. This approach is based on survey guidance (Highways Agency, 2005), which suggests that a minimum of five visits are required to establish whether reptiles are present or likely to be absent from a site, during a standard survey. Therefore, if no reptiles are

¹ Suitable weather conditions are generally considered to be between 10 and 18°C with intermittent sunshine and little or no wind and rain (see Froglife 1999).

recorded after five visits (in optimal survey conditions), it can be concluded that reptiles are likely to be absent from the site (or the capture works complete).

6.2.5 Habitat Manipulation

Once the capture operation is underway, the suitable grassland areas can be manipulated through strimming (to a height no lower than 15 cm) in order to increase reptile capture rates. Typically, this would involve the strimming of areas of suitable habitat to reduce natural cover for reptiles and increase their reliance on artificial refugia for cover. It will also concentrate reptiles into parts of the site where the density of artificial refugia can be increased (i.e. grassland cut in a mosaic pattern). Any habitat manipulation works will be carried out by or under the supervision of an SQE.

6.2.6 Destructive Search

Following the conclusion of the relocation, a destructive search of the site may be necessary. The decision as to whether this would need to be more than a targeted destructive search of localised areas, such as brash piles, would depend on the number of reptiles captured during the relocation exercise in the wider site. The destructive search would entail the stripping of the top layer of the turf using an excavator equipped with a toothed bucket under the supervision of an Ecological Clerk of Works (ECoW). Should any reptiles be identified during this process, they will be captured by the ECoW and placed into a suitable container before being placed into the receptor. This process will be completed during the active reptile season (typically April – mid – late October).

6.3 Post Development Management and Site Safeguard

6.3.1 Protection

The retained area will be safeguarded from development as it will form part of the wider site being set as a Bird Conservation Area. In addition to this, as the wider grassland in the BCA will be subjected to a different management regime, a wooden knee rail will be used on the southern boundary of the receptor to provide a degree of separation between the two areas.

6.3.2 Management

Management works will need to be undertaken to ensure that the receptor area is managed appropriately enhancing its suitability for reptiles. This will be achieved through adopting the following prescriptions:

- Grassland areas should be cut no more than twice per year with the main cut undertaken in summer as a 'hay cut' in late July / early August where the arisings are removed from site. A cut can be also completed in spring (no later than the first week of May) or autumn (by mid-November). **Any cuts will be to a height no lower than 15 cm.** The aim should be to achieve a mosaic of sward heights through rotational cutting of different parts of the grassland on an annual cycle. This will provide a range of thermal niches which will benefit reptiles and wildlife in general.

- Arisings from management should be collected and removed to prevent nutrient enrichment (and subsequent ruderal encroachment) in the grassland.
- The arisings can be composted on site, away from buildings, fences, sheds and sources of ignition: This will provide additional habitat for reptiles and amphibians.
- During each management visit, any rubbish and tipped garden waste (from residents) will be removed.

6.3.3 Funding

The management and on-going monitoring of the receptor site will be funded by Foreman Homes for a period of no less than five years following the completion of the development (during which time ownership may transfer to an alternative organisation).

6.4 Monitoring

It will be necessary to monitor the receptor area post translocation to ensure the efficacy of the capture operation and that the population have successfully established. Monitoring works will involve undertaking population surveys following best practice guidelines (e.g. Froglife 1999) for 5 years post completion (at years 1, 2, 3,4 and 5) with the results passed onto FBC. The funding for the monitoring works will be provided by the developer and can be carried out by an appointed ecologist, or appropriate organisation appointed by the owner / long term manager of the BCA (if they take ownership within the 5-year monitoring period).

7.0 REFERENCES

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