

---

# FENWICK SOLAR FARM

**Fenwick Solar Farm**  
**EN010152**

## **Environmental Statement**

**Volume III Appendix 8-2: Reptiles Report**  
**Document Reference: EN010152/APP/6.3**

Regulation 5(2)(a)

Infrastructure Planning (Applications: Prescribed Forms and Procedure)  
Regulations 2009

October 2024  
Revision Number: 00

## Revision History

<b>Revision Number</b>	<b>Date</b>	<b>Details</b>
00	October 2024	DCO application

Prepared for:  
Fenwick Solar Project Limited

Prepared by:  
AECOM Limited

© 2024 AECOM Limited. All Rights Reserved.

This document has been prepared by AECOM Limited (“AECOM”) for sole use of our client (the “Client”) in accordance with generally accepted consultancy principles, the budget for fees and the terms of reference agreed between AECOM and the Client. Any information provided by third parties and referred to herein has not been checked or verified by AECOM, unless otherwise expressly stated in the document. No third party may rely upon this document without the prior and express written agreement of AECOM.

## Table of Contents

Executive Summary .....	1
1. Introduction.....	2
1.1 Background .....	2
1.2 The Scheme .....	2
1.3 The Order Limits.....	2
1.4 Scope of this Report .....	3
2. Relevant Legislation and Policy.....	4
2.1 Legislation .....	4
2.2 Priority Species.....	4
2.3 Local Biodiversity Action Plan.....	4
3. Methods.....	6
3.1 Desk Study .....	6
3.2 Field Surveys.....	6
3.3 Population Estimates.....	8
3.4 Biodiversity Importance .....	9
3.5 Assumptions and Limitations .....	9
4. Results.....	11
4.1 Desk Study .....	11
4.2 Field Surveys.....	11
4.3 Field Surveys.....	12
5. Evaluation.....	14
6. Conclusions .....	15
7. References .....	16
Annex A Figures .....	18
Annex B Photos .....	22
Annex C Survey Dates and Weather Conditions.....	24

## Figures

Figure 8-2-1: Reptile Desk Study Results .....	19
Figure 8-2-2: Reptile Refugia Results .....	20
Figure 8-2-3: Reptile Results Plan.....	21

## Tables

Table 1: Habitat Suitability for Reptiles.....	7
Table 2: Reptile Population Estimates .....	9
Table 3: Suitable Reptile Habitats Targeted for Presence/Likely Absence Surveys..	12
Table 4: Summary of Grass Snakes Presence/Likely Absence Survey Results .....	13

## Executive Summary

- ES1 This report for the Fenwick Solar Project Limited, prepared by AECOM Limited, assesses the ecological constraints related to reptiles within the Scheme Order limits in Fenwick, Doncaster. This report forms a technical appendix to **Environmental Statement (ES) Volume I Chapter 8: Ecology [EN010152/APP/6.1]**. The primary aim is to identify the presence of reptile species within the Order limits, identify any mitigation requirements and ensure compliance with relevant guidelines and legislation.
- ES2 Field surveys were undertaken within the Solar Photovoltaic (PV) Site in order to establish the presence or likely absence of any reptile species within this area and, if present, where they occur and an estimate of population size. The Solar PV Site was also assessed to determine which parts might be suitable for reptiles based on direct experience of the habitats in the area and the use of a Habitat Suitability Assessment (HSA). The field surveys were supported by a desk study of existing records for the Solar PV Site and surrounding area.
- ES3 The majority of the Solar PV Site is agricultural land (i.e. intensive arable or grazing) and not suitable for reptiles, however, there were some areas of potentially suitable habitat identified for survey, which included hedgerows, woodland edge, rough grassland and waterbodies. Due to access and timing, only 2.32 hectares (ha) of the suitable habitat was surveyed and was divided into three targeted areas (collectively referred to as the Survey Area). Reptile refugia sheets, as well as direct field observations, were used to determine presence of reptiles in the Survey Area and to provide data from which the size of species population could be determined.
- ES4 The desk study returned 37 records of Grass Snakes (*Natrix helvetica*) within 2 km of the Solar PV Site. Field surveys, undertaken between May and September 2023, identified the presence of Grass Snakes within the Solar PV Site.
- ES5 Habitats were identified throughout the Grid Connection Corridor with the potential to support Grass Snake.
- ES6 The conclusion is that Grass Snakes are present, with an estimated low population on the Solar PV Site based on standard guidance (Ref. 1) and assumed present throughout the Grid Connection Corridor. This qualifies for Local importance with regards to criteria set out in the Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines (Ref. 2).
- ES7 Due to the relevant legislation and survey findings described in this report, the Scheme will embed sufficient mitigation measures (formalised through the **Framework Construction and Environmental Management Plan [EN010152/APP/7.7]**) to ensure that reptiles occurring within the Order limits are not impacted upon, in line with legislation, policy and guidance.

# 1. Introduction

## 1.1 Background

- 1.1.1 This report has been prepared by AECOM on behalf of Fenwick Solar Project Limited (hereafter referred to as the 'Applicant'), to assess the ecological constraints in connection with Fenwick Solar Farm (hereafter referred to as 'the Scheme'), located in Fenwick, Doncaster, as shown by the Order limits on **ES Volume II Figure 1-2: Site Boundary Plan [EN010152/APP/6.2]**. This report forms a technical appendix to **ES Volume I Chapter 8: Ecology [EN010152/APP/6.1]**.
- 1.1.2 This report was commissioned to identify whether there are known or potential reptile populations that may constrain or influence the design and implementation of the Scheme. The approach applied when undertaking this assessment accords with the Guidelines for Ecological Impact Assessment published by the Chartered Institute of Ecology and Environmental Management (CIEEM) (Ref 2). This report addresses relevant wildlife legislation and planning policy, as summarised in Section 2, of this report and is consistent with the requirements of British Standard 42020:2013 Biodiversity. Code of Practice for Planning and Development (Ref 2).

## 1.2 The Scheme

- 1.2.1 The proposed Scheme includes three locations (collectively referred to as the 'Order limits'):
- a. The land located east of Fenwick and immediately south of the River Went (hereafter referred to as the 'Solar Photovoltaic (PV) Site');
  - b. The land between the Solar PV Site and the existing compound for the Existing National Grid Thorpe Marsh Substation (hereafter referred to as the 'Grid Connection Corridor'); and
  - c. The land located within the existing compound for Thorpe Marsh Substation (hereafter referred to as the 'Existing National Grid Thorpe Marsh Substation').
- 1.2.2 The Scheme comprises the installation of Solar PV Panels, On-Site Cables, Battery Energy Storage System (BESS) Containers, On-Site Substation, Grid Connection Line Drop, and other supporting infrastructure including fencing, access tracks, drainage, and biodiversity and landscaping enhancements.

## 1.3 The Order Limits

- 1.3.1 The Solar PV Site is located near the village of Fenwick, approximately 12 kilometres (km) north of Doncaster, at Ordnance Survey national grid reference SE 60658 16767. It is approximately 407 hectares (ha) in size.
- 1.3.2 The Grid Connection Corridor is approximately 95 ha in size and 6.3 km in length, stretching from NGR SE 60264 14924 to the Existing National Grid Thorpe Marsh Substation at NGR SE 60605 10009.

- 1.3.3 The Existing National Grid Thorpe Marsh Substation is approximately 6 ha in size and centred on the approximate NGR SE 60537 09736.
- 1.3.4 The Solar PV Site comprises arable and pasture fields, and small patches of broadleaved woodlands, with the River Went delineating the northern Site Boundary, and two large drains running through the eastern part of the Solar PV Site (Fenwick Common Drain, and Fleet Drain).
- 1.3.5 The Solar PV Site is bounded by further arable and pasture fields to the east, west and south, and the wider area consists of a landscape that is much the same in terms of land use. The small town of Askern is located approximately 3 km to the southwest of the Solar PV Site and nearby rural villages Moss and Balne are present within a few kilometres to the south and north respectively.
- 1.3.6 The Order limits also includes a section of highway at the junction of the A19 and Station Road in the town of Askern to allow for abnormal indivisible load (AIL) vehicle access and escort. As the works would be limited to temporary traffic signal and banksman control for the period of AIL delivery, no impacts on reptiles are anticipated, and therefore this area is not assessed further.

## **1.4 Scope of this Report**

- 1.4.1 The purpose of this report is to:
  - a. Present the relevant legislation and policy in relation to reptiles present within the Order limits (detailed in Section 2);
  - b. Describe the methods used to carry out the desk and field-based assessments for reptiles;
  - c. Present existing records of reptiles within 2 km of the Order limits;
  - d. Describe areas which are suitable for reptiles within 50 metres (m) of the Order limits; and
  - e. Present the reptile survey results and analysis confirming the presence or likely absence of reptiles within the Survey Area (defined in Section 3).
- 1.4.2 A desk study of existing information was completed to inform the survey and this report.

## 2. Relevant Legislation and Policy

### 2.1 Legislation

- 2.1.1 The four reptile species that could be found within or in the vicinity of the Order limits (based on habitat and/or geographical range) are Adder (*Vipera berus*), Grass Snake (*Natrix helvetica*), Common Lizard (*Zootoca vivipara*) and Slow Worm (*Anguis fragilis*). All are typically referred to as 'widespread', although all are declining to some degree (Ref. 3).
- 2.1.2 All four species are protected against intentional killing and injury under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) (Ref. 4). Furthermore, Sand Lizard (*Lacerta agilis*) and Smooth Snake (*Coronella austriaca*) are both fully protected under the Conservation of Habitats and Species Regulations 2017 (Ref. 5). However, neither of these species has been, or is likely to be recorded in or near to the Order limits due to their specific habitat requirements and restricted range in the United Kingdom (UK).
- 2.1.3 There is no requirement for a licence where development works affect widespread species of reptiles. Instead, Natural England advise that where reptiles are present, they should be protected from any harm that might arise during the development works through appropriate mitigation.

### 2.2 Priority Species

- 2.2.1 In addition to the above legislation, four species of reptile (Common Lizard, Grass Snake, Slow Worm and Adder) are listed as being Species of Principal Importance for conservation in England under section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 (Ref. 6). These species are of material consideration during the planning process.
- 2.2.2 The NERC Act list of Species of Principal Importance (Ref. 6) is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the NERC Act (in this context, the Secretary of State). Under section 40, every public authority (e.g. a local authority or local planning authority) must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity, including restoring or enhancing a population or a habitat.
- 2.2.3 The UK Biodiversity Action Plan (UK BAP) (Ref. 7) was launched in 1994 and established a framework and criteria for identifying species (and habitat types) of conservation concern. From this list, action plans for Priority Species of conservation concern were published and have subsequently been succeeded by the UK Post-2010 Biodiversity Framework (July 2012) (Ref. 7) which is relevant in the context of section 40 of the NERC Act. These species are identified as those of conservation concern, due to their rarity or a declining population trend.

### 2.3 Local Biodiversity Action Plan

- 2.3.1 The Scheme is located within the county of South Yorkshire. Formerly, the Doncaster Biodiversity Action Plan (BAP) (Ref. 8) provided context to inform

identification of threatened or uncommon species of local relevance, alongside priorities for conservation and enhancement targeted at a local level in South Yorkshire. However, under the Environment Act 2021 (Ref. 9), these are being replaced by Local Nature Recovery Strategies (LNRS), which are a system of spatial strategies for nature which will support delivery of biodiversity net gain (BNG) and provide more focussed action for nature recovery. Whilst this is still being developed for South Yorkshire and with no specific habitat or species plans currently in place, this report references the Doncaster BAP, for which Slow Worm, Common Lizard, Grass Snake and Adder are all listed, but with no specific action plans in place (Ref. 8).



## 3. Methods

### 3.1 Desk Study

- 3.1.1 Reptile data was requested from the Doncaster Biological Records Centre in 2023 as part of the Preliminary Ecological Appraisal (PEA) (Ref. 10). This included records of reptiles within 2 km of the Order limits within the last ten years and informed the requirement for targeted field surveys within the Order limits.
- 3.1.2 Only records up to ten years old were considered within the assessment, as any records older than ten years are unlikely to be representative of reptile presence in the local area.

### 3.2 Field Surveys

#### Habitat Suitability Assessment

- 3.2.1 A Habitat Suitability Assessment (HSA) was undertaken using desk-based data and on-site verification to determine the most likely habitats to support reptiles. Satellite imagery was initially used to highlight potentially suitable habitats for reptiles within 50 m of the Solar PV Site. A walkover survey was then carried out in 2023 by AECOM to verify and further identify suitable habitats within 50 m of the Solar PV Site.
- 3.2.2 This was updated in 2024 through a desk-based HSA assessment and subsequent walkover survey of the Grid Connection Corridor.
- 3.2.3 Habitats with the potential to support reptiles were assessed based on the following characteristics to determine suitability:
- a. Location in relation to species range (taken from desk study data);
  - b. Vegetation structure;
  - c. Insolation (sun exposure);
  - d. Aspect;
  - e. Topography;
  - f. Connectivity to nearby good quality habitat;
  - g. Refuge opportunity;
  - h. Hibernation potential;
  - i. Disturbance; and
  - j. Egg-laying site potential (Grass Snake only).
- 3.2.4 Based on the characteristics mentioned above, each habitat was graded (poor, good or exceptional) for its potential to support reptiles and these, alongside a description of these definitions, are presented in Table 11.

**Table 1: Habitat Suitability for Reptiles**

Habitat Grading	Description
Poor	Habitat which is unfavourable, based on most of the habitat assessment characters listed above or is limited in size and highly isolated from other areas of suitable habitat.
Good	Habitat which is favourable or sub-optimal for many of the habitat assessment characters listed above; or is sub-optimal for some of the characters and has good connectivity with areas of more suitable habitat.
Exceptional	Habitat which is favourable, based on most of the habitat assessment characters listed above.

### Presence/Likely Absence Surveys

3.2.5 Reptile presence/likely absence surveys were carried out in the Survey Area from May to September 2023 by suitably experienced AECOM ecologists. The surveys used four recognised methodologies:

- a. Use of artificial refugia to attract reptiles within the Survey Area;
- b. Manual searches of suitable natural refugia present within the Solar PV Site;
- c. Checks for signs of reptile activity including sloughed skins, burrows and eggs; and
- d. Sustained observation of suitable areas within the Solar PV Site (using binoculars when possible).

3.2.6 The survey methods listed above derived from the best practise guidance Froglife advice sheet 10 (Ref. 1), Natural England’s Standing Advice Sheet for Reptiles (Ref. 12) and the Herpetofauna Workers’ Manual (Ref. 13) with reference to those species most likely to be encountered. Those include:

- a. Common Lizard;
- b. Slow Worm;
- c. Grass Snake; and
- d. Adder.

3.2.7 The reptile presence/likely absence surveys comprised eight visits. The first survey visit consisted of deploying the artificial refugia within the Survey Area in locations suitable for basking reptiles e.g. the south and east facing edges of woodland and hedgerows and sun exposed rough grassland. The seven following survey visits comprised checking refugia (above and underneath) for basking reptiles and executing other survey methodologies listed above in Section 3.3.

- 3.2.8 Artificial refugia used during the surveys were of standard size and specification, namely 0.5 m x 1 m tiles of roofing felt and 0.5 m<sup>2</sup> of corrugated tin. A total of 94 artificial refugia (between 30 and 50 refugia per hectare) were placed within the Survey Area on the Solar PV Site on 23 May 2023, seven days prior to the first survey visit to allow for bedding in. The artificial refugia were set in transects within areas of suitable habitat and around natural areas of refugia, which were exposed to the sun (see Figure 8-2-2 in Annex A for refugia locations).
- 3.2.9 The surveys were conducted in suitable weather conditions in accordance with the preferred basking temperatures of each species listed. Attention was given to individual species preferences when conducting the surveys (Ref. 1, Ref. 14). The species preferences are as follows:
- a. Adders bask freely at temperatures between 8 C and 16 C and are the least tolerant of higher temperatures. Young adders are born live during August;
  - b. Common lizards typically bask at temperatures between 9 C and 18 C between March and June; though gravid females will bask through to the end of July when they give birth;
  - c. Grass snakes will bask at temperatures between 12°C and 20°C. They typically lay eggs in compost heaps, manure piles and grass cuttings. Eggs are laid between June and July and typically hatch in August and September. Checking these sites for eggs carefully with minimal disturbance offers a potential means of survey; and
  - d. Slow worms will typically bask at similar temperatures to common lizards. However, they are usually found by turning over debris and are rarely seen basking. Hatchlings are born in September but rarely bask.
- 3.2.10 Attention was paid to the forecast temperatures to ensure periods of extreme heat or temperatures below 9 C were avoided during presence/likely absence surveys. Where practicable, the surveys were carried out between 8:00 and 11:00 in an effort to ensure the surveys were conducted between guideline temperatures of 9°C and 20°C, and when there was little wind and intermittent hazy sunshine (representing ideal basking temperatures for UK reptiles (Ref. 1)).
- 3.2.11 Where any reptiles were found, the age of each reptile was also recorded using the Amphibian and Reptile Conservation Trust (ARC) Reptile Identification Guide (Ref. 15).
- 3.2.12 The dates of reptile surveys and weather conditions during these surveys are presented in Annex C.

### **3.3 Population Estimates**

- 3.3.1 Where reptiles are present, estimating population sizes of reptiles can be undertaken using guidance within Froglife's advice sheet Number 10 (Ref. 1). This method of population size estimate (as presented in Table 2: 2) uses the assumption of a reptile survey using a density of 10 reptile sheets per hectare. However, it can be difficult to determine a population size through interpretation of data using peak counts of reptiles and densities of refugium sheets. Therefore, an average score across all survey visits will provide a

more robust estimate of the population size of each reptile species present within suitable on-site habitat.

- 3.3.2 Reptile populations can be classed into three groups - low population, good population and exceptional population, based on the average maximum number of adults seen by one person in one day. Table 2: provides the criteria for each population size in relation to each reptile species (Ref. 1).

**Table 2: Reptile Population Estimates**

<b>Species</b>	<b>Low Population</b>	<b>Good Population</b>	<b>Exceptional population</b>
Adder	<5	5 – 10	>10
Grass snake	<5	5 – 10	>10
Common lizard	<5	5 – 20	>20
Slow worm	<5	5 – 20	>20

### **3.4 Biodiversity Importance**

- 3.4.1 The value (Importance) of the Order limits for reptiles and the geographical frames of reference used for this assessment is based on Section 4.7 in the Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines (Ref. 2).
- 3.4.2 This gives guidance on scoping and carrying out environmental assessments and places appraisal in the context of relevant policies and at a geographical scale at which feature matters (i.e. international, national, regional, county, district, local or site). Data received through desk study and field-based surveys were used to identify the importance of the species addressed in this report. Professional judgement was also applied, where necessary. Relevant published national and local guidance and criteria has been used, where available, to inform the assessment of biodiversity importance and to assist consistency in evaluation.

### **3.5 Assumptions and Limitations**

#### **Desk Study**

- 3.5.1 The aim of a desk study is to help characterise the baseline context of a scheme and provide valuable background information that would not be captured by a single site survey alone. Information obtained during the course of a desk study is dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for a particular species does not necessarily mean that the species does not occur in the Study Area. Likewise, the presence of records for particular species does not automatically mean that these still occur within the area of interest or are relevant in the context of the Order limits.

## Field Survey

- 3.5.2 Due to the size of the Solar PV Site, land access and the small survey window available for a reptile survey, suitable areas selected for survey were based on those offering the best available habitat for reptiles. Whilst some areas were not surveyed, this did not affect the survey outcome as the main aim was to confirm presence/likely absence from the Solar PV Site.
- 3.5.3 It was reported on visit four that refugia numbers 55 to 65 had been destroyed by cultivation (see Figure 8-2-2 in Annex A). This was not a significant limitation as refugia density was higher than required to determine presence/absence. They were not replaced as no suitable habitat remained at these locations.
- 3.5.4 The artificial refugia were given seven days to bed in which is below the minimum 14 days recommended in the relevant survey guidance (Ref. 1, Ref. 13). This was counteracted by the long period of time between survey visit three and four which gave the refugia a substantial amount of time to bed in with no disturbance from survey visits. Additional vegetation was also placed under the artificial refugia in order to sustain a suitable place of refuge for reptiles over the long survey period.
- 3.5.5 Survey temperatures exceeded 20 C on visit four and visit seven and finishing times exceeded 11:00 on survey visits two to seven. This was due to the large scale of the survey effort. These temperature and timing limitations are presumed to have little impact on the survey results as the majority of each of these surveys were still within the suitable survey timing and temperatures.
- 3.5.6 Presence/likely absence surveys for reptiles are not adequate for predicting population estimates due to the number of survey visits. Accurate population estimates require a minimum of twenty survey visits (Ref. 1). The population estimate given in this report is therefore an estimate only based on the data collected from the presence/likely absence survey.
- 3.5.7 Not all areas of the grid connection corridor were accessible (due to refusal of land access) for HSA survey in 2024. However aerial imagery indicates that the areas that the habitats present in the inaccessible areas are very similar to the remainder of the corridor (arable and hedgerows).
- 3.5.8 None of these limitations affect the conclusions of this report.

## 4. Results

### 4.1 Desk Study

- 4.1.1 Within the preceding ten years, the desk study returned 37 records of Grass Snake within 2 km of the Order limits through the Doncaster Biological Records Centre. All of the records were located southeast of the Order limits, with the closest record being 0.9 km of the Order limits (see Figure 8-2-1 in Annex A).
- 4.1.2 No other reptiles were recorded within 2 km of the Order limits in the last ten years.

### 4.2 Field Surveys

#### Habitat Suitability Assessment (HSA)

- 4.2.1 The HSA survey conducted in 2023 and 2024 identified multiple good/exceptional graded habitats suitable for reptiles either within or immediately adjacent to the Order limits.
- 4.2.2 The good/exceptional habitats identified consisted of:
- Bordering hedgerows;
  - Hay fields;
  - Mixed broadleaf woodlands;
  - Rough grassland field margins;
  - Compost/hay/manure/log piles; and
  - Ponds, ditches and rivers.
- 4.2.3 The south, east and west facing sun exposed aspects of these habitats listed are hot spots for basking reptiles (Ref. 13).
- 4.2.4 The survey area included selected areas of suitable terrestrial habitat for reptiles within the Solar PV Site, which included water bodies (ponds), ephemeral/short perennial vegetation, scrub/woodland edges and semi-improved grassland. Due to timing and access restrictions (see Section 3.5 for limitations), not all habitat identified as being good or exceptional for reptiles was included in the survey area. A total of three targeted areas (collectively referred to as the 'Survey Area') were subject to further survey for reptiles.
- 4.2.5 Figure 8-2-2 and Figure 8-2-3 (Annex A) illustrate the three targeted areas, as well as the refugia locations and records of reptiles found.
- 4.2.6 Table 3 describes the habitats for each section of the Survey Area with reference to the artificial refugia numbering shown on Figure 8-2-2 (Annex A).

**Table 3: Suitable Reptile Habitats Targeted for Presence/Likely Absence Surveys**

<b>Refugia Number Range (area (ha) of section)</b>	<b>Habitat Description</b>	<b>Suitability for Reptiles</b>
1 to 31 (0.41 ha)	A hedgerow/tree line running north to south. Adjacent hay field with rough grassland field margins to its east. Woodland ponds and semi-improved grassland land to its west.	Eastern aspect of hedgerow/tree line provides sun exposure and cover for morning basking along the field margin. Woodland provides natural refugia and hibernacula. Pond, woodland and grassland habitats are suitable foraging habitats.
32 to 54 and 55 to 65 (1.4 ha)	A hedgerow, rough grassland field margin and drainage ditch running parallel to each other, south-west to north-east. Adjacent hay fields and agricultural land.	South-east aspect hedgerow provides sun exposure and cover for morning basking along the field margin. Drainage ditch and rough grassland are suitable foraging habitats.
66 to 94 (0.51 ha)	Broad leaved woodland with south and east running rough grassland field margins. Adjacent hay fields and ditches.	Southern and eastern aspect of woodland provides sun exposure and cover for morning basking along the field margin. Woodland provides natural refugia and hibernacula. Ditches, woodland and grassland habitats are suitable foraging habitats.

## 4.3 Field Surveys

4.3.1 During the presence/likely absence surveys carried out between May and September 2023, one species of reptile was recorded (Grass Snake). This species was recorded during the 4th, 5th, 6th and 7th visit. Table 4 provides a summary of the Grass Snakes found during the presence/likely absence surveys. The age and sex of the individual was recorded where practicable. Photos are provided in Annex B.

**Table 4: Summary of Grass Snakes Presence/Likely Absence Survey Results**

Visit Number	Number of individuals recorded				Total
	Adult Male	Adult Female	Adult unsexed	Juvenile	
4	2	2	4	1	9
5	0	1	4	2	7
6	0	0	3	1	4
7	1	0	1	3	5

4.3.2 One adult Grass Snake was recorded during other ecological surveys on 14 September 2023 to the northwest of the Solar PV Site, outside of the Survey Area (see Figure 8-2-3 in Annex A).



## 5. Evaluation

- 5.1.1 The desk study returned 37 records of Grass Snake, all of which were to the southeast of the Order limits, the closest being 0.9 km from the Order limits.
- 5.1.2 Field surveys within the Solar PV Site were undertaken between May and September 2023, and recorded one reptile species within the Survey Area which was Grass Snake. During other ecological surveys, one adult Grass Snake was also recorded within the northwest region of the Solar PV Site. Some suitable habitats were not included in the survey (see Section 4.5), therefore, Grass Snakes are likely to be present within suitable habitats throughout the Solar PV Site and not just the targeted Survey Area.
- 5.1.3 Grass Snake is a mobile reptile that will commute through areas of less suitable habitat such as arable fields and pasture to get to suitable basking or hibernation sites. Therefore, Grass Snake cannot be assumed to be absent from areas which are less suitable.
- 5.1.4 The number of juvenile Grass Snakes recorded indicates that breeding is likely taking place within or in close proximity to the Solar PV Site. Grass Snakes are oviparous and lay their eggs within decomposing vegetation such as the compost and manure piles identified within the Order limits. Woodland habitats may also provide similar egg laying sites.
- 5.1.5 No other reptile species were recorded within the Solar PV Site or returned by the desk study.
- 5.1.6 The average peak count for Grass Snake recorded during the presence/likely absence surveys was four (rounded up). According to the criteria stated in Section 3.3 of this report, an estimated low population size of Grass Snake is present within the Solar PV Site. Therefore, the Grass Snake population on the Solar PV Site would qualify as of Local importance and a precautionary approach to mitigation will be implemented within this area.
- 5.1.7 In addition, the HSA assessments conducted in 2024 found habitats present within the Grid Connection Corridor that are suitable for Grass Snakes and therefore it is assumed that Grass Snakes are present throughout the Order limits.

## 6. Conclusions

- 6.1.1 The primary purpose of this report is to provide an assessment of the presence or absence of reptiles and their biodiversity importance within the Order limits to inform **ES Volume I Chapter 8: Ecology [EN010152/APP/6.1]**.
- 6.1.2 The desk study returned 37 records of Grass Snake, occurring within 2 km of the Order limits. Field surveys for reptiles, undertaken within suitable habitat on the Solar PV Site in 2023, identified the presence of one reptile species – Grass Snake, occurring at a low population size.
- 6.1.3 Habitats were identified within the Grid Connection Corridor that are suitable to support Grass Snake. Due to the temporary nature of works in these areas and the findings of the 2023 surveys and desk study it was decided that further presence/likely absence surveys were not necessary in these areas, and it was assumed that Grass Snakes are also present in the Grid Connection Corridor.
- 6.1.4 The habitats within the Order limits was assessed as of Local importance for reptiles.
- 6.1.5 Due to the relevant legislation and survey findings illustrated in Sections 2 and Section 4 of this report, mitigation will be required to avoid causing an offense during the construction of the Scheme.
- 6.1.6 An assessment of potential impacts (considering embedded mitigation), any additional mitigation and residual effects has been undertaken and included within **ES Volume I Chapter 8: Ecology [EN010152/APP/6.1]**.

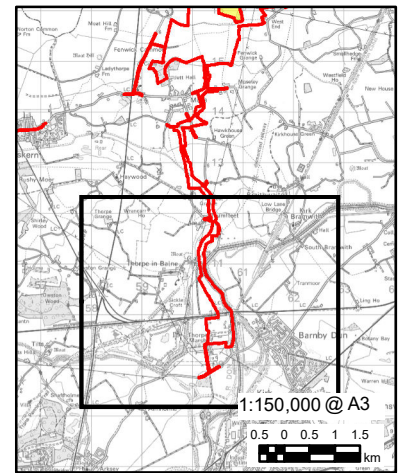
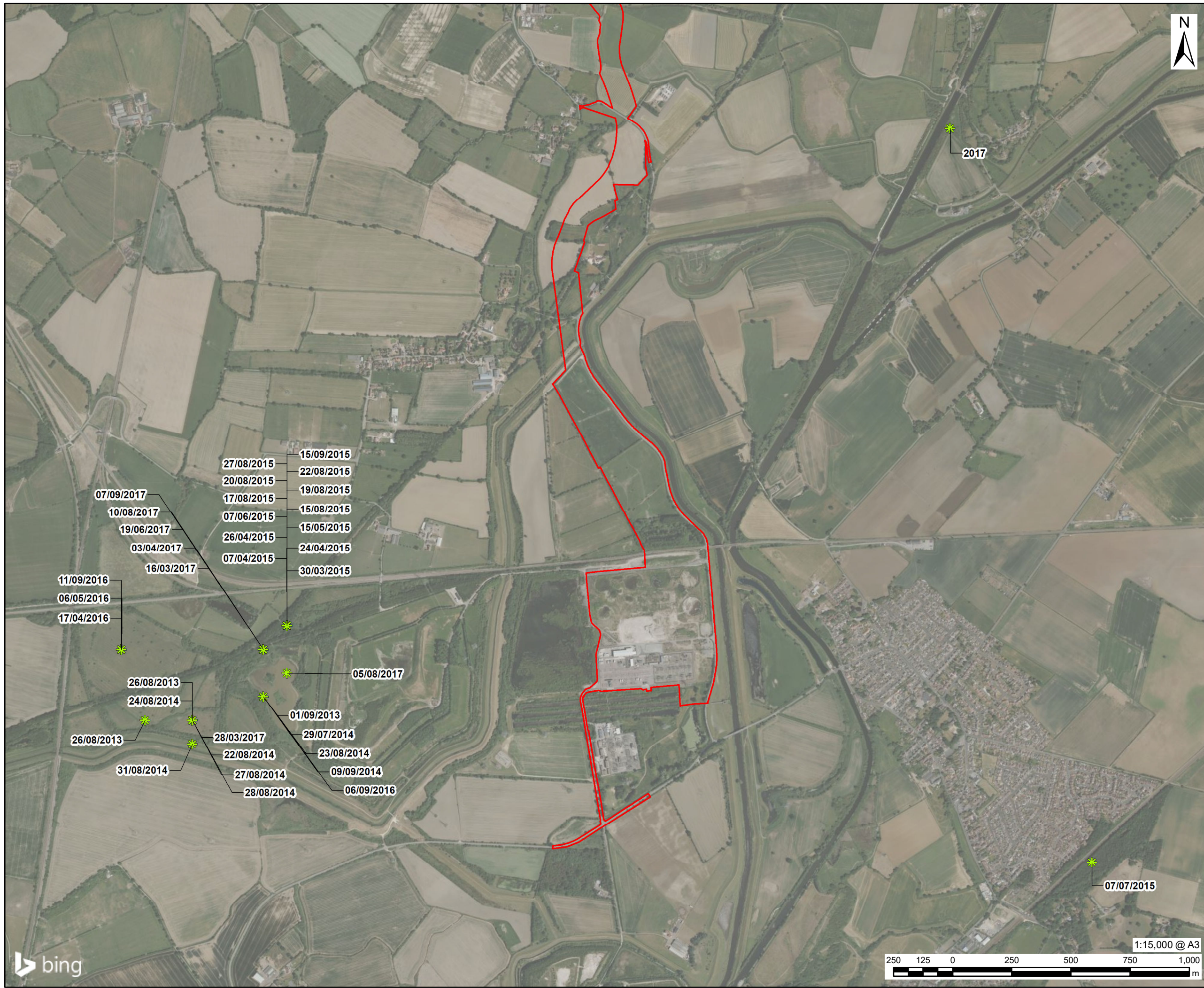
## 7. References

- Ref. 1 Froglife. (1999). Reptile survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife Advice Sheet 10. Halesworth: Froglife.
- Ref. 2 Chartered Institute of Ecology and Environmental Management (CIEEM) (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. CIEEM, Winchester.
- Ref. 3 Russell, L. and Foster, J. (2021). Establishing a baseline dataset for widespread reptiles in England to inform better management of development impacts. ARC report to Natural England. Bournemouth: Amphibian and Reptile Conservation Trust.
- Ref. 4 HMSO (1981) The Wildlife and Countryside Act 1981. Available at: <https://www.legislation.gov.uk/ukpga/1981/69/contents> [Accessed 1 February].
- Ref. 5 HMSO (2017) The Conservation of Habitats and Species Regulations 2017 (as amended). Available at: <http://www.legislation.gov.uk/uksi/2017/1012/contents/made> [Accessed 1 February 2024].
- Ref. 6 HMSO (2006) The Natural Environment and Rural Communities Act 2006. Available at: <https://www.legislation.gov.uk/ukpga/2006/16/contents> [Accessed 1 February 2024].
- Ref. 7 HMSO (1994) The UK Biodiversity Action Plan 1994. Available at: <https://www.gov.uk/government/publications/biodiversity-the-uk-action-plan> [Accessed 1 February 2024].
- Ref. 8 JNCC and Defra (2012) UK Post-2010 Biodiversity Framework 2012. Available at <https://jncc.gov.uk/our-work/uk-post-2010-biodiversity-framework/> [Accessed 1 February 2024].
- Ref. 9 City of Doncaster Council (2007) Doncaster Local Biodiversity Action Plan 2007. Available at: <https://www.doncaster.gov.uk/services/environmental/doncaster-biodiversity-action-plan> [Accessed 1 February 2024].
- Ref. 10 HMSO (2021) The Environment Act 2021. Available at: <https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted> [Accessed 1 February 2024].
- Ref. 11 AECOM, (2023). Fenwick Solar Farm Preliminary Ecological Appraisal.
- Ref. 12 Natural England (2023) Reptiles: surveys and mitigation for development projects (2012). Available at: <https://www.gov.uk/guidance/reptiles-protection-surveys-and-licences> [Accessed 2 February 2024].
- Ref. 13 Gent, A.H. and Gibson, S.D. eds. (1998). Herpetological Workers' Manual. Peterborough: Joint Nature conservation Committee.
- Ref. 14 Beebee, T. and Griffiths, R. (2000). Amphibians and Reptiles. London: Harper Collins Publishers.
- Ref. 15 Amphibian and Reptile Conservation Trust (2019) Reptile Identification Guide by the Amphibian and Reptile Conservation Trust. Available at:

<https://www.arguk.org/downloads-in-pages/resources/id-guides> [Accessed 2 February 2024].

# Annex A Figures





**NOTES**  
 Reproduced from Ordnance Survey digital map data © Crown copyright 2024. All rights reserved. Licence number 0100031673.  
 Reptile records provided by Doncaster Local Records Centre, 2023.  
 © 2024 Microsoft Corporation © 2024 Maxar © CNES (2024) Distribution Airbus DS

**ISSUE PURPOSE**  
Environmental Statement

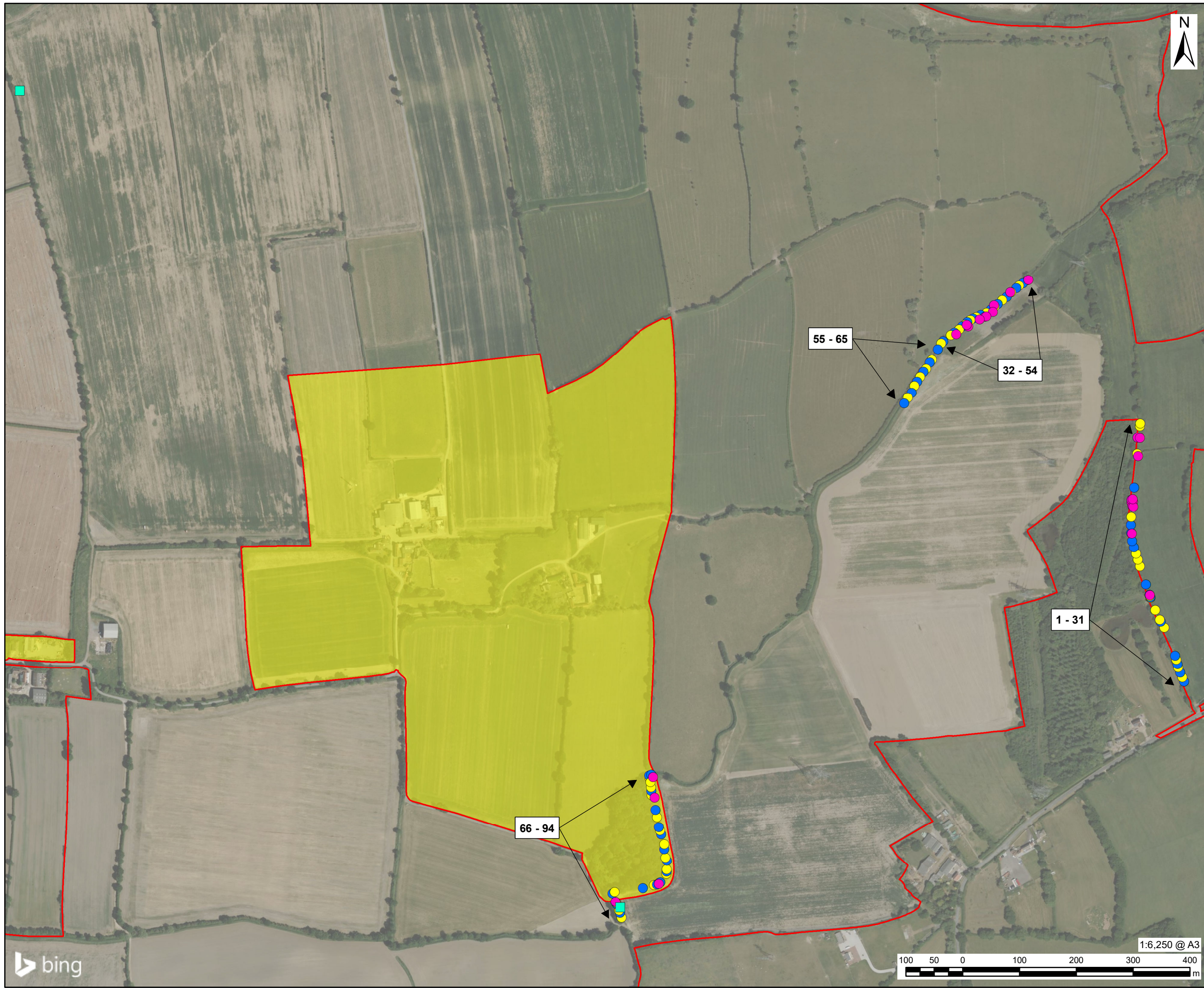
**PROJECT NUMBER**  
60698207

**FIGURE TITLE**  
Reptile Desk Study Records

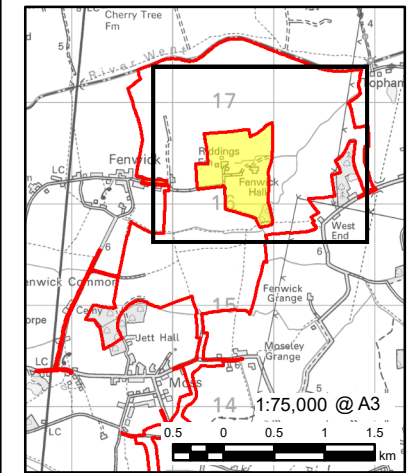
**FIGURE NUMBER**  
Figure 8-2-1

This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as agreed by AECOM or as required by law. AECOM accepts no responsibility, and denies any liability whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. Do not scale this document. All measurements must be obtained from the stated dimensions.





- LEGEND**
- Order limits
  - Land not included in the Order limits
  - Grass Snake Sighting - Non Refugia
- Reptile Refugia**
- Felt Tile
  - Metal Corrugated Tile
  - Grass Snake Sighting



**NOTES**

Reproduced from Ordnance Survey digital map data © Crown copyright 2024. All rights reserved. Licence number 0100031673.

© 2024 Microsoft Corporation © 2024 Maxar ©CNES (2024) Distribution Airbus DS

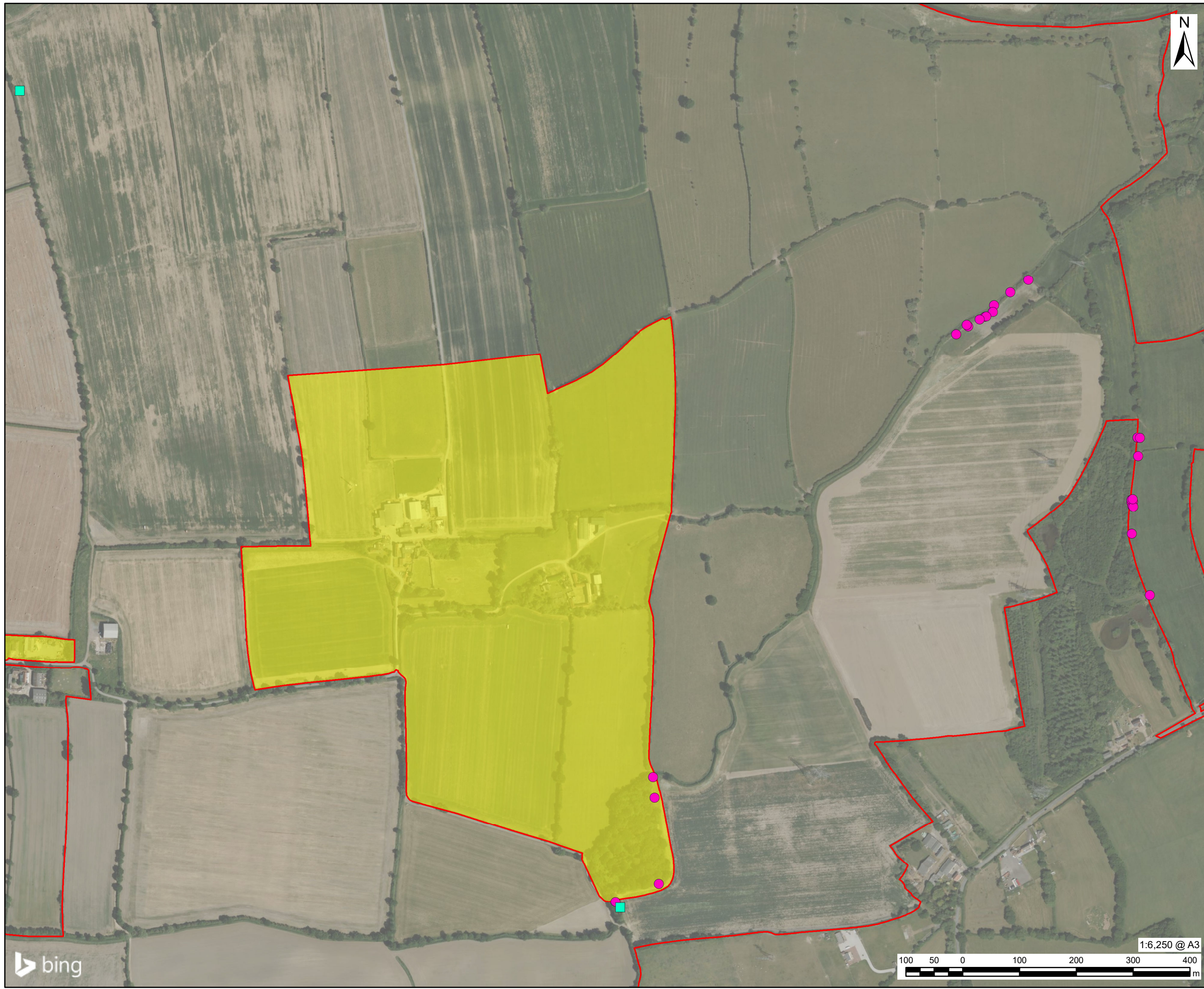
**ISSUE PURPOSE**  
Environmental Statement

**PROJECT NUMBER**  
60698207

**FIGURE TITLE**  
Reptile Refugia Locations

**FIGURE NUMBER**  
Figure 8-2-2



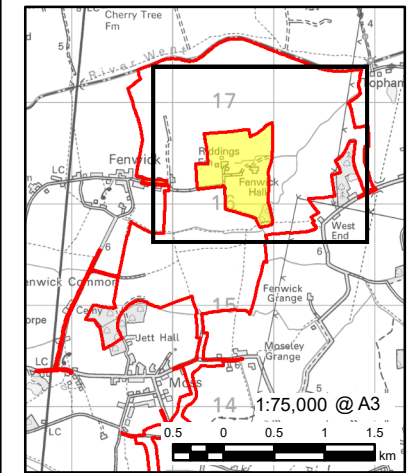


**PROJECT**  
Fenwick Solar Farm

**CLIENT**  
Fenwick Solar Project Limited

**CONSULTANT**  
AECOM Limited  
Midpoint,  
Alencon Link  
Basingstoke, RG21 7PP  
www.aecom.com

- LEGEND**
- Order limits
  - Land not included in the Order limits
  - Grass Snake Sighting - Non Refugia
  - Grass Snake Sighting



**NOTES**

Reproduced from Ordnance Survey digital map data © Crown copyright 2024. All rights reserved. Licence number 0100031673.

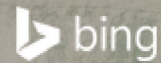
© 2024 Microsoft Corporation © 2024 Maxar ©CNES (2024) Distribution Airbus DS

**ISSUE PURPOSE**  
Environmental Statement

**PROJECT NUMBER**  
60698207

**FIGURE TITLE**  
Reptile Results Plan

**FIGURE NUMBER**  
Figure 8-2-3



The drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as agreed by AECOM or as required by law. AECOM accepts no responsibility, and denies any liability whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. Do not scale this document. All measurements must be obtained from the stated dimensions.



## Annex B Photos



Photo 1 – Male adult grass snake, freely basking





Photo 2 - Grass snake basking under refugia.

## Annex C Survey Dates and Weather Conditions

<b>Visit Number</b>	<b>Date and Time</b>	<b>Temperature Range (°C)</b>	<b>Cloud Cover (%)</b>	<b>Precipitation</b>
1	30 May 2023 08:00-10:15	12-13	100	Dry
2	2 June 2023 08:45-11:15	13-16	25	Dry
3	6 June 2023 08:55-11:45	12-14	100	Dry
4	5 September 2023 08:45-11:45	16-21	0	Dry
5	8 September 2023 08:45-11:45	16-17	100	Dry
6	18 September 2023 09:15-12:15	16-19	60	Dry
7	25 September 2023 09:15-12:15	16-23	20	Dry



An aerial photograph of a vast solar farm at sunset. The rows of solar panels stretch across the landscape, creating a strong sense of perspective. The sky is a deep orange and red, with the sun low on the horizon, casting long, dark shadows across the panels. The overall mood is industrial and serene.

**BOOM**  
POWER

**BUILD | OWN | OPERATE | MAINTAIN**

**BOOM-POWER.CO.UK**