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Reptile Presence/Absence Survey Report and Mitigation Strategy

Land at Toddington Lane, Wick

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Report Summary

1. A reptile presence/absence survey was carried out between 18th May and 22nd June 2022 on land at Toddington Lane, Wick, Littlehampton. The survey was undertaken to ascertain what, if any, reptile species were present on the site as there is a proposal for constructing ten residential units. This was completed further to a repeat Preliminary Ecological Appraisal, carried out by The Ecology Co-op in April 2022 and prior surveys of the site in 2017 which found a low population of slow worms.

2. The reptile surveys were undertaken by James Whitby BSc, Charlotte Hammond BSc, Nick Bayne MSci and Rozel Hopkins MSci.

3. This site comprises a dilapidated industrial building within an area of hardstanding and bare ground. The hardstanding has not been managed recently and, therefore, ruderal vegetation and scrub has begun to establish. Large piles of rubble and building materials are scattered around the centre of the site. The site boundaries are delineated by a mixture of wooden post fence, Heras fencing, a brick wall and concrete blocks in various states of disrepair, as well as a large bank along the northern and western boundaries. Fallen reptile exclusion fencing lines the south-western and western boundaries, allowing a possible avenue for reptiles to re-colonise the site from suitable scrub and ruderal vegetation in the wider landscape.

4. The survey was carried out by placing 20 artificial refugia in suitable areas across the site. A total of seven survey visits were undertaken and the highest count of reptiles from these visits used to estimate the population of each reptile species on the site as low, medium or exceptional.

5. A total of 13 slow worms and four common lizards were observed during the seven reptile surveys, with a peak count of four slow worms and two common lizards identified. Overall, the site therefore supports a low population of these two common reptile species.

6. Section 6 details a Mitigation Strategy, including the proposed off-site receptor site and protection measures for reptiles during construction. This mitigation includes; the development site boundary being fenced off with a rigid semi-permanent reptile-proof fencing and the translocation of reptiles to an off-site reptile receptor site.

Document Control

Issue No	Author	Reviewer	Issue Date	Additions/alterations	Notes
Original	RH	EB	15/07/2022	N/A	
Rev1	RH	SL	25/03/2024	Addition of reptile mitigation and receptor site details	

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1 INTRODUCTION

1.1 Purpose of the Report

This report gives details of a reptile presence/absence survey carried out at land at Toddington Lane, Wick, Littlehampton, BN17 7FU. The grid reference for the site centre is TQ 03403 03856.

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

This survey and report were carried out and produced at the request of Worthing Homes.

1.2 Background

The Ecology Co-operation was commissioned to undertake a reptile survey at land at Toddington Lane, Wick (Figure 1) after potentially suitable reptile habitat was identified during a repeat Preliminary Ecological Appraisal, undertaken by The Ecology Co-operation in April 2022[1] and after prior surveys of the same site in 2017 which found a low population of slow worms[2].

The assessment was carried out further to a proposal for building ten residential units on this site (Figure 2).

1.3 Site Description

This site is situated on the north-eastern outskirts of Wick, West Sussex, with residential housing extending in all directions. An operational train line is situated approximately 25m south of the site. The site itself comprises a dilapidated industrial building within an area of hardstanding and bare ground. The hardstanding has not been managed recently, and therefore ruderal vegetation and scrub has begun to establish (Photographs 1 & 2). Large piles of rubble and building materials are scattered around the centre of the site. The site boundaries are delineated by a mixture of wooden post fence, Heras fencing, a brick wall and concrete blocks in various states of disrepair, as well as a large bank along the northern and western boundaries. Reptile exclusion fencing also lines the south-western and western boundaries, likely leftover from the reptile translocation in 2020; however, this has now fallen over in areas of the southern boundary, allowing a possible avenue for reptiles to re-colonise the site from suitable scrub and ruderal vegetation in the wider landscape.

[1] The Ecology Co-op (2022). Preliminary Ecological Appraisal – Land at Toddington Lane.
[2] The Ecology Co-op (2017). Reptile Presence/Absence Survey Report – Land at Toddington Lane, Wick, Littlehampton

Figure 1. An aerial image showing the location of the site with the approximate site boundary outlined in red. Image produced courtesy of Google maps (map data ©2022 Google).

Figure 2. The proposed development layout plan for ten new dwellings at Land at Toddington Lane. Plan courtesy of MH Architects, dated 27th January 2022 (drawing no.21-097-P02).

Photograph 1a (left) & b (right). Ruderal vegetation with patches of bare ground located around the western sections of the site.

Photograph 2a (left) & b (right). Left – Bramble scrub and ruderal vegetation along the eastern boundary. Right – Evidence of reptile fencing having fallen down along the southern boundary, with further suitable ruderal vegetation and scrub habitat beyond the site boundary.

2 LEGAL PROTECTION

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 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.

3 METHODOLOGY

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 site was surveyed in accordance with the guidance outlined in the *Herpetofauna Workers' Manual* (Gent and Gibson, 2003)[3] and *Advice Sheet 10 – Reptile Survey* (Froglife, 1999)[4]. This involves setting out artificial refugia (reptile 'mats' or 'tins') in 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 10/ha, or 20m apart along linear features. 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 judgement of a suitably qualified and experienced ecologist.

A total of 20 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 18th May to 22nd June 2022. Surveys were undertaken in weather conditions when air temperature was between 9°C and 18°C and avoided strong wind or rain. Weather conditions were recorded at the time of survey.

The survey refugia were placed around the site, focusing on the areas of long vegetation and scrub 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.

The reptile surveys were undertaken by James Whitby BSc, Charlotte Hammond BSc, Nick Bayne MSci, Sophie Cardinal BSc and Rozel Hopkins MSci.

[3] Gent, T. and Gibson, S., (2003), *Herpetofauna Workers' Manual*, JNCC: Peterborough.

[4] Froglife, (1999), *Advice Sheet 10: Reptile Survey* [online] Available at http://www.froglife.org/wp-content/uploads/2014/01/FAS_10.pdf

Figure 3. Location of reptile refugia (identified with red dots and white numbers) at land at Toddington Lane. Image produced courtesy of Google maps (map data ©2022 Google).

4 RESULTS

A total of 13 slow worms and four common lizards were observed during the seven reptile surveys, with a peak count of four slow worms and two common lizards identified. Juvenile and sub-adult slow worms were also recorded at the site, indicating that there is a breeding population. The detailed survey findings, dates and conditions are presented in Table 1 below.

Table 1. Results of reptile survey undertaken on land at Toddington Lane. SW – Slow worm, GS – Grass snake, CL – Common Lizard, A – Adult, Juv – Juvenile, SA – Sub adult, F – Female, M – Male.

Date	Start Time of Survey	Air Temp/ Refugia Temp °C	Weather Notes (cc = cloud cover, BF = Beaufort scale)	Species Total
18/05/22	15:30	17/19	50% cc, BF1 and dry	1 x F A SW 1 x Juv SW
24/05/22	12:25	16/20	80% cc, BF2-3 and dry, but light rain immediately prior to survey	1 x A CL
27/05/22	10:05	17/18	30% cc, BF1 and dry	1 x M A SW
01/06/22	10:35	16/26	90% cc, BF 2-3 and dry	2 x F A SW 1 x M A SW 2 x A CL
07/06/22	10:00	17/25	60% cc, BF0 and dry	1 x A CL
10/06/22	9:00	17/15	30%cc, BF 2 and dry	1 x M A SW 1 x M SA SW 1 x F A SW
22/06/22	9:00	17/25	10% cc, BF 1 and dry	2 x F A SW 2 x M A SW

4.1 Constraints/Limitations to Surveys

Surveys record any fauna that is present at the time of the survey visits. It is therefore possible that some 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 for reptiles. If the habitat conditions change significantly in the intervening period, then it is recommended that the surveys be updated. In addition, the recommendations within this report should be reviewed (and reassessed if necessary) should there be any changes to the red line boundary or development proposals which this report was based on.

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

5 DISCUSSION AND RECOMMENDATIONS

The surveys undertaken at this site identified the presence of reptiles, with a peak count of four slow worms and two common lizards being recorded. No other reptile species or any other amphibian, mammal or invertebrate species of note were identified during the surveys. Following the guidelines in *Advice Sheet 10 – Reptile Survey* (Froglife, 1999), shown in Table 2, it was determined that the site supports a low population of both slow worms and common lizard. The presence of slow worm juveniles confirms that this population is breeding on site.

Table 2. Calculating Populations (from Froglife, 1999).

Species	Low population *Score 1*	Good population *Score 2*	Exceptional population *Score 3*
Slow worm	<5	5 – 20	>20
Common lizard	<5	5 – 20	>20

* Figures in the above 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) by one person in one day.

Given that slow worms and common lizard have been recorded on site, there is the potential for significant adverse effects to arise (e.g. loss of habitat, killing, injury and disturbance during the construction and operational phase) as the whole of the site is to be impacted.

As such, reptile mitigation will need to be implemented at the site to meet the requirements of the NPPF and prevent a breach of the Wildlife and Countryside Act 1981 (as amended).

6 REPTILE MITIGATION STRATEGY

6.1 Fencing Installation

The proposed construction zone will be secured with semi-permanent reptile-proof fencing, utilizing existing fencing materials on the site where possible. As noted in the Preliminary Ecological Appraisal[1], the existing reptile fencing has fallen down in a number of places, allowing reptiles to redisperse back into the site. These access points will be fixed with a tough semi-permanent polypropylene material and ensured that all fencing is to a depth of at least 20cm, with stakes located every two meters.

The fencing will form a continuous line to separate the construction site from all adjacent suitable habitats, including the railway banks at the south, for the duration of the construction period. It will be removed post-construction when all work deemed a risk to reptiles has been completed.

The proposed route for the fencing around the site is shown in Figure 4 and covers the entire west and part of the southern boundaries of the site. Toddington Lane acts as a barrier to reptile movement at the east and therefore no fencing will be required along this boundary.

Figure 4. The proposed fencing route at Land at Toddington Lane, Wick to enclose the construction and landscaping zone of the site is shown in blue. The site boundary is shown in red.

The installation of the fencing would need to be overseen or carried out 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 killing or injury of reptiles during the fence installation.

Construction method:

1. At least 24 hours prior to the construction, the fence route will be hand searched by a suitably qualified ecologist and strimmed (using brush-cutters where necessary) of vegetation to a height of no more than 5cm and a two meter width, with all cuttings raked off and removed. This will ensure that reptiles are discouraged from the fencing construction zone. The strimming process will be completed in two passes, with the grass cut to a height of 10- 15cm on the first pass, to reduce the risk of harming herptiles during the strimming process. In the unlikely event that any nesting birds are found along the fencing route, then strimming will have to wait until the nesting birds and chicks have fledged and moved on.
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 by 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.
4. Excavation work for the fencing trench will be carried out by an excavator or trencher not larger than 1.5 tons in weight to minimise ground disturbance.

5. Fence stakes will be positioned every 2 meters and will be sunk into the ground to a depth of at least 30cm to ensure they are secure.
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 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.
8. 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.
9. After establishment, fence checks would 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.
10. 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.

In order to prevent reptiles from migrating around the southern entrance to the site, the fence will have 'cut backs' on each of its ends (Figure 5). 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.

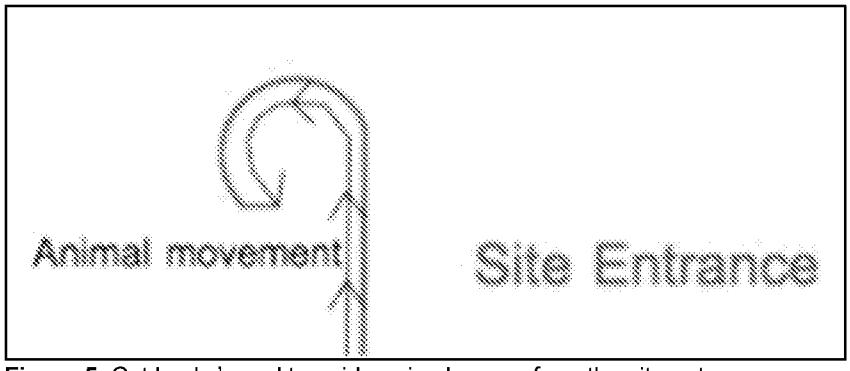

Figure 5. Cut backs' used to guide animals away from the site entrance.

6.2 Receptor Site

All reptiles will need to be translocated to the receptor site as there will not be a sufficient area of suitable well-connected habitat remaining on-site. Littlehampton Golf Course is proposed to be used as a receptor site for the reptile translocation (see Figure 6). This site was used as a receptor previously in 2020 for Toddington Lane, where a total of 20 slow worms were translocated to the site over 48 trapping visits. A monitoring survey of the translocation site was carried out in 2022[5] and found a peak count of one slow worm. It is highly likely that the remaining reptiles have dispersed into the wider landscape, considering the suitable habitat within the wider area, and therefore that this site has not yet reached carrying capacity.

The landowner of the receptor site has been contacted and has agreed for the golf course to be used again as a reptile translocation site.

[5] The Ecology Co-op (2023). *Ref – P2238. Receptor Site Monitoring at Land at Toddington Lane, Wick*

One reptile hibernaculum will be built close to the translocation site to provide hibernation features and refuge for the reptiles. This will 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 (see Figure 7). Buffer zones of long vegetation should be kept around the hibernaculum. The hibernaculum will also provide benefits for other species including solitary bees, wasps, and other invertebrates.

Figure 6. The red line indicates the locations of the proposed reptile translocation area within Littlehampton Golf Course. A yellow star indicates the proposed location of the proposed hibernaculum to be created within the golf course as enhancement of the site. Image produced courtesy of Google maps (Map data ©2024 Google).

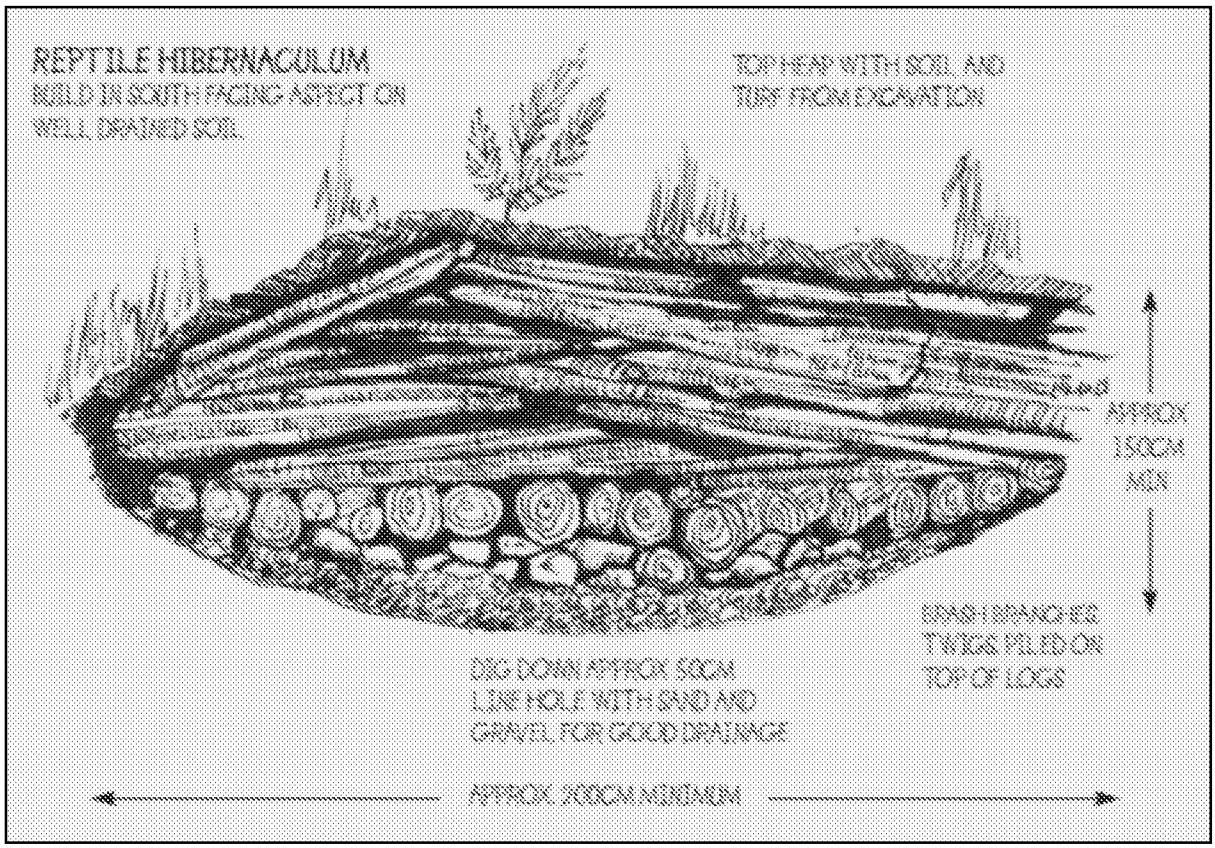

Figure 7. Illustration on how to build a hibernaculum. Image taken from the 'Reptile Habitat Management Guidelines' by Herefordshire Amphibian and Reptile Team and the Herefordshire Nature Trust.

6.3 Reptile Translocation Strategy

A target total of 30 translocation visits will be made between mid-March and October, with reptile refugia (which can be bitumen and or corrugated metal sheets) placed at a density of not less than 50 per hectare of suitable habitat in line with ARGUK guidelines. Translocation visits will be undertaken every working day where possible as long as the air temperature is between 9 and 18°C in the absence of wet or very windy weather. All captured reptiles will be placed into a large smooth-sided bucket with some green hay at the bottom and transported and released immediately into the receptor area.

Although the target number of trapping checks is 30 visits, this should be used as a guide, with the total number of visits cut shorter if there is an early drop in captured numbers and at least 10 visits in suitable weather conditions are made without identifying any reptile presence within the construction zone. After the target of 30 trapping visits has been achieved the trapping visits will continue if reptiles are still being captured. The construction zone will be declared free of reptiles following 5 clear visits.

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