



Eastleigh HF&RS HQ,
New LFF

Reptile Survey & Mitigation
Strategy

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Report	Reptile Survey & Mitigation Strategy
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1.0 INTRODUCTION

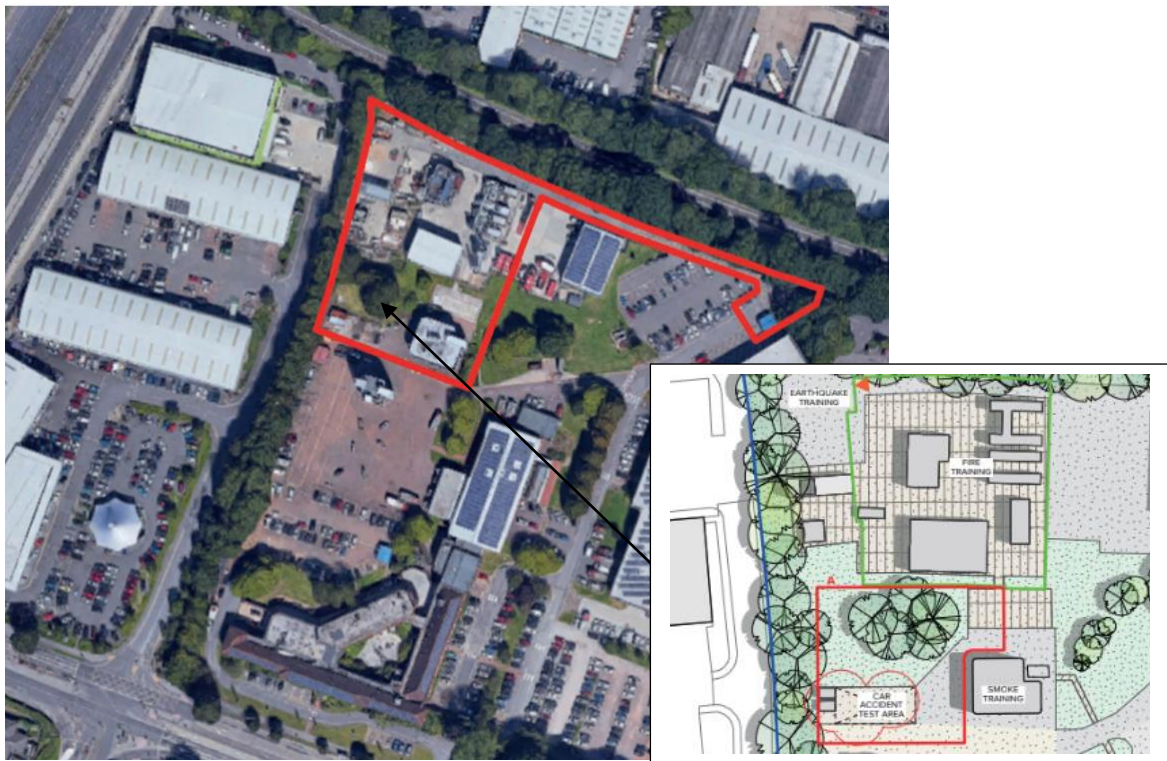
1.1 Summary

The site known as Eastleigh HF&RS HQ (hereafter referred to as 'the site') has been subject to a suite of ecological survey work in support of an application for a new live fire facility. As part of this work, a reptile survey was undertaken by Ecosupport 2022 which identified a 'low' population of Slow Worms (*Anguis fragilis*) on site. As reptiles are legally protected in the UK and their presence is a material consideration when assessing a planning application, it is necessary to ensure they are not harmed as a result of development-related activities. This mitigation strategy details the measures which will be undertaken to avoid harm to reptiles during the development and maintain their conservation status within the local area.

1.2 Site Description

The site is located at Eastleigh HF&RS HQ, SO50 9SJ (**Fig 1**) (Grid Reference SU44231962). The site is bound to the north by the railway line and in all other directions by industrial properties. The majority of the surrounding landscape consists of the residential and industrial properties associated with Eastleigh and to the west is the M3.

Figure 1. Approximate site boundary (redline) with the extent of the area proposed for the new LFF also indicated (Google Earth, 2022)



1.3 Brief Description of the Proposals

The development proposal is to remove the mound and some trees to the east of the site and to build a new Live Fire Facility (LFF).

1.4 Relevant Legislation and Policy

1.4.1 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.

1.4.2 Policy

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) 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.

1.4.3 Local – Eastleigh Borough Council

New Strategic Policy S10 'Green Infrastructure' is subject to proposed amendments that are currently out to public consultation. These include re-numbering the Policy to S9 Green Infrastructure which is still to seek the provision of connected habitats, linking the network of designated sites and existing priority sites.

This new strategic policy cross-refers to new Policy DM11 Nature Conservation which is also proposed to be amended to read...

'Policy DM11, Nature conservation

General Approach

1. The Council will work with statutory and voluntary agencies and developers, and will determine planning applications, to:

a. Protect, conserve and enhance all:

i. international, national and local nature conservation designations; and

ii. networks of natural habitats and features, including the Local Ecological Network, Priority Biodiversity Areas and Priority Biodiversity Links, watercourses, wetland complexes, woodland trees, and trees and hedgerows important to biodiversity and local character;

and facilitate their adaptation to climate change wherever possible;

b. Assist in achieving national, county and local biodiversity targets as set out in Biodiversity Action Plans (BAPs);

c. Seek a net gain of biodiversity on all development sites (including sites for redevelopment) through the protection, enhancement and connection of existing and provision of new habitats and features of nature conservation interest compatible with the native biodiversity characteristics of the Borough, having regard to local geodiversity and soils; and

d. Contribute to major elements of the PfSH Green Infrastructure Strategy and other strategies for the provision and enhancement of multifunctional green infrastructure including green routes, ecological networks and biodiversity enhancements (see strategic policy S910).

Priority habitats, protected and priority species and the local ecological network

5. Development will not be permitted if it is likely (either individually or in combination with other developments) to have a direct or indirect adverse effect on priority habitats, protected or priority species, or on the local ecological network unless it can be demonstrated that:

- a. there are no alternative solutions;*
- b. the adverse effects are unavoidable;*
- c. measures are taken to mitigate or, as a last resort, compensate for the adverse effects;*
- d. there is an overall biodiversity net gain; and*
- e. if there are any residual adverse effects, the benefits of the development clearly outweigh the adverse effects on priority habitats, priority and protected species, and the local ecological network.*

Surveys

8. Development will not be permitted unless it can be demonstrated that:

- a. there have been thorough habitat and species surveys;*
- b. the great crested newt strategic survey and strategy have been considered in all developments within 500m of a great crested newt pond; and*
- c. the strategic bat trapping survey has been considered in all developments within the locality of a woodland or connected habitat networks.'*

2.0 METHODOLOGY

2.1 Survey Methodology

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 June 2022. Artificial refugia comprising of bitumen roofing felt were distributed throughout the suitable reptile habitats on site. The distribution of 30 pieces of refugia throughout the identified suitable habitat 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.

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.

3.0 BASELINE CONDITIONS

3.1 Field Survey

The results of the reptile presence / likely absence survey are presented below in **Table 1** with the survey refugia distribution and numberings provided in **Fig 2**.

Table 1. Results of the reptile surveys undertaken on-site during June - July, 2022 F = Adult Female, M = Adult Male, SA = Sub Adult, J = Juvenile and SW = Slow Worm.

Date	Start Time	Air Temp (°C)	Wind (Beaufort)	Cloud cover (%)	Slow Worms				Total (all SW)	Total (excluding SA and J)	Mat No
					AM	AF	SA	J			
20/06/2022	09:20	14	1	30	0	2	0	0	2	2	9, 8
22/06/2022	09:05	16	1	10	0	0	0	0	0	0	-
24/06/2022	09:45	17	1	80	0	0	0	0	0	0	-
29/06/2022	09:25	16	2	75	0	0	0	1	1	0	5
01/07/2022	09:10	14	3	80	0	0	0	0	0	0	-
04/07/2022	09:05	16	2	75	0	0	2	0	2	0	30, 8
06/07/2022	09:15	15	1	70	0	0	0	0	0	0	-

Figure 2. The approximate locations of reptile mats (numbered 1-31) set out on site.



3.2.1 Evaluation

Given the size of the suitable areas of habitat, the number of refugia deployed and the maximum count of adults (which was 2 during the penultimate check), a '**Low**' population of Slow Worms (as defined by the Froglife guidance 1999) is present. Slow Worms are however relatively widespread in within Hampshire and as such the site it is considered to be **Local Value** for reptiles.

4.0 ASSESSMENT OF IMPACTS IN THE ABSENCE OF MITIGATION

4.1 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.

4.2 Site Preparation and Construction Activities

Based on the latest layout, none of the habitat where Slow Worms were recorded can be maintain. Therefore, site clearance works would result in the loss of some areas of reptile habitat. Subsequent construction of the residential development would ensure this loss is permanent. Should reptiles be present during the clearance of these areas, this could result in their death and/or injury. As all reptile species are protected, this would constitute an offence under the Wildlife & Countryside Act (1981). Given the size of the suitable habitat on site, the low numbers recorded during the surveys and the status of Slow Worms in Hampshire, the loss of habitat and individual animals of these species would be significant (in terms of their conservation status) at the **Local** level.

4.3 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.

5.0 MITIGATION STRATEGY

5.1 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 Gent & Gibson (1998) and the HGBI (1998).

The desirable approach is to avoid development within the areas used by reptiles. If this is not possible, reptiles should be moved to areas within the site that are to be retained, enhanced and managed to provide suitable habitat (relocation). The steps in the mitigation strategy for reptiles are as follows:

- Step 1:** Identification of suitable release area. If a separate site is to be used, it may be necessary to undertake a reptile survey of any potential receptor site to establish the status of existing reptile populations on the site;
- Step 2:** Production and agreement of mitigation strategy;
- Step 3:** Habitat creation, enhancement and/or management of receptor site area (if required);
- Step 4:** Set up of development site with appropriate numbers of artificial refugia and reptile exclusion fencing;
- Step 5:** Capture of reptiles on site and translocation/relocation. This stage must take place between March and September, in order to include the optimal period for reptile capture;
- Step 6:** Destructive search of suitable natural reptile refuges;
- Step 7:** Production of completion report;
- Step 8:** Monitoring success of mitigation.

5.2 Mitigation Strategy Overview

The overall aim of the mitigation strategy for this development will be the identification of a suitable receptor area on site, the subsequent management of this area to maintain and increase its suitability for reptiles and then capture and relocate any reptiles within the wider site into this area.

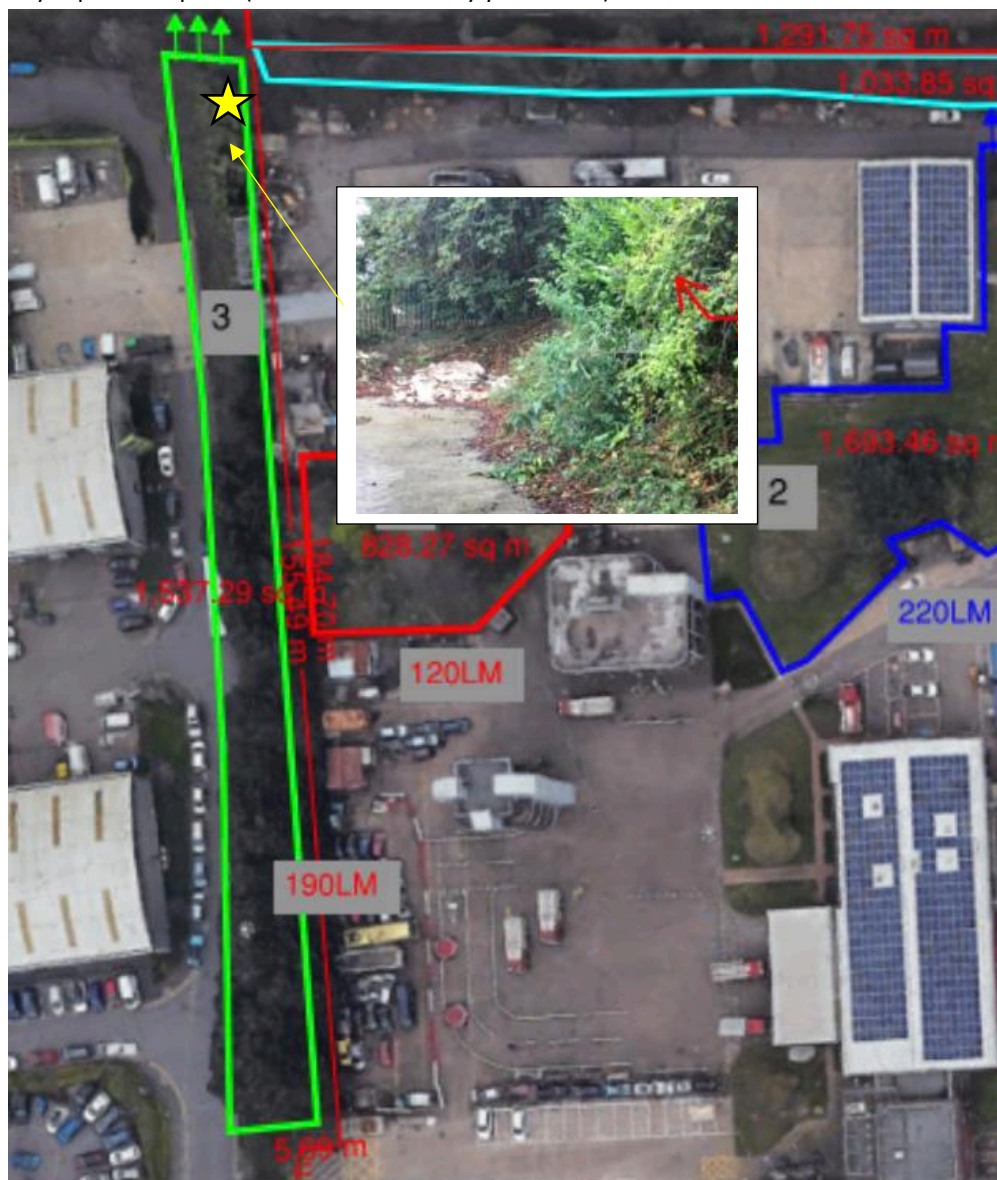
5.3 Receptor Site

5.3.1 Location and Description

Following discussion with the EBC ecologist (Lisa Malter), it has been decided that the reptiles will be kept on site and moved to the strip of vegetation along the western part of the wider site adjacent to Manor Road (see area 3 on **Fig 3** below). Based on information provided to the EBC ecologist (based on images / an on-site video call) this area was described as such by the EBC ecologist:

"This has the advantage of directly connecting with the south-facing raised railway embankment just to the north of the site without the entrance/service road presenting a barrier to dispersal. The western side of this area has a slope leading down to the fence separating the site from Manor Road, currently providing both sheltered and open areas which could be used by reptiles."

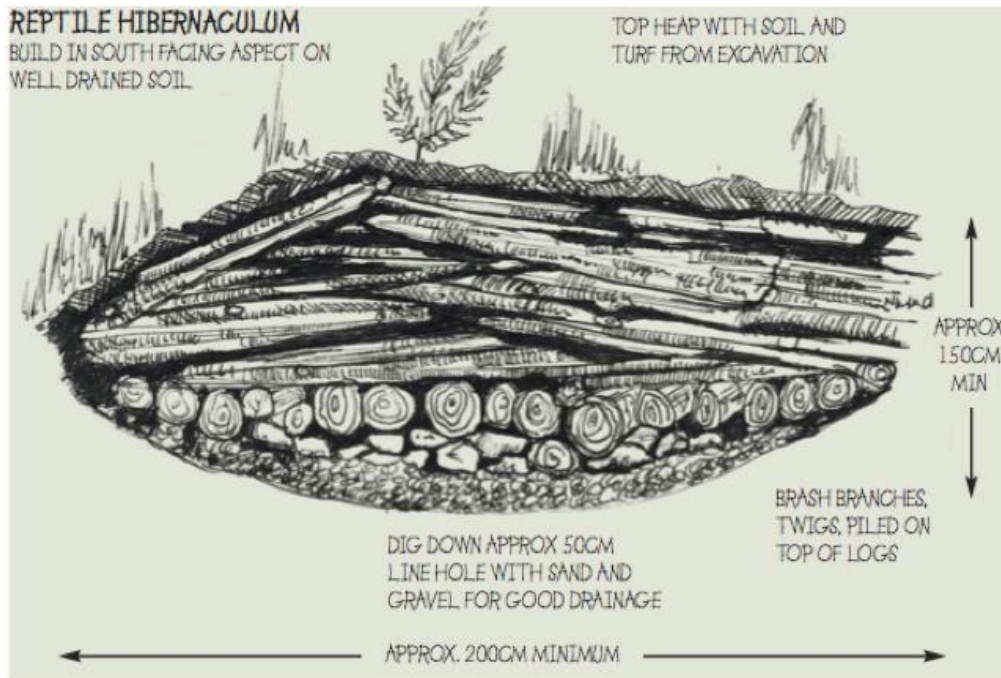
Figure 3. The area proposed to be used as a reptile receptor outlined in green (labelled 3). This area benefits from direct connections to the capture site and to the railway embankment to the north and will be enhanced through the provision of a single hibernaculum which will act as a 'release site' for any captured reptiles (location indicated by yellow star).



5.4 Habitat Creation and Enhancement

Based on the nature of the existing habitats within the receptor, the only potential enhancement anticipated would be the creation of 1 No wood-based hibernaculum to provide reptiles with a suitable area to hibernate within (see **Fig 3** above for indicative location). This will be created following the specification outlined within Reptile Habitat Management: Guidelines for Landowners (HART, 2009) (**Fig 4**).

Figure 4. Reptile hibernaculum design as provided in HART (2009).



5.5 Capture and Exclusion

5.5.1 Capture and Translocation

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 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 receptor area would be set up with reptile exclusion fencing where necessary to prevent the movement of reptiles from / to adjacent areas. In accordance with the HGBI guidelines (1998), artificial refugia should be distributed across the site at a minimum density of 50/ha although 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 higher. Captured Slow Worms and Common Lizards would then be transported to the receptor area in appropriate containers such as buckets with perforated lids.

5.5.2 Effort and Timing

Despite the recommendation for 60 capture days (as per **Table 2** reproduced from HGBI 1998), it is considered a lower figure than this would be appropriate (estimated at 20 - 30 days) although this can be reviewed during the capture works (*i.e. should the capture rates be higher than anticipated, the full 60 days will likely be required*). 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 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).

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	<i>High (> 100 / ha)</i>	100	<i>All suitable days between March and September (min 90 suitable days)</i>
	Medium (> 50 / ha)	100	All suitable days between march and September (min 70 suitable days)
	<i>Low (< 50 / ha)</i>	50	<i>60 Suitable days</i>

5.5.3 Destructive Search

Following the conclusion of the relocation, a destructive search of the site may be necessary. This would entail the sensitive stripping of vegetation on site using a toothed bucket where habitat is suitable for reptiles and can be focused on areas where reptile numbers were highest.

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).

5.6 Protection of Ecology Area

5.6.1 During Construction

Once the reptile capture works have been completed and the site is due to commence building works, the edge of the reptile receptor used will have a line of Heras fence or similar placed in front of it (it may be that the tree protected fencing can be used for this purpose as well). Signage will be placed on this fence with phrases such as:

Protected Reptile Habitat, Do Not Disturb

This level of protection will remain in place for the duration of the construction works and the ecologist will make quarterly visits to the site to check on the integrity of the reptile fence and ensure any repairs are made as necessary.

5.6.2 Once Operational

To ensure the retained reptile receptor is afforded the appropriate level of protection once the site has been built, it should be listed within the S106 (or similar such as a restrictive covenant) as protected reptile habitat.

5.7 Ongoing Management of Receptor

Once the reptiles have been relocated into the defined receptor site, management works will need to be undertaken to ensure the area is maintained as a favourable habitat. This will be achieved through adopting the following prescriptions:

- The aim will be to keep on top of scrub (Bramble) encroachment to prevent too much shading of basking areas. Bramble currently growing within the area can be cut back annually to aim to keep coverage below 10% by area (as some Bramble coverage is desirable to create shade and 'eco tones').
- All arisings must be removed and can be composted on site, away from buildings, fences, sheds and sources of ignition: This will provide additional habitat for both reptiles.
- During each management visits, any rubbish and waste will be removed.

All management works as described above should be secured through an appropriate Section 106 agreement for the site that will legally oblige the developer to carry out the works.

5.8 Post-completion Monitoring

It will be necessary to monitor the receptor area (and the surrounding suitable habitat which they may disperse into) 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 2 years post completion of relocation (at years 1 and 3) with the results passed onto the LPA.

6.0 REFERENCES

Edger, P., Foster, J. and Baker, J. (2010) Reptile Habitat Management Handbook. Amphibian and Reptile Conservation, Bournemouth.

English Nature. (2004). *Reptiles: Guidelines for Developers*. English Nature, Peterborough.

Froglife. (1999). *Reptile Survey: An introduction to planning, conducting and surveys for snake and lizard conservation. Froglife Advice Sheet 10*. Froglife, Halesworth.

Gent, A.H. & Gibson, S.D., eds.(1998). *The Herpetofuna Workers Manual*. Joint Nature Conservation Committee, Peterborough.

Hampshire Biodiversity Partnership. (1998). *A Biodiversity Action Plan for Hampshire*. Hampshire County Council, Winchester.

HGBI (Herpetofauna Groups of Britain & Ireland), (1998). *Evaluating local mitigation/translocation programmes: maintaining best practice and lawful standards. HGBI advisory notes for Amphibian and Reptile Groups (ARGs)*. HGBI c/o Froglife, Halesworth, Suffolk.

Highways Agency (2005). *Nature Conservation Advice in Relation to Reptiles and Roads*. Design Manual for Roads and Bridges Vol 10. Section 4. Part 7. Highways Agency.

Sewell, D., Griffiths, R. A., Beebee, T, J, C., Foster, J., & Wilkinson, J, W., (2013) Survey Protocols for the British Herpetofauna, Version 1.0.