



Reptile Survey

Former Belmore Allotments, Hayes, London Borough of Hillingdon

On Behalf of:

Hillingdon Borough Council

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1.0 Introduction and Aims

- 1.1** Southern Ecological Solutions Ltd. (SES) was commissioned by the London Borough of Hillingdon through their agent, Baily Garner, to undertake reptile presence/likely absence surveys at land at the Former Belmore Allotments, Hayes, Hillingdon (the site).
- 1.2** Previous work on site has involved the erection of exclusion fencing and translocation of a small slow worm *Anguis fragilis* population, and subsequent destructive search of the site (SES, 2011). Since this work has been completed, the exclusion fencing has broken down and the site recolonised with semi-improved grassland.
- 1.3** The site (c.1.2ha.) is situated within the town of Hayes in the London Borough of Hillingdon. Semi-improved grassland is the dominant habitat on the site, with areas of scattered broad-leaved trees, hedgerow, scrub, and buildings (Appendix 1). Yeading Brook Meadows Local Nature Reserve (LNR) is adjacent to the northern boundary and residential housing lies to the south, east, and west. In the wider landscape the site resides within a heavily urbanised area, but is south of multiple LNRs and the Yeading Brook.
- 1.4** Scrub and hedgerow provide opportunities for sheltering and foraging reptiles. The rest of the site is dominated by semi-improved grassland, which provides less optimal habitat.

2.0 Methods

Desk Study

- 2.1** SES commissioned a data search for records of protected and notable species and non-statutory designated sites via Greenspace Information for Greater London (GiGL). The data search encompassed the study area, and up to 2km from the boundary for protected species. An online search was conducted using the National Biodiversity Network (NBN) Atlas for records of reptiles within 2km of the site. Additionally, online mapping software was used to assess nearby habitats for suitability.

Field Survey

- 2.2** Seven presence/likely absence survey visits were undertaken between the months of August and September 2017 during suitable weather conditions using felt roofing squares as refugia for reptiles. Indicative locations of reptile refugia are provided in Appendix 2.
- 2.3** The surveys were undertaken by suitably qualified ecologists Chris Kelly MSc BSc (Hons), Kirk Hards MRes BSc (Hons), Benjamin Nulumbu BSc (Hons) ACIEEM and Jim Silverstone.
- 2.4** Further details of the species survey methods for reptiles are provided in Appendix 3. Relevant protected species legislation is set out in Appendix 4.

3.0 Constraints

- 3.1** Desktop data searches are a valuable tool in evaluating a site's potential to hold rare and protected species, it is not however an absolute in confirming presence or absence of notable species due to the nature of how the records are collected.

4.0 Results

Habitats

- 4.1** The site is comprised of the following habitat types; dense scrub, scattered scrub, scattered broadleaf trees, semi-improved grassland, tall ruderal, species-poor hedgerow with trees, and buildings. Please refer to the preliminary ecological appraisal for a detailed breakdown of the habitats on site and species composition (SES, 2018).
- 4.2** The site is dominated by semi-improved grassland and is considered to provide suitable habitat for the four most common reptile species, in particular the site boundaries, where transitional habitats are present grading from hedgerow to scrub to grassland. The reptile refugia were distributed to reflect this (Appendix 2).

Reptiles

Desk Study

- 4.3** Four reptile species are considered to be the most common and widespread in the UK; common lizard *Zootoca vivipara*, slow-worm, adder *Viper berus* and grass snake *Natrix helvetica*. These four species of reptiles are legally protected under the WCA 1981. Relevant legislation is detailed further in Appendix 4.
- 4.4** The data search returned multiple records of commoner reptile species within 2km of the site, the results of which can be found in Table 1. The habitats on site considered suitable for reptiles are ecologically connected to the wider landscape via the scrub and hedgerows to the north, leading to Yeading Brook Meadows LNR, and it is considered likely that individuals in the wider landscape could disperse onto site.

Table 1: UK reptile species within 2km of site

UK Protected Species	Number of records	Last recorded (distance from site)
Slow-worm <i>Anguis fragilis</i>	7	29/05/2012 (0.02km north)
Grass Snake <i>Natrix helvetica</i>	5	23/05/2012 (0.2km north)
Common Lizard <i>Zootoca vivipara</i>	1	2007 (0.7km north)

Field Survey

- 4.5** Table 2 below highlights the weather conditions for each survey visit as well as the reptiles recorded.

Table 2: Weather Conditions and Reptile Species Recorded.

Survey	Date	Temp °C	Cloud %	Wind (Beaufort)	Last rain	Results
1	14/08/17	15	80	1	>12 hours	None observed.
2	13/09/17	16	50	3	<4 hours	Two female slow worms. Five juvenile slow worms.
3	16/09/17	15	70	0	<1 hour	One female slow worm. Four juvenile slow worms.
4	19/09/17	12	60	2	5 hours	None observed.
5	23/09/17	16	90	2	<2 hours	Two female slow worms. Three juvenile slow worms.

Survey	Date	Temp °C	Cloud %	Wind (Beaufort)	Last rain	Results
6	28/09/17	17	100	1	>12 hours	One female slow worm.
7	30/09/17	16	10	3	>12 hours	None observed.

- 4.6** 18 slow-worms were recorded over the seven visits; the peak count for one visit being two adults. Guidance published by Froglife (1999) states that one can infer a population class size estimate using the maximum number of adult animals seen on a single survey visit. This method is based on refuges being placed at a density of up to 10/ha (Appendix 3). The data suggest it is likely that the site supports a 'Low' population of slow-worms (Appendix 3).
- 4.7** Reptiles were predominantly observed along the northern hedgerow, and scrub along the eastern boundary (Appendix 2).

5.0 **Evaluation**

- 5.1** Removal of suitable habitat on site would likely result in direct and indirect effects on the reptile population found to be present via killing/injuring of individuals during construction and loss of sheltering/foraging habitat. Given the urban landscape to the south, development will not result in habitat fragmentation.
- 5.2** To mitigate for these impacts, a mitigation strategy will be developed and agreed with the local planning authority. To avoid the killing/injuring of reptiles, affected habitats on site (donor site) should be isolated with reptile fencing, which would then be subject to a period of trapping over 60 days (best practice guidance for a 'low' population) (HGBI, 1998). An increased survey effort can be used to reduce the number of trapping days consisting of increased number of sweeps per day, increased number of refugia, as well as habitat manipulation. After a minimum of 30 days and once seven clear capture days are achieved the trapping could be stopped (if deemed appropriate by the project ecologist). Animals captured from the donor site should be immediately moved to the receptor site (see 5.3).
- 5.3** To mitigate for the loss of habitat on site, the northern hedgerow will be retained and buffered from development (SES, 2018). This is deemed an appropriate level of habitat retention as the majority of the field is sub-optimal due to its management. This habitat will be enhanced for reptiles with native planting, and the installation of log piles/hibernacula will provide additional foraging/sheltering resources. This retained area will be utilised as an *in-situ* receptor site for translocated animals. The receptor site should be subject to a management plan sympathetic to reptiles in the long term.

6.0 Conclusion

- 6.1** SES conducted a survey to assess the site and establish the presence or likely absence of reptiles. A 'low' population of slow worm was recorded. Individuals recorded were predominantly along the northern and eastern boundaries. It is considered likely that the individuals recorded are utilising the site in conjunction with higher quality habitat off-site to the north.
- 6.2** The proposed development is predicted to result in direct (killing/injury of individuals) and indirect (loss of habitat) effects on local reptile populations without mitigation. These effects can be mitigated through the development of an on-site strategy seeking to retain and enhance habitat along the northern boundary of the site as a receptor area for translocated individuals.
- 6.3** Through implementing above measures, it is predicted that any potential adverse effects from the proposed development upon reptile species can be wholly mitigated in line with relevant wildlife legislation and planning policy. With appropriate on-site enhancements, a positive change in the biodiversity could potentially be achieved, in line with *chapter 15: Conserving and Enhancing the Natural Environment*, of the NPPF (MHCLG, 2018)

7.0 References

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

Gent, T. and Gibson, S. (2003) *Herpetofauna Workers Manual*. Joint Nature Conservancy Council: Peterborough.

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). HGBI, c/o Froglife, Halesworth. Unpublished.

Ministry of Housing, Communities and Local Government (MHCLG) (2018). *National Planning Policy Framework*. [Internet]. Available from: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

Natural England (2015) *Reptiles: surveys and mitigation for development projects*. First published 2014 at URL: <https://www.gov.uk/guidance/reptiles-protection-surveys-and-licences>.

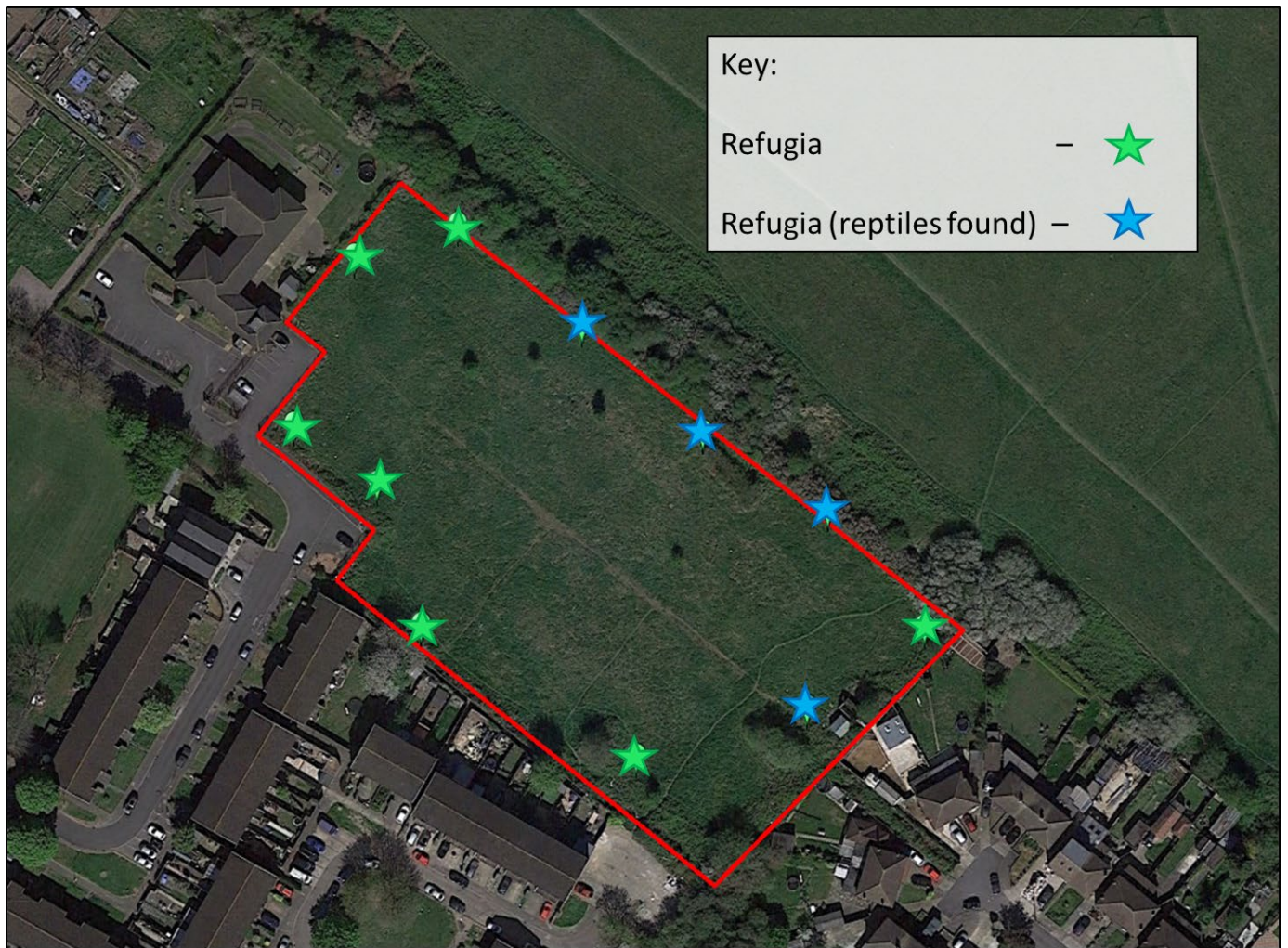
SES (2011). *Reptile Mitigation – The Former Belmore Allotments*. Unpublished, SES

SES (2018). *Preliminary Ecological Appraisal: Former Belmore Allotments, Hayes, London Borough of Hillingdon*. Unpublished, SES

Appendix 1. Phase 1 Habitat Map



Appendix 2. Reptile Refugia Mat Locations



Appendix 3. Reptile Survey Methods

REPTILES

To detect presence or likely absence, a seven-visit survey is required (Froglife, 1999). Seven survey visits were undertaken during 'suitable' days for reptile activity; a 'suitable' survey day is determined by the weather, with temperature being the pre-eminent factor.

Refugia were laid in suitable habitat using the surveyor's professional judgement. This allowed an assessment of the carrying capacity of these habitats. As density dependence often plays a role in population size (Massot *et al*, 1992), this information will guide the mitigation and compensation measures.

Refugia were laid at a density of 10 per hectare of suitable habitat (Froglife, 1999). Reptile refugia (0.5m x 0.5m felt squares) were used to observe reptiles basking or taking refuge, these were laid in transects and left for seven days to settle before the survey commenced. If presence is detected a population class size estimate can be inferred from the peak adult count from a single visit (see below Table). This survey methodology is recognised as best practice by Froglife (1999) and the Herpetofauna Worker's Manual (Gent and Gibson, 2003).

As described above, following guidelines set out by Froglife (1999) it is possible to infer a population class size estimate using the maximum number of adult animals seen per survey visit. This method is based on refuges being placed at a density of up to 10/ha. The table below details the assessment categories:

Froglife Population Class Assessment for Reptiles.

Species	Low Population	Good Population	Exceptional Population
Common Lizard	<5	5-20	>20
Slow-Worm	<5	5-20	>20
Grass Snake	<5	5-10	>10
Adder	<5	5-10	>10

Ambient air temperature is an essential factor for reptile surveys after suitable habitat has been located. Reptile surveys conducted between 10 and 18 degrees centigrade have the most chance of success (HGBI, 1998). The key months for reptile surveys are April, May and September with April and May being advantageous because it is reptile mating season, which means they will be more obvious and less wary of observers. Also, the temperatures are generally lower during these months and as such it will take longer for the reptiles to warm up so they must spend more time basking. During the warmer summer months, animals will spend less time basking due to the increase in ambient temperature, thus reptile survey visits will be conducted earlier in the day during the hotter summer months. However, the temperature on the day of the visit will ultimately determine what time the survey takes place.

Appendix 4. Reptile Species Legislation

This document has not been prepared by a legal or planning professional and should be read as an interpretation of relevant statutes and planning policy guidance only. The information presented within this document has been reported in good faith and are the genuine opinion of SES on such matters. SES does not accept any liability resulting from outcomes relating to the use of this information or its interpretation within this document.

Habitats found on/off site are suitable for common lizards, slow-worms, grass snakes and adders which are protected under the *Wildlife and Countryside Act 1981 (as amended)*. These species are listed within *Schedule 5* and offences are outlined under *Section 9 (1)* and *Section 9 (5)*, and are as follows:

- Intentionally, or recklessly, kill or injure any of the above species, and/or;
- Sell, or attempt to sell, any part of the species, alive or dead.

The maximum fine per offence is £5,000 and if more than one animal is involved, the fine is £5000 per animal (*Wildlife and Countryside Act 1981 s21*). The Countryside and Rights of Way Act 2000 (CRoW)_amendment contains a provision for a custodial sentence of up to six months instead of, or in addition to, a fine, coupled with a development delay until appropriate mitigation has been agreed and completed.

The Natural Environment and Rural Communities Act 2006 (NERC) also lists the above reptiles as a species of 'principal importance' under *Section 41*. *Section 40* requires every public body in the exercising of its functions (in relation *Section 41* species) 'have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity'. The NPPF (DCLG, 2012) places a duty to minimise impacts on biodiversity and provide net gains where possible (Para. 109); and to refuse permission if significant harm from development cannot be avoided (para.118). *Footnote 24* of the NPPF (DCLG, 2012) directs readers to government circular 06/2005 (ODPM, 2005) to provide guidance in respect of statutory obligations for biodiversity and the planning system. *Para. 98* states that protected species are a 'material consideration' to the planning authority. *Para. 99* goes on to state 'the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision...'.