LAND TO THE NORTH OF THE A4, THEALE

REPTILE SURVEY

A Report to: Panattoni c/o Turley

Report No: RT-MME-150545-03 Rev A

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REPORT VERIFICATION AND DECLARATION OF COMPLIANCE

This study has been undertaken in accordance with British Standard 42020:2013 “Biodiversity, Code of practice for planning and development”.

Report Version	Date	Completed by:	Checked by:	Approved by:
Final	10/10/2019	Penelope Rees (Senior Ecological Consultant)	Tom Docker MCIEEM (Associate Director)	Dr Philip Fermor CEnv MCIEEM (Managing Director)
Revision A	12/12/2019	Charlotte Page BSc (Hons) (Ecological Project Officer)	Tom Docker MCIEEM (Associate Director)	Dr Philip Fermor CEnv MCIEEM (Managing Director)

The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management’s Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

DISCLAIMER

The contents of this report are the responsibility of Middlemarch Environmental Ltd. It should be noted that, whilst every effort is made to meet the client’s brief, no site investigation can ensure complete assessment or prediction of the natural environment.

Middlemarch Environmental Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

VALIDITY OF DATA

The findings of this study are valid for a period of 24 months from the date of survey. If works have not commenced by this date, it may be necessary to undertake an updated survey to assess any changes in the status of reptile species on site, and to inform a review of the conclusions and recommendations made.

NON-TECHNICAL SUMMARY

In August 2019 Panattoni c/o Turley commissioned Middlemarch Environmental Ltd to undertake a reptile survey of the site of a proposed development at the Land to the North of the A4 in Theale. This assessment is required to inform a planning application associated with the construction of an employment facility, with associated access infrastructure, drainage and landscaping.

At the time of the survey, the site was dominated by an area of semi-improved grassland with areas of scrub, hedgerow and woodland around the site boundaries.

Reptile surveys were undertaken in September and October 2019. 200 artificial refugia were set out in suitable habitats within the site and checked over seven survey dates with reference to Froglife Advice sheet 10 (Froglife, 1999) and Herpetofauna Groups of Britain and Ireland Guidelines (HGBI, 1998).

No reptiles were found during the surveys in 2019. The proposed development could therefore be carried out with no constraints in relation to reptiles.

Following the results of the survey the following recommendations have been made:

R1 No reptiles were recorded on site during the presence/absence survey, therefore no recommendations for further work are made. However, should any reptiles be discovered on site during the development, works should cease immediately and Natural England and / or an experienced ecologist should be contacted immediately to determine a way forward.

R2 If works do not commence by September, 2021 then this survey should be updated to assess whether reptiles have colonized the site in the intervening period, particularly if grazing of the site discontinues.

CONTENTS

1. INTRODUCTION

1.1 PROJECT DESCRIPTION

In August 2019 Panattoni c/o Turley commissioned Middlemarch Environmental Ltd to undertake a reptile survey of the site of a proposed development at the Land to the North of the A4 in Theale. This assessment is required to inform a planning application associated with the construction of an employment facility, with associated access infrastructure, drainage and landscaping.

Middlemarch Environmental Ltd has previously carried a Preliminary Ecological Appraisal and Preliminary Bat Roost Assessment. The findings of this survey are detailed in Report RT-MME-150244-02.
In addition, Middlemarch Environmental Ltd has been commissioned to undertake the following assessments:

- Nocturnal Emergence and Dawn Re-entry Bat Surveys, RT-MME-150545-01; and
- Reptile Surveys, RT-MME-150545-03.

All native reptile species receive protection under UK law and are capable of being material considerations in the planning process. Further information about the legislation that protects reptile species is provided in Appendix 1.

1.2 DEVELOPMENT SITE DESCRIPTION AND CONTEXT

The survey area comprised a large grassland-dominated field located to the immediate west of the junction between the M4 motorway and A4 Bath Road (Junction 12). It was centred at National Grid Reference SU 64755 71463 and measured c. 5.5 hectares in area.

Reference to historical aerial imagery indicates that the site was subject to arable management as recently as 2010, however in recent years has been left fallow and has subsequently colonised with a mosaic of coarse grassland and ruderal species. Field boundaries are formed by a combination of wooden fencing, intact hedgerow, woodland edge and scrub. The field is bisected by a large electricity pylon and overhead wires running north to south. A tall mobile phone mast within a small compound of palisade security fencing is present in the north-eastern corner of the field. The survey area also includes a small hardstanding compound enclosed by Heras fencing to the northwest.

Beyond the site boundary to the south-east, south and south-west are steep slopes up to the highway embankments of the A4 Bath Road and Hoad Way respectively. The M4 runs northwest-southeast c. 80 m to the east of the site. To the northwest is a small complex of built environment comprising a mixture of residential and industrial units, and beyond the eastern half of the northern boundary is an area of greenspace. The wider area is occupied by a mosaic of farmland, greenspace, retail and residential development typical of the urban fringes of West Berkshire.

1.3 DOCUMENTATION PROVIDED

The conclusions and recommendations made in this report are based on information provided by the client regarding the scope of the project. Documentation made available by the client is listed in Table 1.1.

Document Name / Drawing Number	Author
Site Location Plan / 18-095-P200	SGP
Proposed Site Plan / 18-095-P201	SGP

Table 1.1: Documentation Provided by Client

2. METHODOLOGIES

2.1 DESK STUDY

As part of the Preliminary Ecological Appraisal (Report RT-MME-150244-02) an ecological desk study was undertaken. The consultees for the desk study were:

- Natural England - *MAGIC* website for statutory conservation sites; and,
- Thames Valley Environmental Records Centre.

Middlemarch Environmental Ltd then assimilated and reviewed the desk study data provided by these organisations. Relevant reptile data are discussed in Chapter 3. In compliance with the terms and conditions relating to its commercial use, the full desk study data are not provided within this report.

2.2 SITE SUITABILITY ASSESSMENT

An assessment of the suitability of the site to support reptile species was undertaken, based on a review of habitat characteristics and other parameters known to influence reptile distribution. The following parameters were considered:

- Location of site in relation to species range of native reptiles;
- Site management and disturbance;
- Topography and aspect of site;
- Vegetation type and structure;
- Likely prey abundance;
- Presence of refugia and potential hibernation habitat;
- Egg-laying site potential (grass snake and sand lizard only); and,
- Connectivity to surrounding habitat of potential value to reptiles.

The suitability assessment was used to design the route of survey transects for the presence/absence survey (see Section 2.3).

2.3 PRESENCE/ABSENCE SURVEY

A presence/absence survey for reptiles was undertaken in accordance with the best practice methodology detailed in the Herpetofauna Workers Manual (Gent and Gibson, 2003). This consisted of the following works:

- An initial assessment of the potential reptile habitat characteristics was undertaken, in order to identify features and habitats of potential value to reptile species.
- Survey transects through the site were identified to ensure all suitable habitats were covered by the survey.
- Checks of any natural refugia present within the survey area, such as log piles or rubble piles, were undertaken.
- A series of artificial refugia were installed within the site to facilitate detection of reptiles (further detailed below).
- Seven survey visits to the site were undertaken to inspect natural and artificial refugia in suitable weather conditions.

200 artificial survey refugia were installed within the site during the first survey visit. These refugia consisted of squares of roofing felt approximately 500 mm x 500 mm.

Reptiles are ectotherms, deriving their body heat from the external environment. Therefore the timing of the survey visits was dictated by the time of year and weather conditions. Where possible, surveys were undertaken on warm sunny days with little cloud cover and wind to maximise the probability of recording reptiles within the site. Suitable weather conditions for undertaking refugia checks are outlined in the Herpetofauna Workers Manual, and are summarised in Table 2.1.

Parameter	Value
Temperature	9 - 17° C
Sunshine	Preferable
Cloud	Little or None
Wind	Low/None

Table 2.1: Suitable Weather Conditions for Reptile Surveys

2.4 ASSESSMENT OF SITE IMPORTANCE FOR REPTILES

Current best practice guidance recognises that undertaking detailed population assessments for reptile species is difficult, as the number of survey visits required to give an accurate assessment is prohibitive for the majority of projects.

It is desirable, however, to attempt to judge the overall importance of the survey site for reptiles. In order to provide a basic assessment of site importance, the results of the survey were analysed in the context of Froglife Advice Sheet 10 - Survey Assessment: Key Reptile Sites (Froglife, 1999). This provides a simple methodology for assessing the value of a site to reptile species, based upon the number of species recorded on site and the peak adult count for each species per hectare, when refugia are installed at a density of up to 10 per hectare.

The guidelines for assessing the value of the site to reptile species are summarised in Table 2.2.

Reptile Species	Low Population *Score 1*	Good Population *Score 2*	Exceptional Population *Score 3*
Adder	<5 individuals/ha	5-10 individuals/ha	>10 individuals/ha
Grass snake	<5 individuals/ha	5-10 individuals/ha	>10 individuals/ha
Common lizard	<5 individuals/ha	5-20 individuals/ha	>20 individuals/ha
Slow worm	<5 individuals/ha	5-20 individuals/ha	>20 individuals/ha

Table 2.2: Key Reptile Site Population Class Assessment and Scoring Criteria

Froglife define a Key Reptile Site as one that meets any of the following criteria:

1. Site supports at least three reptile species;
2. Site supports two snake species;
3. Site supports an 'exceptional population' of one species (see Table 2.2);
4. Site supports an assemblage of species scoring at least 4 (see Table 2.2); or,
5. Site does not satisfy Points 1-4 but is of particular regional importance due to local rarity.

Sites that support populations of either smooth snake or sand lizard are also considered to be Key Reptile Sites.

3. DESK STUDY

3.1 BIOLOGICAL RECORDS

No desk study records of reptiles were within a 1 km radius of the survey area.

4. RESULTS

4.1 INTRODUCTION

The reptile habitat assessment and presence/absence survey were undertaken between 9th September 2019 and 10th October 2019 by the following members of staff:

- Penelope Rees, Senior Ecological Consultant; and
- Rod Batistela, Ecological Projects Officer.

4.2 SURVEY CONSTRAINTS

In accordance with Froglife Advice Sheet 10 (Froglife 1999), the optimal months for undertaking reptile surveys are during April, May and September. Two of the surveys were carried out at the start of October. These surveys were however undertaken in suitable weather conditions (between 9°C - 17°C) and therefore it is not considered that the weather conditions have adversely affected a robust survey result.

4.3 SITE SUITABILITY ASSESSMENT

The habitat characteristics of the site with regard to suitability to support reptile species are summarised in Table 4.1. Photographs of the habitats present on site are provided in Chapter 8

Reptile Habitat Characteristic	Description
Location of site in relation to species range of native reptiles	No desk study records of reptiles were within a 1 km radius of the survey area.
Site management and disturbance	The site has recently been mown, however the boundary habitat was not subject to any management regime at the time of survey.
Topography and aspect of site	The south, east and west boundaries have a sloped topography.
Vegetation type and structure	The majority of the site consists of poor semi-improved grassland with longer swards and areas of tall ruderal and scrub present around the boundaries of the site.
Likely prey abundance	Due to the presence of suitable habitat, the site is likely to support prey such as invertebrates, amphibians and small mammals.
Presence of refugia and potential hibernation habitat	Areas of grassland, scrub and hedgerow provide suitable foraging, basking and shelter for reptile species.
Egg-laying site potential (grass snake and sand lizard only)	None recorded.
Connectivity to surrounding habitat of potential value to reptiles	The site is connected to other potentially suitable habitats (i.e. grassland, arable field margins, hedgerows and woodland), in the wider landscape to the north and west. Bath road and the M4 create dispersal barriers to the south and east.

Table 4.1: Summary of Reptile Habitat Characteristics

It should be noted that the presence of good quality reptile habitat (e.g. habitat providing features of value to reptiles) does not confirm that reptiles will be present at the site, just as the presence of low quality habitat does not confirm that reptiles will be absent.

4.4 PRESENCE / ABSENCE SURVEY

Weather conditions at the time of each of the survey visits are presented in Table 4.2.

Date/Time	Parameter	Cloud cover (%)	Air temperature (°C)	Precipitation	Wind speed (F)
02-09-19*	Preceding survey	Clear, sunny and dry			
10:00	During survey	20	16	None	1
09-09-19	Preceding survey	Sunny intervals with some drizzle			
10:30	During survey	60	13	None	2
11-09-19	Preceding survey	Clear, sunny and dry			
08:30	During survey	10	15	None	2
13-09-19	Preceding survey	Clear, sunny and dry			
10:30	During survey	10	17	None	2
17-09-19	Preceding survey	Sunny intervals and dry			
11:00	During survey	10	13	None	3
23-09-19	Preceding survey	Clear, sunny and dry			
08:30	During survey	10	13	None	1
03-10-19	Preceding survey	Sunny intervals and dry			
14:00	During survey	60	13	None	3
10-10-19	Preceding survey	Drizzle			
12:00	During survey	60	15	None	3
*Artificial refugia set out on site					

Table 4.2: Weather Conditions During Survey Visits

The findings of the presence/absence survey are detailed in Table 4.3. The location of reptile survey transects and any reptiles recorded on site are plotted on Drawing C150545-03-01 in Chapter 7.

Visit	Date	Common Lizard	Slow-worm	Grass Snake	Adder
1	02-09-19	0	0	0	0
2	09-09-19	0	0	0	0
3	11-09-19	0	0	0	0
4	13-09-19	0	0	0	0
5	17-09-19	0	0	0	0
6	23-09-19	0	0	0	0
7	03-10-19	0	0	0	0
8	10-10-19	0	0	0	0
Key ♂: Male, ♀:Female, Juv – Juvenile					

Table 4.3: Presence/Absence Survey Results

No reptiles were found on site during the survey visits.

5. DISCUSSION AND CONCLUSIONS

5.1 SUMMARY OF SITE PROPOSALS

Planning proposals include the construction of an employment facility, with associated access infrastructure, drainage and landscaping.

5.2 HABITAT ASSESSMENT

Whilst the site is currently dominated by sub-optimal habitat (mown grassland), the longer areas of grassland along the boundaries and on the embankments, areas of scrub and hedgerows are of value to reptiles, providing opportunities for foraging, basking and refuge. Due to the close proximity of the site to areas of suitable reptile habitat in the north and west, there is potential for reptiles to be present on site.

5.3 FINDINGS OF REPTILE SURVEY

Whilst suitable habitat is present around the boundaries of the site in the form of scrub, hedgerows and grassland, no reptiles were found during the surveys carried out in September and October 2019.

5.4 CONCLUSIONS AND SUMMARY OF POTENTIAL IMPACTS

No reptile species were found on site during any of the surveys undertaken in 2019. As such, it is concluded that the proposed development will have no impact on reptiles. However, should the site be left unmanaged then there is potential for the site to be colonised in the future.

6. RECOMMENDATIONS

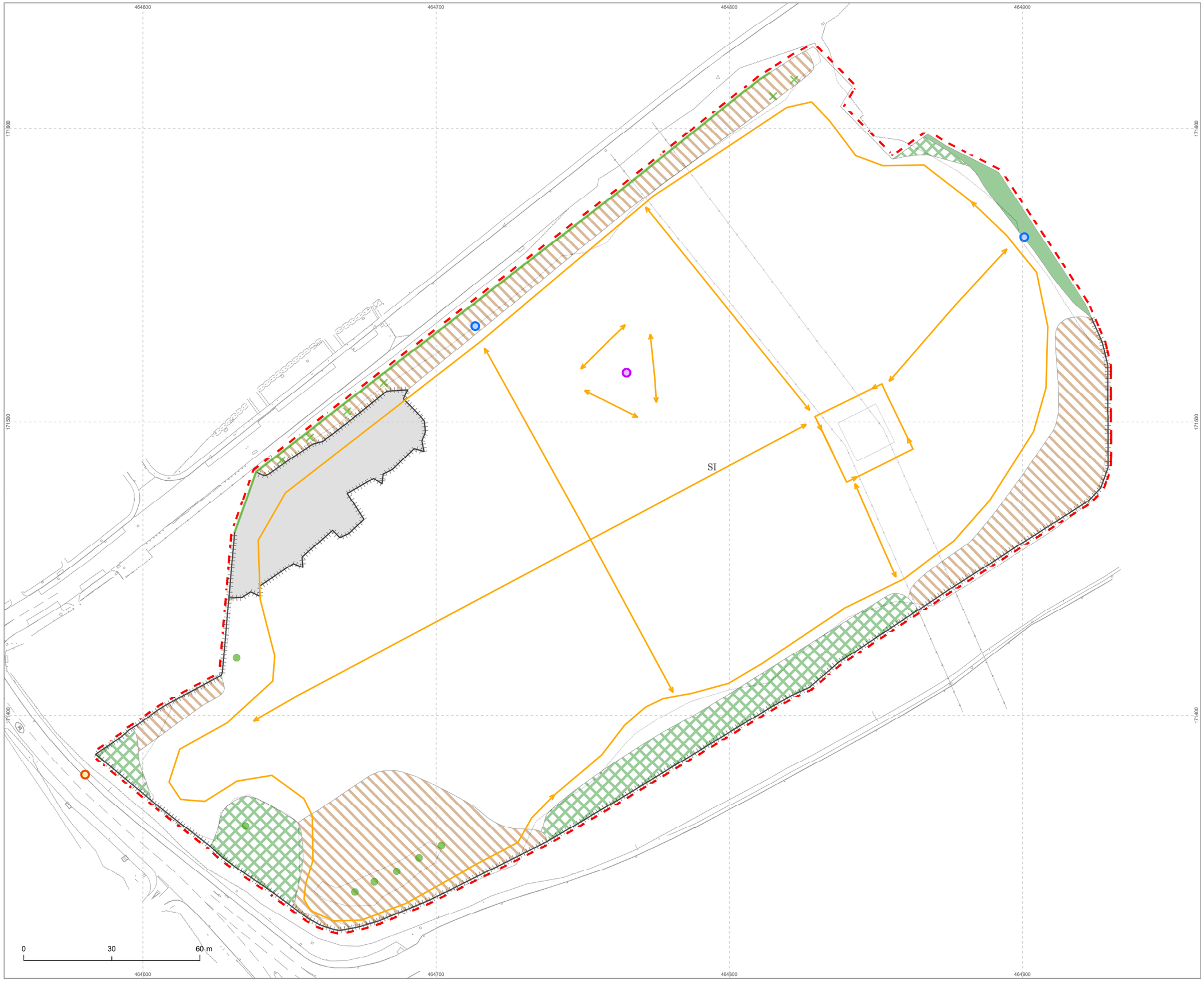
All recommendations provided in this section are based on Middlemarch Environmental Ltd's current understanding of the site proposals, correct at the time the report was compiled. Should the proposals alter, the conclusions and recommendations made in the report should be reviewed to ensure that they remain appropriate.

R1 No reptiles were recorded on site during the presence/absence survey, therefore no recommendations for further work are made. However, should any reptiles be discovered on site during the development, works should cease immediately and Natural England and / or an experienced ecologist should be contacted immediately to determine a way forward.

R2 If works do not commence by September, 2021 then this survey should be updated to assess whether reptiles have colonized the site in the intervening period, particularly if grazing of the site discontinues.

7. DRAWINGS

Drawing C150545-03-01-RevA – Survey Transects



C150545-03-01-RevA

Legend

Phase 1 Habitats

- Scattered broad-leaved tree
- Scattered scrub
- Species-poor hedgerow
- Fence
- Dense scrub
- Hardstanding
- SI — Poor semi-improved grassland
- Semi-natural broad-leaved woodland
- Tall ruderal

Reptile survey

- Transect routes
- Gap in vegetation
- Log pile
- Street light

N

Project	Land to the North of the A4, Theale
Drawing	Reptile Refugia Transect
Client	Hoare Lea
Drawing Number: C150545-03-01-RevA	Revision: Rev A
Scale @ A3: 1:1,200	Date: December 2019
Approved By: PR	Drawn By: VO

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8. PHOTOGRAPHS

Plate 1: Semi-improved grassland

Plate 2: Tall ruderal habitat and scrub

REFERENCES AND BIBLIOGRAPHY

Betts, C. (2008). Checklist of Protected British Species. 3rd edition. Environmental Biology, Worcester.

Blomberg, S. and Shine, R. (1996), 'Reptiles'. IN: Sutherland, W. J. (ed). Ecological Census Techniques: a handbook. Cambridge University Press, Cambridge.

English Nature. (2004). Reptiles: guidelines for developers. English Nature, Peterborough.

Gent, T. and Gibson, S. (2003). Herpetofauna Worker's Manual – Second Edition, Joint Nature Conservation Committee, Peterborough.

The Highways Agency, Scottish Executive, Welsh Assembly Government and The Department For Regional Development. (2005). 'Design Manual For Roads And Bridges: Nature Conservation Advice in Relation to Reptiles and Roads'.

Middlemarch Environmental Limited (2019) Preliminary Ecological Appraisal*: Land to the North of the A4, Theale.* Report RT-MME-150244-02 Rev A

National Amphibian and Reptile Recording Scheme. Reptile Methods and Protocols. Available: http://www.narrs.org.uk

Wildlife & Countryside Act (1981) As Amended.

APPENDIX 1

LEGISLATION

All of the UK's native reptiles are protected by law. The two rarest species – sand lizard (*Lacerta agilis*) and smooth snake (*Coronella austriaca*) – benefit from the greatest protection.

Common lizard (*Zootoca vivipar*a), slow-worm (*Anguis fragilis*), adder (*Vipera berus*) and grass snake (*Natrix natrix*) are protected under the Wildlife and Countryside Act 1981 (as amended) from intentional killing or injuring.

Sand lizard and smooth snake are protected under The Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981 (as amended) which together make it illegal to kill, injure, capture, handle or disturb these animals. Places they use for breeding, resting, shelter and protection are protected from being damaged or destroyed. It is also illegal to obstruct these animals from using such areas.

All native reptile species are listed as Species of Principal Importance on the UK Post-2010 Biodiversity Framework (2012), and as such are material considerations in the planning process.

This is a simplified description of the legislation. In particular, the offences mentioned here may be absolute, intentional, deliberate or reckless. Note that where it is predictable that reptiles are likely to be killed or injured by activities such as site clearance, this could legally constitute intentional killing or injuring.

The reader should refer to the original legislation for the definitive interpretation.