

**Coltsdene Solar Farm**  
Reptile Survey Report

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## 1 Introduction

- 1.1 BSG Ecology was commissioned by Renewable Energy Systems Ltd. (RES) in March 2025 to conduct a Preliminary Ecological Appraisal at the proposed Coltsdene Solar Farm, in Kibblesworth, centred on Ordnance Survey (OS) Grid Reference NZ232566. This appraisal considers land within the red line provided by the client, hereafter referred to as 'the Site'. An extent greater than the Site was subject to field survey within this assessment, this is referred to as the "Survey Area". Extents of both the Site and the Survey Area are provided in Figure 1.

### Site description

- 1.2 The Site covers an area of approximately 92.5 ha of predominantly arable land directly west of the village of Kibblesworth, Gateshead, approximately 1.3 km west of the A1 corridor.
- 1.3 Habitats within the Site consist primarily of arable land with associated margins and boundary hedgerows. Pockets of modified grassland, scrub and woodland are also present. Notably, Coltspool Burn flows in an easterly direction through the north of the Site and Strandy Burn is located offsite to the north, both of which are tributaries of the River Team (a statutory main river).
- 1.4 Habitats adjacent to the Site are dominated by arable and pastoral land with the village of Kibblesworth to the east. Four local wildlife sites (LWS) are present onsite or directly adjacent. Other habitats in the locality include pockets of deciduous woodland, connected through hedgerow networks and riparian corridors, semi-improved grassland and open mosaic habitat on previously developed land to the east.
- 1.5 The Site is located within the Gateshead Greenbelt (Gateshead Local Policy CS19) and the southern extent is sited within the designated Wildlife Corridor (Gateshead Local Policy 37). The Bowes Railway Line Local Wildlife Site runs through the centre of the Site (Gateshead Local Plan 2010-2030). The Site is also located within the Impact Risk Zone (IRZ) for three Sites of Special Scientific Interest (SSSI) (MAGIC accessed December 2024).

### Description of project

- 1.6 It is understood that current proposals comprise the development of a 49.9 MW solar array and associated infrastructure, including access tracks, boundary fencing, inverters and a substation. At the time of writing, detailed plans are not available.

### Personnel

- 1.7 Jennifer Peacock and Harry Glass completed the reptile surveys both of which have undertaken reptile surveys as part of their roles in Ecological Consultancy over the last 3 years with Harry being involved in more complex reptile work during this time.
- 1.8 The report was prepared by Jennifer Peacock an Assistant Ecologist with BSG who has over 2 years' experience in Ecological Consultancy and who has authored a number of protected species reports including reptiles.
- 1.9 The report has been reviewed by Claire Dewson. Claire is an experienced professional ecologist with over 20 years' experience. Her survey and project management experience extends from small scale schemes to large scale infrastructure projects with multiple ecological considerations. She has undertaken reptiles surveys and prepared reptile reports and managed and/or contributed to numerous projects over the years.

## 2 Methods

### Desk Study

- 2.1 Information on the presence of designated sites and records of protected and notable species in the vicinity of the Site was provided by Environmental Records Information Centre (ERIC) North East on 07/11/2024.
- 2.2 The search area extended 2 km from Site's red line boundary, extending to 10 km for International sites.
- 2.3 The desk study made use of publicly available online mapping and aerial photography resources to assess the landscape and ecological context of the Site, and to identify any designated sites of nature conservation interest including:
  - The Multi-Agency Geographic Information for the Countryside (MAGIC) database (<http://www.magic.gov.uk/>). This was used to identify any nearby statutorily designated sites (including Sites of Special Scientific Interest (SSSIs)), any granted European Protected Species Mitigation Licence (EPSM) applications, Defra eDNA survey results of ponds 2017-2019, and great crested newt survey licence returns within 2 km of the Site.

### Habitat Survey

- 2.4 The majority of terrestrial habitats onsite are arable and considered unsuitable for reptiles, however the woodland, scrub and hedgerow network present provide suitable terrestrial habitat and connectivity throughout the Site. Various rubble piles throughout the Site also present and off potential opportunities for sheltering amphibians.

### Refugia deployment

- 2.5 A total of 89 artificial reptile refugia were deployed on 4 April 2025 around the Site, placement targeted suitable reptile habitat as per the guidance in Sewell *et al* (2013), a mix of refugia materials were used, bitumen roofing felt and corrugated sheet metal, with minimum dimensions of 50 cm x 50 cm:
- 2.6 Deployments aimed to achieve a minimum density of 10 artificial refugia per hectare of suitable reptile habitat per guidance in Gent and Gibson (2003).
- 2.7 The artificial refugia were deployed over 7 hectares of suitable reptile habitat onsite, resulting in an average density of approximately 12.7 refugia per hectare. A desk study, followed by a ground truthing walkover in January 2025, confirmed that the majority of the Site comprises agricultural land, unsuitable for reptiles. These areas were not targeted during the reptile mat deployment. Deployments instead targeted habitats between the arable fields which have better quality shelter, foraging and basking habitat for reptiles.
- 2.8 The exact location of each refugia deployment was determined on the day by an experienced ecologist who has set out and conducted reptile surveys, targeting habitat suitable for species, and taking account of local habitat characteristics, vegetation structures, topography, aspect and shading. Refugia were numbered and placed in suitable locations across the Site, avoiding deployments in unsuitable habitat such as the agricultural land, tracks and hardstanding. Each refugia was georeferenced using a high-accuracy GPS for accurate reporting and navigation / re-location during subsequent surveys.
- 2.9 Refugia locations are shown in Figure 1.
- 2.10 The refugia were then left to 'bed in' for a period of approximately two weeks prior to the first survey visit, occurring to allow reptiles in the area to find and begin habitually using the refugia.

## Reptile survey

- 2.11 The reptile surveys were carried out between April and June 2025 by suitably experienced ecologists over seven visits in suitable weather conditions and at times of day in line with guidance in Gent and Gibson (2003). Survey visits were spaced at least 2 days apart and overlapped with the active season for reptiles (mid-March – mid-October as a guide, depending on prevailing weather conditions). Table 1 presents the survey details (date, time and weather conditions).

**Table 1 – Reptile survey visit details summary**

Survey Date	Start Time	Start Cloud Cover (oktas)	Start Temp. (°C)	Start Wind Speed (Beaufort)	Rain	Finish Time	Finish Cloud Cover (oktas)	Finish Temp. (°C)	Finish Wind Speed (Beaufort)
22/04/2025	08:30	4	12	0	No	12:30	1	14	0
29/04/2025	08:00	2	10	0	No	12:00	2	18	1
06/05/2025	15:45	0	16	0	No	18:45	0	15	1
13/05/2025	16:00	0	20	0	No	19:00	0	17	0
21/05/2025	08:00	3	11	0	No	12:00	3	14	1
28/05/2025	08:00	1	12	1	No	12:00	2	14	2
04/06/2025	08:00	1	12	2	Yes	13:00	7	17	1

- 2.12 Surveyors carried out the survey by walking a transect that captured both the artificial refugia and any existing potential reptile basking locations in the Survey Area. Surveyors visually searched for basking reptiles on top of each of the artificial and other refugia, before carefully lifting the refugia by hand to inspect underneath for sheltering reptiles. The refugia was carefully replaced in its original location once inspection was complete, and the surveyor continued the transect to the next refuge until all refugia had been inspected.
- 2.13 Observations of reptiles, reptile field signs (such as sloughed skins) or other notable species (such as amphibians and small mammals) were recorded on a survey sheet or digital tablet, with reference to grid reference location or the artificial refugia number.
- 2.14 No refugia showed signs of outside interference.
- 2.15 Refugia were collected from the Site following completion of all seven visits.

### Limitations to methods

- 2.16 A few brief showers were observed during the final survey when collecting the mats in on the 4<sup>th</sup> of June 2025. The survey stopped during the rain showers, which lasted no longer than 20 minutes. The showers were followed by warm sunshine resulting in the surveyor waiting a brief period of around 10 minutes after the rain stopped to then continue to survey. Although no reptiles were observed, a common toad was identified after the rain, and it is not thought that the rain showers impacted the survey results.

### 3 Results

#### *Desk study results*

- 3.1 ERIC NE returned 18 records of reptiles within 2 km of the Site including five records of common lizard *Zootoca vivipara* and 13 records of grass snake *Natrix Helvetica*. The grass snake records are considered historic, as no records were dated later than 2002.
- 3.2 The closest record to Site is of common lizard approximately 530 m east of Site on Bowes Valley Nature Reserve LWS, dated 2007.

#### *Reptile survey results*

- 3.3 A summary of results is provided in Table 2 and findings are mapped in Figure 1.

**Table 2 – Reptile survey results summary**

Survey Date	Slow Worm	Common Lizard	Grass Snake	Adder	Other
22/04/2025	0	0	0	0	1 x common toad (refugia 16)
29/04/2025	0	0	0	0	1 x common toad (refugia 67)
06/05/2025	0	0	0	0	1 x common toad (refugia 26)
13/05/2025	0	0	0	0	N/A
21/05/2025	0	0	0	0	N/A
28/05/2025	0	0	0	0	N/A
04/06/2025	0	0	0	0	2 x common toad (refugia 8 and 14)

- 3.4 No observations of reptiles or reptile field signs (such as sloughed skins) were recorded. This suggests that no reptiles are present within the Site boundary and corroborated by the low number of records despite the Survey Area being connected to other suitable habitat for reptiles. Habitats found within the wider area such as grassland and open mosaic habitat are likely to be more suitable for reptiles.

#### **Other species**

- 3.5 An occasional common toad was recorded across various mat locations. No other amphibian species were recorded.

## 4 References

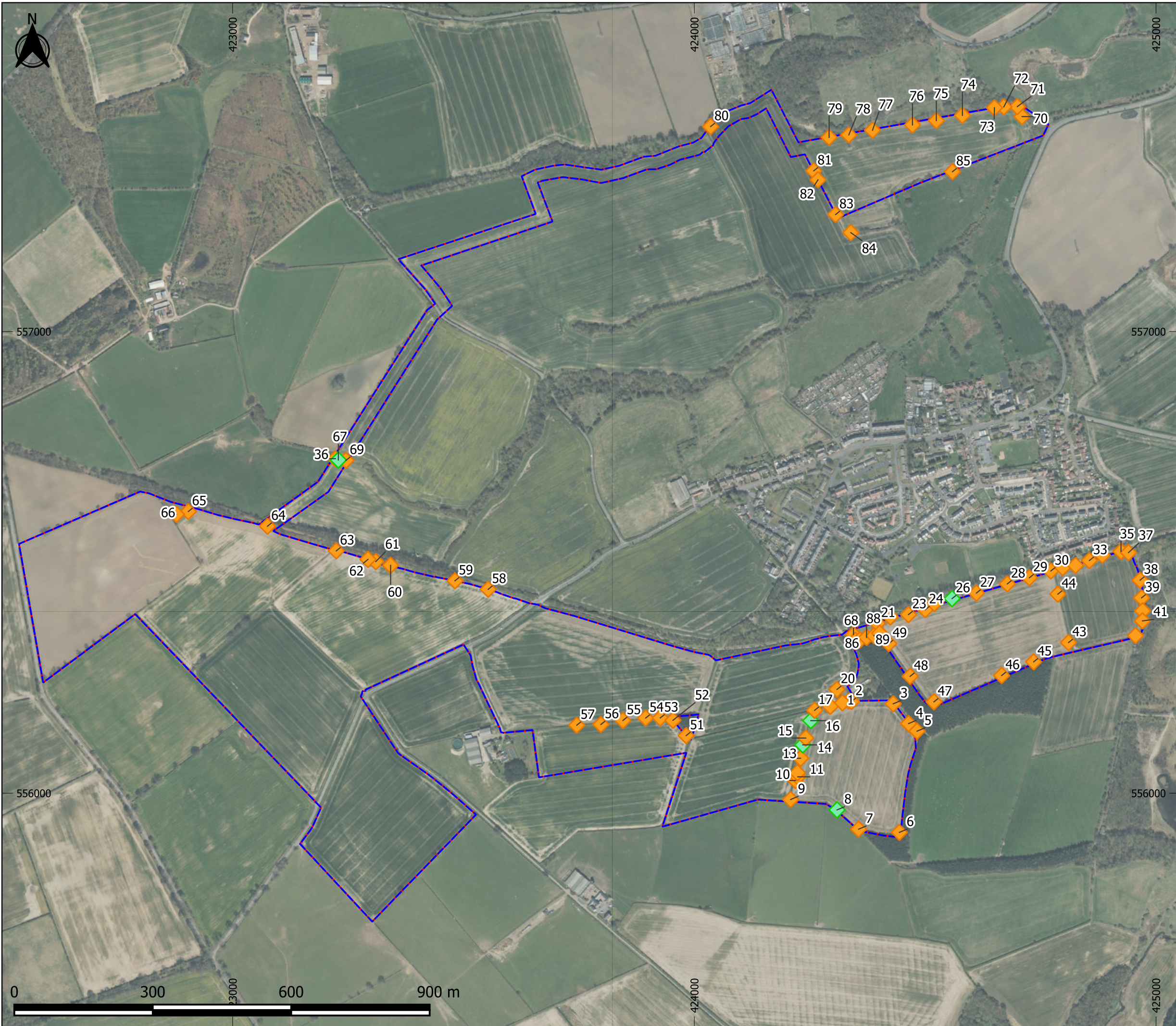
Froglife (1999) Froglife Advice Sheet 10: Reptile Survey - An introduction to planning, conducting and interpreting surveys for snake and lizard conservation.

Gent, T. and Gibson, S. (2003). *Herpetofauna Workers Manual*. Joint Nature Conservation Committee, Peterborough.

Sewell D., Griffiths R., Beebee T, Foster J and Wilkinson J. (2013). Survey protocols for the British herpetofauna.

## 5 Figures

Figure 1: Artificial Refugia Locations and Reptile Locations



- Legend
- ◆ Common Toad recorded on artificial reptile refugia
  - ◆ Artificial reptile refugia
  - Survey boundary
  - Site boundary

Survey Date	Refuge number	Species
22/04/2025	16	Common toad
29/04/2025	67	Common toad
06/05/2025	26	Common toad
04/06/2025	8	Common toad
04/06/2025	14	Common toad



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PROJECT TITLE  
 KIBBLESWORTH / COLTSDENE SOLAR  
 PROPOSAL

DRAWING TITLE  
 Figure 1: Reptile Survey Results

DATE: 17/06/2025      CHECKED: NE      SCALE: 1:7,872  
 DRAWN: SP      APPROVED: HS      VERSION: 1.0

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No dimensions are to be scaled from this drawing and are to be checked on site.  
 Area measurements for indicative purposes only.

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Projection: OSGB 1936/British National Grid - EPSG 27700

Sources: BSG Ecology survey data



## Appendix A: Summaries of Relevant Legislation

All native reptile species receive legal protection in Great Britain under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Viviparous lizard, slow-worm, grass snake and adder are protected against killing, injuring and unlicensed trade only. Sand lizard and smooth snake receive additional protection as “European Protected species” under the provisions of the Conservation of Habitats and Species Regulations 2017 (as amended) and are fully protected under the Wildlife and Countryside Act 1981 (as amended).

All six native species of reptile are included as ‘species of principal importance’ for the purpose of conserving biodiversity under Section 41 (England) of the NERC Act 2006 (as amended) and Section 7 of the Environment (Wales) Act 2016.

Current Natural England Guidelines for Developers<sup>1</sup> states 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.’ Further the guidance states: ‘Normally prohibited activities may not be illegal if ‘the act was the incidental result of a lawful operation and could not reasonably have been avoided’. Natural England ‘would expect reasonable avoidance to include measures such as altering development layouts to avoid key areas, as well as capture and exclusion of reptiles.’

The Natural England Guidelines for Developers state that ‘planning must incorporate two aims where reptiles are present:

- To protect reptiles from any harm that might arise during development work;
- To ensure that sufficient quality, quantity and connectivity of habitat is provided to accommodate the reptile population, either on-site or at an alternative site, with no net loss of local reptile conservation status.’

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<sup>1</sup> English Nature, 2004. *Reptiles: guidelines for developers*. English Nature, Peterborough. <https://webarchive.nationalarchives.gov.uk/20150303064706/http://publications.naturalengland.org.uk/publication/76006>