



Reptile Mitigation Strategy

Lineside Industrial Estate

March 2019

www.phlorum.com

Lineside Industrial Estate, Littlehampton

Reptile Mitigation Strategy

March 2019

Malcolm Hollis

Suite 23, Basepoint
1 Winnall Valley Road
Winchester
SO23 0LD

	Name	Date
Written By	Hayley Fuller	28 March 2019
Checked By	Richard Schofield	28 March 2019
Authorised By	Richard Schofield	28 March 2019

This report has been prepared for the exclusive use of the commissioning party and may not be reproduced without prior written permission from Phlorum Limited.

All work has been carried out within the terms of the brief using all reasonable skill, care and diligence.

No liability is accepted by Phlorum for the accuracy of data or opinions provided by others in the preparation of this report, or for any use of this report other than for the purpose for which it was produced.

Contents

.....

1.	Introduction.....	1
2.	Mitigation Strategy.....	2
3.	References	6

Appendix A – Legislation

Appendix B – Reptile Exclusion Fence Design

Appendix C - Hibernacula Design

1. Introduction

Background

- 1.1 Phlorum Limited was commissioned by Malcolm Hollis to carry out reptile mitigation prior to development at Lineside Industrial Estate (hereafter referred to as "the site").
- 1.2 This Reptile Mitigation Strategy document has been compiled in order to guide works in relation to reptiles and follows on from a reptile survey of the site which was undertaken by Phlorum in June 2018 (Phlorum, 2018). The reptile report recorded a peak count of 28 slow worms (*Anguis fragilis*) and 22 common lizards (*Zootoca vivipara*), which equates to an exceptional population for both based on the current guidance (Froglife, 1999). British reptiles are protected under the Wildlife and Countryside Act 1981 (as amended) and this strategy has been produced to mitigate any impacts from development activities.
- 1.3 Due to the small size of the site which measures approximately 0.35 hectares it is not considered feasible to retain sufficient habitat for the reptile population, either during or post construction. On this basis was recommended that all reptiles are translocated away from the development footprint to a suitable receptor site prior to works.
- 1.4 This report details a working methodology which aims to avoid any negative impact to reptiles within the works area. The report also sets out some basic on-site precautions for contractors in order to minimise any risk to reptiles.
- 1.5 This report also provides details on the receptor site and suggests site enhancement measures for the chosen receptor site which will aim to augment the quality of this area for reptiles.
- 1.6 Development proposals for the site involve the erection of 4 employment units with associated areas for car parking, service yards and landscaping.

Site Description

- 1.7 The site is situated in Lineside industrial estate with numerous businesses located east and south of site. There is a large Tesco Superstore located approximately 30m southwest of site, on the other side of the railway line and beyond the A529, lies the River Arun.
- 1.8 The site is located approximately 10m east of the A529 Road, and is bounded by a railway line along the sites south western border and by Eldon Way to the east. The site is predominantly overgrown with grasses, nettles and other small plants. There are also a number of trees on site.

2. Mitigation Strategy

Outline

- 2.1 Due to the known presence of reptiles within the proposed development site, it is recommended that a translocation is conducted prior to any ground works commencing. Translocation is the relocation of individuals from a donor site to a receptor site.
- 2.2 In order to successfully trap reptiles on the site, a series of artificial refugia in the form of sections of roofing felt will be placed within all areas of suitable habitat. Guidelines state that capture effort may be started once reptiles have emerged from hibernation and are fully active; between mid-March to October weather dependant (HGBI 1998). The translocation can commence once the traps have been in-situ for at least seven days.
- 2.3 Current guidelines (HGBI 1998) state that the minimum recommended capture effort for an exceptional population of slow worms, as found to be present at this site (Phlorum,2018), is approximately 90 capture visits. These visits must be carried out between March and September.
- 2.4 Temporary reptile exclusion fencing will be installed around the development boundary in order to restrict movement of reptiles onto the site from the surrounding habitats for the duration of the works. On-site habitat management will be undertaken by carrying out the phased removal of vegetation to maximise the capture efficiency of reptiles within the site.
- 2.5 All individuals captured will be released to the selected receptor site at Littlehampton Golf Club. More information about this area is provided in the Receptor Site section below.
- 2.6 Following the end of the capture effort, a fingertip search of the donor site will be carried out in order to complete the process by destroying any remaining reptile habitat and capturing any remaining animals.

Habitat Management

Receptor Site

- 2.7 Littlehampton Golf Club lies 1.5km south east of the site and covers an area of approximately 43 hectares. Within the area covered by the golf course there are extensive grassland areas of greens and rough, scrubby and wooded margins and a tributary of the River Arun which is more than 1km long and a pond of approximately 0.1ha. This assemblage of habitats offers excellent reptile habitat. Although the habitat is very suitable for reptiles, we recommend that additional hibernacula and log piles are provided to provide additional support for the species. The number and location of these will need to be agreed with the Golf Club. Ideally we would be looking to install a minimum of one log pile and one hibernacula.

Temporary Reptile Exclusion Fencing

- 2.8 A temporary reptile exclusion fence of standard design will be installed around the site boundary. The fence will serve to exclude any individuals outside the development area.
- 2.9 The design of the fencing must be in accordance with the specification set out in the Great Crested Newt Mitigation Guidelines (Natural England, 2001) and installed under an ecological watching brief to ensure correct installation. The fence should be made of UV resistant polythene approximately 500mm in height and buried 200mm deep into the ground. There should also be a turn out or roll down at the top of the fence facing out from the working area. A diagram of the fencing specification is included in Appendix B.
- 2.10 The reptile exclusion fence will be retained throughout the construction phase to prevent any reptiles from re-colonising the works area during and following the translocation. The integrity of the fence should be checked on a weekly basis by designated site staff and any damage should be repaired immediately.
- 2.11 Following completion of the development, the exclusion fencing will be removed under an ecological watching brief.

Reptile Translocation

Heat Traps

- 2.12 Artificial refugia will be placed at initial densities of approximately 100 refugia per hectare throughout all suitable habitat. This is the recommended density for a medium or high reptile population (Herpetofauna Groups of Britain & Ireland (HGBI)).
- 2.13 Artificial refugia will be made from sections of roofing felt which will be cut to 1m x 0.5 m. The density of heat traps may be increased and/or rotated around the site during the course of the translocation to maximise capture efficiency.

Capture Visits

- 2.14 The ecologist will attend the site either once or twice a day depending on the weather conditions at the time of the visit. A route will be established around the site that will enable each refugia to be checked at least once during each capture visit.
- 2.15 All captured reptiles will be placed in pre-prepared, smooth sided, air vented plastic buckets which will be lined with leaf litter and/or grass for transportation and secured with well fitted lids.
- 2.16 The species, sex, life stage and the location of all individuals collected and observed will be recorded. Captured individuals will be transported to the receptor site as soon as possible after capture. Reptiles from different species and adults and young of the same species will remain separate from each other throughout the process in order to avoid unnecessary stress to the animals.
- 2.17 The capture effort will take place five days a week during periods of suitable weather conditions. The capture effort will continue until there have been five clear capture visits with no reptiles either being caught or sighted. When this point is reached a fingertip search of the site will be undertaken.

Vegetation Clearance: First Phase

- 2.18 In order to help with the capture process the vegetation on site will be gradually reduced.
- 2.19 In the first phase of habitat management, all standing vegetation will be reduced in height to approximately 200mm above ground level. Vegetation will be cleared using hand tools, such as chainsaws and strimmers. All cut vegetation will be removed from the site.

Vegetation Clearance: Second Phase

- 2.20 The second phase of habitat management will be undertaken when reptile capture rates have dropped off, at a point decided upon by the project ecologist after studying the catch data. Grass and scrub vegetation will be reduced throughout the area and cut to ground level. Depending on the catch data, small 'islands' of uncut vegetation may be retained as refuge habitat to concentrate individuals for capture. The ecologist will determine whether this is required at the time.

Finger Trip Search

- 2.21 After 5 clear visits a fingertip search of the area will be carried out.
- 2.22 The search will entail the careful removal by hand of all potential refugia such as rubble piles, large piece of debris and logs in order to capture any sheltering reptiles. Any debris will then be moved out of the capture area.

Reptile Release

- 2.23 The welfare of all animals captured will be taken account of at all stages of the process.

- 2.24 Individuals will be released to the receptor site as soon as practicable immediately following each of the capture visits.
- 2.25 Individuals will be released into suitable cover and in suitable temperatures to enable basking so that they can reach a suitably active temperature prior to the end of the day. No animals will be released past the time of day when ambient temperatures have fallen too far to restrict this activity.

Reptile Population Monitoring

- 2.26 Provided agreement can be obtained with the Golf Club, post translocation monitoring will be carried out for one year following the translocation to determine how translocated reptiles are using the receptor site and whether they are successfully breeding.
- 2.27 The survey methodology will follow that devised for presence/absence surveys and in accordance with accepted standards as set out in Froglife (1999), Hill et al (2005) and English Nature (2004).
- 2.28 The survey of the receptor site will be undertaken between March and October, in the active period for reptiles, in suitable weather conditions; with the optimum months for survey considered to be April, May and September (Froglife 1999). Surveys should be spaced throughout the survey season.
- 2.29 The monitoring survey will involve a combination of visually searching for reptiles (direct observation) and the use of artificial refugia which should be placed throughout areas of suitable reptile habitat. Refugia should comprise individual 0.5m² (approximately) sections of roofing felt.
- 2.30 A total of seven survey visits will then be undertaken in suitable weather conditions, that is, where temperatures are between 9°C and 20°C, with little rain or wind. Visits should be carried out, where possible, between the hours of 08.30-11.00 or 16.00-18.30, which are the optimum times for recording reptiles, although the time of day may vary slightly according to weather conditions.

3. References

- ❖ English Nature. (2001). Great Crested Newt Mitigation Guidelines. Peterborough: Natural England.
- ❖ English Nature (2004) Reptiles: Guidelines for Developers. Peterborough: Natural England.
- ❖ Froglife (1999) Advice Sheet 10: Reptile Survey. An Introduction to Planning, Conducting and Interpreting Surveys for Snake and Lizard Conservation. Froglife Advice Sheet 10. Halesworth: Froglife.
- ❖ Herpetofauna Groups of Britain and Ireland (HGBI) (1998) Evaluating Local Mitigation/ Translocation Programmes: Maintaining Best Practice and Lawful Standards. HGBI Advisory Notes for Amphibian and Reptile Groups (ARGs). Halesworth: HGBI, c/o Froglife. Unpublished.
- ❖ Hill, D. Fasham, M. Tucker, G. Shewry, M. Shaw, P (2005). Handbook of Biodiversity Methods – Survey, Evaluation and Monitoring. Cambridge: Cambridge University Press.
- ❖ Joint Nature Conservation Committee (2003) Herpetofauna Workers' Manual. Peterborough: JNCC.
- ❖ Phlorum (2018) Reptile Survey – Lineside Industrial Estate June 2018. Unpublished report, June 2018.

Appendix A

Legislation

Legislation

This section contains information pertaining to the legislation and planning policy applicable in Britain. This information is not applicable to Northern Ireland, the Republic of Ireland the Isle of Man or the Channel Islands. Information contained in the following appendix is provided for guidance only.

Species

The objective of the EC Habitats Directive¹ is to conserve plants and animals which are considered to be rare across Europe. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2010 (as amended) (formerly The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) and The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended).

The Wildlife and Countryside Act 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and also implements the obligations set out for species protection from the Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.

Various amendments have been made since the Wildlife & Countryside Act came into force in 1981. Further details pertaining to alterations of the Act can be found on the following website: www.opsi.gov.uk. Key amendments have been made through the Countryside and Rights of Way (CRoW) Act (2000) and Nature Conservation (Scotland) Act 2004.

There are a number of other legislative Acts affording protection to species and habitats. These include

- ❖ Countryside and Rights of Way (CRoW) Act 2000
- ❖ Deer Act 1991
- ❖ Natural Environment & Rural Communities (NERC) Act 2006
- ❖ Protection of Badgers Act 1992
- ❖ Wild Mammals (Protection) Act 1996

Herpetofauna (Reptiles and Amphibians)

The following species receive full protection under the The Conservation of Habitats and Species Regulations 2010 (as amended) through their inclusion on Schedule 2.

- ❖ Sand lizard (*Lacerta agilis*);
- ❖ Smooth snake (*Coronella austriaca*);
- ❖ Natterjack toad (*Epidalea calamita*);

¹ Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora

- ❖ Great crested newt (*Triturus cristatus*); and
- ❖ Pool frog (*Pelophylax lessonae*).

Under this legislation, Regulation 41 prohibits:

- ❖ deliberate killing, injuring or capturing of species listed on Schedule 2;
- ❖ deliberate disturbance of any Schedule 2 species as to impair their ability:
 - (i) to survive, breed, or reproduce, or to rear or nurture young; and
 - (ii) to hibernate or migrate.
- ❖ deliberate disturbance of any Schedule 2 species as to affect significantly the local distribution or abundance of the species;
- ❖ deliberate taking or destroying of the eggs of a Schedule 2 species;
- ❖ damage or destruction of a breeding site or resting place; and
- ❖ keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part of a species.

With the exception of the pool frog, these species are also currently listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this Act, they are additionally protected from:

- ❖ intentional or reckless disturbance (at any level);
- ❖ intentional or reckless obstruction of access to any place of shelter or protection; and
- ❖ selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of herpetofauna are protected solely under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). These species include:

- ❖ Adder (*Vipera berus*);
- ❖ Grass snake (*Natrix natrix*);
- ❖ Common lizard (*Zootoca vivipara*); and
- ❖ Slow-worm (*Anguis fragilis*).

Under this legislation, for these species it is prohibited under Section 9(1) & (5) to:

- ❖ intentionally (or recklessly in Scotland) kill or injure these species; or
- ❖ sell, offer or expose for sale, possess or transport for purpose of sale these species, or any part thereof.

The following species are listed in respect to Section 9(5) of Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) which only affords them protection against sale, offering or exposing for sale, possession or transport for the purpose of sale:

- ❖ Common frog (*Rana temporaria*);
- ❖ Common toad (*Bufo bufo*);
- ❖ Smooth newt (*Lissotriton vulgaris*); and

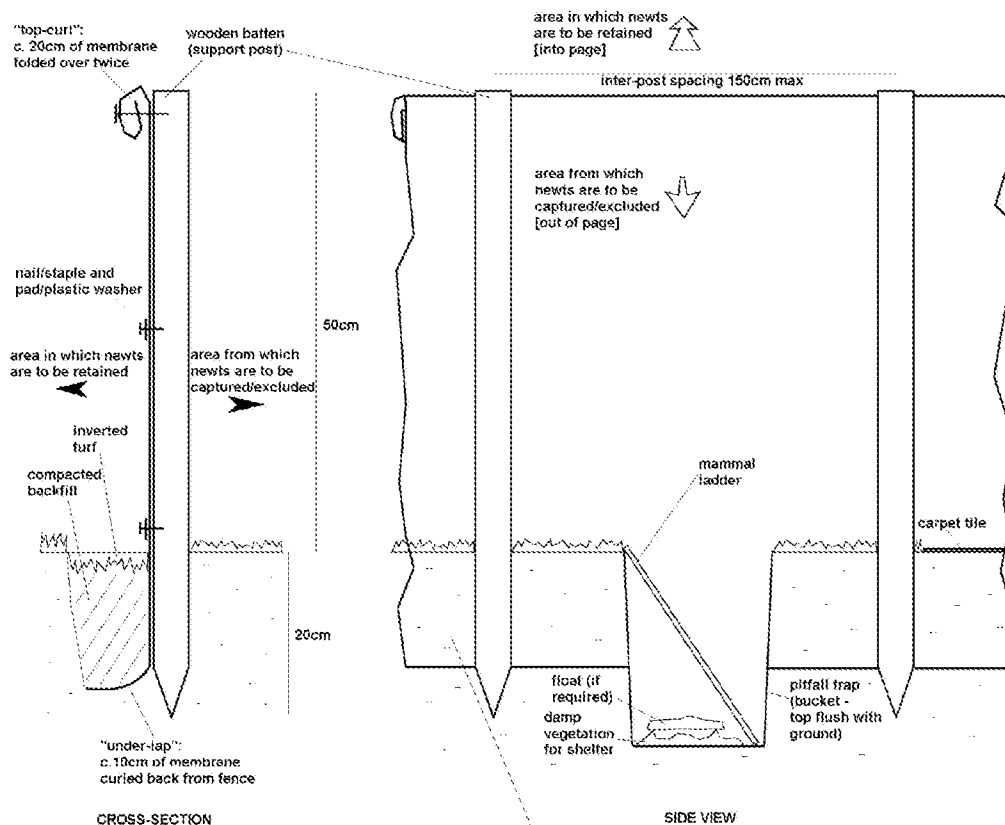
☒ Palmate newt (*L. helveticus*).

Appendix B

Reptile Exclusion Fence Design

Reptile Exclusion Fence

FIGURE 1: Reptile exclusion fence design: Adapted from Natural England Great crested newt mitigation guidelines (2001).

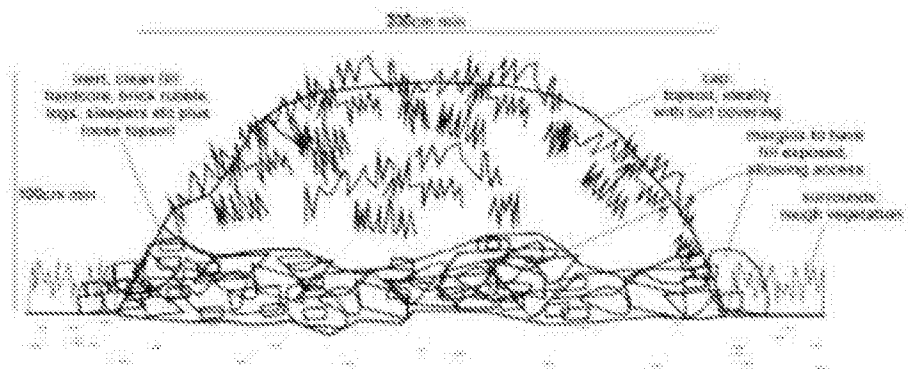


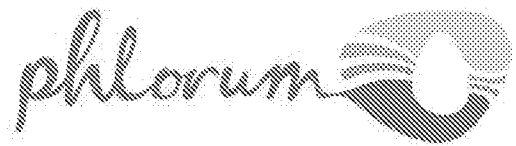
Appendix C

Hibernacula Design

Hibernacula Design

Figure 4: Suggested hibernacula design: Adapted from Natural England Great crested newt mitigation guidelines (2001).





Phlorum Limited

Head Office & Registered Office:

Unit 12

Hunns Mere Way

Woodingdean

Brighton

East Sussex

BN2 6AH

Northern Office:

Ground Floor

Adamson House

Towers Business Park

Wilmslow Road

Didsbury

Manchester

M20 2YY

Western Office:

One Casplan Point

Pierhead Street

Cardiff Bay

Cardiff

CF10 4DQ

Registered in England S. 924-Pes. Reg. No. 4967156