

Appendix 8.6: Reptile Survey

Land at Barkham Square

Land at Barkham
Square: Reptile
Survey
FINAL
November 2025

Approval for issue

NB

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Glossary

Term	Meaning
The Applicant	Crest Nicholson Operations Limited (Chiltern m Division)
The Project	Land at Barkham Square

Abbreviations

Abbreviation	Meaning
ES	Environmental Statement
S41	Species listed as being of principal importance for conservation in England under Section 41 of the Natural environment and rural communities act 2006.
TVERC	Thames Valley Environmental Records Centre.
WCA5	Animal species protected from intentional killing injuring or taking under schedule 5 of the Wildlife and Countryside Act 1981 (as amended).

Units

Unit	Description
m	Meters
ha	Hectares
km	Kilometres

1 INTRODUCTION

1.1 Overview

- 1.1.1 This Appendix of the Environmental Statement (ES) has been prepared by RPS on behalf of Crest Nicholson Operations Limited (Chiltern Division).
- 1.1.2 The purpose of this technical report is to present the methodology and results of the reptile survey for the Project. The results of this report have been used to inform Chapter 8: Ecology and Nature Conservation of the ES.

1.2 Site Description

- 1.2.1 The site is located at Barkham Square, Arborfield south-east of Reading, Berkshire (the Site). It comprises approximately 61.3 ha of mainly grassland grazed by sheep. There are blocks of ancient woodland found on Site. There is a pond located to the south, adjacent to the Barkham Brook. The Barkham Brook runs through the centre of the Site in a north-south orientation.
- 1.2.2 The wider landscape is generally rural in nature with parcels of woodland, including ancient woodland. Arable fields are found to the east and north of the Site. Waterman's Lake is located approximately 30m south of the Site boundary.

1.3 Legislation

- 1.3.1 All native UK reptile species (smooth snake *Coronella austriaca*, sand lizard *Lacerta agilis*, adder *Vipera berus*, grass snake *Natrix helvetica*, common lizard *Zootoca vivipara* and slow worm *Anguis fragilis*) are at least partially protected through Section 9(1 and 5) of the Wildlife & Countryside Act 1981 (as amended). This prohibits:
- Intentional or reckless injuring or killing;
 - Selling, offering or exposing for sale, or having in possession or transporting for the purpose of sale, any live or dead wild animal or any part of, or anything derived from, such an animal; or
 - Publishing or causing to be published any advertisement likely to be understood as conveying buying or selling, or intending to buy or sell, any of those things.
- 1.3.2 All six native species are also listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 as species of principal importance for nature conservation in England (Priority Species).
- 1.3.3 Two species of reptiles (sand lizard and smooth snake) are also listed on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended) and are referred to as European Protected Species. Of relevance to development, under Part 3, Section 43 of the regulations it is an offence to:
- Deliberately disturbs wild animals of any such species;
 - Deliberately take or destroy the eggs of such an animal; or
 - Damage or destroy a breeding site or resting place of such an animal.
- 1.3.4 Disturbance includes in particular any disturbance which is likely:
- To impair their ability;
 - To survive, to breed or reproduce, or to rear or nurture their young;

- To, in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
- To affect significantly the local distribution or abundance of the species to which they belong.

2 METHODOLOGY

2.1 Desk Study

- 2.1.1 Records of reptiles from the last 10 years, within 2km of the site, were obtained by CSA as part of the ecology desk study. Records were requested from Thames Valley Environmental Records Centre (TVERC).
- 2.1.2 The desk study results are presented in Appendix 8.1: PEA of the ES. A summary of reptile records is provided in this report.

2.2 Reptile Surveys

- 2.2.1 A walkover survey of the Project site was undertaken by CSA in February 2023 to identify habitats with the potential to support reptiles. Reptile presence/absence surveys were targeted at suitable habitats within these areas.

Artificial Refugia Surveys

- 2.2.2 The reptile survey followed the recommended methodology described in the Herpetofauna Worker's Manual (Gent & Gibson, 2003) and Froglife's Surveying for Reptiles (Froglife, 2016).
- 2.2.3 The surveys were carried out over two periods, with the refugia placement in July 2023 being followed by seven visits to check the refugia between August and October 2023. Two further checks were carried out in May and June of 2024.
- 2.2.4 The reptile survey was conducted using artificial refuges made from roofing felt measuring 50 cm x 50 cm and 50 cm x 100 cm. The refuges provide shelter and basking opportunities for reptiles, which can be identified on or under the refuges in suitable weather conditions. The location of refuges during the surveys is presented in Annex A.
- 2.2.5 A total of 210 refuges were used in the 2023/24 survey.
- 2.2.6 The location of the artificial reptile refuges were recorded using Global Positioning System. The refuges were placed out at least two weeks before the start of the survey to allow vegetation dieback beneath the refuges and to allow reptiles to find and start to use them.
- 2.2.7 The refuges were placed in areas identified as providing the greatest suitability for reptiles and which had optimal basking opportunities. Areas of high disturbance, including areas with high livestock use were generally avoided, where practicable.
- 2.2.8 In order to conform to best practice guidelines, the refuges were inspected on seven survey visits on different days between the months of April and September inclusive.
- 2.2.9 Each refuge was checked by the surveyor between 7am and 6pm when the air temperature was between 10°C to 20°C, there was little or moderate wind (equivalent to the Beaufort scale 4; 13 to 17 mph) and when it was dry. Weather conditions during each survey visit are reported in Annex B.

- 2.2.10 Surveys between periods of heavy rain, when all other conditions were suitable, were considered acceptable as reptiles are known to be active between rain showers if conditions are sufficiently warm and not too wet, e.g. flooded.
- 2.2.11 During each survey, the artificial reptile refuges were checked first from a distance to avoid disturbing any reptiles that may have been warming themselves on the refuges. Each refuge was then carefully lifted to check for reptiles sheltering beneath.
- 2.2.12 All reptiles observed were recorded, including species, the number of individuals, their life stage (adult, subadult, juvenile), their sex (where possible), the survey area, and artificial refuge number/location.

Population Size Class Assessment

- 2.2.13 An estimate of the population size for all reptiles present was made with reference to guidance published by Froglife (1999). The guidance gives a basic index of relative abundance of reptiles based on the maximum number of different adults seen whether in the open or on or under refuges by one person in one day with a refuges density of 10/ hectare (ha) (see Table 2.1).

Table 2.1: Population Size Assessment

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

2.3 Limitations

- 2.3.1 The number of refuges used in the survey area west of Barkham Street was below the 10/ha density recommendation due to the nature of the habitat in these areas being generally only optimal along the field margins of the Project site. However, the survey still identified the presence of reptiles in these areas and the thresholds in Table 2.1 have been adjusted accordingly. As such, it is considered that the assessment of the reptile populations in these areas is still valid.

3 RESULTS

3.1 Desk Study

- 3.1.1 The ecology desk study, as reported by CSA (2023), identified 831 records of four reptile species within the search area, with these species being: slow worm, grass snake, adder, and smooth snake.
- 3.1.2 The closest records are of grass snake within the field immediately north of the north-west corner of the Site. The majority of the records are located within the Longmoor Bog LNR and SSSI, and Shepperlands Farm LWS, including all of the records of adder. The single smooth snake record dates from 2020 and is located c. 1.28km south-east of the Site,

south of the Longmoor Bog LNR. The remaining records are widespread and infrequent around the search area.

3.2 Reptile Presence/ Absence Surveys

3.2.1 A summary of the results is provided in Table 3.1 which gives the species found and the peak count on any one survey visit. Any amphibians found are also noted.

3.2.2 The results are also shown graphically in Annex A.

Table 3.1: Summary of 2023/2024 reptile presence/ absence survey results.

Visit Number	Date	Species and Number	Temperature (°C)
1	18/08/23	None	20
2	06/09/23	No reptiles but 1 x adult toad	19
3	13/09/23	None	14
4	15/09/23	Adult and juvenile grass snake slough. Adult grass snake seen in Barkham Brook	15
5	22/09/23	2 x juvenile grass snakes 3 x adult grass snakes	15
6	04/10/23	12 x adult slow worms	12
7	09/10/23	None	13
8	15/05/24	None	18
9	05/06/24	1 x adult slow worm 1 x adult toad	15

3.3 Reptile Population Size Assessment

- 3.3.1 The reptile population size class assessment is at best an approximation. The survey area is not physically separate from suitable reptile habitat outside of the survey area, so are unlikely to represent discreet populations.
- 3.3.2 The population size class assessment therefore should be seen as providing the relative importance of the survey area for reptiles within the wider landscape.
- 3.3.3 For the purpose of counting refuge density, the area used was the area of suitable habitat including field margins, woodland, grassland and tall herb vegetation. Arable fields, bare ground, and short grazed pasture were excluded as these habitats have negligible potential to support reptiles. As the suitable habitat was largely limited to the field margins, the exact area is difficult to ascertain, but estimated calculations indicated that the refugia coverage was at least 10/ha. Therefore, the population estimate figures outlined in Table 2.2.1 can be used without the need for adjustment.
- 3.3.4 With four adult grass snakes recorded on Site, the Site is estimated to have a low population of grass snake.
- 3.3.5 Thirteen adult slow worms were recorded during the surveys, indicating an estimated low population size of slow worms.

4 SUMMARY

- 4.1.1 The ecology desk study, as reported by CSA (2023), identified 831 records of four reptile species within the search area, with these species being: slow worm, grass snake, adder, and smooth snake. No records were located within the site boundary.
- 4.1.2 A reptile presence/ absence survey was undertaken across the site over 2023 and 2024, during which six grass snakes, four adults and two juveniles, and thirteen adult slow worms were recorded. These results indicated estimated 'low' populations of both species.

5 REFERENCES

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

Gent & Gibson. (2003). Herpetofauna Worker's Manual. JNCC, Peterborough.

Annex A Reptile Survey Results



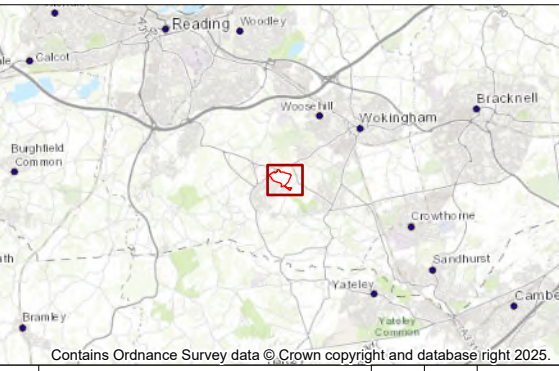
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- Legend**
- Site Boundary
 - Reptile refugia
 - Grass snake
 - Slow worm



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Anx Table 1 Presence/ absence Reptile Survey Weather Conditions

Visit	Survey Date	Weather
1	18/08/23	20°C, 10% cloud, 1 wind, clear
2	06/09/23	19°C, 0% cloud, 0 wind, clear
3	13/09/23	14°C, 30% cloud, 1 wind, clear
4	15/09/23	15°C, 0% cloud, 0 wind, clear
5	22/09/23	15°C, 60% cloud, 2 wind, clear
6	04/10/23	12°C, 25% cloud, 1 wind, clear
7	09/10/23	13°C, 25% cloud, 2 wind, clear
8	15/05/24	18°C, 20% cloud, 0 wind, clear
9	05/06/24	15°C, 50% cloud, 2-3 wind, clear